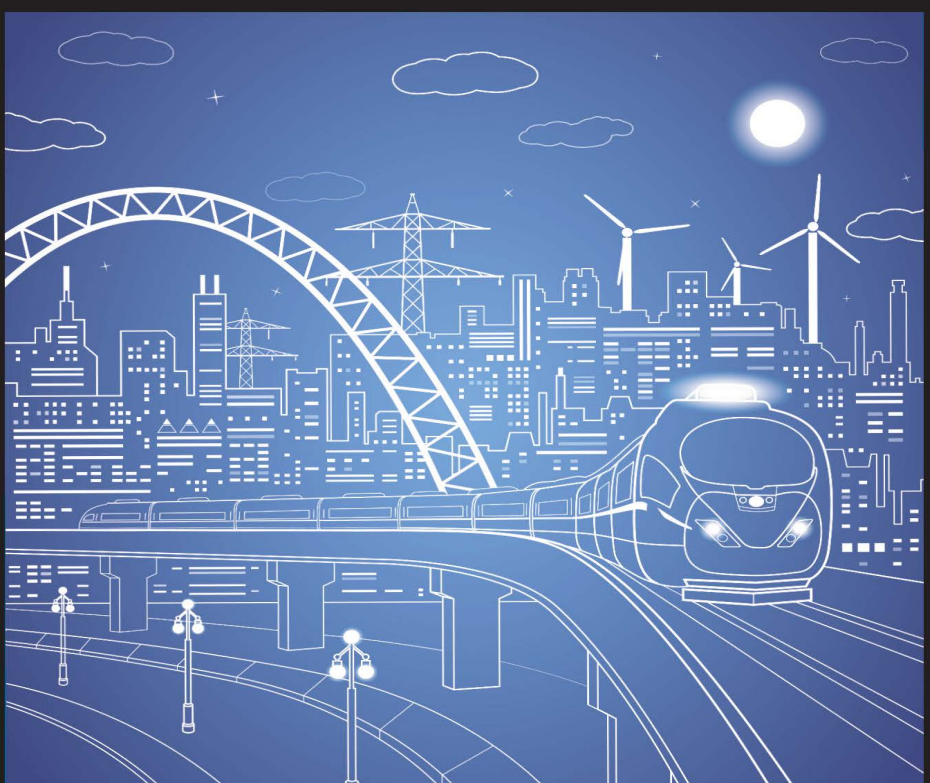
Project Finance in Practice

Case Studies



Carmel de Nahlik and Chris Jackson

EUROMONEY BOOKS

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Published by
Euromoney Institutional Investor PLC
Nestor House, Playhouse Yard
London EC4V 5EX
United Kingdom

Tel: +44 (0)20 7779 8999 or USA 11 800 437 9997
Fax: +44 (0)20 7779 8300
www.euromoneybooks.com
E-mail: hotline@euromoneyplc.com

ISBN 978 1 78137 263 0

Typeset by Phoenix Photosetting, Chatham, Kent

Contents

Acknowledgements

Books like this one are the product of many people's thoughts and input … some of whom have asked to stay anonymous, most of whom are mentioned in the book by name. The willingness of people, some of whom the authors had not contacted for years, to give of their time and the encouragement that they provided whilst reviewing drafts and making suggestions for further review was appreciated. What also became apparent was the number of conversations these contributors had in turn that enabled them to comment in a rounded fashion on individual cases. So rather like the underlying projects, the finished article is a product of extensive teamwork, multiple view points and a number of compromises.

We would like to thank everyone who contributed to the book, especially:

Our families for putting up with long conversations, proof reading duties and the highs and lows of writing and researching the book. Thanks, Suzanna and Chris;

Melissa Oshungbure of Euromoney Books for her support and encouragement;

Everyone who gave ideas and feedback on the content;

Andrew Bing at MTN Nigeria and Bram Moerman at Analysys Mason for providing some of the original Nigerian project and market data for inclusion within the book;

Kai Nehen and Yijun Dong for writing the A1 Model and Cheng Jiu case studies;

Everyone who gave us insights into political, practical and other issues that related to the project case studies, the experts who wrote commentaries on the cases and the peer reviewers who read through drafts of individual cases;

Philip Fletcher, John Dewar and Munib Hussain from the Islamic Finance Team at Milbank and, Robert Jay, Annika Kiestra and Muhabbat Mahmudova of IJ Global for giving us permission to reproduce some key diagrams;

Sarah Abel for copy editing.

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Carmel has taught at several universities in the UK and in France and has designed and delivered executive education programmes focusing on project finance and project management and ethics. Her research interests include project finance, attitudes towards risk in financial decision-making and how theories from natural science can give insights into managing organisations.

Part 1

Project finance principles in practice

Chapter 1

Introduction

Project finance affects the lives of everyone, and since major projects are important to all of us as stakeholders, a wider understanding of the complex decision-making processes involved allows for better engagement in informed debates about new and sometimes controversial projects.

The Infrastructure Global Project Finance sector is reviewed each year by IJGlobal and the 2013 figures suggest that for this year, the total volume of project finance transactions was US$280 billion (548 deals) for which US$235 billion was raised in debt. To offer a comparison, the total volume is slightly smaller than the CIA's estimate of the 2013 GDP of Singapore and about twice the size of the GDP of Bangladesh. Over the period 2010 to 2013, total capital investment has risen by 51% close to the debt increase of 53% with a deal count rising by 30%, suggesting deals are getting larger. The breakdown by sectors is shown in Exhibits 1.1 and 1.2. Exhibit 1.1 shows a geographic distribution of deal volumes for the last three years and Exhibit 1.2 breaks this down by sector. (In Exhibit 1.2, there is an element of double counting as transactions can be both public private partnership/private finance initiative (PPP/PFI) and belong to one of the other sectors.) The AI road case (see Chapter 13) is a good example of this as it is classified as a PPP and an infrastructure project.

Exhibit 1.1

Global project finance deal volume and value by geographic region

	Deal numbers			*Deal value US$ billion*		
	2013	*2012*	*2011*	*2013*	*2012*	*2011*
Europe	208	188	288	74	51	84
Americas	152	142	157	73	63	71
Asia Pacific	129	75	96	76	51	62
Africa and Middle East	59	38	33	57	21	33
Total	548	443	574	280	186	250

Source: IJGlobal (reproduced with kind permission)

Exhibit 1.2

Global project finance deal volume and value by industry sector

	Deal numbers			*Deal value US$ billion*		
	2013	*2012*	*2011*	*2013*	*2012*	*2011*
Oil and gas	78	50	67	113	57	53
Power	74	50	75	44	28	45
Social infrastructure	58	52	77	13	10	22
Water and sewage	8	6	7	7	4	2
PPP/PFI	95	101	135	45	46	58
Transport	62	59	72	52	41	50
Renewables	236	193	229	35	36	43
Mining and metals	23	17	37	9	10	31
Telecoms	9	6	9	7	1	5
Total	643	534	708	325	233	309

PFI/PPP includes all deals in this category, so there is some duplication.

Source: IJGlobal (reproduced with kind permission)

Whilst Europe continues to dominate the deal numbers, the overall deal values are split between the three traditional areas of Europe, Americas and Asia Pacific. Deal sizes in Africa and the Middle East are rising but this is also affected by some of the mega projects in Saudi Arabia such as Sadara (see Chapter 16). MTN Nigeria (see Chapter 10) offers a positive picture of a project in Africa that has been very successful.

Oil and gas deals continue to dominate the industry sectors possibly as a result of the large Saudi transactions but renewables projects dominate by number. These tend to be much smaller projects, often solar energy. The PFI/PPP projects category spans all project industries, so as mentioned previously there is an element of double counting and is concentrated in the UK. Australia and the US were the most active markets. Asian banks are displacing traditional European and US lenders and Western pension funds continue to be interested in infrastructure projects because of their longer term nature. Many funds hold some form of project finance transaction elements as part of their portfolios, as is alluded to at the end of the LASMO case by our expert commentator (see Chapter 8).

In this book we have selected cases that represent the major markets and sectors, but bearing in mind that projects have lengthy timescales, we have also chosen a spectrum of projects at different stages of their life cycles.

Having claimed that project finance is important, the use of project finance techniques spreads further than these classic project areas and includes other areas such as football finance (Liverpool: Chapter 11) and leasing (Cheng Jiu: Chapter 14) and we have included them to show the breadth of the range of applications. We have also included a final case

that turns the discussion around to look at policy decisions and how they impact on project finance opportunities.

It was our original intention to make this book a stand-alone work, so Chapters 1 to 7 offer a quick walk through project finance written from a generalist's perspective, that we hope will attract a wider audience than just finance providers. We examine the history of project finance through the ages (including the growth of Islamic finance) and we consider how such an apparently straightforward approach has colonised the area of corporate finance and been adopted by different groups such as games developers, inspiring venture capitalists in their newest incarnation – peer to peer and crowd funding, including charitable giving. We consider the regulatory background and risk and we specifically address the increasing challenge of project managing not only the project but also the finance – essential for the speedy and successful closure of a mega-project such as Sadara (Chapter 16).

Stories (and thus cases) are an established way of conveying information inside institutions and in the last decade, organisational storytelling has become a topic of interest for those studying organisations and seeking to improve or change them. They also bring the figures to life in a different way by providing some of the background to the decisions made. In Chapters 8 to 17, we look at 10 project case studies in some detail, split into more mature and early stage projects. The long lifespan of many projects suggested it made sense to look at some that were still works in progress, rather than revisiting the same classic projects, such as Eurotunnel. The choice inevitably reflects our own interests but we have made a conscious choice to look at wider examples, suggested as the book developed. They cover a number of industries and also reflect a spectrum of maturity: LASMO (Chapter 8) is a 'cradle to grave' picture of an innovative financing closed at a time of difficult economic conditions and uncertainty and lies very much at the equity end of the capital continuum. Peterborough (Chapter 12), a mature but ongoing story is closer to the debt end and newer projects such as Sadara (Chapter 16), closed in 2013, are yet to demonstrate physical completion and first cash flow. We look at toll roads, airline leases and military satellites as well as ports and power stations and even a football club to explore that enormous power of the project finance approach – a far cry from the original 1970s version of *Project Financing* as an internal Bank of America publication that was used by the shipping, energy, film, aerospace and leasing groups. Some, but not all of our cases have also been Projects of the Year, winning well deserved awards for the teams that made them happen.

As we planned this book, we also faced a number of issues that were different from the last such case study book published by Euromoney in that we have now firmly entered the digital age and the transient nature of material available on the internet. With this goes a need to clearly acknowledge ownership rights in material that lives behind financial firewalls. So whilst we might have wanted to share some of the more complex structures as diagrams, that has not always been possible. In such cases, we refer the reader back to the original source material that exists at the time of writing.

We hope you will enjoy reading the book as much as we enjoyed planning and writing it and we welcome suggestions for cases for our next book.

Carmel de Nahlik
Chris Jackson
October 2014

Chapter 2

A brief history of project finance

Overview

We might be forgiven for thinking that the challenge of financing large projects has only been around for the last 150 or so years and that the complex techniques for financing are similarly modern. However as ancient manuscripts have been decoded by scholars and become freely available online, it has emerged that the art of financing a large project by looking to its assets and cash flows is a very old one indeed. Many of the structures that we look at today are essentially re-workings of previous legal and financial structures, and indeed even in our own professional lives we have seen claims of genuine innovation in project finance designs that are more akin to tweaks of established practices. As we will see in Chapter 3, the basic principles of project finance have spread out into other branches of banking and investment capital, providing the financial resources to enable change and development to take place for individual companies, emergent countries and their public and private stakeholders.

In this chapter we shall go back in time to look at how large projects have been financed and also review some alternative approaches to project finance driven by different socio-economic environments, including Islamic finance. Finally, we shall look at how the modern project financier can draw on this library of techniques to enrich the approaches that are available.

How were large projects financed in the past?

A number of modern writers on project finance have suggested that project finance techniques had their origins in merchant trade in the former city states of Florence and Venice, in what is now Italy, or mention the Frescobaldi bankers to Edward I of England during the period known as the Middle Ages in Europe. Written evidence more recently discovered, suggests that project finance techniques are very much older. Trade, buildings and infrastructure needed to be financed in periods of growth, and the mechanisms to do so existed in times as early as recorded history. One challenge exists in that we can only see records that have survived in civilisations where such records were written down, stored and can be translated. As such, what follows is not an exhaustive discussion, but a suggestion that this view may be too narrow.

Hammurabi (an early monarch in Babylonia in 1700 BC) is believed to have been one of the first monarchs to provide a set of laws or code for government, but in the code that survives there is no detailed set of laws for trade. A trade code appears to have been developed somewhat later with loans and advances (both interest and non-interest bearing), repayable in silver or corn, as both were reportedly legal tender. These loans against payment in kind were forerunners of modern commodity based project financings where the debt is

repaid in the product derived from the project. Early forms of a bond as a physical and finite obligation were also found on Babylonian clay tablets.

There are early examples in agricultural finance of the revolver and term-out structure seen in modern times in oil and gas financings:

> A reckoning might also be made, to check off profit against interest. Thus D pledges a field to L, but on condition that, if in any year the crop is less than will meet the interest due, he shall pay the difference; but if, on the other hand, it be worth more, he shall take the balance.
>
> *(Johns, 1904)*

Title and ownership were recognised in early legal systems, even to a ban on second liens on property already pledged, just as seen today in legal documentation:

> The value of the pledge might, however, be such that it would outweigh both loan and interest. At any rate, it should be as valuable as the loan. Hence it could not be used as a further pledge to another. There is often a guarantee that the pledge given has not been already pledged, that no other creditor has a lien upon it.
>
> *(Johns, 1904)*

Guarantees issued by parties other than the debtor to ensure payment or performance individually or jointly and the construct of joint and several liabilities can be seen in surviving documentary fragments.

Joint ventures and indeed the use of a special purpose vehicles (SPV) structure were also in existence in these early times in Assyria.

The *tappa'atum* was a form of temporary enterprise whereby a number of parties joined in a specific enterprise, bringing different resources. One might bankroll it, another purchase the goods, often tin or iron, and a formal agreement governed the timing and distribution of profits made as well as repayment of capital invested, so perhaps analogous to some partnership structures of today.

The *ellātum* structure was composed of a number of venturers who invested goods in a joint enterprise, sharing expenses, equipment, salaries and profits in accordance with their initial share of the total value.

The *naruqqum* contract was a long-term contract whereby the initial investment in gold or silver was entrusted to an agent, appointed to invest in trade and whose overall compensation amounted to one third of the profits at the end of the venture.

We can see echoes of these early structures in modern day Islamic financing techniques.

Elsewhere, other imperial powers such as Rome, the Ottoman Empire, the Maurya Empire in ancient India, the Chinese Empire and the Japanese Empire, to select just a few, have left records of awards of concessions for various sub-contracted activities, for which a payment was made to the ruler or his government. These could be in the form of tax-farming (for example, in the pre BC Roman Republic where a '*publicanus*' bid for the concession and was allowed to keep any additional monies raised over and above that bid – we might compare this with the Peterborough case in Chapter 12). Similar systems existed in the Ottoman

Empire and the Chola kingdom. Mine financing using a grant of rights with a government royalty and sundries giving rise to a total take of around 35% existed in the former Indian empire of the Mauryas (an interesting comparison with the LASMO case study in Chapter 8).

Japanese railways were constructed using funds raised in 1869 through a bond issue in London but far earlier records from the Shogunate period suggest the existence of seed loans to farmers repayable in kind at an annual interest rate of 75% during the reign of the emperor Tenbu or Temmu (AD 675), arguably an earlier project finance format.

Historically, economies needed mechanisms to redistribute resources within nation state boundaries and across boundaries in order to fill resource gaps. Thus trade provided the context for the development of project finance. Merchants borrowed money against cargoes and traded across state boundaries and banded together in groups to share risk and to manage economies of scale. Certain groups such as Flemings and Venetians (for example, Marco Polo) were held to be excellent merchants and developed reputations for reliability supported by financial infrastructures that found ways around the laws existing in many states prohibiting usury. Infrastructure investments such as roads, ports and places for travellers and their goods in transit to stay safely as well as stable media of exchange such as money or bills of exchange needed to be developed, creating banks in Venice and Florence with the Medicis and other families holding interests that spanned countries as early as the 16th century. (The oldest recorded bank still in existence is the Monte dei Paschi di Siena, operating since 1472 though even older banks did not survive.)

The first recorded foreign exchange contract appears in a Pisan charter dated 9 October 1189 and records a payment of 250 North African bezants as satisfaction for an obligation of £50 supporting a shipping charter contract, and we might suppose that even earlier contracts existed but have not survived.

The common characteristic of these types of finance is that they are provided for specific investment projects and are repayable from that project's activity and include risk-sharing. This is not an exhaustive list of earlier examples of project finance, which would be beyond the scope of this book, but illustrates that different states had sought to manage their expansion using techniques that are recognisable today as project finance and that creative approaches were wide-spread. One challenge (and indeed regret) mentioned extensively in historical papers on economies of older civilisations is the need to bridge the gap between economic and financial theorists and fragmentary historical records in ancient languages and a demarcation between economists and archaeologists and historians.

Eichengreen, writing in a World Bank paper in 1995, suggests that developing countries thinking about infrastructure finance might look back to lessons from railway finance in earlier times (defined as the 19th century) that synthesised risk and reward as well as information asymmetries and was based on modern financial theory. Looking back to the 19th century and the development of railways, he identifies a series of risks that contribute to asymmetry of information for all stakeholders that we can apply to the cases in this book, albeit in a different context:

- technological change (LASMO, A1 and Skynet 5 – Chapters 8, 13 and 9 respectively);
- uncertainty around information (Peterborough, MTN and the Ports – Chapters 12, 10 and 17 respectively); and

- prior experience with promoters (Cheng Jiu, Liverpool Football Club, Sadara and Desert Hot Springs – Chapters 14, 11, 16 and 15 respectively).

Railways were financed by local subscription, bonds and equity, pulling in capital from overseas. Bond obligations were supported by mortgages or local city or state government guarantees. However, as more railways were built, the interest rates required in order to attract funding increased and the portfolio became riskier, with promoters leveraging heavily as their downside was limited to the equity committed. To get projects completed, guarantees were required to manage the risks and offset the information asymmetries. The North Bengal Company was set up to fund a railway but failed to raise enough capital and returned all deposits to shareholders until eventually an Indian Government guarantee allowed the transaction to go ahead.

The British South Africa Company (BSAC) was governed by a Royal Charter that included the clauses to 'make and maintain roads, railways, telegraphs, harbours, and any other works which may tend to the development or improvement of the territories of the Company… and… carry on mining and other industries, and to make concessions of mining, forestal or other rights'.

BSAC planned a Cape to Cairo railway network crossing the African continent. It was backed by shareholders including Cecil Rhodes and other South African magnates, and was funded by de Beers (the diamond company) and Gold Fields of South Africa. The pan-African railway concept ran into financial problems in 1906 when the railway project could not service its debt just as it extended the railway to what is now Kabwe (Broken Hill) near the copper belt of Zambia and the Congo. The mineral estimates that had backed the financial rationale were found to be higher than the amounts of ore recovered. (However since BSAC also included other mineral concessions and territorial administration among its activities and had wealthy backers, its financial solvency was not just dependent on rail projects to produce cash flow – and so work recommenced). However, despite this, a Cape to Cairo railway has still not been completed, having stalled numerous times as a result of various political issues.

Many rail project companies had raised money on the London Stock Exchange for projects elsewhere in Latin America (in states newly emerging from old empires) and in Africa (still largely part of a British Commonwealth with other European interests). Railways in Africa offered links between imperial possessions and routes to move valuable natural resources to ports for shipping back to Europe. As such, in the absence of state guarantees, they only made financial sense if they moved valuable mineral ores.

Infrastructure projects also failed. The Madras Irrigation Canal company completed the canal, but it could not be used as planned. An investigation suggested the shortcomings included cost overruns, the wrong kind of soil for irrigation, not enough users, poor stakeholder management especially with the farmers and local administrators, 'absence of good revenue administration', choice of the level for the canal, wage escalations and competition with the railways. The lessons learned from this project, comparing it with others, were that canal projects were best managed by the public sector and rail projects by the private sector.

Sometimes unexpected events occurred. Brazilian mining concessions were framed in law as early as 15 August 1603 in what are known as Felipe's Ordinances (Ordenaçoes

Filipinas), expanded in 1608 allowing domestic, foreign and native Brazilians to explore for and be awarded mining rights. By the 19th century, mining investment post-independence was concentrated in Minas Gerais and largely from British investors. One project stood out – the St John del Rey Mining Company Ltd (SJMC and formerly known as the Brazilian Mining Company) was a British gold mining company established in 1830 with strong roots in the Cornish mining community and working in Brazil.

Its success was suggested to be the result of three factors:

- the richness of the Morro Velho deposit;
- exceptional management with the introduction of technological innovations; and
- the establishment of a powerful political network in the country, which protected and promoted the interests of the company.

However, an unexpected risk emerged. Long after abolition in the UK and Brazil, and in direct disregard for a contract of 1845 promising them freedom, SJMC became a 'cause célèbre' as it continued to use slave labour leading to a court case (the Cata Branca case) that gave the workers their freedom immediately, awarding them back pay and triggered an additional 4% tax on all profits arising from gold in the State of Minas Gerais. The company appealed, appearing to be more concerned about the tax than the obligations to those still working as slaves under a contract that had expired 20 years previously. The company survived this revolutionary period and several other problems with the mine itself and continued as the largest industrial company and largest tax payer in the State, if reputedly rather paternalistic in its approach. By the 1950s, it had become uneconomic and following various transactions, the gold mine was taken over by Anglo American Mining, later Ashanti Gold and is still operating.

Another side of poor risk pricing is seen when competition by eager banks, once the initial projects in a new sector have 'tested' the concept, drives prices down to the point where the market refuses to provide finance as the risk is incorrectly priced. If the finance is non-recourse, banks may be left loans of longer tenor than first anticipated – as happened with some tax driven loans in the UK's North Sea.

Many bond and equity investors lost money on projects as companies have crashed leaving worthless bonds behind them. Some, such as the guano bonds of Peru have resurfaced as investment scams of the 21st century. Others have recovered some small value based on the beautiful engraving of the bond or share documents. Eurotunnel serves as a more recent reminder that large infrastructure projects can still cause investors and lenders to lose money. We may have better tools to manage the core risks mentioned by Eichengreen but that does not mean that the other topic of his paper, 'corporate looting' or bankruptcy for profit (Akerlof and Romer, 1993) is not a temptation to project sponsors.

Islamic finance and its contribution towards project finance forms

Islamic finance, and the techniques used, has roots in the trade finance practices of the time in what is now Saudi Arabia, learned from the caravan trade along the Gulf with the

Babylonians and Assyrians. Many religions of the time and earlier had limits to the amounts of interest that could be charged for making funds available, and in the Middle Ages, the lending of money was restricted to certain groups perceived as external to core society such as Lombards, Jews, Greeks and so on. Usury or the charging of what appears to be excessive interest is technically proscribed in the Hindu scriptures as well as other faith groups, including Christianity.

Usury is also forbidden in the Holy Qur'an, the core Muslim text, where the word used is *riba*, literally meaning excess or addition. Since interest is paid regardless of the outcome of the investment activity (which should be value-creating), interest is a 'free ride' and as such goes against a fundamental tenet of Islam – that of distributive justice – the same argument used by Western philosophers and theologians, including Popes. Following the death of the Prophet, Muhammad, his successors formed a Caliphate following the tenets of the Holy Qur'an – a system of government following an interpretation of Islam, such that interest disappeared and both the absence of interest and the sharing of risk and '*profits*' by all parties became fundamental for trade. These two principles have carried through into Islamic finance, as we understand it today. The word 'profit' is written in italics since whilst this is the word used in many Islamic finance texts and was appropriate for a time before complex accounting rules existed, nowadays and especially to project finance specialists, the key driver is cash flow rather than profit. ('Turnover is vanity; profit is sanity; cash flow is reality' – a phrase around for at least the last 25 years and sadly ignored.)

Islamic finance has become interesting to project sponsors in the Middle East and also further afield because it offers investors a new asset class for their portfolios and is believed to offer access to large pools of hitherto untapped funds provided by Muslims who wish to earn a return on their funds but cannot reconcile interest-earning assets with their concerns about *riba*. Specialist Islamic banks have been set up in most major financial centres as well as the Muslim spiritual heartlands to assist these investors. Each decision needs to be signed as meeting the needs of Islamic legislation, or being Sharia compliant, by a religious expert or Sharia scholar. There are a comparatively small number of such qualified Sharia scholars so many sit on, or advise, several bank or corporate boards. This may raise questions of independence and potential conflict of interests that need to be managed transparently. There may also be differences in interpretation and application of the underlying guidance from the religious texts by Sharia scholars, the resolution of which may cause delays to a rapid syndication. However, the Sadara case study (Chapter 16) shows how Islamic financing can be used effectively and efficiently.

The core tenets of an Islamic approach to financing may be summarised as:

- risk sharing of both gains and losses, between partners and the wider community rather than the accumulation of wealth for individuals;
- the absence of interest;
- transactions should demonstrate conscious effort by all parties rather than relying on chance or speculation;
- contracts avoid uncertainty, so prices are determined and set as contracts are signed; and
- investments must be in goods and services of public interest or good. Several areas are explicitly excluded such as forbidden foods, gambling and armaments. Islamic financial

institutions usually have an agreed list of forbidden investments approved by their Sharia scholars.

In the next part of this chapter we shall look very briefly at some of the key Islamic finance products as they may appear as part of a project financing (a more detailed discussion lies outside of the scope of this book).

Mudarabah

The *mudarabah* format is a joint venture between a bank and one or more investment partners in which all parties invest and all returns, either gains (profits) or losses, are shared according to the investment proportions.

Musharakah

The *musharakah* format looks at a financial investor putting up all of the money and recognises his right to a prioritised pre-determined share of the returns.

So we can say that *mudarabah* is like conventional equity and in *musharakah* the financial investor uses a form of preference share without an interest coupon but with a fixed percentage of 'profits' or cash flow to recognise its priority and major risk taking. We can see the roots of these structures in the early *ellātum* and *tappa'atum* structures discussed above. The Sadara Sukuk offering (see Chapter 16) has an underlying *musharakah* agreement.

Murabaha

Whilst originally relating to sales of goods where the transaction was transparent to all parties and the margin of profit is agreed, in project finance, this may appear in a number of areas. The first or traditional *murabaha* financing entails a commodity that is bought by the bank from a third party and then sold to a third party on a deferred payment basis. (When the purchase order is provided by the client, this may also be known as a *murabaha* to purchase order or MPO). The challenges are the bank's internal expertise to purchase the commodity and make appropriate judgments and the bank tying up capital by holding an inventory of material – it must have title or possession before selling to the client. *Murabaha* has been used for shares but use in contexts other than commodities may give rise to Sharia compliance issues. Key risk areas include the valuation of the goods and the setting of the appropriate margin; default by the client – title has already passed and default penalties may be held to be payable to charities.

Istijrar is a form of *murabaha* that allows for bank returns to be dependent on a predetermined formula using the prices of the goods on delivery and the prices at the final maturity date of the deal; so it offers a form of option once certain conditions are triggered.

In 2012, the Euromoney Islamic finance award for the Best Project Finance Deal went to the Qurayyah IPP, backed by Saudi-based ACWA Power, which is being funded with US$730 million of equity capital provided through an equity-bridge *murabaha* facility and US$2.075 billion of debt. *Murabaha* has also been used in well documented project financings such as SCECO in Saudi Arabia and the Kuwaiti Equate project.

Finally a reverse *murabaha* or *tawarruq* has been used for infrastructure financing.

Salam and istisna'a

These are forms of forward sales contracts. In the case of *salam*, or *bai salam*, the price is paid upfront for future delivery of a specified quantity and quality of goods. In the case of *istisna'a* there is an order to manufacture goods that do not exist yet but can be presold at an agreed price paid partly or in instalments in the future (but fixed) – this structure has been used for roads and highways; bridges and also for large projects and is included in the Sadara case study (Chapter 16).

Ijarah

Ijarah literally means compensation and is the contract for the use of specified assets, either property or labour, for a specified time and against a specified return for the work or benefit of their use. It is best understood using the Western legal concepts of usufruct – the right to use property belonging to a third party, provided the use does not destroy or damage it. So *ijarah* is easily recognised by most bankers as a form of leasing. The assets must not be 'used up', benefits must be clear, all parties (especially in the case where the asset is co-owned) must consent to the contract and it must be transparent to all as well as clearly defined. Risks that arise from ownership are the owner's responsibility. Both operating and financial lease structures can use *ijarah* structures. Again we can observe that conceptually, some of the complex conventional leasing structures created in Australia in the 1980s share some characteristics with *ijarah* transactions (though the detailed conditions would clearly be different). *Ijarah* structures can only be used for tangible assets, so not for concessions where the rights are intangible.

Sukuk

Probably the most known form of Islamic finance to Western bankers is the *sukuk*. This is a form of capital market instrument that has 'plugged the gap' between the equity bias of many of the instruments discussed above and the need for a secondary market for an instrument that can be traded to generate liquidity. Islamic depositary receipts (IDRs) can generate a partial secondary market in listed equity, supported by regulators and rating agencies, but a *sukuk* allows securitisation via a special purpose *mudarabah* that acts as an agent by managing the assets and liabilities associated with the underlying assets and their securitisation.

A *sukuk* is an undivided share or interest in the ownership or usufruct for a specified period of time and also carries the risks associated with that share. So although it is a share rather than a formal debt instrument, ownership can be transferred and it can be bought and sold privately or through a secondary market, if listed on it. A *sukuk* represents interests in a Sharia compliant structure. In 2013, the Islamic Finance Information Service estimated that US$65 billion of *sukuk* had been issued during 2013 though levels in 2014 had fallen sharply.

The Sadara petrochemicals deal, with debt of US$12.5 billion included a *sukuk* as well as a number of export credit tranches and is discussed in Chapter 16.

Whilst Islamic finance has become a prominent differentiated form of finance, critical to enterprises that follow the spiritual tenets of the Holy Qur'an, other socio-economic

environments have also produced alternative forms of capital to meet the needs of various projects and their stakeholders. Not all projects are large ones with export credits and multiple layers of debt and equity. Indeed many projects are so small that they may not be seen by a specialist project finance department, but they still need to find equally creative approaches to financing to balance the needs of all stakeholders, and to recognise the distinction between debt and equity as well as clarifying the levels of risk taken on by providers of funds in each category.

What today's project financier can learn from history

Looking back over the history of project finance, patterns can be seen to repeat. Many of the legal forms seen today are rooted in earlier history. Agency theory (though not called that) was alive and well in the early caravan trade which recognised a difference between agent and principals and their duties to each other and the difference between the ownership and control of assets. Risk, and risk sharing, and differences between ideas of investment and loans thread through different areas and different histories.

The idea of excess return on loans in particular, known as usury, was marginalised in many societies. Limited communication and travel meant that peer pressure to perform and repay debts was exerted by societies and the need to conform and live within their rules – the same mechanism used by a number of microfinance bodies and even credit unions or the micro funders mentioned above to ensure repayment.

Sharing risk and rewards, codified in Islamic finance, exists in other governance structures, such as partnerships.

Most projects are not the '*grands projets*' of the opening statistics in the introduction or many of the cases in our book, but on a much smaller scale. Whilst non-governmental organisations (NGOs) and banks can deal in large sums of money, their cost structure means that for the smaller borrower, the transaction costs are just too high. The Internet and mobile phones have enabled other funding providers and approaches to come into existence to cut costs and to recognise investment in such smaller projects as not always needing to be linked to a monetary return and not requiring complex contractual structures but still using basic project finance techniques. In Chapter 4, we shall explore the techniques of project finance and how the basic approach has blurred the boundaries with traditional corporate finance activities.

Chapter 3

Principles of project finance

Overview

Perhaps the first thing to say is that the term 'project finance' has different meanings to different people – ranging from a simple evaluation technique for business decision-making and investment opportunity selection to the range of approaches and specific structures discussed in *Project Financing*,[1] the companion volume to this book.

For our purposes, we will use the term to mean the financing of defined projects – and the myriad of methods and funding sources available to them. The cases that appear in subsequent chapters were chosen to illustrate the specific applications of the general principles in this chapter as applied to those industries – themes in this chapter will be readdressed in the cases.

So, what exactly is a project? We can think of a project as being an activity that has distinct boundaries, usually put in place by a series of contracts that define it. It may be held in a special purpose vehicle (SPV) or legal entity that has been specially set up for the project. What is important for financiers is that a project possesses these limits, so that there is no 'scope-creep' or movement in the remit of the activity that is being financed, which in turn may lead to requirements for more funds or an increase in the risks involved.

Linked to this is the project's specific ability to generate cash flow (and this can also mean cash flow savings). This dedicated cash flow is important because it will service any debt and offer any returns to investors. Once again the cash flow should be defined or 'ring fenced' by legal agreements.

Some project financiers would also see separation of project assets as an important ingredient, but we can argue that this comes into our first criterion.

The final part of the project finance jigsaw is the allocation and management of the risk envelope that surrounds the financing of the project – so project risks, financial risks and the interrelationship between these two high level groupings. The risks need to be clear to all parties, have assigned owners, monitors and management strategies, and all of these aspects will affect the pricing of financial participation.

This definition of project finance is reasonably standard. It can encompass the historic trade finance examples that we saw in Chapter 2, though we are not going to address trade finance cases in this book.

What makes a project a project?

In Chapter 2, we looked at historical perspectives on projects and saw how early projects were defined, financed and exhibited many of the characteristics of projects today. In a later

chapter, we shall look at some key features around costing and scheduling projects that impact on their financing and ultimately their successful delivery … preferably on time and within budget! This chapter will also support the view that the operation of the project and its financing flows are linked and need to be carefully coordinated.

For our purposes, a project is an activity that:

- will produce a change;
- can be defined with a definite start and end point as boundaries;
- has associated assets or services that can be linked with those boundaries – so shared assets or services are subject to contracts that define them;
- is the subject of a formal project plan with associated management and governance processes, such as a robust risk identification management system and a project governance system in place;
- will generate or save cash and/or add value to its sponsors and its stakeholders and take their needs into account; and
- has an associated budget in place, including contingency strategies.

Providing the financing package for a project requires an acknowledgment of these factors and an understanding of the dynamics of the cash flows and risks. The same ingredients for a corporate credit approval decision apply to a project financing approval decision: CAMEL – Capacity, Amount, Management, Earnings, Liabilities; and CAMPARI with ICE – Character, Amount, Means, Purpose, Assets, Repayment, and Insurance with Interest, Capital and Extras.

Both 'memory aids' focus on the quality of the borrower and the return to the bank. However financed, either with 100% equity or 100% debt, the project needs to have certain key traits if it is to avoid departing from the approved business plan. (The word 'approved' is important. Many issues arise out of generational changes to an approved board document that have increased the overall project cost or altered the project's technical specification.)

It is often suggested that a business plan has never been produced by a sponsor that shows that a project cannot service the level of debt they are asking for at the time. The telecoms boom and bust provides hard evidence of how far people were trying to push financiers. One of the authors received a beautifully crafted and well-argued business plan for a pan-European telecommunications backbone network. The product was competitive, demand assured, the technology worked and build costs were clear. The only problem was the implications of the proposed sales or access price. At the business plan rate, the project had a negative net present value using discounted cash flow techniques and a modest weighted average cost of capital. So when seeing a 'hockey stick' cash flow profile, testing returns via a range of basic appraisal methods is vital. This is particularly true when there is a general clamour to enter a sector – such as alternative fixed line providers or dotcoms.

So whilst execution of the plan is fundamental to success, being aware of other external factors that impact the potential outcome is equally important – the Brazilian gold mining example in Chapter 2 shows how neglecting to understand changes in the social system can profoundly affect performance.

Challenging the assumptions behind the sponsors' plan and identifying relevant risk features is vital to any meaningful appraisal of a project. This is exactly what CAMEL and

CAMPARI do – they remind lenders of the need to think about the underlying credit in a critical and systematic manner. If the borrower had an atrocious credit history or the directors had all been barred by their regulator from serving due to prior misdemeanours, a prudent lender/investor would never agree to advance capital without further extensive due diligence.

Probably the biggest difference in credit approach between a project financing and a small, medium enterprise (SME) or corporate loan is the inability to use automated tools as part of the credit assessment process. Whilst readers will be familiar with the heavy use of credit scoring techniques to approve smaller personal loans and credit card applications, automated systems do not stop there.

Various financial institutions have tried to encapsulate their experience of managing risk into so called 'black box' financial models. However, each system has one fundamental requirement – a detailed financial history, but whilst theory may suggest a five-year horizon of financial data is best to establish a trend, some banks' risk pricing systems use only a single year's data and seek to augment that with non-financial data gleaned from due diligence. The argument can be made that bank risk return pricing models effectively incorporate credit decision criteria, as they include financial and non-financial data and algorithms that look at prior default history to determine the appropriate pricing for new loans. Any central bank (or indeed the Prudential Regulation Authority (PRA) in the UK) may feel the need to remind market participants looking to fully automate their credit systems that 'past performance is no guarantee of future returns'.

The main problem with projects is they tend to be one-offs and/or start-ups, so the project will have no such history. The inability to study the past requires a highly tailored approach to structuring that does not lend itself to either automation or statistically-based decision making. Key criteria like management experience can only be implied by virtue of the stakeholders' contractual obligations, it is not explicit and the whole area of execution risk is by definition forward-looking.

The project itself can be valued as an option, using an appropriate model, of which there are many to choose from. The comments on LASMO (see Chapter 8) include an observation that this was what caused many fund managers to hold the LASMO Oil Production Stock. The sponsors, provided they offer limited or no recourse to their own balance sheets, have the ability to 'put' the project SPV to the banks at a given strike price, their shareholder contributions commitment. If the share capital and loan obligations are fully paid up the incremental walk-away financial cost may be zero, with the real risk being reputational damage likely to flow from any such action. The bank at the time of the 'put' runs the risk of debtor in possession liabilities. The implications of funded and unfunded commitments are explored further in Chapter 11 and Liverpool Football Club.

Should a bank take a more aggressive approach to the borrower's business in any restructuring, it may find itself facing legal action from disgruntled investors. Why? As a result of being deemed to have acted as a shadow director and being the 'deepest pocket' in any subsequent litigation. The whole issue of shadow directorships has become an increasing concern for lenders as they are asked to take a more active role in assisting businesses (which may or may not be in financial difficulty). The problem is compounded where bank employees end up providing advice to the owners or managers that is beyond the remit of the bank's own product suite and could be thought to be acting as a 'shadow director'. The desire to

be helpful needs to be tempered by the realisation that any advice provided to businesses could have repercussions, if that proves to be bad advice or indeed if the advisor was not aware of all the pertinent facts.

For a 'bankable' project there is always a level of leverage that it can service, it is just that this debt portion may be very small in relation to the overall project cost and thus deeply unattractive to the sponsor from an investment appraisal perspective. Why? The assumed cost of capital is fundamental to any return calculations that stakeholders may use as a go/no-go decision criteria.

Any project has a distinct life cycle, typified by phrases like build operate transfer (BOT) or build operate own (BOO). What needs to be understood is that whilst the constellation of risks may be the same throughout the project's life, the drivers and thus the relative importance of each risk is constantly changing. Managing risk, is crucially about actively monitoring the project on an ongoing basis and not just as part of some initial due diligence that is then forgotten.

Cash flow or profit?

In Chapter 2, we covered a brief review of Islamic finance and the word 'profit' was used in the definitions. We have also said that projects focus on cash flow. How do we resolve this apparent discrepancy?

First of all a word of warning: *not all languages have the same commercial basis as those found in Western Europe*. This means that when using agreements completed in the language of the country in question, it is very important to ensure that there is a clear understanding of a shared meaning of the words, 'profit', investment, share, loan and, of course, cash flow in the home language and English, or the language of negotiation. Anecdotal evidence suggests that this misunderstanding is less common today, but not extinct. Whilst English has become the common language of finance, English around the world is not a single language and misunderstanding can occur if assumptions are made. In our Islamic finance example we should recall that the tradition at the time was that of merchants making a surplus or profit – hence profit is the word in use and is not at odds with our modern concept of cash flow – we think of profit as an accounting measure rather than cash in the hand, which was the tradition of merchants at the time.

All stakeholder entities need to report a surplus to show that their investment in a project adds value. It makes sense, therefore, to begin by base-lining what the representation of that added value (or indeed cost saving) will look like so that appropriate metrics can be put in place. This is also why it is critical to keep accurate reports of meetings – to avoid situations down the road when new representatives may attend meetings dealing with project difficulties and not have access to this body of knowledge of the project. All too often this is not the case – meeting reports are sketchy at best and an unglamorous chore that is performed by the most junior team member, who may not have understood the nuances and importance of certain comments. So, a good project finance kick-off or launch meeting will ensure that there are clear and shared understandings about what forms the transaction and how it will operate in practice.

Are assets always valuable as security?

In many of the cases in this book, a security interest is taken in the project assets. In the LASMO case (Chapter 8), we see a government that was not prepared to let interests in national assets fall into the hands of unqualified mortgagees, with the possibility of an on-sale to an entity that was not considered acceptable. So the ability to substitute ownership and control of an asset needs to be very clear, and the risks associated correctly priced.

There are three further points to consider in the 'asset as security' debate.

1 What is the value of the asset if the deal is not going well? Is there a ready market for it, or is it too specialised, meaning that the market is limited and the debtor in possession (DIP) may be forced to sell at a rock bottom price?
2 Does being a DIP mean that the lender or provider of project finance is taking on additional risks? So, if a ship is arrested and the crew have not been paid, it may mean that the bank has to pay off the crew to remove their lien or charge (which takes priority) that will inhibit the completion of the transfer of ownership of the asset, thus spending more money and increasing the bank's exposure. Are there other obligations that the asset owner must meet – such as facilities' provision for the workforce in a remote location? Are there historic obligations, such as payments or service provision to local stakeholders for site access, and so on, that are not always clearly documented and are the subject of informal agreements? In a worst case scenario of a disaster where the existing sponsors file for bankruptcy, are there restitution or compensation liabilities that may not be covered by insurance? There is also the risk of being considered a shadow director as discussed earlier in this chapter and assuming liabilities attaching to that role, including lawsuits by shareholders. This requires sensitive handling and a need to curb enthusiasm for an opportunity to 'sort things out'.
3 Finally, can a security interest held by an external lender or investor be perfected under local law? The choice of law conundrum alluded to in the Cheng Jiu and Sadara cases (Chapters 14 and 16) can be critical for structuring a project finance deal, especially if there is a push for non-recourse. In the worst case scenario, a provider of finance supported by a mortgage is unable to gain possession of the project assets, and has no other source of repayment. Looking back to the previous paragraph, this role is truly that of a co-investor and not a lender.

So a project finance approach is a very useful way of looking at a transaction when the risks are fully understood by all parties. However, this aspect of due diligence is often regarded as someone else's problem. When the focus is on the fee and not the substance of the transaction, as in the collateralised debt obligation (CDO) scandal, things can go badly wrong – it is interesting to note that longer-term savvy investors like Warren Buffett were critical of CDOs before the crisis, suggesting that their latent dangers were potentially lethal.

[1] Fabozzi, FJ and de Nahlik, CF, *Project Financing*, 8th edition, 2012, Euromoney Books.

Chapter 4

Different contexts for project finance approaches

Overview

In Chapter 2, we looked at agricultural projects as simple examples of early project financing. In this chapter we widen the exploration to look at how the ideas can be applied in different contexts, several of which might not be obvious. So from aquaculture and fish farming, we look at film finance (a traditional project finance activity) and its newer relation, computer gaming, as well as hotel financing (the basis for financing resorts such as Disneyland Paris). Then we move to a different scale and look at micro projects and those typically very difficult to bank – can project finance techniques help there?

Fish farming

The basic ideas of project finance have been extended to commercial agricultural projects such as fish farms, or aquaculture, where a partial off-take contract from a supermarket can offer a cash flow stream, though this is not universally applicable. In the case of assuming the market risk, the lender can take a view about demand for certain species of farmed fish. This is a good example of small early transactions receiving project finance and later ones struggling to fund as markets have developed so that supermarkets or processors can access global supplies. The cost drivers in this group of industries (and they are different from each other) and the issues of quotas of fresh stock and the role of frozen stock as a market price buffer mean that this is specialist lending just like ship lending, aircraft lending, and oil and gas based lending and requires specialist knowledge. Funders usually only support one segment of the value chain, for example, hatchery, grow-out, processing and distribution. Whilst multilateral agency (MLA) finance from sources like the Asian Development Bank is available for some national programmes, smaller local farmers use cooperatives or credit unions as in Chapter 3. Fish harvests can be affected by pollution or disease or external health scares, and input costs. Unless there is a portfolio of projects, cash flows can be vulnerable.

Film finance

Just as in the oil industry, as we see in the LASMO case study (Chapter 8), ideas of royalties exist in other industries and the creative industries use project finance techniques. Film finance was an early extension of project finance techniques starting in the 1960s. The film is usually owned by a special purpose vehicle (SPV) and the cash flow generated by its sale

and distribution rights repays the lenders. The intellectual property (IP) and the physical generation of the master negative copy with their associated property rights in various channels form the asset bundle.

Considerations may include:

- the first stage is to produce the negative copy when the filming is completed – but costs can still rise at the post production stage and before distribution;
- a completion guarantee issued in favour of the funder is provided by a specialist insurer and budgets are now very strictly monitored. Gap financing, a form of mezzanine finance to bridge any shortfalls can be high risk in a film context;
- film funding can come from government or local grants (see comment in Chapter 15 about locations), tax enhanced investments, hedge funds or other pooled private sources, banks, and equity investors, including peer to peer lending and specialist crowdfunding platforms, such as Kickstarter (though the latter is used for smaller creative projects);
- still more funding routes, recognisable in other areas of project finance include presales (usually based on the cast and director, but may be based on script or franchise);
- sales of specific rights such as TV or certain territorial rights can also generate additional cash flow (analogous with football club revenues – as discussed in the Liverpool Football case study in Chapter 11);
- other forms of finance include a negative pick-up, a form of deferred sale (such as the sale of the completed project in Chapter 13 and the A1 road case study) where a studio buys the completed negative from the producer for a specified price at a specified future time, leaving the producer to fund the project in the interim; and
- finally, just as for football clubs, product placement fees can contribute to the overall cash flow.

Computer gaming

Film financing approaches have also been adopted by computer game developers. Many computer games fail to make money and many are developed as individual enterprises. Some require large development teams to build, launch and establish a brand quickly, such as 'Grand Theft Auto'.

The completion bond idea from film finance is used in some video game projects and insiders estimate that US$200 million of video games used this technique. In this context, the game developer is contracted by a publisher with a budget and a schedule agreed. The project is funded by a loan, supported by the completion bond that covers the lender if the project breaks the terms of the agreement with respect to time and cost. Once the product is completed, the equivalent of the negative is handed over and the publisher's payment is used to pay off the loan.

Whilst this works for larger projects – what about the smaller game developer? There are several options that are recognisable to project financiers. The first, termed 'bootstrapping', is the 'lean and mean' approach where the game is usually self-funded and staged. Whilst this is the slowest form of development, it allows the developer to maintain control of the process and the intellectual content. The Kickstarter, or similar funding platform mentioned

later in this chapter, provides crowd funding and support. The business incubator concept may also offer facilities whilst grouping developers together to allow peer to peer exchanges. Whilst many outsiders see a clear gap between content generation and content distribution, for gaming insiders this is becoming more blurred. Co-venturing, using some of the ideas from the oil industry that we discuss in the LASMO case (Chapter 8), works, as in the oil industry, when the partner adds significant value. Publishers may also look to pick up new ideas and thence reach out to smaller game developers, but may want to control the intellectual property.

Hotel financing

The international hotel industry has long separated ownership of the building from the brand it bears. Hotels (and resorts) can offer attractive project finance opportunities, though this market is now very mature. Countries opening up to foreign tourists and providing luxury accommodation will need to do some research on what luxury and service mean to incoming visitors, especially if there is no existing tradition, for example in an economy recovering from internal strife. The international brand, in common with resorts such as Disney, usually charges a fee for its partnership and access to its international reservation system, staff and operational support composed of three parts – a royalty from the turnover, and a percentage of each of the hotel's pre and post-tax profits.

Financing is based on projected occupancy rates and cannot be guaranteed by a large international brand, though the involvement of a known brand can help ease financing as industry specialists will recognise that the 'big brand' will impose the use of its well-developed management systems including marketing and reservations. Areas to watch in these financings include local versus foreign occupancy if the local currency is not convertible and the loan is all or partly in dollars (often the case if hotel furniture and fittings need to be sourced overseas). The identity of the local partner is also critical – influential partners can direct traffic to their hotel but can also use it as a personal and sometimes free entertainment source. Finding a way to resolve a cash flow shortfall in a case such as this can become politically delicate, especially for local bank staff. The attractiveness of the hotel can be affected by national and regional events – weather or civil unrest are two examples. Again many lenders in this area have expert teams on staff.

Start-ups

Venture capital is also a form of project finance: with debt repayment and equity returns from the new company, this is a pure project finance play. Usually set up with equity provided by the founders, possibly supplemented with government funding, subsequent funding rounds layer new equity and/or debt that can be appropriately priced as the risks fall. Exit is from a flotation or, more likely a trade sale, or when professional funds are not investors and thus exits are not time-bound, via the earnings generated from the business itself. Private equity companies, mezzanine lenders (possibly with convertibility rights for debt, or warrants for preferential rate share purchases) and bank or private lenders are the key players.

Management buy-outs, buy-ins or combinations also use project finance approaches; cash flow services debt, equity and operational improvements, undertaken out of the spotlight of the markets, enhance that cash flow. Again key players are private equity companies, other lenders, and possibly private placement seekers such as insurance companies and banks. Linked to this are leveraged buyouts, where the debt is repaid and equity serviced from the enhanced company's cash flows. In the past, these had multiple levels of debt that were priced and formatted to meet specialist investor or lender needs.

Whilst these examples consider a single cash flow, or a series of cash flows associated with a series of associated assets, it is a small step to extend the project finance format to a grouping of cash flows to allow for risk management. Further cash can be generated by the sale of interests in this grouping of assets. This is the basis for securitisation, a way for banks to maintain liquidity to meet regulatory requirements (see Chapter 5). However, whilst initial securitisation looked at over-provision of assets in the basket that constituted the SPV being securitised, and were rated by rating agencies, sales staff in investment banks gradually moved the model. Ever more examples were generated that appeared to lack thorough detailed research. Higher risks that were not always clearly disclosed or correctly priced, were passed on to purchasers, leading to the collateralised debt obligation (CDO) scandal of the 2007 to 2009 sub-prime mortgage crisis in the US.

How governments have stolen the project finance ball

For a government with a structural imbalance in payments versus revenues and with borrowing under scrutiny from rating agencies, what could be better than to come up with a way of making government funded projects disappear and indebtedness fall? Is there such a magic wand?

To understand the logic behind this apparent wizardry, we need to distinguish between the economic substance of a transaction and the way it is reported. Project finance, contrary to the belief of some of its more macho exponents, is no longer about making loans go off balance sheet and disappear. Such practices are now the subject of increasing scrutiny by regulators, and though loopholes close and others are exploited, it is becoming increasingly more difficult to make an obligation disappear completely from view for commercial entities. The days of public companies crashing with a sudden appearance of an iceberg of unknown debt following their collapse are behind us in many jurisdictions, but not all. In the public sector, revenue expense is off balance sheet as compared with capital expense and this explains some of the decision-making in private finance initiative (PFI) projects.

For many governments and their departments and services, the picture of resource accounting, accountability and measurement are very different from the commercial sector. In many cases, there is an annual budget, which may be overspent with no sanction. However, if it is underspent, it is likely to be reduced in the following year. Planning is often based on the lifetime of a government, central or local, with no regard to consequences for future generations – thereby applying a plaster on the wound, but not making a full assessment of the problem; in the absence of the right dressing and sutures, the wound may reopen again.

Against this background, and a need to upgrade schools, hospitals and other public buildings, the UK government of Tony Blair followed the lead of his predecessor. John

Major introduced the concept of public private partnerships (PPPs) on a small scale during the early 1990s as a route to updating some of the facilities for ministries. Blair (and later Gordon Brown) used the scheme to move large projects off the government balance sheet, even though it is ultimately the source of the cash flow to repay PPP debt. These projects conflate capital and on-going service payments into a single payment and thus move the transaction off the government balance sheet, understating the liabilities.

The original logic for PPPs was compelling. Public sector commissioning and contracting at the time were not always delivering projects that were fit for purpose or that were running substantially over budget. Having completed a transfer of many core service-providing assets such as telephony, electricity, gas, rail and water to the private sector via an aggressive privatisation programme, thus transferring the renewal investment to the private sector from the government, PPPs were an attractive next step. However, the lessons from the large non-privatised public project, the Channel Tunnel between England and France, were not learned by the successive governments. In this mega-project, the contractors had invested, but then retrieved much of their investment once the bank lenders, pressurised by the government of Margaret Thatcher, came in. The tunnel costs overran from an initial estimate of £4.74 billion in 1986 with a final cost in 1994 of £10.5 billion – the initial investors lost everything and banks took successive 'haircuts' on their exposure. The project has struggled to manage such a large debt burden and whilst too big to fail, has also been affected by strategic responses from competing cross-channel service providers.

The PPP model envisaged a partnership between the private and public sector players in which the public sector would learn from private contractors and operators, benefit from commercial sector best practice (especially in cost management) and project build costs would be managed, so overruns did not occur. Whilst this has been partly successful, for example, in the A1 and Skynet 5 cases (Chapters 13 and 9 respectively), this has not always been so as we see in the Peterborough case study (Chapter 12).

For a PPP to work well, several key ingredients are needed – a series of long-term contracts (usually 25 to 30 years) that specify the output from the project as a series of standards. Failure to deliver these standards will require changes, but project termination is difficult. So the contract drafting is critical. There are usually three key project entities that play key roles and can be seen in our cases. These are a TopCo (the project SPV); a CapCo (the infrastructure or service provider) and an OpCo (the project operating company). It goes without saying that care needs to be taken to ensure that 'gaming behaviour' between the entities is prohibited by the contracts.

Since the revenue for a PPP or a PFI project is coming from a government entity that is the end-user, and these project finance structures are longer term, and there is an investment appetite for longer term infrastructure assets in fund portfolios to back pensions, and so on, many of these projects are financed via bond issues that are bought and held by long-term investment funds (see Chapters 9 and 12, the Skynet 5 and the Peterborough Hospital cases).

The UK PPP/PFI finance mechanism has been the subject of public scrutiny by the National Audit Office, by academics and other interested parties. Several lessons appear to be emerging that our cases cover well and that link to other sections of the book, such as Chapter 7 on the project management of project finance and indeed the importance of the role of project management.

First, a project is only as good as its scope definition and that means as good as those entrusted with its specification and sign off. Many senior players in government facilities have been promoted because of their skill and expertise in that field – so a head of a hospital may be an excellent surgeon. However, that expertise is not universally applicable – a great surgeon may not be good at sitting in meetings and looking at plans to locate and pay for the washrooms on a corridor. A short course in leadership may not cover the minutiae of project management in sufficient detail. Yet this person is ultimately accountable for the project sign off of a multibillion pound complex project. Perhaps the solution is the logical one of delegation? However, though professional managers are now in place in many UK public sector service providers such as the police and hospitals, they do not always understand the point of view of the stakeholders, especially consumers, of the service at the point of delivery. Possibilities for positive improvements in a re-design during a PPP/PFI can be missed as can potential future problems because many governmental organisations are hierarchical, so staff members that need to use the facility may not have a strong voice, or may be represented by others with different agendas. The effectiveness of the notional boards or governance structures can be seen in the constant specification changes in many military projects, causing them to go over budget.

Second, the shift between capital and operating costs can mean that a long-term project is locked in to apparently expensive operations and maintenance (O&M) sub-contracts. A classic example is the cost of changing a light bulb in a PFI hospital, such as the Peterborough case in Chapter 12. In a hospital, the service level agreement for the operating stage may specify that any light must be replaced within three hours of reporting the fault, with a severe penalty clause for not delivering this service. Only a qualified electrician from the O&M sub-contractor is permitted to change the light bulb and thence will need to be on call 24/7; there is also a need to hold stock of every different sort of light bulb on site to meet this service level within the time frame and not incur the penalty. However, the contract cost is a single figure not broken down by light bulb type – replacing some light bulbs may be less frequent or less critical than others and the bulb cost is not standard. Nevertheless, to meet a three hour replacement service level, the O&M sub-contract price will need to cover all eventualities and be high enough to include cover so that if a penalty is occasionally levied the sub-contractor may still see a potential profit, or there will be no takers. At this point, perhaps your eyes have glazed over, so you, the reader, can see that this may be a boring topic during negotiations to a cutting edge clinician. It can produce outrage in the Press at the cost but the service provision becomes critical if the light bulb that blows is in an operating theatre or treatment room. In the UK experience, costs in PFI schools and hospitals for services that need to use a specified contractor under the PPP agreement can be out of line with the cost of 'doing it yourself'. Tight financial resources may mean it becomes a choice between a clinical budget versus a maintenance budget.

Third, buildings and technology date quickly. With a long-term contract, organisations are locked into legacy systems such as archaic trunking for power and internet access delivery. For fast changing environments such as medical care or emergency service cover, this can be a matter of concern.

Fourth, at the risk of repeating ourselves, all risks need to be defined, clearly understood and allocated appropriately. Whether risks are transferred to the private sector remains an

area for debate with both sides making a case. The nature of the contract means that payment is made to the private entity for service levels – risks and costs associated with that service level need to be transparent to the commissioning staff.

Fifth, as mentioned in various cases, the value for money (VfM) criterion using a public sector comparator (PSC) is the key determinant of qualification for PPP status. As we say in the A1 road project in Chapter 13, this can be very subjective or difficult to find. The choice of discount rate selected for use over such a long period can also have a significant impact as can the effect of risks on cash flows. There is evidence to suggest that the so called optimism bias correction factor that forms a part of the PSC calculation is only applied to the PSC. Successful private sector projects do not appear to suffer from higher levels of optimism bias.

Finally, staff contracts move to the private sector and lose the benefits and protection associated with the public sector. This may lead to a loss of skilled labour and a consequent decline in the quality of service delivery.

Despite this picture of apparent gloom, not all PPPs have had problems. As just one example of many, new police stations have reflected a better approach to policing as it exists today. The situation is also improving as lessons learned are being centralised, and Infrastructure UK and its predecessor Partnerships UK link the Treasury (Ministry of Finance) with the projects.

PPP is a project financing model that is spreading – used in Spain and widely in Australia; it has also appeared in other countries, such as the Indian ports example in Chapter 17. We hope they will reap some of the advantages and learn from some of the mistakes seen in the UK.

Project finance in smaller and less conventional transactions

Let us consider three examples: we can return to the problem of the farmer (growing cocoa in this case) whose assets are so slim that the success of the crop and its sale are the sole route to repaying the loan. How does he finance the seed for his crop? As another example, what about the small local renewable energy project that would generate power for sale to a local grid, but more importantly will make a difference to those that live nearby? The drawback to conventional financing in this case is that the project will be owned by a community, not a company? Finally, how about finding funding for a tiny film project?

If we go back to Chapter 3 and the concept of a project as a bundle of assets that generates cash flow in a risk environment, then the funding package for the assets needs to consider the risks carefully, so the cash flow can be generated to repay and produce returns for any funds raised. We look at risks in Chapter 6 remembering that risk management is a dynamic process and risk registers need to be updated, rather like the project plans, schedules, budgets and financial models in Chapter 7.

Small agriculture projects

We can recognise these situations as needing funding from the early days of agriculture, so we might expect to see a range of approaches. Small farmers may want to diversify their crops and have limited resources – they may not own the land they farm and they may be

located in a rural area without banks, or require small amounts of money making them unattractive to many banks. The idea of microfinance is a good one, but traditional microfinance has focused on cities or towns and in some cases has disregarded women who may be the sole head of the household in developing economies. So solutions proposed include shared hire-purchase deals on equipment (Madagascar); credit unions to manage risk coupled with combining farms and looking at solar power to enhance activity (Senegal) and warrantage of pledging of communal stored goods to support credits (Niger), as just some Francophone West African examples. The challenge is the establishment of local entities able to judge local conditions and to assess risks with full and transparent accountability to the funders and not to family or other social groups, in other words to perform some of the functions of a bank! Mechanisms also are needed to bridge and break down the large non-governmental organisation (NGO) funding tranches into smaller local needs, whilst maintaining accountability to the supplier of funds without producing excessive transaction costs.

Innovative solutions have tried to use peer to peer micro lending to borrowers who are locally screened and then post a request on to a site. The growth of mobile telecoms in Africa (see Chapter 10 and the MTN Nigeria case) means many more people have access to better communications. One such entity, Zidisha, offers a platform (for a fee) and the two parties – the project owner in the developing world and an individual funder in the developed world – can negotiate directly on terms and price. Borrowers are pre-screened, they must have mobile phones, need to be internet users, require local references and are limited in the amount they can borrow, with the amounts increasing each time they repay. Inevitably, this restricts the market, but by spring 2014, this entity had raised US$1.8 million for 5,520 businesses of which 75.44% had been repaid. This is the 'bleeding edge of project financing' – to borrowers who need tiny amounts of funds to invest in cash flow generating activities that may change the domestic circumstances of their household by growing a business. But it is not a rosy picture. Default rates are high and transaction costs can be significant. Providers have attracted criticism because the reported rate of interest can be very high to take account of the non-payment risk across all credits and those high transaction costs! The Reserve Bank of India removed a cap of 26% on microfinance loans in February 2014, potentially allowing rates to rise as an illustration. Small loans still cost to administer!

Finally, in the same way that we have seen petrochemical plants like the Sadara case (Chapter 16) put together by off takers with an interest in production, so 'off takers' of agricultural products have put up money to support local farmers, such as the initiative that Fairtrade producer, Divine, made in Ghana and Hotel Chocolat made in St Lucia, the latter funded using 'chocolate bonds' bought by chocoholic consumers, where the dividend is paid in kind as consumer ready chocolate.

Small renewable energy ventures

These are often very local projects where the community is actively involved. One example is Ovesco, where in 2011, a project that leased a roof from a local brewery, installed photovoltaic cells and generated electricity subsidised by a feed-in tariff to the national supply grid, selling the electricity produced to the brewery with surplus sold to the National Grid. This used an initial public offering (IPO) to raise money for an entity using a 'not for profit'

governance structure called an Industrial and Provident Society for Community Benefit (IPS) to raise the money which was predicted to pay 4% after the third year of operation, with the capital being repaid 25 years after first operation. However, as with all renewables, the feed-in tariff and its subsidies has been under review and the length of time for favourable pricing has dropped in many countries and fell to 20 years in this case, so the project's economics and confidence have been affected by macro-economic changes. Ovesco, like a number of other renewables, favours the IPS or cooperative ownership structure, relying on 'equity-flavoured' debt.

Small creative projects

The creative industries also may need funding for small, new, experimental productions. Small amounts of money can be raised from crowdfunding sites, such as Kickstarter where the tiering of the different tranches attracts different project specific rewards, such as an executive producer namecheck for the largest contributions and an invitation to the premiere for smaller participations. Amounts may be £50 to £1,000 for a £6,000 project as one example. If the full amount is not reached the crowdfunding pitch fails and no money is invested. Projects are promoted by video and by webinar. Crowdfunding sites may not offer equity to investors unless regulated by the relevant financial authority, and registration to access information is a prerequisite of many sites. There have also been issues raised about potential intellectual property theft. This is an area under current regulatory scrutiny in several countries.

So, we can conclude that project financing techniques work for large and small projects, provided that the project is well defined, it generates a cash flow and the risks are transparent and understood by everyone. Governments have embraced the project financing model. It also works for very small transactions in a modified form. Pricing the finance needs to reflect the risk taken by the finance providers and cover the transaction costs and not be swayed by sentiment. Documenting large and small transactions where risks need to be clearly explained and allocated can be a lengthy process and thus expensive. Finally, not all project finance is debt and not all rewards are dividends or cash!

Chapter 5

Impact of regulation

Overview

The importance of regulation on project finance should not be underestimated, as it can affect the stakeholder economics or indeed prohibit projects either commencing or developing. New rules designed to limit behaviours can often drive financial innovation, in an attempt to circumvent the perceived regulatory obstruction.

This chapter will give an overview of five key regulatory areas that impact project finance:

- capital adequacy;
- taxation;
- environmental legislation;
- self-regulatory bodies; and
- corporate governance.

Banking from the 1960s to the late 1980s

In the 1960s, competition in the UK banking market was low. Authorities sanctioned, albeit tacitly, collusion and the formation of cartels. The benefit was that these groupings led to greater market stability. Throughout the 1970s great structural deregulation occurred and the market became inherently more risky: the pace of change became even quicker in the 1980s.

Globalisation saw the entry to the UK market of large US banks like Citicorp and Bank of America, who realised that money could be raised from around the world for their clients and saw London as an important secondary hub to New York because it bridged the New York and Tokyo time zones and operated in English.

It was against this fast-moving backdrop that regulators (initially UK based, then European and global) sought to introduce more controls in order to enhance banking market stability. In reality with numerous banking scandals having occurred, formation of an all-encompassing regulatory framework was going to be difficult as it tended to be focused on the problem that just occurred, rather than what might happen.

Primary legislation was called for to control the power of financial institutions, as the:

- diversity of financial products had grown;
- banking business had become global and interconnected across national borders; and
- relative economic power of the regulators and the regulated parties had altered.

Concerns over being 'too big to fail' are the current focus of global banking regulators as they seek to be able to ring-fence institutions in order to make them more manageable in times of financial distress. Typically this takes the form of seeking to split the tax payer insured parts (usually retail and corporate banking) from the casino banking elements (investment banking). This harks back to the original Glass-Steagall Act reforms in the US of 1933, which had formally separated the two functions as the US Congress had deemed them incompatible.

Bank asset allocation decisions are in constant flux. Each decision will result in a chosen product mix, which may add to the existing portfolio, and result in disinvestment or expansion of the present position. In each case new regulations that cause capital allocation decisions to be made (financial or indeed human) will have real world implications that can increase or reduce the demand for project finance assets within each institution. The changes may make banks more or less competitive as potential funders, creating shifts in the balance between advisory work, arranging and lending.

Capital adequacy

In 1991, the underlying framework was the Basel 1 Accord and the EU's Capital Requirements Directive (CRD). Both proposed a relatively simple risk weighting matrix that enabled comparison of capital adequacy levels to be made internationally via risk weighting banks' balance sheet assets and then comparing the level of risk weighted assets (RWA) to the level of capital, whether that be Tier 1 (equity) or Tier 2 (equity-like). One of the authors conducted some research on the rules of the time and the central findings of the work appear to be relevant today:

- the minimum 8.0% Capital Rule will drive future behaviour on asset allocation;
- there is a need for consistency across international and European standards, to minimise the regulatory cost burden to banks;
- there were divergent abilities of European banks to meet the new criteria given their business mixes; and
- there would be implications for the underlying supply of finance as certain products become marginal or indeed unprofitable.

Basel II took the initial set of rules and sought to encompass other assets into the calculation of risk weighted assets and be more nuanced than the original set of rules. It was implemented in January 2007, having been published back in June 2004. The move to a more prescriptive methodology was tempered by the differentiation between banks that were able to perform their own more complex risk weighting systems, based on years of empirical evidence, and those that were less sophisticated. However, the very significant trading losses for JPMorgan Chase's London unit, as a result of one trader's activities, raised pertinent questions over how sophisticated these banks systems really were, if such a loss could occur. This system was updated in 'Basel 2.5', implemented in December 2011, and included new capital charges in relation to trading books and increased disclosure.

Basel III seeks to pull back from some of the less prescriptive elements of Basel II. The change explicitly acknowledges that the entities it is trying to manage are far more complex

than simple corporations that lend money and take deposits. The pace of financial innovation had certainly circumvented the previous rules. Phased in from 2013, full compliance is required by 2019.

'Conduits' and non-recourse structures that did not appear on the balance sheets of any financial institutions suddenly became headline news as the sub-prime mortgage market imploded in the US and Lehman Brothers suffered a financial collapse. Financial giants' management teams realised that the theoretically bankruptcy-remote vehicles that had proliferated were not as non-recourse as they had originally been led to believe, due to the banks' contingent commitments to the conduits.

The arrangers had agreed at the time the vehicles were created to provide back-up liquidity in the case that the commercial paper market could not rollover the conduits' funding on each 90-day maturity. The obligations of the banks had originally been viewed as 'soft exposures' with a seemingly attractive return for taking on a purely contingent risk. After all, why would the commercial paper market suddenly stop functioning for all mortgage-backed conduits in a systematic way?

Suddenly, banks' credit teams found that these back-up lines were all being called upon, at just the time that the asset quality of the conduits was falling rapidly. The conduits found themselves in breach of their asset coverage obligations and became forced sellers in a downward market, potentially exacerbating their losses. The end result was that bank lenders found themselves in control of defaulted conduits. They had security, but their collateral was the very assets that they thought they had seen the last of when they placed them with the conduits rather than holding them on their own balance sheets.

This learning heavily weighed on the minds of regulators as they sought to integrate into the capital adequacy framework:

- counter-cyclical capital buffers;
- enhanced rules surrounding counterparty-credit exposures;
- leverage ratios;
- liquidity ratios; and
- the creation of higher ratio requirements for 'systematically important banks'.

The case for banks maintaining a presence in the project finance market has been continually weakened by the treatment of longer term lower yielding assets, which made them less attractive as part of an overall business mix (given their equivalent capital weighting to other loan assets). In a move to reduce the quantum of on-balance sheet exposures, many banks had embraced conduit structures to slim down their asset bases and focused on bond market execution for their clients, where they could distribute all the paper to third parties.

In reality banks often held some of the bonds in their trading books and regulators have long debated the pros and cons of marking to market assets that are either retained or held for sale. According to *The Treasurer* magazine in 2012: 'Two new liquidity requirements, the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR) are due to come into force from 1 January 2015 and 1 January 2018 respectively.'

The former looks at cash outflow under stress and the latter seeks to prevent a mismatch between a bank's funding and its assets in the wake of the collapse of the UK bank, Northern

Rock. The LASMO case study (Chapter 8) also discusses the effects of an earlier occurrence of mismatched funding in financial institutions on the UK economy. The article goes on to say that the impact of these new requirements will be felt in:

- the cost and availability of corporate credit;
- competition for the banks themselves in the capital markets from term funds;
- cost and availability of over-the-counter (OTC) derivatives;
- cash management; and
- structural issues, if some entities are judged financial.[1]

Clearly this scope is far beyond the original simple model of capital adequacy envisaged in the early 1990s. These new rules are not alone with other EU financial directives being:

- Fourth Capital Requirements Directive – bank capital, leverage and liquidity issues;
- European Market Infrastructure Regulation – OTC reporting; and
- Markets in Financial instruments Directive – trading and standardisation rules.

This suggests that the army of regulatory experts in all institutions will remain very busy, assessing the implications for their companies. Significant industry lobbying continues prior to any introduction of additional leverage ratios to support the Basel III capital adequacy ratio.

In the JP Morgan Chase's annual shareholder letter for 2014, Chairman and CEO Jamie Dimon made the following observations.

> On a like for like basis from 2007 to 2013 the group's Tier 1 capital ratio under Basel I has risen from 7.0% to 11.8%. Basel III Tier 1 ratio had on a pro-forma basis grown from 5.0% to 9.5% over the same period. On the implications of Basel III [he noted that] it would have a tangible financial cost on clients estimating that the pricing of revolving credit facilities could increase by up to 60bps and short-term trade and standby letters of credit by 75bps. Further, that the bank's rates business (which includes interest rate swaps) was in danger of becoming uneconomic, due to the required capital allocations.
>
> Product redesign was required, potentially including new draw-stop limits within committed revolving credits (to reduce the associated capital costs to the bank) and the potential return of a preponderance of uncommitted lines.

Taxation

Whilst many project finance financial models simplify, by necessity, the workings of the underlying tax system in each country, they tend to overestimate or at least bring forward the timing of dues. This is often seen as a conservative bias, which provides 'headroom' on downside sensitivities.

In 1998, an Austrian mobile phone start up (Connect Austria) controlled by the German group Viag, was financed partially through an 'atypical silent partnership'. Connect Austria, was an Austrian Schilling (ATS) 7.5 billion debt financing for funding capital expenditure and working capital of the third entrant into the Austrian mobile market. Whilst the initial

reaction to this tranche of debt was one of mild apprehension, it rapidly became clear that it behaved like debt, was tax advantaged to the investors and could easily be integrated into the overall financing structure. Namely inclusion made sense, leading to a lower cost of funds and it diversified the syndication risk beyond bank investors.

Leasing is probably the most common tax advantaged structure used in project finance. The MTN Nigeria case (Chapter 10) evidences how arm's length operating leases can be incorporated into transactions by sponsors, where the underlying documentation would have prevented an equivalent finance lease (or as a minimum required it to be carved out as a form of permitted indebtedness). The Cheng Jiu case study (Chapter 14) offers another insight into integrating an operating lease into a project financing structure.

The accounting treatment of operating and financing leases over time has also had a significant impact on demand for project funding of assets. In circumstances where genuine off-balance sheet treatment can be achieved, with consequent improvements in key financial balance sheet and leverage metrics, sponsors have been keen to investigate project structures.

Film finance, as discussed in Chapter 4, is probably one of the best examples of a product where the tax aspects of the structure are critical to the success of fund-raising. It also highlights the importance of insurance and the limitations of the risks that the market can be expected to absorb. The way of structuring around un-insurable risks is covered in Chapter 9 and the Skynet 5 case study.

One important facet of the law is that taxation legislation can operate retroactively as well as coming into force now or at a future date. This is particularly important when it comes to projects as previously understood taxation positions can alter significantly. Two such examples from the telecoms industry were:

- *Hutchison Essar*: legislation in India exists to ensure the national economy (via the tax system) receives a share of any capital gains made on disposals between shareholders of Indian assets. As a consequence, several multi-national companies have found themselves enmeshed in detailed tax disputes with the national authorities. In Vodafone's case, despite having won its hard-fought legal case, legislators were able to overturn an Indian Supreme Court decision and reopen the question of tax due on a particular transaction. The Indian tax office had claimed US$2.5 billion in dues from Vodafone, relating to taxes associated with the Vodafone acquisition of Hutchison's 67% stake in Hutchison Essar for US$11.1 billion in February 2007; and
- *top-up cards*: in a drive to enhance consumption taxes, and manage the use of top up cards as cash substitutes, certain markets saw additional sales taxes being imposed on top-up airtime cards for pre-paid users. The implication being that the user tends to reduce their minutes of use as each minute has become more expensive to buy. A steep rise in tariffs can have significant dampening effects on cellular revenues.

Tax credits as opposed to tax charges, also shape the industry particularly when it comes to renewable energy. The tax system is being used by governments around the world to encourage green energy investment, but by using some blunt tools to achieve their ends financiers can 'double dip' tax benefits and create unintended 'hot spots'.

One such example is solar power. Spain is a market where solar power would probably have taken off without the need for heavy subsidies, given its geographic location. The resulting exponential growth in the business started to snowball into large financial commitments for the government, which was paying above-market prices for green energy.

With the onset of financial austerity following the collapse of many of the secondary banks, the government was forced to significantly reduce the available feed-in tariffs through legislation. However, other changes were also proposed. The implication was that the average time it takes for solar panels to pay for themselves would lengthen from eight to 25 years (according to the solar lobby). The move is under appeal to the European Parliament.

Yet more examples are to be found in the California power market, or the frenzy of activity accompanying the phasing out in the US of wind power tax credits.

'Substance over form' is a common debate among tax inspectors around the globe. Should regulation seek to be very detailed to cover all eventualities or should it be more interpretable by those in authority? The dilemma is that the more complex or opaque a regime becomes, then the less likely sponsors are to agree to invest. Undoubtedly the tax holiday MTN gained when winning its cellular licence in Nigeria was a huge positive for their decision to pay for the licence, as there was real value in that pledge. Yet even when MTN thought it had a blanket exemption, it became clear that this did not mean they would be able to avoid all taxes, just certain existing ones.

The issue of taxation and resulting demand for cross border project finance loans also applies to interest payments. Lenders seek to impose so called 'gross-up' obligations on borrowers under facility documentation. If a country institutes a withholding tax on their interest payments, the borrower is obliged to make good the shortfall that would have resulted in the bank only getting a portion of its dues. The logic of the obligation is to put the lender back into the same situation as when it agreed to make the loan.

Cross border taxation issues can become more complicated when it comes to subsequent trading of loans. Understandably sponsors would not wish to have to gross-up their project's interest obligations purely because the transferee operated in a different jurisdiction from the transferor. The qualifying bank definition in facility agreements is often considered as boilerplate language, but the cost implications can be significant if not properly considered.

Environmental

An analysis of the environmental consequences of a project have become part of a project financier's assessment, from highly sensitive projects like the Three Gorges dam project in China to lower category ones, such as the MTN project in Nigeria (Chapter 10). This is another area where existing projects can easily be affected by legislation that was never envisaged when the projects commenced operation or budgets were specified.

The implication of new environmental laws is usually additional cost, as project sponsors are required to reduce emissions or reconfigure their plans to take into account particular environmental concerns. The need to delay project development can be significant, especially where ground works uncover previously unknown archaeological sites that can bring construction to an immediate halt. Even without formal legislation, environmental issues in areas such as ports can cause legal problems as emerged in the Mundra case in Chapter 17.

Legislation can also increase demand for projects. The decision to increase the share of environmentally friendly sources of energy has been a considerable boost for the renewable sector, as has the premature cessation of energy generation at 'high polluters'. Ironically it has also produced a boost for nuclear power, which despite numerous environmental incidents is considered 'green', as it does not create carbon dioxide in the same way as burning fossil fuels and is therefore not associated with depletion of the ozone layer.

The necessity to buy or acquire carbon permits has become a feature of power transactions today that never existed 15 years ago and can cause delays (see Chapter 15 and the CPV Sentinel case study). The Eggborough power station, which supplied 4% of the UK's electricity in 2014, was under threat of closure following changes in renewable subsidies. A £750 million programme to convert the station from coal to biomass fuel, due to start in January 2014, has been affected by a combination of rising carbon taxes, EU environmental legislation and could now become uneconomic and cease operating.

Self-regulatory organisations and independent bodies

The growth of privatisation and the need to control private sector oligopolistic markets has resulted in a proliferation of self-regulatory organisations (SROs) and independent bodies (IBs). Using the UK as an example, the market has seen the creation of a myriad of bodies including the offices of:

- gas and electricity markets (Ofgem);
- rail regulator (Ofrail);
- telecommunications (Oftel); and
- water (Ofwat).

This trend, born in the 1980s has mushroomed into many other forms of government, as is demonstrated in the Peterborough Hospital case study in Chapter 12. The regulatory entities often report directly to parliament or other statutory bodies and are tasked with policing their respective sectors.

The implication for project finance of these bodies is that they provide the project vehicles with their ongoing licence to operate. They can also intervene in the pricing of services and the implications of a formal review can be severe in terms of significantly altering the underlying assumptions of a project model, where the project is taking market volume or price risk.

Corporate governance

Financial scandals such as that of the Co-operative Bank in the UK have meant there is a growing emphasis on the executive management of financial institutions being deemed fit for purpose. The bank, already rocked by a series of senior management changes resulting from the losses it sustained as a result of the original decision to merge with another mutual, the Britannia Building Society, saw the lack of banking experience of its Chairman laid bare in front of the Treasury Select Committee. In December 2013, it was rescued via a debt for

equity swap that saw its parent diluted to 30% ownership. In April 2014, it reported a loss of £1.3 billion for 2013.

However, the requirements of operating to a stringent set of guidelines are not just restricted to the banking subsidiaries. Lord Myners was called in by the parent of the Co-operative Bank to investigate governance issues. The BBC reported that his initial findings in a report to the Co-operative Banks' 30% shareholder (the mutually owned Co-operative Group) included the statement that 'the [parent] group's elected directors had overseen breathtakingly value-destructive decisions.' On this occasion, all stakeholders seem to agree there is an urgent need for change, but the form of that change and the negotiations with stakeholders have proved contentious.

Interest in corporate governance has grown dramatically, as authorities grapple with the need to differentiate between legal entities and the way in which the people who control them conduct themselves. Are the directors always operating in the best interests of the company? Given the multiple roles that some stakeholders play in projects as supplier, off-taker, sponsor, service provider and lender, the issue of independence is rarely under more strain. The Liverpool Football Club case (Chapter 11) shows how complex matters can get when shareholders seek to retain their economic interest and lenders look to exert their rights to recover outstanding debts.

From a project perspective, the key issue is that the project company must have the necessary managerial resources available to it to complete its function. In the case of special purpose vehicles, such as in the Peterborough case (Chapter 12), 100% of the service provision roles were contracted out. However, lenders were protected by the contractual obligations imposed on the service providers. The problems arise when there is a default under those obligations. Does an alternate supplier exist and how will the directors of the business act, if they were appointed by that service provider? The implication of resigning as a director can cause significant issues if the project company becomes rudderless at exactly the time that it needs the experience and strategic direction that those parties held to help it resolve the underlying issue.

What next for regulation?

What is clear is that regulation drives behaviour and the absence of regulation can lead to cartels forming and higher resulting prices from artificially reduced supply. Financial disintermediation is constantly driving the ability of banking regulators to control their chosen industry as old barriers are broken down and new providers formed.

Project finance has been directly impacted by the banking environment:

- players have chosen to enter and exit the market as profitability and capital constraints are loosened or tightened;
- banks have altered the mix of their products (loans or bonds depending on which is more profitable or liquid in the current environment); and
- product features have altered to fit within capital frameworks (364 day facilities, mini-perms or banking conduits) are all responses to regulation.

The conclusion must be that new regulation, de-regulation or re-regulation all present challenges, that cannot be assessed at the beginning of a project's life. The only protection afforded to stakeholders is to ensure that the fundamentals of the project make sense at the outset and to work with the project as the regulatory landscape shifts.

The supply of funding for quality projects will continue to exist, but financiers need to consider alternative sources of liquidity that may be attracted to the credit profile of a long-term infrastructure transaction. An appreciation that projects have to compete with many alternative asset classes when attracting investor interest is vital. The implication is that the era of the 'one stop shop' typified by the pre-2008 Citigroup model in finance may be over for the time being. As the potential investor base fragments, best execution requires the sponsor to avail themselves of multiple funding sources. Ironically, it is just these structuring skills that project financiers possess, suggesting that the more fragmented the markets become then the greater the need for someone who can bring it all together.

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[1] The article, 'Biting the Basel III bullet', appeared in *The Treasurer* magazine in Februay 2012. It suggests that what constitutes a bank at the legal level is very simple. The growth of alternative debt providers (see Chapter 3) has meant there are many vehicles that fulfil the role of a bank as a financial intermediary, yet operate outside the traditional sphere of influence of the regulators.

Chapter 6

Risk mitigation in project finance

Overview

Risk can be defined in many ways, but the key elements of most definitions are a: 'measure of volatility of returns around an expected outcome'; 'pattern or distribution of returns seen for a given event.'

From these two definitions we can quickly ascertain that risk encompasses the fact that returns can be higher or lower than the expected outcome and that if we do not have an expected outcome, then it is impossible to consider the risk of not achieving that end.

In structuring transactions, from any stakeholder's perspective, there will be a series of options available that may seek to reduce the volatility of outcomes. Parties do that by mitigating the perceived risks inherent in the project. It is the perception of risk that is important to the stakeholders, as that will determine to what degree they are willing to seek to reduce those risks. Whilst some risks can be removed through appropriate structuring, most of the time the focus is on reducing and not eliminating risk in a transaction.

Risk mitigation techniques are most readily accepted when the interests of stakeholders are aligned. They are also not static, but dynamic tools that need to be reviewed in a continuous feedback loop of credit appraisal and ongoing monitoring and control.

Credit analysis, monitoring and control

The review of any project tends to start with a business plan provided by the project sponsor and its advisors. The quality varies greatly, but the better ones provide a balanced approach to the project highlighting risks as well as rewards. The role of the credit analyst is to take that document and interrogate it in the wider context. Banks have very differing approaches to credit submissions (short or long file based approvals, verbal committees and hybrid arrangements of the two), but the key element of each of them is to bring to the approver's attention the salient points. A formal part of any assessment is the identification of the key risk factors, their relative importance to the expected outcome and proposed mitigating pathway.

Equally importantly is an ongoing monitoring of the health of the project and assessment of how the risk drivers have changed over time. The importance for all stakeholders' assessment of current risk factors is to remove the asymmetry of information that naturally arises from the management team being acutely aware of what is happening and the lenders/investors being utterly ignorant of how things have progressed since they undertook their due diligence.

MTN Nigeria, covered in Chapter 10, operated with a management information pack, containing pre-agreed key performance indicators (KPIs) and accompanying commentary from

the project team. Whilst potentially time consuming to produce, by designing it to mirror a cut down version of monthly board papers, the advisors were able to create a valuable information pack. Whilst no substitute for face to face meetings, it meant management did not have to contact each investor monthly in order to update them on progress and by providing a pro-forma in the banking documentation, lenders understood in advance what they would be getting. This communication method aided consistency of message and reduced ongoing costs, especially important given the geographic diversity of the funders on the project. Timely provision of information is important when dealing with a disparate group of funders, especially in situations where there are multiple facility agents. It ensures parties are regularly kept up to date with project developments and tend to be more comfortable with the project as they feel they are closer to it. The Sadara project in Chapter 16 also invested considerable resources upfront in putting together an information pack for the complex multi-level financing.

Typically, the information flow required will be higher during the construction phase of a project and then reduce post completion. Depending upon the technical nature of the project, investors may require specialist third parties to opine on the information provided. Thus, technical consultants can often be asked to remain involved, on some kind of retainer basis, after their initial report. An area of debate on the provision of information is whether what it shows should lead to an event of default having occurred under the banking documents. Typically these reports are described as informational only and lenders rely on the covenant suite, or *in extremis* a material adverse change (MAC) clause to enable them to take action.

Whilst not a form of risk mitigation per se, financial and non-financial covenants provide an early warning system to participants that risk has increased. Whilst it is possible that a breach has occurred because of over performance, it is impossible to design a set of constraints that are so flexible they cater for every eventuality, yet provide an element of control to investors. Thus a potential event of default having occurred should be seen as the starting point for a dialogue, if it had not already commenced.

Financial triggers can supplement financial covenants to bridge the gap between sponsors who are concerned about covenants being too tight and banks wanting a greater element of control. The triggers are typically set at a lower variance to plan and may result in the cessation of certain cash flow leakages from the project company. Typically these are payments to the sponsors, such as management fees or dividends. This provides both parties with the feeling they can give more time to the deliberations of what to do, rather than forcing the banks to take more dramatic action such as declaring a default and accelerating the loan obligations.

Ratings triggers are a specialised form of covenant, which effectively outsource the ongoing monitoring of the credit quality to a third party, a ratings agency. Ratings agencies, such as Fitch, Moody's and Standard and Poor's, will offer ratings on projects or on project debt that may or may not be publicly disclosed. However, this process takes time and is expensive, so it is not for smaller projects. The location of the project may also influence the rating. Any ratings change, usually a downgrade, cannot in itself communicate the detail of what has gone wrong with the project. Thus, while useful as a third-party check, they are no substitute for active monitoring of risk positions by the lender/investor. However, they can be a useful way of measuring the health of contracting third parties, as will be seen in

the Skynet 5 project in Chapter 9. (In this project, the project company had to deal with the implications for the continued funding of the project, following the ratings downgrading of one of the agent banks.)

Events of default that are debt-service related can effectively be 'cured' by sponsor injections of additional shareholder loans, to make it appear as if they had never happened. 'Equity cures' were prevalent in mobile phone financing documentation, as the solution for the banks to funding shortfalls was usually for the sponsors to inject more funding. The structuring skill was in negotiating the terms of the cures to make sure that they would enable the sponsor to meet its financial covenants, but not drip feed equity over an extended period in an attempt to prolong the value of their economic put option, to walk away from the project and hand the keys to the bank lenders or bond investors. The difference in regulatory frameworks is vital here as demonstrated by the US and UK residential housing markets. In the US the concept of 'jangle mail', where a home owner simply returns the keys of the property to his lender is well understood, whereas in the UK it is not possible to have this type of non-recourse finance as you remain personally liable for the mortgage debts. If you have no other assets, the implication of negative equity is the same, but only in those circumstances.

Based on the credit experience of five-year 'mini-perm' structures in the US power market, project finance lenders in early 2000 were being regularly reminded of the potential deterioration that could happen in a sponsor credit profile over a project life. Recourse in itself did not necessarily improve their chances of getting repaid if the highly-leveraged sponsor had succumbed to a payment default on its other financial obligations. Ratings triggers were only a partial answer to the problem, but were reactive and tended to happen late in the day. Downgrades from the lower tiers of investment grade rating status through junk status to default could occur very quickly. A trigger in itself does not resolve the underlying project company's financial problem; it just means that another potential event of default has occurred under the project financing documents. Without confidence in the management, business plan and strategy of the sponsor (with an active monitoring obligation over time of this risk as best practice), lenders should consider whether they really want to be involved in a project where the obligations of the sponsor are both material to its success and not transferable to another party on similar commercial terms. (However, the specialised nature of many projects can mean that there is nobody else who could perform the role adequately and thus the 'step-in' rights may prove useless as there is nobody else who can take control if the original obligor fails to perform.)

Technology

Technology risk underlies most project finance transactions, and mitigation can only really be achieved via the choice of equipment or the regular testing of functionality prior to project completion. The risk may be transferred to the prime contractor, but ultimately the timetable means that the project sponsors are not indifferent to delays despite the potential for liquidated damages being due to them.

The primary risk is one of equipment proving unfit for purpose, as it either never works to the agreed specification or the cost of operating it far exceeds original estimates. Ideally it

is possible to scale technology up (or down) in the sense that similar operations have used it in a way that is not inconsistent with the proposed use. The scalability risk can be assessed by looking at the fault rates and in-service operational hours that have been achieved on other projects. Ultimately risks are reduced if the technology is an evolutionary change rather than an entirely new creation.

Ionica, the UK alternative fixed line provider, pioneered a new technology for residential telephony via wireless local loop services in 1992. Whilst it is true that the 'fixed-line' telephony market was eroded by the rapid growth of mobile phones, its downfall related to the various technical issues associated with its technology. The inability to roll-out the technology quickly to new subscribers materially handicapped the project. Line quality was arguably higher than the incumbent operator (when it worked), but Ionica struggled with its underlying software that limited user capacity and material network availability problems. Consumers demanded a far higher availability of service from their fixed line provider than they did with their mobile phone. In short they seemed to be more forgiving of call drop-outs, because of the added functionality. Whilst Ionica's Cambridge trial roll-out suggested that a national service was technically feasible, the group fell into administration only 15 months after its July 1997 IPO, having reached a peak user level of 62,000.

Whilst African mobile phone projects may have sounded technically risky, the operators were rolling out tried and tested equipment. What this equipment may not have been used to was the physical environment in which it was deployed. Scandinavian suppliers were well used to extremes of cold, but what about heat and high humidity? These were exactly the sort of questions posed to the technical consultants, from potential financiers grappling with the practicalities of technology being introduced into different environments.

A classic example of a project where software, not hardware was the problem was the development and roll-out of the UK's National Health Service IT infrastructure project. I-SOFT Group plc (i-SOFT) and its US partner Computer Sciences Corporation (CSC) were involved in developing software to manage patient records at 97 acute hospital trusts in the North, Midlands and East of England. Poor performance under its contract, exacerbated by a row over premature revenue recognition in 2006, saw i-SOFT put itself up for sale. In 2007, it was acquired by an Australian software company, IBA Healthcare. This group too got into difficulty and in 2011 was sold to CSC. Finally, in February 2012, CSC wrote off US$1.49 billion comprising the entire value of its software development for the NHS programme.

Hedging

Seeking to narrow the potential financial outcomes, by using third party instruments to cap, collar or provide a floor to key cost or revenue lines is a highly effective form of risk mitigation. Hedging can be in the form of long-term contractual obligations (as mentioned in the CPV Sentinel power project in Chapter 15) or swaps, and option based products for which the sponsor pays an upfront premium. The latter are more like insurance, which is covered later, but with the benefit that once the premium is paid there are no 'utmost good faith' similar terms and conditions which need to be obeyed in order not to invalidate the project's cover.

Ultimately the choice of hedging instrument will be a function of:

- liquidity of the relevant currency/interest rate/commodity market;
- pricing of the hedge;
- willingness of the hedge provider to take credit risk on the project;
- cash flow implications of the hedge (such as the need to fund an upfront premium);
- documentation requirements; and
- relative sophistication of the client.

Liquidity is important as the more liquid an instrument is then it is more likely that the pricing of the hedge will be transparent. Illiquid or complex bundled products tend to be harder to understand from a purchaser's perspective.

Standardisation of hedging tools, in the form of exchange traded instruments, reduces the counterparty risk associated with bespoke over the counter (OTC) products. However, exchanges are not risk free, given the capitalisation of the intermediary itself is dwarfed by the size of trading conducted on that exchange. Also, the size of the transaction being hedged may not easily fit with standard contracts.

Counterparty risk becomes acutely important if hedges are put in place for longer tenors. Twenty-five year instruments can also incur large credit exposures. Whilst certain banks are attracted by the remuneration associated with these complex instruments, credit approvers are becoming far more sophisticated over their requirements for long hedges, such as insisting on breaks, covenants and security. For the project this brings risks as short-term volatility may mean that hedge providers can close out their contracts and the cost of entering into new agreements may have become prohibitive.

Whilst other secured creditors may view hedging providers as providing soft credit lines, the reality is that a cash liability will crystallise when the provider is called upon to close out a swap that has become materially out of the money. From a project loan perspective, the problems tend to arise when the commonality between lenders, hedge providers and secured parties is reduced. The trend to ask institutions to hedge their own portion of a loan stems directly from this, but runs the risk of uncompetitive pricing from a party that knows it will win the business.

The risk for the sponsor is that the hedge pricing may be sub-optimal when compared with an exchange driven solution, especially in more esoteric areas such as hedging future telecom bandwidth prices. In situations where there are few counterparties willing to provide such an instrument in the first place, premiums and margin rise. So whilst hedging is always a popular suggestion, there needs to be a robust counterparty that can take the specified risk for that period of time at an acceptable price. Problems can also arise when the hedge provider is remote from the project and is only interested in the hedge based revenue and the fee attached. In the LASMO case (Chapter 8), hedging was not an option for the company at the time of the transaction.

The issue of voting rights and termination rights for hedges is also a complex one. Typically hedge providers will rank pari passu for security purposes, but retain the right to be able to close out the swap to crystallise and thereby limit the exposure. Yet this may well mean that a key part of the risk mitigation strategy for the project company has disappeared.

How then should they be treated for non-swap related credit events? As a secured party they have an interest in ensuring that the credit quality is maintained, but the valuation of the hedge is unlikely to be correlated with the underlying project and their interests may not be aligned. Early termination risks can see lenders forced to make whole the swap obligations of their client, if it is unable or unwilling to pay when sums are due.

Whilst the number of items that can be successfully hedged has grown exponentially over recent years, the implication for projects is that the number of finance parties who fully understand all these instruments is getting steadily smaller. For all treasurers there is a point at which a hedge that was designed to reduce volatility actually increases the spread of potential outcomes because the mark to market cash flow obligations have real world implications. While major corporations may be able to negotiate the underlying ISDA[1] documentation in such a way that they are protected against the bank's credit rating falling, for most projects there is a distinct asymmetry between the monitoring of the provider's credit rating and that of the project.

Contracts for difference (CFDs), a challenge on a subsequent project for CPV (the Sentinel project sponsor in Chapter 15) are an example of products that can easily become speculative, if the parameters for hedging are not clearly defined.

Equally, in an environment where banks are increasingly concerned over being seen as shadow directors, having the project company produce an explicit hedging policy is key. The existence of such a document that is approved by the project company management ensures that appropriate hedging of interest rate, exchange rate or indeed commodity risk is undertaken.

The Hammersmith & Fulham local authority swaps legal case, triggered from a review of their exposure in 1988, showed that it is not just unsophisticated project sponsors who can be mis-sold financial instruments. Providers always need to consider appropriateness when selling hedging products. Even where the client is asking for something specifically, if their position goes beyond hedging an underlying exposure then questions need to be answered. In this case the local authority had taken a colossal one-way bet on rates falling, only to see them rise.

Duncan Campbell Smith, in his blow by blow account of the crisis that resulted in a House of Lords' appeal determining that the local authorities did not have the power to enter into those contracts, cited a prior quote: 'For British local authorities, the House of Lords' ruling severely curtailed their capital markets activities, but effectively fireproofed them from the derivative debacles that came to be a recurring feature for US authorities, notably Orange County, during the 1990s.'

Insurance

Insurance operates on the principal of '*uberima fides*' or 'utmost good faith' and the party having an insurable interest. Whilst theoretically all encompassing, the problem with insurance for many project financiers is the question of the actual form of the cover available and the exclusions.

Insurers may place limitations on the number or value of individual claims that can be made:

- policies may be declared invalid due to misrepresentation;
- insurable events are defined in documentation that is subject to interpretation; and
- certain events are simply uninsurable.

Insurance of a project like Skynet 5 in Chapter 9 evidences the wide range of risks that can be assumed by insurers and the need to involve experts to advise the stakeholders on the nature of the policies being taken out. The more sophisticated the need, the greater likelihood that a bespoke policy will be required, which often means the provision of cover by one or more syndicates at Lloyds of London. There is a need to be vigilant about reinsurance risk especially when the reinsurance is directed into less liquid markets. This is usually managed via a reinsurance restriction clause. The choice of insurer can become a delicate area when state-owned insurers are expected to provide cover by the sponsors as discussed further in a later paragraph.

Whilst it is perfectly possible to take security over an insurance policy in many jurisdictions and for the lending group to receive the proceeds when the claim is settled, the question becomes how that interest should be noted, perfected and operate in practice. What level of claim requires to be routed through the facility agent and are the lenders best placed to determine how the insurance proceeds of a successful claim should be spent? The insurer will reserve the right to repair, replace or pay for any given claim, as part of its standard condition set applying to the policy.

Certain types of insurance are relatively straightforward, such as cover for physical property. But 'loss of profits cover', third party indemnity cover and highly specialised assets will involve a much more involved approach from all stakeholders.

Marine insurance is one specialist area for attention by financiers, not least since its principles have crossed over into other areas from insuring aircraft to oil rigs. Basic marine insurance recognises a difference between the ship or vessel and the cargo and though these may be of interest to the same lender who could be financing the asset conveying the goods and also providing letters of credit for the cargo, they are usually treated separately.

Project finance risks are normally with the asset. Whilst a static asset insurance will have a requirement to repay lenders (and/or be replaced) in the event it is destroyed or unusable, a mobile asset compounds these risks. The asset is subject to a need for insurance of its underlying economic importance or value to the project but also the possibility of cover in the event of an accident to a third party or consequential damage from this and the risk of travelling through a war zone (including piracy) adds further risks that financiers will want to see covered. Historically, the insurance of the physical asset (ship) was carried out by an agent or broker and placed in the insurance market. This led to the development of the Lloyds of London market as a centre of specialist risk expertise. However, this 'Hull and Machinery' insurance (a term still in use) did not cover all third party risks and ship owners formed mutual 'clubs' to insure the remaining portion of the risk on a pooled basis.

Protection and Indemnity (P&I) clubs persist to this day and are significant insurance entities in their own rights, with the largest 13 contributing to a centralised coordinating and lobbying group, The International Group of P&I Clubs. Additionally, there are specialist War Risks Clubs that offer mutual insurance against these risks to members. Analogous to the International Group of P&I Clubs, there is a Combined Group of War Risk Club that shares information and lobbies on behalf of members.

Lenders will expect to be the first assignees of insurance policies and seek to be endorsed beneficiaries of any proceeds. They will also ask for letters from insurers that not only confirm premia have been paid but that the lenders will be notified if future premia are not paid (often these are paid through an account that the agent bank for the lenders can monitor).

Conflicts between lenders and project sponsors can arise when a nationally owned asset, forming part of a project financing is required by the project sponsor to be insured with the national insurance company which may be of lesser strength than those mentioned above. This can be compounded when the currency is not freely convertible or is depreciating against a dollar based lending currency. Expropriation at a time of political change can also affect projects, not least if assets are seized as part of a war effort, with uncertainty around compensation payments. Kidnap insurance is expensive and not always easy to purchase, and in the event of kidnap of staff – or the increasing risk of piracy – ransom payments are specifically prohibited in certain countries if they can be considered to fund terrorist activities. The Multilateral Investment Guarantee Agency (MIGA) may be able to cover some of these risks but it may not cover all of them and negotiation takes time during the project structuring phase and requires specialist input.

Credit enhancement

Credit enhancement is a more generic term and can include insurance, particularly in the film finance arena. These are often tax driven structures, arbitraging domestic taxation rules to provide much needed financing to film producers eager to put their project into production.

Enhancement can take two primary forms:

- full or partial guarantees – a 'wrap'; or
- contingent credit support.

Full or partial guarantees

Within this book are examples of partial or full 'wrapping' of an underlying project debt by a third party (for example, Peterborough in Chapter 12). Based on investor experience with the fall-out from the sub-prime crisis, today there is a much greater focus on counterparty risk when structuring transactions.

AMBAC, MBIA, AIG and indeed Citigroup were considered high quality investment grade counterparties. However, the 2008 financial crisis showed that their position was more complex, when faced with a systemic meltdown in mortgage asset prices and consequent calling of conduit backup lines. Risk had been mispriced and the mitigation of buying cover in the form of credit default swaps appeared equally shaky, when the selling counterparty had a financial crisis on its own hands.

Documentation considerations and legal opinions are crucial when dealing with this type of structure. However, the guarantee is ultimately a second way out and its existence should not encourage stakeholders to ignore the risks associated with the underlying project.

Contingent credit support

Credit support is another generic term and can cover everything from 'in the money' tariff or tolling arrangements through to export credit insurance cover for political or commercial risks.

The Dhabhol[2] power project in India, which benefited from credit enhancement in the form of generous tariff support from the state of Maharashtra, saw that contract set aside. A single weak link can lead to the demise of a project, where the replacement of that link by a commercial alternative could only be done at a very different pricing point, especially if, as with this case, the Maharashtra state off-take tariff was far higher than would normally be expected to be seen in an 'open' power market.

The Nigerian telecoms project in Chapter 10 opted for bilateral loans for the project but did have political risk insurance from the South African export credit agency (ECA). Its sister project in Cameroon, opted for development finance institution (DFI) cover and Swedish export cover for both political and commercial risks on a parallel tranche.

Safaricom[3] in Kenya opted for a hybrid arrangement for what was a Ksh4,000 million floating rate amortising debt instrument. Dubbed a credit enhanced local currency bond, this was a first in many respects. The key features were:

- a 75% principal guarantee from Citibank, N.A;
- Citibank's guarantee was backstopped, to the maximum extent possible, by a Belgian ECA all-risks policy;
- the pricing was reduced to T-Bill +1%, as a result of the credit enhancement;
- the tenor was extended to five years; and
- the ECA premium to the borrower was reduced by the fact that certain risk categories could be carved out as the obligations were ultimately in local currency.

Attractiveness was boosted by listing the bond on the Nairobi Stock Exchange (NSE); and liquidity was provided through two market makers. The reaction at the time from the Governor of the Central Bank of Kenya was that: 'All future bonds listed on the NSE should be in this form.' Whilst this was a laudable goal perhaps, it was also very problematic given that Citibank Kenya had a limited customer target segment; the US parent had finite cross border credit enhancement capacity for Kenyan names; and furthermore the documentation burden associated with a financing of this type was significant (as remarked upon by the Safaricom senior management at the time).

Whilst it proved economic for a financing of this size (US$50 million equivalent), to undertake a similar arrangement for a smaller bond (US$10 million) would have seen too much of the proceeds get absorbed by the financing costs (the transaction costs issue was discussed in Chapter 4). This would have offset the pricing and tenor gains that were on offer to the sponsors, Vodafone Kenya and Telkom Kenya, and may have discouraged them from opting for this solution in the first place.

As stated at the beginning of this chapter, the business of assessing risk needs to be dynamic. An initial assessment undertaken in a systematic way is followed by regular review of credit quality. In each of the cases featured in this book, stakeholders will have gone through a similar process. The idea of using a systematic approach to credit appraisal is vital

to ensure that when immersed in the detail, the basics are not forgotten. This is particularly important in project finance, where the quantity of information to wade through is often very significant. It requires an ability to distil the key facts and analyse dynamically rather than simply describe the project at hand and to be able to respond to unexpected change.

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[1] ISDA stands for the International Swaps and Derivatives Association and provides pro-forma swap documentation in the form of standardised terms and a tailored schedule that reflects the specific terms of this transaction.
[2,3] This case is included in Fabozzi, FJ and de Nahlik, CF, *Project Financing*, 8th edition, 2012, Euromoney Books.

Chapter 7

Project management meets project finance

Overview

One of the major developments in project financing over the last 40 years has been the effect of the professionalisation of the project management function inside sponsor and contractor organisations. However, this evolution can also lead to problems for projects and it is important to understand where a reasonable dividing line may be drawn. It is not the business of the project financiers to constantly second-guess or run the project schedule and there are appropriate limitations to the information that they can expect to share with the project sponsors and contractors. Less experienced and often more junior bankers can appear to try to interfere, because they believe that they have a greater stake in the project than providing the finance, and this may lead to issues of the shadow director behaviour discussed in Chapter 3 with potential liabilities for banks. However, from the financiers' side, it is important that there is a clear understanding of the project trajectory, when funds will be needed, against what sort of certification they will be advanced, and to query and take action when they as outsiders can see events that may derail the project.

A critical reader of this book commented on the need to explore 'the effects of putting together financing on operational management – not just in the time it takes, but the way in which the financial solution ultimately can affect the operational strategy itself, and often paradoxically, damages the balance sheet as the final outcome is a distortion of what had originally been intended'.

In this chapter, we shall review the principles of project management, discuss key issues in the project management of the project that can have an impact on its delivery and thence on the success of the finance, consider how project management has come of age and professionalised, include some observations on modelling, and also the lessons that project financiers can learn from the developments in project management to support their own best practice. Many of the latter are already implemented by the very best project finance teams, but with high staff turnover in the field, and project finance teams as a 'fad and fashion' accessory for some major financial institutions, some of this best practice is lost to organisations. Thus, less experienced professionals are less likely to understand why the use of lessons learned from previous projects can be a critical success factor for a project that may be experiencing some 'bumps in the road'.

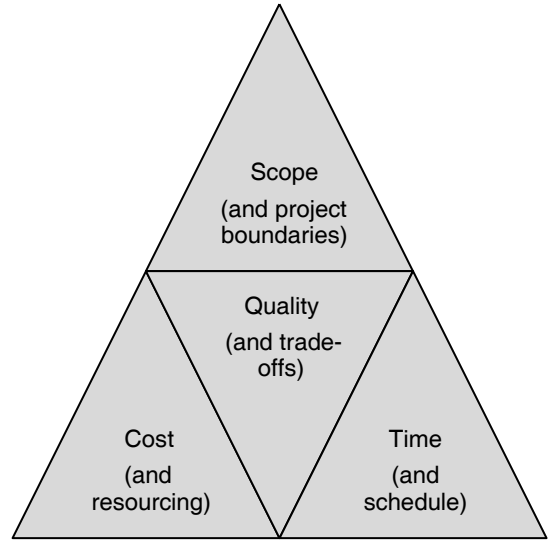
Principles of project management

Historically, the three core drivers of project management are scope, cost and time with quality as a more recent addition as shown in Exhibit 7.1.[1] These shape the project plan, the work

breakdown schedule, milestones setting, the critical path and the regular risk assessments. It is outside the scope of this book to instruct readers on the art of project management – there are many excellent texts and institutions that do this very well. However, this section will focus on scope, cost and time as the aspects of most interest to a project financier (quality being a judgment formed and negotiated by the sponsors and clients) and consider how these may have effects on requirements and delivery of the financing necessary to make the project happen. As an aside, it continues to be the case that for many project managers finance equates to costs and not to the underlying funding structures. We hope that this will begin to change over the next years as the profession continues to develop.

Exhibit 7.1

The interrelationship of scope, cost, time and quality in project management



Source: CF de Nahlik

Scope

The scope of the project refers to the boundaries of that project and will therefore reflect the activities for which funding is sought (see also Chapter 3). Usually these are provided by the project sponsor. Hopefully the days are behind us when major projects failed because those responsible for defining the project inside multilateral agencies (MLAs) forgot to include the necessary road to convey imported machinery to the project site![2] This raises the point about conflict of interest within projects designed by non-governmental organisations (NGOs) and MLAs where the project and the finance may be coming from the same source and there is

no reality check from a neutral external third party. Whilst there might be claims of over-specifying projects by contractors, the fundamental requirement is to have a well-informed sponsor and, as we can see in the Peterborough case (Chapter 12), NHS Trusts have had to face a steep learning curve to become informed sponsors. Indeed many of the criticisms of the private finance initiative (PFI) and public private partnership (PPP) initiative have resulted from lack of experience by the public sector commissioning body or sponsor. An experienced financial advisor to the sponsor can add considerable value if they can draw on a repertoire of previous projects to coach the sponsor in querying the critical aspects of the project scope, but very often this is not considered an appropriate additional cost. A project may go out to tender, or bids from interested parties, but there may be pressures on public sector commissioning bodies to accept the lowest offer even though that may exclude aspects of the project that had not been foreseen and that would provide future benefits. So the tendering design and process also requires expertise, and given the current trend to expect interested parties to pay for copies of tender documents and the considerable expense incurred in making a tender for a project, contractors may have invested very significant sums of money upfront and be reluctant to accept decisions that do not favour them without protest (see Chapter 13 and 'The A-models following the A1'). This also means that the tendering process should aim to be transparent in both design and in execution.

Once the scope is defined and the project begins to move into the execution phase, contractors often rely on changes to the project scope for which they can charge a higher price and increase their profits, so changes can become difficult and expensive for project sponsors. As one example, design drawings may be shared with subcontractors tasked to manufacture to the specification in a drawing and may also need to design and build machinery to execute that task. The subcontractor may also have financed their part of the contract as a Tier 2 supplier and so an amendment can be potentially catastrophic for a smaller company that has produced tools against a design specification that has been changed.

A 'project' may also be a part of a larger 'programme' with a requirement to consider the interactions between other projects that form part of the programme. We can see an example in the Skynet 5 case in Chapter 9. Many organisations now set up dedicated programme offices and stakeholders have recognised the importance of programme management through such initiatives as the UK government's guidelines for Managing Successful Programmes, often known by its initials, MSP. The concept of programmes may appear to be familiar to financiers through such instruments as commercial paper, where the framework is set up and the paper was issued as needed. However, project programmes are rather different and require extensive coordination activity to ensure that economies of scale and scope are harvested successfully and that the many activities that form part of the programme are successfully aligned. A key element of this success is the choice of programme manager (or director) and the design of the appropriate governance structures to ensure smooth operation and timely information flows. Sadly, rather like the term 'project manager' popularised on such television programmes as *The Apprentice* in the UK and the US, the term 'programme manager' has similarly been misapplied. The programme manager is normally a very senior member of the sponsoring organisation, reporting directly to the board. Even large multinational natural resource companies will have a comparatively small number of these talented individuals who have managed many projects. So from a financier's point of view, the choice

of project manager (or project director) and programme manager (if appropriate) is critical to the project's success. This individual's experience will enable the resolution of difficult situations and the potential reconfiguration to allow the project to move back on track if a problem has occurred.

Cost

What does it really cost?

This question will normally evoke nervous glances from groups of managers because there is no certainty – the frequent answer is that it all depends – and over the years there have been different approaches to attempting to look at more accurate costing. Whilst the internal processes concerning the derivation of costing the component parts of a project are of lesser interest to sponsors and providers of finance, the outcome of the process is of considerable importance because if the costs are wrong, the project budget is wrong and this means there is possibly a financial shortfall that needs to be plugged because implicit internal control processes have failed. No lead manager likes to go back to a syndicate with news that everybody is going to have to put in some more money to make the project work, and no participating banker enjoys returning to the credit committee to ask for an increase and re-open discussions on a complex project.

Companies that have managed projects in a particular industry and indeed in a particular geographic area can compile databanks of costs and use these to estimate costs via statistical techniques such as parametric and non-parametric cost estimating and/or reference class forecasting. For less experienced companies, these statistics may not be available. As a result cost-estimators for large projects can be very valuable members of staff. The cost-estimator adds value by being able to use heuristics derived from their experience to adjust the reference costs to the new situation. Some evidence suggests that internal estimators may suffer from the 'optimism bias' mentioned earlier in Chapter 4 in the section on government projects but this may be managed through comparison with the historic cost databases.

Traditional contracts are split into engineering, materials and construction (EMC) or engineering, procurement and construction (EPC). These can be broken down into smaller component parts that can recognise similarity with 'project pieces' in the database, allowing for more accurate cost estimation and replication. However, even with such vast databanks, costs may well differ because most projects are not exact replications. This means the contingency sum is very important as it has to cover the unknown unknowns, which can result in considerable changes.

Whilst banks may have some idea of costs at an aggregate level, as a result of executing a number of projects in an area, and indeed industries may also have some information about costs that may be available in the public sector or behind paid firewalls, many bank syndicates will use an industry expert to opine on costs, especially since they will form part of the input to the project model that will then be used by finance providers to profile funding needs and ensure that returns are adequate to meet the levels of risk.

Cost behaviour is also an area of potential concern. If, in the process of design and thence scope, an existing project is 'resized', then costs may not necessarily increase in a linear

fashion. This also becomes important when considering the project model where a headline cost number may require considerable decomposition in order to understand the dynamics of its contributing factors. An obvious example is if a building is resized: elevator provision is not linear but what we might term 'stepped' and the next size up may not exhibit the same economies of scale until it shows high usage. (Other examples would be from the mobile phone case, MTN Nigeria (Chapter 10) with decisions about transmission tower configurations and the LASMO case (Chapter 8), where crude oil liftings after basic treatment at the Shetland terminal will be dependent on tanker size – a half empty tanker will incur much of the same operating costs in terms of high fixed costs as a full one).

Again, it is outside of the scope of this short chapter to cover all the dimensions of costing in projects but it is worth mentioning another area of potential risk which is that of project costs being incurred in different currencies. Project models need to reflect this and for longer projects exchange-rate forecasting between the different currencies may be problematic. Whilst in Chapter 6 we mentioned the use of derivatives to hedge against currency risks, we also stated that such derivatives are not always available. One area of potential concern is that of the working capital for the project, required so that the project can meet its bills before first revenue is in the bank account. The working capital is usually in the domestic currency of the project location, at least in part, since local bills will need to be paid. This may introduce a local bank into the bank group so good legal advice should be taken to make sure this bank (with a comparatively small exposure to the project) cannot assume a priority position in the hierarchy of lenders (see Chapter 16 and Sadara). Regardless of the Common Terms Agreement or Inter-Creditor Agreement, if the local law (as is the case of certain countries) favours the local bank, then this entity can exercise power above and beyond its exposure to the project.

Time

Scheduling a project by breaking it down into individual components and then considering dependencies and priorities is the third key project management activity. Successful scheduling lies behind the project timeline and critical path analysis; both key management tools for the project manager and also for the project finance group, since the latter can see how resource usage compares with progress in completion of the project. Nevertheless there are some 'hidden time budgets' that pertain to projects and should be considered by all parties to a project. The more protracted the negotiations to agree any legal documentation, the more expensive this is likely to be, even in these days of capped or maximum legal costs, not least in terms of senior management time tied up in handling queries. Whilst Common Terms Agreements represent a form of economy of scale for all parties, and Inter-Creditor Agreements establish the priorities between the different creditors in complex, multiparty financings, it remains noteworthy to discuss transactions similar to our cases of the German A1 road (Chapter 13), CPV Sentinel (Chapter 15) and Sadara (Chapter 16), where financial close was achieved so quickly.

Another such 'hidden time budget' can lie in the nature of procurement for certain types of large projects. Many public sector sponsors may be required to go out to international procurement tenders for goods and services supplied to a project. Whilst 'international' can

mean inside the EC, once worldwide competitive tendering is required, this can be time and resource intensive, not least in terms of educating new companies to this tendering process so that a level playing field can be seen to be in operation. This process may be required when funds from a regional development bank or the World Bank form part of the financing mix and it can have a significant impact on costs and also on scheduling because it is so time-consuming and may well result in a high degree of variability that needs to be negotiated. The temptation to use existing suppliers because they are known to deliver to a standard specification, on time and on budget, needs to be traded off against development projects where one of the objectives might be to encourage the development of local input to the project. The sponsor or project manager that favours one group of suppliers, possibly because it is a local group, can cause the project to experience delays and cost escalation if that favour is misplaced. It can even be that the contractor ends up educating the local supplier to ensure that the goods tendered are delivered. In some cases as much as 80% to 90% of the project spend may be spent locally so in a relatively tight manpower budget, managing the local suppliers can be a significant cost because it will require an additional budget.

On the other hand, an experienced supplier or vendor may know the project manager and the culture of his or her company very well and may try to improve a position that has arisen from accepting a less attractive tender. One way of doing this might be to get the design or scope changed, since change orders in the project are always a way to reopen negotiations and if time becomes critical, then there will be pressure to settle. Vendors also need to control costs at the highest possible level as failure to do so can cause problems that will escalate and become critical. The process of transparent management of vendor or supplier claims is a priority for large projects, lest significant resources be absorbed by them.

There will be key time points or milestones in many projects – and these may be very specific to local conditions. So in the North Sea there may be a limited weather window for a tow-out or for a refinery there may be a particular period for major servicing or shutdown. Another example would be the effect of the monsoon season in certain countries where groundwork conditions can become impossible. As we see in the Peterborough case (Chapter 12), the rare colony of newts caused work to stop. The discovery of archaeological remains or the existence of indigenous inhabitant sacred sites will also mean that activity ceases on a project until either excavation has taken place or discussions with elders have resolved the sacred site issue for both sides. In the latter cases, permits may need to be obtained and specialist experts involved and this process is unlikely to be swift. Complications may occur as a result of the weather (see the monsoon comment above), the timing in a religious or natural cycle and the availability of appropriate experts. These pinch points need to be identified and flagged up to all stakeholders as early as possible, if known. Less experienced participants may not understand why a delay can have such a profound effect especially if the project or its location is far removed from their normal sphere of operations or culturally remote from their own experiences.

Finally, it is always worth enquiring if the financing negotiation and closure appears as part of the project schedule. All too often it may be missing and the financing profile of the project may be invisible to the procurement and other functions with consequent surprises when it surfaces.

Key issues for the project management of the project

In this section we will look at some key issues for the management of a project. As we discussed earlier, the four important drivers in project management are scope, cost, time and quality, and adverse risks associated with these either individually or in combination can lead to a project experiencing problems that may then spill over into the project financing.

Well-run projects will have defined governance and reporting structures to manage information flows to and from those responsible for individual work packages. These reports will flow up to the project (or programme) office and be used to compile progress reports. The project or programme manager and the project or programme office are responsible for the implementation of the project (possibly as a part of a programme). This role does not include responding to every single phone call from a syndicate member who has not bothered to read the documentation, and we are making this point explicitly, because, regrettably, this is not an unusual situation. Young bankers, new to a project, will often consider that a fast way to get up to speed is to be briefed by somebody senior in the project team. When the programme or project office does not respond immediately, they then call the most senior person in the organisation that they can find in the file, fired up with indignation that this organisation is being disrespectful to the bank, their employer, and whilst the recipient of this call may well manage the problem, no programme or project manager needs to field interference from a board member, generated by an idle junior member of a bank team, whilst trying to coordinate a complex project. In the longer term, this has ramifications for the relationship between the bank and the contractor and while the young banker on rotation may move on, corporate memories are somewhat longer. So this is an avoidable cause of friction between the project delivery and the project financing team. It can be easily solved by ensuring that there are clear designated communication (and response) protocols in place.

One of the major changes has been in contract formats – fixed price lump sum turn-key (LSTK) contracts are often used for mature technology, and cost-plus contracts are used for more experimental technologies, with an EPC based contract management lump-sum procure and build (EPCM/LSPB) seen in very large complex projects contracts, such as Sadara with its 26 different plants (Chapter 16). Contract terms have become highly standardised which means that the focus is on the project rather than on the legal issues. The choice of governing law is also wider as many countries now have well developed and tested commercial codes, but for financing, the key choices remain the UK and New York as those are the most developed systems. Arbitration clauses in contracts remain popular, with London as one key centre, but as in all disputes, legal action should be the last resort as it is time consuming, incurs costs, and project work may have to cease whilst any legal action is in progress.

One obvious way to try and optimise outcomes for projects, especially large longer term projects, is the use of teams rather than individuals to share knowledge and to form consensus views about such matters as design, cost and timing. Getting to agreement, whilst allowing enough time to discuss all the issues, can mean that some cross-team (and indeed inter-organisational and intra-organisational) project base-lining workshops may last for a week, taking key players out of their existing commitments in order to work on the design for the next project. Teams will often cut across traditional groups inside an organisation, giving rise to personal and role rivalries. As an example, the procurement team needs to

understand the project design and that entails an investment by that team, going deeper than the surface of the description to the underlying solution that the design addresses. Design teams may view this as 'bean-counter' interference!

Larger project size means that it is more likely projects will not involve a single sponsor or indeed a single contractor in order to spread the risk, analogous to situations where banks will also work in groups rather than alone. Successful partnering and the management of partners is an art form; significant investment in knowing and understanding the different players has become more acceptable recently as project and programme offices have looked at teambuilding exercises to try and manage shared understandings of the goals of the different stakeholders. However, it is a truism that a partnership is only as good as its weakest link, and the careful support of that weaker link by stronger partners may be necessary – as true for bank syndicates as for project management and contractor teams.

At this point it is worth raising the different attitudes towards contractor collaboration in the US and in Europe. The US view of contractors is that they should be competing and any evidence that they are discussing things with other contractors would be viewed as anti-competitive behaviour. In Europe however, there has been a move towards collaborative behaviour between contractors to try and minimise the friction costs and bring complex projects in on time and under budget. One of the best-known of these projects was the Andrew Field, a marginal North Sea oilfield operated by BP and first discovered in 1974. Indeed LASMO originally held an interest in the Andrew Field. As oil prices continued to rise, it remained uneconomic and undeveloped. However, the oil price increases and construction costs decreases (as a lot of the unknown factors relating to the North Sea became easier to quantify) led to the economics of the field eventually becoming more attractive and BP decided to go ahead and develop the field. A group of contractors was involved, several of which were major American companies, and BP proposed an unusual aspect to the contract called 'gain-sharing'. A target cost for the project was agreed; if the contract came in early and under budget, the contractors were rewarded with a bonus payment based on the cost saving. The other side of this, or 'pain-sharing', was that if the contract went over budget, then the overrun costs were first absorbed by the contractors and then shared with BP in accordance with a predetermined formula. This approach whilst initially viewed with suspicion by the different contractors, paid off with a 21% reduction in capital expenditure, and the project came in six months early.

Perhaps one of the major changes in project management has been the focus on the individuals that make up the teams, as alluded to above. Diversity issues go beyond those we consider in classic 'HR speak' and usually arise as a result of different cultural norms and practices or tacit roles assumed by different partners, such as national government proxies. Raising and exploring partner views and positions as early as possible is healthy, and many large organisations have what may appear to be long and complex project kick-off internal procedures that may be invisible to the providers of finance. Joining these meetings would not be appropriate for financiers as the partners thrash out project specific fundamentals before a more polished version of the project is presented for internal approval and indeed afterwards to banks. Indeed many organisations keep the project team away from the financial stakeholders with a finance group running interference and controlling information flows. Thus, it can become easy for finance providers to be unaware of the many steps that have

already been taken before a project goes out for financing and to attempt to second-guess decisions that may have already been extensively debated and resolved in such a way to manage stakeholder needs.

The decision on when to first mobilise onto site and start work has financial implications as that may be the beginning of the project for the outside world. Rather like the European fairy story of Goldilocks and the Three Bears and the porridge that was too hot or too cold, too early is not good as labour may be mobilised but too late is not good because deadlines may be missed.

How project management has professionalised

The requirement for many project managers to hold a Prince 2, PMP, or similar professional qualification, with the recognition of knowledge management and the curation of project experiences has led to more formal development of a number of highly systematic (and proprietary) approaches inside major sponsors and contractors, both governmental and in the private sector. The accrediting bodies have codified much of the best practice developed over the years and learned from large projects, using it to form part of such manuals as the Body of Knowledge (BOK) that are then considered to represent best practice and regularly updated (the Association for Project Management's BOK is in its sixth edition).

The systematic approach to project management uses hierarchical structures that govern projects, and specific processes that are executed to ensure that bases are covered, stakeholders consulted, decision-making is formalised, and even that documents are clearly identified through version control and using a central documents log. The use of these approaches may make auditing projects simpler and it may be easier to spot problems early.

The codification of best practice, which continues to be dynamic and co-evolving with different projects, has also embraced another major change in project management, that of recognising the importance of the individual. The previous project management model largely derived from military, space or scientific programmes, reflected the view of that time period towards employees, where individuals were compliant robots rather than engaged participants in a change process. Part of this has resulted from a more general recognition of the importance of different stakeholders and indeed the differing importance and criticality of stakeholders at different points of the project. Feedback from stakeholders can lead to improved design and a better outcome provided it is received early enough in the process. However, all stakeholders are not created equal and part of the challenge of the sponsoring organisation, and indeed the project manager, is to listen to different voices and attribute appropriate levels of influence to that viewpoint, as well as seeking to negotiate differences between stakeholders to find shared and workable solutions. So today's project manager needs soft skills such as coaching, mentoring and negotiating and conflict resolution skills as well as the technical knowledge and project experience.

It may be surprising to readers after all that has been said in this chapter about professionalism, and so on, that one of the biggest challenges in project management and for project teams is the absence of information capture from projects that have ended, and the dissemination of lessons learned from them. This forms a part of the quality agenda mentioned as an integral part of successful project management. Prince 2 and other formal

project management systems allow for projects to go through a formal closure process with part of that process being the codification of lessons learned from the project experience. Getting the quality processes managed effectively creates a valuable bank of knowledge inside any organisation that can be passed on to the next generation, leading to an early awareness of signals that a project is about to develop problems and a repertoire of coping responses on which to draw. Too often, members of the project management team are already looking at the next project and mentally if not physically leaving the existing project behind. This is one of the reasons why organisations make the same mistakes repeatedly. Do banks look at financings and learn lessons from what went well or badly? Do banks codify experience and pass it on, or does it leave inside the head of the banker, to go with him or her to the next posting? Pressure to be seen to be perfect is an issue for any professional, and an organisational culture needs to support the admission of shortcomings in a positive and developmental way rather than a punitive one. As managers jostle for position on the next rung of the corporate ladder, no one will want to admit to weakness. And yet it is a paradox that the best learning in projects is from ones that have performed badly!

Computer models

The developments in computing capability have been transformative for project management in terms of critical path analysis and even risk analysis, as well as computer modelling for projects and project financing. This power in a laptop can give rise to a focus on the numbers as the end result rather than as the manifestation of the project dynamics that lie behind the numbers. Who in the project management and project finance areas has not heard one of the many tales of spreadsheet jockeys producing results that are useless because the sales price is too high or the capacity ignored? Project models are passed around between banks and so errors may persist – and it means that some projects may be operating from inaccurate representations of projects.

This focus on results, ignoring process, has also had an impact on the project financial models that are needed to make the initial investment and financing decisions, and then to monitor the project for key stakeholders, so that the investors can assure themselves that they will get an acceptable return on their investment, the lenders can assure themselves that their loans can be repaid with an acceptable margin (the loan cover ratios), and government agencies or NGOs are obtaining the best value for money for the taxpayer (in the case of PPPs/PFIs).

Models may be prepared by developers, sponsors, lenders, third party suppliers and/or the government bodies, but their viewpoint will differ. A common agreed model for joint discussion purposes makes sense. The time taken to build and develop a model dependent on its complexity can typically take between a couple of weeks to many months. The use of templates can help, but it can also be the cause of errors and an error in one model will replicate itself through all subsequent models based on the first.

Models come in varying degrees of complexity. At its simplest level, the project may consist of a simple technology and straightforward legal entity with the special purpose vehicle (SPV) consisting of a corporation. Complexity arises from foreign currency loans and accounts (in this case the balance sheet should contain a currency adjustment (such as in the

MTN Nigeria case study in Chapter 10) or multiple units producing a variety of products or services in a variety of markets (the Sadara case study in Chapter 16). If the elements of a project are located in more than one country, the model must reflect the different currencies, inflation, interest and exchange rates and taxation. Other legal entities such as leases, joint ventures, partnerships and service agreements are ideally modelled in such a way that the user can see the cash flows for each participant (for example, lessor and lessee in Cheng Jiu – Chapter 14).

Typically, models are first prepared during the early planning phases when the results are incorporated into a feasibility report. Since this is not a definite investment decision, smaller stakeholders may be reluctant to invest in a 'de novo' project model and will be tempted to reuse previous models, possibly omitting necessary detail. This can generate a 'path dependency' where a less well specified model supports decisions and becomes the main project model. The model must evolve through the pre-financial close phase (updated with information as the deal is negotiated, such as the basis of contracting (for example, LSTK bids), or the financing proposals (for example, bond issues). It will be kept up to date during the construction and operating phases in order to determine the cover ratios and to calculate any triggers which may affect the prepayment of loans and restriction on payment of dividends.

All models should be flexible enough to answer the 'what if' questions, such as 'what happens to the cash flows if the capital cost is higher?' This means working systematically through the implications of a change, not just changing a line of a spreadsheet capital cost (scenario versus sensitivity analysis). So, for example, construction of one part of the project is brought forward – not only will more building materials be required immediately (and need storage space) but there will be more traffic movements on and off site – so traffic capacity problems, there may need to be additional labour available (and if this is a remote site, facilities for this additional workforce). Will materials be available early at the same price as the main supply contract, and so on? This will also affect the schedule and impact on costs, so will link to the project management system and ultimately the financial model.

A good model shows all the complexity of the financial structure – so it should include the waterfall of accounts, reflect the dividend policy, the functional currency (and may need to be available in other currencies for different stakeholders), any sinking funds (such as a debt service reserve account and major maintenance reserve) and any control ratios such as loan cover ratios specified by the lenders. It also should produce key accounting statements (profit and loss, balance sheet and cash flows) and indicators of returns such as project and equity internal rates of return (IRR) real and nominal, and modified IRR (MIRR), net present values (NPVs), payback periods and profitability indices, many of which are used internally as benchmarks by project sponsors. It can produce projections on a half yearly basis as this is the period over which most cover ratios are calculated, but also more frequently if required.

Whilst some models are deterministic and dependent on a single set of input data, more sophisticated models use a stochastic process to generate a range of input data which the model uses to produce a histogram of results and tornado diagrams.

Although purpose built software exists, the majority of models are based on spreadsheets with Microsoft Excel as the most widely used software. Such models have their own problems. In particular, it is not unusual to find a lack of internal consistencies. For example:

- a forecast in the growth in revenue without the corresponding increase in working capital and the associated financing will give incorrect results; or
- a lack of appreciation of the linkage between inflation rates, interest rates and the project discount rate, often ignored in a spreadsheet model.

Surprisingly, many models do not include audit trails, meaning that an incoming staff member may take a long time to find out that someone changed a key figure or formulae which completely altered the viability of the project. This reflects the typical background of many modellers who have little experience in software development and testing and/or of the industry or project under consideration. A good modeller will need to have a thorough understanding of the project technology (does he/she know the difference between a lower and a higher heating value?), the markets for the product or service, financing, taxation, accounting and software development.

Poorly built financial models have caused very large losses in the industry. The potential for such problems may be reduced by using and abiding by recently produced 'best practice' and standardisations. In addition, specialist consultants will provide third party audit services but they can be expensive.

Lessons for project financiers from project management for best practice

So what can financiers and other stakeholders learn from project management? Here are 10 suggestions based on best practice – many banks may already carry these out!

1 Consider where your organisation can add value and what sort of investment you will need to make to enable this – projects require specialist input. Build a pool of talent around your group and recognise that as projects may be long term, so is this investment. Linked to this, handle short-term rotations with care – and manage the exposure of inexperienced staff to key stakeholders.
2 Build robust knowledge management and quality management systems and learn from project management governance techniques and systems.
3 Create a climate in meetings of shared responsibility and mutual problem solving where it is acceptable to ask questions and supportive to answer them – projects can go wrong because an inexperienced sponsor did not understand the drawings with expensive consequences.
4 Working relationships will solve problems better than legal intervention.
5 Structure thoughtfully and then deliver on promises made to clients – do not try and improve the position by using change – invest in getting it right first time.
6 Pick a project team carefully, not based on convenience, and leave them together to work on that project – develop them carefully with teambuilding and other supportive activities. Teams and syndicates are only as strong as the weakest link.
7 Establish clear and defined formal channels of communication to avoid resources being wasted with spurious queries and relationships being damaged.

8 Recognise that projects can change and so there may need to be further presentation to approving committees with delays.
9 Capture lessons learned and share them … and learn from them!
10 There are no quick fixes and there is no Twitter (140 character) version of a complex project – to work on it requires an investment of time by all parties.

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[1] Interestingly, though quality has been ignored in the past, it is now firmly embedded in such industry standards as the APM Body of Knowledge (www.apm.org.uk/knowledge) and is broken into four components: the process of quality management includes planning, assurance, control and continuous improvement. These processes should be managed throughout the project and its stakeholder organisations.

[2] Real case in the Sudan in the 1970s.

Part 2

Case studies I: mature projects

The 10 case studies in Parts 2 and 3 cover a broad range of industries, geographic locations, types of funding and stages of maturity. They are split into two groupings: mature financings and projects in progress. One of the challenges in writing a case book on projects that are normally long term by definition, is that by the time the outcomes are finally known, the project is 'out of date' and/or the project is 'morphing' or changing shape in response to environmental changes.

The first case, LASMO (Chapter 8), looks at a complete history of a project financing conceived under the adverse circumstances of the 1970s and finally redeemed in 2011. Whilst it may be 'elderly' to some readers, possibly pre-dating their birth, the approach is just as valid today so there are lessons that may be learned.

Skynet 5 (Chapter 9) is a good example of managing a military project in the new public private partnership (PPP) environment – satellites are an important part of everyday life and communications. It is also the first of a series of PPP projects in our book.

MTN Nigeria (Chapter 10) looks at the challenges overcome by a mobile phone operator in a country that is perceived to be risky. The choice of advisor clearly helped make this deal successful.

Liverpool Football Club (Chapter 11) shows what can happen to a loan for an entity built on intangible assets when members of the financial ownership team fall out.

The Peterborough Hospital project (Chapter 12) shows the difficulty of managing a public sector project with too many layers of governance and underprepared stakeholders.

Finally, the A1 German road upgrade PPP project (Chapter 13) sought funding in the middle of the financial maelstrom of the Lehman debacle and then faced further challenges as the German financial system came under pressure from that fall-out while trying to bail out other Eurozone members.

Chapter 8

How LASMO rode the waves and struck black

Why is this case interesting?

The ability of a new company to raise financing for a minority stake in an untested oil and gas field in a new oil province, with no tangible security would have been a worthy 'Deal of the Year' winner in 1976. To do so in the face of economic uncertainty and a sovereign debt crisis shows how hard the company and its advisers must have worked to find investors willing to buy the loan notes even with the unusual equity kicker. The latter became the 'gift that goes on giving' to its holders, surviving until its eventual retirement in 2011.

Exhibit 8.1

Key project features of the LASMO case

Feature	*Headline*	*Detail*
Financing	14% unsecured loan stock (ULS) 1981 to 1983 with associated securitised royalty carve-out, known as an oil production stock (OPS) issued January 1976	£57.5 million 14% ULS LSMO £0.55 million linked OPS LSMO £17.5 million 14% ULS SCOT £0.175 million linked OPS SCOT
Borrower(s)	London and Scottish Marine Oil Company Limited (LSMO – later LASMO); Scottish Canadian Oil and Transportation Company Limited (SCOT)	
Sponsors	Issue underwritten by Morgan Grenfell & Co Ltd	
Sector	Oil and gas exploration and production	Upstream activities
Country	UK	

Source: LSMO prospectus, 1976

What was the project?

At first glance, you might think that this 1970s case study is ancient history; however, the financing principles that were used by the fledgling offshore oil company to undertake a high-risk investment are still highly relevant. The London and Scottish Marine Oil Company

(LASMO) case is an excellent example of a creative solution to what seemed to all stakeholders at the time to be an insuperable problem and typifies what project finance can achieve by bringing a methodical approach to the negotiating table. Under adverse conditions, the company and its smaller sister raised money, in what was thought to be a difficult if not impossible market. This enabled their sponsors to not only 'stay in the game' but grow their investments into a substantial international oil company.

The project was to provide cash for the 6.9% and 2.1% respective interests of the two tiny new companies, LSMO and SCOT (LASMO's antecedents) in the new Ninian oilfield, located in the UK's North Sea. The funds were needed for three linked activities:

- drilling wells to develop the field;
- constructing a pipeline to take the oil to the Sullom Voe terminal on Shetland; and
- funding part of the terminal construction costs.

For LSMO alone, the capital requirement for the period 1976 to 1983 (inclusive) was estimated at £78.6 million.

LSMO as LASMO was known at that time, and its sister company SCOT, had been created in April 1971 with the specific purpose of exploring for and producing oil and gas, principally in the UK sector of the North Sea. The two operations were predominantly owned by English and Scottish insurance companies and investment trusts – we would understand them today to be similar to venture capital private equity investments. In 1972, LSMO, in association with others, was granted three exploration licences in the UK sector of the North Sea in the 4th Licensing Round. In January 1974, oil was discovered in block 3/8 in which LSMO had a 23% interest and further exploratory drilling revealed that the oilfield, called Ninian, extended into several adjacent blocks and was commercially viable. During 1975, LSMO extended its interest by acquiring those of two other smaller companies for a consideration of shares representing an increase in the field percentage attributable to LSMO from 4.65% to 6.9% (whilst this is obfuscated by other transactions, it seems to value the field as: 2.35% for £4.19 million = £186 million).

By December 1975, LSMO had paid £9.3 million towards its share of the costs, raised from shareholders via a form of bond popular at the time with investors called unsecured loan stock (ULS). This left £69.3 million to be found for the period 1976 to 1982 (assuming that the contingency and escalation costs estimates were accurate). At this point, LSMO had raised £6.67 million in equity and issued £12.07 million of floating rate unsecured loan stock due in 1976 and SCOT was in a similar position with £5.4 million equity and £3.7 million raised in floating rate unsecured loan stock due in 1976. To give a sense of proportion, if we consider the shortfall of £69.3 million in 1976 (and it went up as the costs were inevitably underestimated) we are talking about an equivalent amount in nominal terms in 2014 of £450 million.

Exhibit 8.2 shows the total cost estimates for the Ninian Field as at 1976, with Exhibit 8.3 showing the worst case 'cash burn' assumption year by year. In Exhibit 8.2, we can see that provision has been made for escalation and contingency and that the expenditure is split into platform, pipeline and terminal with a substantial escalation for the terminal. Exhibit 8.3 shows the peak expenditure occurring in 1976 to 1978.

Exhibit 8.2

Total Ninian Field costs: 84 well case

Amounts in (£ million)	*Base cost*	*Escalation*	*Contingency*	*Total*
Ninian Field platforms x2 plus facilities	500.20	186.00	31.60	717.80
Pipeline	168.30	45.30	27.40	241.00
Terminal	97.20	63.00	19.80	180.00
Grand total	765.70	294.30	78.80	1,138.80

Source: LSMO prospectus 1976

Exhibit 8.3

Ninian costs year by year: 84 well/2 platform case

Year by year	*1974 to 1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*Grand total*
£ million	134.40	337.30	331.70	151.20	72.90	49.40	47.10	14.80	1,138.80

Source: LSMO prospectus 1976

The two companies (merged into LASMO in 1977 and referred to collectively as LASMO hereafter) had comparatively small interests in the field because they were new investment operations set up by British institutions seeking to become involved in the emerging North Sea oil province. They had little in the way of the capital needed to fund major oil and gas production projects or indeed the in-house expertise to do so at the beginning, so like many other new oil companies, they were heavily reliant on third-party expert advice. This was provided by a larger Canadian independent, Ranger Oil, via its UK subsidiary. Ranger Oil (UK) and a service provision agreement lasting until 1999 for which Ranger was paid an annual fee but Ranger also had direct representation on the LSMO and SCOT boards.

Each participant in the oilfield was ultimately responsible for financing its pro rata share of the costs.

One option could have been a single financing for the field where all the interest holders financed the field as a single package. The BP Forties Field financing package of £360 million had been closed in 1972 and was viewed as a success – but BP owned 100% of Forties. No one was prepared to share the risk and indeed the BP Chief Geologist was said to have offered to drink all the oil found in the North Sea, which did not augur well.[1] Mixed field financing discussions usually ran into problems, because the relative creditworthiness of the

partners impacted on the pricing offered to compensate for the risks the banks would be expected to take. A small player might wish to benefit from the lower debt pricing associated with the greater creditworthiness of a larger player, but an oil major might be less keen to subsidise smaller vulnerable players, that might grow into significant competitors in the future. In this case, Ranger Oil (UK) was in no position to lend its creditworthiness to the smaller participants, since Chevron was supporting Ranger's own financing package.

The Ninian oil field was to be operated by Chevron Petroleum (UK) and not Ranger Oil, even though the latter provided the technical advice to LSMO and SCOT. A field operator would make decisions on behalf of a number of the interest owners as to the way that the oilfield should be developed and Chevron's parent, SoCal (Standard Oil of California) was a substantial member of the 'Seven Sisters' or major oil companies of that time.

LSMO (and SCOT) were financially very precarious and LSMO alone needed to borrow £78.6 million (in 1976). Its key credit characteristics were:

- a tiny balance sheet (net assets of £3 million);
- no profit history (it was recording losses);
- a limited in-house expertise;
- a fragmented investor base, given the nature of its own shareholders;
- a speculative forecast cash flow from a single undefined asset (consisting of a series of holes in the sea bed and thus intrinsically valueless if they proved to be dry); and
- operating in an alien environment where technology was tested to its limits.

As you can imagine, the easy answer would have been to 'just say no', before rapidly moving on to something easier from which to earn a fee. Fortunately, the stakeholders did not give up that easily and the project financiers felt they had a challenge worthy of their craft.

Exhibit 8.4 shows the audited figures for LSMO provided in the prospectus (SCOT was similar but smaller). There was no major parent or source of considerable expertise behind the two small companies that would be seen as providing an element of support. LSMO had already increased its original stake in the Ninian field once by taking over the North Sea assets of two other mineral companies that wanted to realise some value for their investment but were not in a position to embark on major commitments to a single largely uncharted asset. For these mineral groups, the North Sea share of Ninian had represented a successful diversification, but not a strategic investment.

Exhibit 8.4

LSMO Annual Audited Accounts 1975

LSMO audited accounts year end 1975	*£ (not £ million)*		*£ (not £ million)*
Furniture	676		
Ninian expenditure capitalised		*Financed by*	
Exploration	1,615,121		
Development	5,178,334	Fully paid shares, £1	2,471,780
		Partly paid £1	2,224,602
Total E and D	6,793,455	Total equity	4,696,382
Deferred expenditure	2,642,389	Less P&L	–1,576,812
Less written off	1,170,808		
Sub-total deferred expenditure	1,471,581	Total financing	3,119,570
Net investment in subsidiaries	0		
Unquoted investment	87,118		
Current assets	1,315,001		
Current liabilities	6,548,261		
Net current assets	–5,233,260		
Net assets	3,119,570		
Pre-paid expenses	0		
Total net assets	3,119,570		

Source: LSMO prospectus 1976

In the early days of the North Sea, and going back to a time where seismic and other techniques were relatively primitive, banks simply did not take completion risk on an upstream deal. Why? Knowledge of the geology of the North Sea was still being gathered, so that there was no certainty that the oil was there in the volume suggested by the specialists in their reserve reports (a similar dilemma to the stakeholders' attempts at market sizing mobile telephony demand in Nigeria – see Chapter 10 and the MTN Nigeria case).

- Could the oil be recovered economically?
- Would the technology be appropriate to extract the oil in the quantities suggested?

The UK government was under intense economic pressure because of the poor state of the economy. Interest rates were high and additional sovereign borrowing capacity was very limited. It is difficult to believe, in 2014, that the IMF was on the point of intervening in the UK's affairs in the mid-1970s. The sovereign debt crisis in Europe of 2010 to 2013 (that engulfed Cyprus, Greece, Ireland, Portugal and to a lesser degree Spain) spawned by the US mortgage market collapse has reminded a new generation that over-leverage does not just impact individuals and corporations.

The UK government had two potential access routes to North Sea revenues.

1 The government had the right to claim a majority share of the resources, creating even more uncertainty around this project. This right is not uncommon in resource development where 'below ground' resources are owned by the state. It is often seen as a political mechanism to demonstrate that the state is capturing some of the benefits for the local economy.
2 A new oil taxation regime was under development and offered a struggling administration additional access to cash flows resulting from the North Sea.

Since much of this activity was new to the UK, updated legislation (such as that requiring associated pipelines to receive the Secretary of State approval as part of the Development Plan) meant that at the time of the funding need and issue of the associated prospectus to raise money for Ninian, full development approval for the field was not yet in place.

Yet another significant risk that was of currency exposure. Here the concern was that the expenditures would be in US dollars, as would the sales proceeds of the oil, against which sterling, the currency of the debt issue, was depreciating. Whilst this could boost sterling reported revenues, the costs were payable in US dollars funded from a steadily devaluing currency of which a fixed amount of funding had been raised. LSMO reported in sterling. Currency futures and options markets as we understand them today did not exist in the 1970s, appearing in the 1980s as a response to the effects of exchange rate fluctuations on large companies and taking the ideas of agricultural futures into new areas. Firm forward contracts with tiny companies to deliver large amounts of sterling (not yet raised), presented bankers with severe credit challenges and thus limited the ability of the companies to hedge the risk themselves. It is highly likely that LSMO could not have afforded the up-front cost of the hedging or option route either, even if it had been available.

The institutional shareholders in the two small companies had borne most of the risk of the development expenditure on the project thus far, but had other commitments arising from the state of the UK economy. Whilst prepared to provide some of the debt required for the field, they were not in a position to fund all of it. They wanted to share this risk and to reclaim some of the monies they had lent to the two small companies as their wider businesses were under pressure.

If LSMO and SCOT failed to raise the money to finance Ninian, then they would effectively forfeit their shares of the oilfield. Those shareholders who had supported previous fund raisings stood to lose all of their investment. So the sponsors either needed to sell now (as the two mineral companies had already done to LSMO), assuming there were willing buyers or to find a financing solution. Any disposal price would reflect the risk/uncertainty that the

buyer was assuming and the market for such entities was thin, as other small players were heading for the exits at the same time. Worst still, the Ninian stake could become a liability and not an asset if the two small companies did nothing more. There was a real risk that other partners could sue them for the unpaid monies needed for the Ninian development.[2]

Macro environment

In the early 1970s, the UK was beset by a number of interlinked political and economic challenges.

Domestic inflation rates were high over this period and rose again in the late 1970s as shown in Exhibit 8.5. Successive governments tried to manage the trickle-down to the general public by curbing civil servant pay and wage growth in the state-owned industries such as coal mining, power generation and transmission. Industrial unrest spread, culminating in 1974 with the 'three day week'. This was a time when the largely coal-fired electricity generation system that powered the country was affected by a long running miners' strike over pay curbs and working conditions. The Ted Heath led right-wing government attempted to manage the effect on the population by rationing power, a move that was challenged in Parliament and a UK general election was called. The results were initially a 'hung parliament' where no party had an overall majority and an uneasy coalition with the Northern Irish Unionists allowed the Conservatives to struggle on. This was followed by a second general election in November 1974 that resulted in a left wing government being formed under Harold Wilson with a tiny majority of three seats in a 635 seat parliament.

Exhibit 8.5

Percentage changes over 12 months in RPI (as an inflation rate proxy) 1970 to 1982

	Annual changes (%)	*January*	*February*	*March*	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*
1970	6.4	5.0	4.9	5.1	5.6	6.1	5.9	6.7	6.8	7.0	7.4	7.9	7.9
1971	9.4	8.5	8.5	8.8	9.4	9.8	10.3	10.1	10.3	9.9	9.4	9.2	9.0
1972	7.1	8.2	8.1	7.6	6.3	6.1	6.1	5.8	6.6	7.0	7.9	7.6	7.7
1973	9.2	7.7	7.9	8.2	9.2	9.5	9.3	9.4	8.9	9.3	9.9	10.3	10.6
1974	16.0	12.0	13.2	13.5	15.2	16.0	16.5	17.1	16.9	17.1	17.1	18.3	19.1
1975	24.2	19.9	19.9	21.2	21.7	25.0	26.1	26.3	26.9	26.6	25.9	25.2	24.9
1976	16.5	23.4	22.9	21.2	18.9	15.4	13.8	12.9	13.8	14.3	14.7	15.0	15.1
1977	15.8	16.6	16.2	16.7	17.5	17.1	17.7	17.6	16.5	15.6	14.1	13.0	12.1
1978	8.3	9.9	9.5	9.1	7.9	7.7	7.4	7.8	8.0	7.8	7.8	8.1	8.4
1979	13.4	9.3	9.6	9.8	10.1	10.3	11.4	15.6	15.8	16.5	17.2	17.4	17.2
1980	18.0	18.4	19.1	19.8	21.8	21.9	21.0	16.9	16.3	15.9	15.4	15.3	15.1
1981	11.9	13.0	12.5	12.6	12.0	11.7	11.3	10.9	11.5	11.4	11.7	12.0	12.0
1982	8.6	12.0	11.0	10.4	9.4	9.5	9.2	8.7	8.0	7.3	6.8	6.3	5.4

These are specifically not designated as National Statistics.

Source: Office for National Statistics, extracted from Table 37: RPI All Items: 1948 to 2013

The incoming Labour (left wing) Wilson administration included a Secretary of State for Energy who instituted an aggressive policy of state intervention in the North Sea. The government used a vehicle called British National Oil Company (BNOC) and intended to actively implement and manage sharing of North Sea oil revenues by the UK government through either:

- lifting and trading its share of the oil; and/or
- active involvement in the licences (and decision making).

Whilst the policy of active state participation in oil and gas revenues was on the horizon, the exact mechanism tapping into the resulting potential cash flow still remained unclear as LSMO and SCOT went to look for money. The initial deal was that oil companies would be 'no better, no worse' and many smaller companies such as Tricentrol (see below) signed up promptly.

The taxation system that applied to oil and gas revenues was also under development. Aside from a 12.5% royalty payment to the Government (as the agent for the Crown, the mineral owner), common in many mineral transactions, the enactment of the Oil Taxation Act of 1975 introduced an additional Petroleum Revenue Tax (PRT) levied at 45%. This increased to 60% and then 75% by 1983 (and remains at around 80% for older fields).

Indeed by 1980, the Chairman of LASMO stated that UK oil-related tax was over 90% on a barrel of crude from a substantial oilfield.

Licences were granted to explore and develop on a phased basis. Early moves stopped any assignment of interests or sales of individual licence interests for corporate profit by requiring formal permission to be given ahead of any changes to licensees. This differs from the US system in many states, where the landowner also owns the mineral rights, including oil and these can be traded separately from the land. Again the parallel with mobile telephony licences is striking, underlying the need to regulate closely those utility style businesses that may have oligopolistic characteristics.

The route around this oil-related regulatory hurdle was to buy or sell the shares of the company that held the licence, a direction also taken when the first test case about granting security interests to banks providing finance for development appeared to stall over the issue of security. In the Piper financing in 1974, the banks took a charge on the licence itself, though this was almost an isolated example. By the time of the telecoms boom, regulators had become materially savvier about bankers' wheezes to circumvent their regulation.

Bank rates in 1976 are shown in Exhibit 8.6, representing the alternative low risk investment rate for savers, nervous of the stock market after the fall of 1973. Note how high and how frequently they moved compared with 2011 to 2012 when the UK base rate had remained below 1% and looked set to remain so.

Exhibit 8.6

Building society rate annual interest rate movements during the period 1975 to 1977

Date	*Building society bank annual interest rates March 1975 to March 1977. Annual interest rate (%)*
21 March 1975	10
18 April 1975	9.75
02 May 1975	10
25 July 1975	11
03 October 1975	12
14 November 1975	11.75
28 November 1975	11.5
24 December 1975	11.25
02 January 1976	10.75
23 January 1976	10.5
30 January 1976	10
06 February 1976	9.5
05 March 1976	9
23 April 1976	10.5
21 May 1976	11.5
10 September 1976	13
07 October 1976	15
17 December 1976	14.5
24 December 1976	14.25
07 January 1977	14
21 January 1977	13.25
28 January 1977	12.25
03 February 1977	12
10 March 1977	11

Source: Building Societies Association data

However, a further destabilising factor was affecting lenders and investors by 1976; in the early 1970s, the UK had experienced one of its regular residential property price booms. In order to meet demand, traditionally met by the building societies (essentially UK mutuals) that were the main lenders at that time and represented 93% of UK mortgages issued in 1976, a number of so-called secondary banks that saw asset-backed loans as an attractive proposal entered the market. However, these entities were largely supporting their longer term loan books through borrowings from the shorter term interbank market, a mismatch that would prove disastrous.

In 1973 to 1974 several further significant global macroeconomic events affected the UK:

- the Bretton Woods monetary system linking all its members to the US dollar collapsed – the US had abandoned the gold standard in 1971;
- the US dollar was falling against other global currencies (sterling was performing slightly better but still falling against the neighbouring forerunners of the euro) in the new world of floating exchange rates; and
- in 1973 OPEC had proclaimed an oil embargo followed by a price increase after seeing that US oil production had peaked and there was no slack in an economy dependent on the car.

These events contributed to material stock market falls and the UK housing market tumbled, triggering a run on the secondary banks, now exposed to undervalued security in the property held as collateral and thus funding gaps. The Bank of England intervened and rescued a number of these banks, with others closing – depositors were all refunded (exactly as occurred 23 years later with Northern Rock in 2007). Once the market began to recover, house prices rose once more, contributing to inflation and another cycle of political and economic challenges began.

By March 1976, sterling was considered to be over-valued and a run on the pound began, culminating in intervention in the form of a short-term loan from the IMF in September 1976 of US$3.9 billion. The IMF support came at a heavy price to the UK government in the form of an intervention programme, very similar to Greece's austerity programme that began in 2010 to 2011. This included enforced cuts in both public expenditure and the budget deficit. The loan however was not fully drawn and the economy recovered as a result of black gold in the form of significant North Sea oil revenues entering the UK governmental coffers.

The oil market had received a number of major pricing shocks as a result of pressure from the OPEC cartel (1970 to 1973) and previously predictable prices with modest standard deviations had suddenly demonstrated volatility. The nominal price of Brent Crude (the North Sea benchmark) had quadrupled from US$3 to US$12 per barrel by the end of 1974, rising again to around US$14.5 per barrel by 1978.

When we think about the North Sea and the oil and gas industry today, we think about mature fields and an oil and gas sector that has peaked in production. Many British independent companies were formed in the early 1970s and went on to become significant international natural resource companies. However, at the beginning of North Sea exploration, the arena was dominated by the major oil companies, of which BP (still partly government owned at that point) and Shell (UK and the Netherlands) were the only two significant domestic entities.

In the UK, all oil and gas reserves, whether onshore or offshore are owned by the state. This came about as a result of concerns around security of the supply of petrol during the First Word War in 1914. The only privately owned and produced oil at that time came from a well drilled under the Chatsworth stately home in Derbyshire. Those rights and the ability of the Government to licence exploration and production of oil and gas (other than in Northern Ireland) are contained in various pieces of legislation consolidated in the 1998 Petroleum Act.

Any state seeking to develop its natural resources and maximise the value for its own electorate in the longer term has a number of routes open to it, including:

- offering a time-limited concession to potential developers and receive payments in kind or cash for the exploitation of the resource; and
- using a production sharing structure to attract incoming expertise.

The concession structure has extended into private finance initiatives (PFIs), such as the Peterborough Hospital (Chapter 12) and the A1 road in Germany (Chapter 13) cases in this book.

Production sharing agreements can take various forms. In essence the government partner is more active – the resource produced is split between the developers and the host government – the latter choosing to take this in kind (as the resource, so crude oil in this case) or as a cash equivalent (sometimes generated by delegating the sale of the resource to the other resource developers).

Many host governments consider it politically expedient to include 'local content' to create a way of injecting the newly generated wealth into the local economy. In some cases this takes the form of support services, but the goal of many politicians is to seek a longer term development of an indigenous resource exploitation capability. Why? So that they can be developed by the local population and skills truly transferred. Offset payments seen in large projects in the Middle East are designed to focus funds back in to the local economy. The temptation always remains, however, for politicians to take the money and spend it elsewhere.

The UK Government began to develop offshore oil and gas resources following the discovery of the giant Groningen gas field offshore to the Netherlands in 1959 which began production in 1963. Geologists believed that this gas extended into UK Continental shelf waters.

Licence areas are known by block numbers. The blocks are located in designated areas of the UK sector and licences to explore, develop or produce are made for a fixed period of time by the Government department overseeing the UK oil and gas resources, to suitably qualified bidders against work plans that are approved by the department's technical specialists. The process is broadly the same as back in 1976 when awards of blocks were grouped into a series of formal licensing 'rounds' rather than made on an ad hoc basis. The blocks required a notional grid structure to be overlaid across the North Sea area that comprised the UK sector, creating mostly oblong blocks of territory. A block exploration licence was granted to a group of companies or a single experienced company that submitted a work plan and evidence of financial strength to carry it out. Licences were awarded for fixed time periods for exploration, then resubmitted with more detailed plans (known colloquially as an Annex B) to gain consent for production at pre-agreed rates, also for a defined time period.

Natural resources do not respect artificial grid (or indeed actual) geographic boundaries. Problems were encountered in earlier US and other on-shore oil and gas fields, when adjacent licensees tried to pump the most oil out of the wells on their licence area.[3] To stop this, 'multi-block' fields, that were deemed to span a number of grid areas or blocks, became the subject of 'unitisation agreements'.[4] Under these agreements all parties agreed a joint development field plan with a notional split of the resources dependent on the estimates for each

block. The field operator, a company with experience and financial strength, took day to day responsibility for operations delegated to it by a joint operating committee made up of all companies with interests in the field. Based on existing well performance and geological information, the field operator allotted each field participant a share of the oil generated based on their interest in each block and the oil believed to lie under that block. These shares of oil could then be adjusted (or *redetermined*) as better production information became available and oil or money paid or repaid as appropriate.

To progress the development of an oil or gas field, several activities needed to be completed not least:

- a delineation of the boundaries of the field was necessary in order to make the unitisation agreement as comprehensive as possible; and
- the method of extraction needed to be confirmed.

'Nodding donkey' oil derricks are a common site on land but are not technically viable in water, so trying to cope with the adverse weather conditions of the deep-water North Sea was a challenging proposition. Whilst mobile drilling rigs could drill sub-sea wells, they were not a long-term option for significant volume production of oil and gas. If the field was large enough, therefore, it made sense to build a concrete installation, float it out and tether it to the sea bed with accommodation for the staff and limited storage for oil. This required cutting-edge technology to be employed to be able to operate in chaotic conditions – corrosion and storms. North Sea oil, though benchmarked against Brent crude, was not a standard commodity, varying from light (sweet) crude to something resembling treacle that required heating to get it to move or was even toxic to manage (sour crude).

Originally, smaller and commercially unviable volumes of gas associated with oil fields were burned or flared. When Ninian began production, and even into the 1980s, such gas had a low commercial value since there was a monopoly state owned buyer, British Gas, and all gas entering the national gas grid had to meet minimum specifications. So at this time, flaring was preferred to installing expensive production and treatment facilities and connecting to a gas pipeline. Latterly gas has been re-injected into wells to assist oil production or produced and transported via pipeline as more opportunities have opened up. Such opportunities included the 'dash for gas' that led to the development of gas-fired power stations in the UK in the 1990s (the Lakeland case referred to in Chapter 15, the CPV case study and in the US in the Desert Hot Springs case (Chapter 15). We can also see a value-adding use of gas in the Sadara *sukuk* case study (Chapter 16).

History of the project's development

In order to commission and produce these huge installations, massive fabrication yards needed to be mobilised. The towing out of the vast finished platforms was weather-dependent and also reliant on a suitable supply of tug boats. These assembly areas were often former shipbuilding yards and thus heavily unionised, adding further uncertainties to price and delivery/installation times, given the prevailing political climate, hence the contingencies and escalation amounts in the Ninian budget.

Yet another early complication came from the decision to build a pipeline to an onshore processing terminal and treatment plant. Whilst offshore pipeline construction does not require the same complex 'way-leaves' or rights of way required for their onshore cousins, crossing other people's licensed blocks still requires negotiations. There are specification issues in terms of the anticipated maximum capacity – it is not possible to just to drop in another sea-bed pipeline if capacity needs to increase. Furthermore, pipe-laying ceases for the winter months because of the adverse weather conditions.

First North Sea oil had flowed through BP's pioneering Forties pipeline in September 1975 after the contract was awarded in January 1972: BP still retains ownership of it, having upgraded the pipeline in the early 1990s. The underwater location requires continuous monitoring – as one example, an unexpected hazard was an unexploded World War II mine found close to the line during a routine survey in March 2011 and prompting a five day shutdown of all oil transportation whilst it was defused in August 2011. The Forties pipeline is 240 miles long and carried about 40% of the UK's total production in 2008 according to one industry observer. However, landfall is at the Grangemouth refinery, sold by BP to Ineos which has been the subject of a number of strike actions in 2008 and more recently in 2013.

The plan with the Ninian pipeline was to build it as an over-specified line and to rent or sell the estimated 50% excess capacity to the groups developing nearby fields. Pipelines represent large capital costs (not least when laid offshore by specialist equipment) and then generate returns by tariff or tolling arrangements. A separate entity was set up, the Ninian Pipeline Management Committee (NPMC), with BP appointed to construct and operate the infrastructure on behalf of NPMC – an action that made sense since BP had relevant experience in managing and constructing the North Sea Forties Field sub-sea pipeline. Eventually, a complete pipeline infrastructure was put in place to handle North Sea production that peaked in 1999 at 2.7 million barrels per day.

For the Ninian field, the location of the landfall of the pipeline and the terminal was in the Shetland Isles, a remote, sub-arctic archipelago dependent on fishing and tourism. The Shetland Islands Council (SIC), established in 1974 following a local government reorganisation, was conservative but concerned to ensure that these lovely and unspoilt islands were able to appropriate a share of the anticipated oil bonanza and limit the effect on their way of life. In a rare example of stakeholder power at that time, the SIC, led by a charismatic mainlander, Ian Clark, forced the oil companies to build a single terminal at Sullom Voe rather than one for each operator and a series of charges for services provided by the SIC were levied covering harbour dues, landing, pilotage, and so on. This was supported by a special Act of Parliament passed in 1974, delegating powers to the SIC and conferring control over land purchases and developments in and around the proposed terminal area. A fund now known as the Shetland Islands Charitable Trust was set up in 1976 as compensation for the presence of the Sullom Voe oil terminal. Over the years the SIC and the Trust have separated and are now fully independent of each other. In the period 1976 to 2000, the Trust received £81 million in 'disturbance payments' from the oil industry.

The stakeholder management of the terminal project was complex including the interests of some 30 oil companies in an area of natural beauty dependent on tourism and fishing. Safety and the fear of an accident or a spill required the development and updating of complex contingency plans[5] managed by a 50/50 joint venture between SIC and a further

joint venture between the two UK entities, Shell (representing the Brent field that was also using the Sullom Voe terminal) and BP representing NPMC.[6] Activities were split with the processing controlled by NPMC and the support services including the land lease, harbour facilities, jetties and even accommodation during construction provided by SIC.

The Ninian Field

The Ninian Field was discovered in 1974, named after an early Scottish holy man and was located largely in block 3/3 with an extension into 3/8. The latter was the block in which LSMO and SCOT had interests (as had the two companies they bought out.) The field lay in 137m of water and was located south of the Brent field that was already in production and using part of the proposed Sullom Voe terminal.

In order to hedge design and in-operation risks, two different platforms were commissioned, capable of independent operation so that if one had problems, the other could continue to keep the oil flowing. One was a concrete gravity base structure, the other a steel piled jacket. Each platform was capable of drilling the 42 wells needed in the base case with a third smaller platform envisaged if the case expanded further to 104 wells.[7] These wells produce a mixture of oil, other liquids, small amounts of gas and water and are kept at an optimal production pressure by re-injecting water. Production was expected to begin in the second quarter of 1978, rising to peak production in 1981 to 1982 and then falling as the well pressures dropped and recovery became less economically viable.

A well-known and respected company of US Petroleum Engineers, de Golyer and MacNaughton, produced a report suggesting that using field data obtained from the first seven delineation wells, and their expertise gained from studies of a number of other early fields at similar or slightly more advanced stages of development, the estimates for Ninian included oil in place (not all of which is producible) of around 2.9 billion barrels of which 1.1 billion was thought to be recoverable.[8] Natural gas liquids (NGL) estimates were also included in the Ranger production model. Exhibits 8.7 and 8.8 show the estimates of the size of Ninian from this report and the two production cases and profiles.

Exhibit 8.7

DeGolyer & MacNaughton Ninian Field estimates, January 1976

Reserves *Oil in place*	*Million barrels*	*Recoverable oil*	*Million barrels*
Proven	2,576	Proven	963.32
Probable	412	Probable	146.06
Possible		Possible	n/a
Total oil	2,988		1,109.38

An additional 20 million barrels of recoverable NGL are not included. These estimates used the older style of reserve estimation.

Source: LSMO prospectus 1976

Exhibit 8.8

Ninian Field production case data (estimates by platform case January 1976)

	2 platform	*3 platform*
Recovery factor (%)	29.8	34.4
Field productive life (years)	22.5	20
Peak production daily volume (000 barrels)	313	330
Peak production duration (years)	0.75	3.25
Ranger Oil (UK) production model used by DeGolyer & MacNaughton		
Total production – oil – proven (million barrels)	772.12	890.21
Total production – oil – probable (million barrels)	117.42	135.38
Total production – NGL – proven (million barrels)	13.97	16.11
Total production – NGL – probable (million barrels)	2.12	2.45
Total recoverable	905.63	1,044.15

NGL = natural gas liquids or condensate. These estimates used the older style of reserve estimation.

Source: LSMO prospectus 1976

As an aside, the shareholdings in Ninian have shown some changes over the period up until 1999 but in the snapshot views shown in Exhibit 8.9, it can be seen that some players such as Ranger and Murphy have remained.

Exhibit 8.9

Ownership of the Ninian Field in 1976 and 1999

Ninian Field ownership	*1976 company name*	*Percentage*	*1999 company name*	*Percentage*
Block 3/3	BNOC	30		
	Chevron*	24	Kerr McGee*	63.03
	ICI	26	Ranger	11.6
	Murphy	10	Murphy	19.41
	Ocean	10	Lundin	5.96
Block 3/8	BP	50		
	Ranger	20	Ranger	55
	LASMO	23	AGIP	45
	SCOT	7		

* The Ninian Field operator after the field was unitised.
BNOC was the UK state participation vehicle for the North Sea.

Source: Authors' own research data based on data from UK Government Brown Book statistics

Ultimately, Ninian became the third largest North Sea field!

Sponsors

Both LSMO and SCOT were very well connected entities. Morgan Grenfell was advising the company. Cazenove and Greig were the stockbrokers in London and Glasgow respectively and the company secretary was a Glasgow based firm, James Finlay. LSMO and SCOT presented themselves as Scottish companies that were based in London. Full time staff included one executive director and a small number of other staff. It is also useful to look at the other licensees in the two blocks under which the Ninian Field lay – shown in Exhibit 8.9.

Block 3/8 had three participants – BP held 50% and Ranger held 20% with LSMO/SCOT holding the 30% balance having taken out the two smaller coal company participants, Cawoods and National Carbonising. So LSMO's cash position meant that a deferred payment structure was required until the 'ship came in'. With Ranger struggling (its Ninian finance was supported by Chevron) and BP coping with many developments, LSMO had little choice but to pick up the pieces.

Block 3/3 had a different set of partners and thus a different set of challenges. The medium-sized and integrated Burmah Oil[9] originally owned 30% of 3/3 but ran into financial problems in 1974, following losses on its tanker fleet. The rescue of its Thistle oil field participation is mentioned below, but as part of the bail-out it was forced to handover its interest in Ninian to the new company set up to hold the State participation in the North Sea, BNOC. However, the latter had no operating experience. Chevron, the large US company, held 24% and became the designated operator for the field. ICI, then the chemicals giant, held 26%, with the balance held by Murphy Oil and its 51% owned oil drilling rig owning affiliate ODECO with 10% each. Murphy was a medium size integrated company and financed its share and that of ODECO through the sale of US$34 million in convertible debentures in 1969 and 800,000 shares of common stock in June 1971. The oil crisis (and indeed the North Sea drilling activity) was good news for the company as profits soared so it was able to fund its share of the costs without a need for additional project finance. Chevron had supported Ranger in its financing and, like ICI, was strong enough to finance its share of the costs without resorting to a project finance format.

Structure

Whilst a 14% annual interest coupon might have seemed an attractive 'equity-like' rate of return for investors for a relatively short exposure, these were no ordinary economic times. Bank senior debt funding was out of the question and so the company and its advisors began to think about innovative ways to attract money. Investors were also reluctant to put money in a bank after the secondary banking crisis and this presented an opportunity.

Other deals that had closed included the Occidental and Thomson participations in the Piper field that ceded a royalty interest to the banks as an additional part of their return. At the time, similarity to the US oil finance mechanisms was possibly the principal structuring driver. The royalty basis was important as it was the first bite at the revenue, a fixed percentage and thus relatively predictable and transparent.[10] Importantly it was not subject to the offsets and changes to PRT and other levies. The then Treasurer of LSMO, Louis Smith, came up with a potential solution based on the royalty idea. LSMO had received advice that the OPS would be treated as a distribution of profit and thus a dividend, with an accompanying tax credit and the company was not permitted to deduct OPS payments for PRT or corporation tax payments.

The financing prospectus issued in January 1976 was a fully underwritten issue of 14% unsecured loan stock due 1981 to 1983 and issued at par, associated with what were termed oil production stock (OPS) units. These were described as a 'new kind of security'.[11] For every £100 of loan stock subscribed, investors received a new type of security that represented a

semi-annual payment related to the production from the field, treated as a dividend for tax purposes. Ultimately, when the OPS ceased (after 1,350 million barrels had been produced from Ninian) or abandonment of the field or 31 December 2010, the OPS would be redeemed at a face value of 10p. During the time of Ninian production, the holders of the 7.5 million OPS units (SCOT and LSMO were aggregated for this calculation) participated in an 8.75% interest in LSMO's Ninian production interest of 6.9%, post lifting, processing and other operating costs, and post government royalty payments.[12] There are many similarities between the OPS and ideas of risk sharing seen in Islamic finance.

Financing decisions

LSMO had a problem because the Ninian Field had no production history, and the oil province off the UK coastline was still undeveloped. So there was no database to allow for accurate predictions. This dilemma is eternal in natural resource exploration projects, even though oil has been produced in most major oil provinces for some time. So should the Government support small oil companies? The UK government helped Tricentrol Oil finance its interest in its Thistle Field development by charging Tricentrol a 5% royalty and providing a guarantee in return.

The debt decision

Any loan to LSMO, even if disguised as a corporate loan, of the size needed to start paying the development costs on Ninian, would have been excessively large compared with LSMO's total assets and liabilities. It would have been a de facto non-recourse credit, where the theoretical recourse on offer was worth virtually nothing. In general banks do not make non-recourse loans to a small oil company for a large development in a new oil province – though for larger companies, they may take a limited recourse approach up until a 'completion test', as mentioned in Chapter 6. The latter includes evidence that the field is technically completed and operating as expected in the plans submitted. A creditworthy credit enhancer (such as a strong parent) or other (rated) institution willing to stand behind the credit pre-completion is also required in case anything goes awry, so the bank risk is minimised.

Even so, limited recourse requires collateral from someone to provide recourse. At that time, with the prevailing political and economic conditions, finding such a credit enhancer for LSMO and SCOT was a complete non-starter.

BP managed to close the Forties deal at a spread of 1.25% over Libor but the banks were betting on BP and ultimately its significant government ownership – even so, the Board of the Bank of Scotland at the time thought the pricing was too low, though London banks accepted it. The banks were being asked to take on equity-type risks, for a senior lender's spread. Even when considering the security of the interest in the field (assuming the State would let it be pledged as security to a lender) it only had a value to other oil companies, and was potentially subject to the partnership agreement that was in place to develop the field, which normally gave pre-emptive rights to the other licensees. Applying this to Ninian, if LSMO did not pay its cash calls, its partners could pick up LSMO's interest in Ninian

at no cost, giving them little apparent incentive to bail out LSMO. So this project was one of the more risky senior lending opportunities, especially when compared with BP and the Forties Field.

With a senior loan, the only upside to the lender is the interest it receives. With an uncertain payback and the prevailing banking environment of that time, it becomes clear that few banks were likely to entertain involvement taking this level of risk for a 2% over the benchmark cost of funds. Alternative projects signed around this time included the Piper debt financing packages of US$140 million for Thomson North Sea (a large Canadian Newspaper group) for which the banks were granted a 5% overriding royalty as additional compensation.

The investor appetite for today's so called retail bonds (small denomination bonds held by individuals rather than institutional investors), or as a debt alternative had yet to occur.

An equity facet?

The next possibility, that to offer providers of finance an appropriate return for the risk taken, lay in the equity markets but again LSMO faced a problem. This project was a quasi-equity risk, but the market for new IPOs was limited by the economic problems of the prior years. The dilution impacts of an IPO would also have been unpalatable for the previous shareholders. So the challenge lay in accessing the potential investing groups. New investment from the man in the street was unlikely to back LSMO on a purely equity basis. The institutions that made up LSMO's present shareholders were fighting the effects of the recession, and property losses in their portfolios. So an IPO would only be open to LSMO for a limited amount of the funds needed.

What then did a company in LSMO's position do, given the straitened circumstances of the economy, limited sources of funds and the investment's high risk? At the time there were several choices.

Burmah Oil (see above), a larger oil products company, secured a government guarantee for its interest in the Thistle Field (as did Tricentrol) – a relatively expensive way of funding their share of the field development. (Burmah Oil left the Ninian partnership, ceding its interest to BNOC, the government participation vehicle.)

Another option open would be to persuade one of the other partners to pay all of LSMO's costs through the development stage, with that loan repayable from the production proceeds, and a reallocation of the interests when repayment is completed. This is called a 'carry', and LSMO would have a 'carried interest'. The term arises from the idea that the larger, wealthier company carries the smaller company.

A 'farm-out' or transfer of interest for a consideration, which may be the drilling of a well or the assumption of certain drilling obligations is a similar concept. The difference between a farm-out and a carry lies in the transfer of the licence interests. The 'carrier' is assigned all of the production proceeds, until the costs are repaid, but each company keeps its share of the licence. The company 'farming-in', splits the interest in the licence from day one, and each company is responsible for its share of the expenditure. It follows, therefore that the consideration for a 'farm-out' by the existing owner, LSMO in this case, would have been the payment of certain obligations, with a need to monitor the tax implications of this as a form of income and state permissions for a new licensee sought.

The last alternative of this type is called a 'net profits interest'. In this situation, the licensee surrenders all of its interest in the licence, in return for a percentage of the production revenues, after the costs of development have been recovered. This is the least risky form of participation in an oil and gas development, but there is no control – the company is a stakeholder with very little power indeed. This tactic has been used by a number of smaller companies in this industry.

These options were open to LSMO but the only one of benefit to the present shareholders was the 'carried interest' rather than the 'net profits interest', since this would have allowed the company to keep any upside if things went better than expected.

Forward oil sales are another possibility often raised, but what about the counterparty to a sale of oil from this field, given the uncertainties? In 1975 to 1976, the futures and options markets did not exist. Had they done so, the only attractive choice would be a put option from LSMO whereby LSMO could 'put' the oil to a counterparty at its discretion. This can be on a given date (European option) or within a period up to a final date (American option), but could be expensive to buy with this level of uncertainty, and LSMO had very little cash. A futures contract would have involved LSMO possibly being locked in to contracts to sell oil that has no production history and thus uncertain delivery timing with a potential requirement to go into the market and buy oil on the spot market to deliver its side of the deal. Realistically, therefore, this would not work for this field.

The proposed OPS linked solution met a number of criteria:

- it raised the money immediately;
- it established LSMO as an interesting and innovative small company; and
- it allocated the risk appropriately and on the face of it, the risk was correctly priced by linking the return to Ninian production.

Investor profiles

The issue was extensively advertised in the national press, which was unusual for this time. The thinking behind this was to attract money from individual investors who might be interested in the opportunity to make a direct investment in the North Sea and receive interest on what were essentially fixed rate bonds. Whilst the issue was underwritten, the take-up was spread across investment groups, though the big surprise was the significant number of smaller individual shareholders, who sank their savings into LSMO or later LASMO (shown in Exhibit 8.10). Individuals made up almost 95% of the numbers of holdings in the ULS and the OPS.

Exhibit 8.10

March 1978 breakdown of the owners of LASMO shares and debt paper

	Number of shareholdings			*Value of financial instruments held*		
	Ordinary shares	*14% ULS*	*OPS*	*Ordinary shares*	*14% ULS*	*OPS*
Insurance companies	22	21	14	13.4%	20.5%	16.7%
Investment companies	63	34	30	15.4%	4.7%	13.3%
Pension funds	25	36	26	1.8%	5.6%	5.3%
Banks and nominees	272	196	164	25.9%	29.9%	34.5%
Other companies	331	176	115	33.8%	22.9%	14.9%
Educational and charities	24	38	19	0.7%	2.9%	2.2%
Individuals	10,691	8,482	6,848	9%	13.5%	13.1%

This shows the large number of individual shareholders, each holding a small parcel of shares or OPS. It is dated after the first public offer for shares. The value is probably based on nominal values.

Source: LASMO annual report 1978

AGMs of the company during the early 1980s were well attended by these individuals who had a very strong sense of their tie to the company and always asked questions – about the oil, and about the marine life, including dolphin sightings. The Board was very respectful towards them, remembering that they were the providers of money in the hour of need, and it was one of the few occasions where City grandees (and startled bankers) could be seen talking with genuine interest and affection to elderly gentlemen and ladies attired in their best suits and hats to see how 'their company was doing'. These individual investor numbers remained steady in the 1980s.

The sting in the tail

The Ninian Field interest launched LSMO as a contender in the North Sea. (The merger between LSMO and SCOT at the end of 1976 created LASMO). Two years later, in 1978, Ninian production finally began, having been delayed by the severe weather and delays to tow-outs. In the end, the three platform case (104 wells) was the one adopted. Costs had increased – 13% in 1977 to 1978 alone – and a £30 million syndicated term loan was arranged in 1977, following an offer for sale of LASMO shares and a listing on the London Stock Exchange.

Exhibit 8.9 shows the first public statement of the breakdown of ownership of the three different forms of LASMO paper: ULS, OPS and shares. At that point, LASMO had around 11,000 shareholders, many of whom had followed the company since the OPS days and the split of ownership of the shares was roughly 29% investment companies, 26% banks

and other nominees, 33.81% other companies including just over 19% by the two small companies LASMO had bought out from block 3/8. LASMO received its first revenues from the field, moving into pre and post-tax profit in the financial year ending 1979.

At first, the LASMO Board included institutional shareholders and major oil company retirees, especially from Shell and BP. Borrowing powers were increased steadily and BP even offered a guarantee for future borrowing up to the additional £19.2 million due as part of a redetermination of the field between the partners (where LASMO's share was, in the light of more up to date well performance data, shown to have been overestimated, and was reduced to 7.88% necessitating a payback of over-lifted oil). Redeterminations of the Ninian share continued: 9.3% in financial year ending 1979; 9.9% in financial year ending 1980 with a need to repay the additional costs associated with a greater share of the field, pending receipt of additional oil. BP bought part of the Ninian facilities – the terminal and pipeline – for its Magnus Field, a transaction worth £8 million in total to LASMO relieving some of the financial pressure.

The 14% ULS was repaid at the end of 1982, but various attempts to persuade the OPS holders to sell proved futile. The innovative financing approaches at LASMO continued with the issue of a US$75 million 9.5% seven-year floating rate note (FRN) with warrants entitling holders to an equivalent subscription for a 13% fixed rate 10-year bond denominated either in US dollars or sterling. This was followed by US$44 million 9.25% convertible guaranteed bonds, due 1999 and convertible into ordinary shares. The Treasury and oil trading activities became profit centres in their own right and the company began to change.

More mergers contributed to LASMO's growth: Oilex in 1979 (shares), also bringing strong technical expertise as well as other producing interests; Bates Oil in the US in 1976 (though this was not significant until 1980,[13] when it began to acquire and develop more oil properties) and Hudson's Bay non-Canadian assets. In a complex deal with RTZ Oil and Gas, LASMO also took a shareholding in Enterprise Oil, the privatised BNOC exploration asset owning company, subsequently sold to Elf Aquitaine.

With these new interests, the group diversified its income geographically: the US; then the Netherlands and the Philippines. LASMO became an operator in the UK for an offshore and an onshore licence in 1980. More overseas operations followed: Indonesia; Australia; Gabon; Norway; Egypt; Italy and Brazil. During the 1980s, the company moved towards exploration and a broader geographic coverage, reflecting the interest of its new Chief Executive, Chris Greentree, the ex-Ranger representative on the original LASMO Board who had left and returned as LASMO's CEO.

In 1981, a new field in Block 3/8a was first mentioned as awaiting permission for development. The Columba Field was adjacent to and south of Ninian and merited separate tax status, an important consideration in approving its development as financially viable. In 1988, BP transferred its interest in Ninian and two other fields, to LASMO for shares, though this did not benefit the OPS holders. The North Sea interests of Thomson, held in a subsidiary and including those in the Piper Field were also sold to LASMO for £358 million.

The Piper Alpha platform disaster in the Piper Field in 1988 sent shockwaves through the North Sea community. The Cullen Inquiry based partly on reconstructed accounts, as many of those on the scene had perished, found that a series of miscommunications led to an explosion and subsequent fire. Poor coordination at a shift handover on the Piper Alpha

platform together with poor coordination with two nearby fields that failed to shut down gas being sent down a pipeline to Piper Alpha that fed the fire, resulted in 167 deaths. Heroic behaviour by some ensured that others survived and industry safety practices were transformed as a result. LASMO was indemnified against claims arising from Piper Alpha when it bought Thomson North Sea, but the effect was that future field approvals were scrutinised further and money was spent on enhancing safety practices to try and stop anything like this tragedy happening again. The inquiry reports make sobering reading about members of an industry that had become complacent about safety.

In January 1992, following a hostile takeover battle, LASMO acquired the larger Ultramar, a UK integrated independent oil company, doubling in size (and divesting the unwanted downstream assets) for US$2.2 billion in shares. A unique royalty repayment agreement relating to Columba finally cleared the way for its development. However, this was deferred as oil prices fell to US$13.56/barrel in December 1993 and LASMO began to rationalise its asset portfolio following the Ultramar acquisition.

The financial year ending 1993 showed a loss as LASMO recognised value impairment in the new low oil price regime and took steps to rationalise its assets and staff. The exploration-led era was over. The new CEO was the former head of Thomson North Sea and a new chairman came in from Consolidated Goldfields. The new CEO wanted a small focused company. There had been a costly defence against an unwelcome bid by Enterprise (an entity in which LASMO had earlier held a significant stake, selling it to Elf).

As part of the new rationalisation, LASMO sold its interest in the Ninian Field and Columba with effect from 1 January 1994 to Sun Oil and Ranger Oil for US$84 million, split 75:25, so a certain circularity reappears with Ranger owning the Ninian asset, the field on which it had originally provided technical advice to the fledgling LASMO. As part of the consideration, LASMO received unlisted securities with identical terms to the OPS units. The income from these securities was equal to the OPS payments and was included within interest receivable and similar income. The OPS was finally redeemed on 28 April 2011 – LASMO itself having been taken over by ENI (the largest Italian industrial company, in which the Italian Government owns a ‘golden share’) in 2000.

The Ninian Field was granted Brownfield Status in June 2013, which incentivises investment into sub-commercial further development. CNRI, the new parent of Ranger has said it is planning to spend US$470 million to drill further wells in Ninian and extend the field life. As at 2013, CNRI owns 87% of Ninian (shared with ENI) and 94% of Columba (shared with Marubeni).

However, the great unknown is the continued life of the almost 30-year old facilities on the platforms and the final decommissioning costs of the field.

Lessons learned

This case study is almost unique in that it allows the reader to follow a ‘cradle to grave’ story of a project financing method and the company that created it under very adverse conditions, as it saw the possibility of joining the North Sea oil bonanza, if only it could find the money.

It tells the corporate story of how the original LASMO remembered its humble origins, but then a series of mergers moved it away from its roots into a new competitive arena of overseas exploration, where the Ninian Field as an asset was of lesser importance. Success caused over-expansion. The acquisitions changed the company, and eventually it was taken over after it was forced to retrench.

It also tangentially tells the story of the national development of a key resource. Heavy industries were restructuring, including the coal mining sector – where unions were successfully challenged by Margaret Thatcher in the early 1980s, secure in her knowledge that North Sea gas lessened the influence of the miners to bring industry to a standstill.

There are policy implications too: tax changes and resource price changes need to move in step to keep the development momentum. Creative tax-take solutions such as that for Columba may be necessary in mature resource provinces. In the North Sea, new life continues with deeper development and revisiting of earlier fields not thought economic as oil prices have risen to the present day levels of over US$100 per barrel. The discovery of Columba and the debate on whether this revenue formed part of the OPS could have been a tricky one. Fortunately, Columba was found to be a series of small fractured terraces delaying production until the 1990s so the issue did not arise. However, the tax treatment of Columba was critical; it was confirmed not to have been part of the Ninian Field. Had the fields not been treated separately, the OPS holders might have enjoyed even higher returns, albeit affected by the absence of any applicable allowances as a new field.

A thriving UK oil industry that then went overseas to explore and develop oil and gas fields was created, so technology and knowhow was transferred. Improving technology prolongs the life of an oil field, but until the field starts to be drilled up and thoroughly explored, there are many unknowns. In 1976, few expected to see the OPS still in existence in the 21st century as the original forecast for the OPS life was from 1998 to 2000, dependent on the number of platforms, and based on US$12.5 per barrel.

Most importantly, it is a story of a true project financing. As an example of a long-term non-recourse financing where the risks were correctly allocated, there are few better. Many modern project financings want to refinance the project loans as quickly as possible to cut their interest bill. However, the lender takes significant risk at the beginning and calculates a return based on expectations of the tenor of the debt. This is why prepayment is not permitted in many transactions for a designated period of time. LASMO redeemed the ULS on time, remarking that it saved 3% on the coupon.

But it could not part its initial risk-takers, the OPS holders, from their very own share of North Sea Oil!

As a last word, Sue Graham White, former Managing Director and Global Head of Oil and Gas Research, Merrill Lynch observed about the OPS:

> … it was such a good income generator that a number of funds had the OPS units as an investment just for that and also that it was a way to have an indirect option on the oil price.

[1] One of the reviewers of this chapter met him and observed that aged 92, he looked well on all that crude!

[2] The mechanism was complex and described in the prospectus, p. 27. Essentially, provided the other parties picked up LSMO's share of the future costs then post production, LSMO got back 75% of its interest based on a formula using the share of the costs as a percentage of all costs prior to default. However, if the project was abandoned, LSMO was liable for its share of any additional costs incurred up to abandonment. In other words, the lot! But the real question was *could* the other participants in Ninian afford to pick up LSMO's share?

[3] The so called Law of Capture.

[4] Including an initial Cost Sharing Agreement between the two groups licensed for blocks 3/3 and 3/8 in which the Ninian Field lay, a Unit Agreement and a Unit Operating Agreement amongst others. An overall management committee for Ninian, the Ninian Management Committee appointed Chevron to be the operator, replacing Burmah in March 1975.

[5] The latter were used when the tanker Braer ran aground in 1993 with a spill spread by the winter storms, but ultimately also dispersed by them.

[6] The terminal at Sullom Voe included two systems: one for Dead Crude (mostly from Brent and associated fields where the methane gas was separated at the fields); and one for Live Crude (mostly from BP Ninian and associated fields) where the gas was separated at Sullom Voe. The two systems have merged in recent years.

[7] In fact the three platform route was pursued.

[8] Note the old terminology of proved (P90 or 1P), probable (P50 or 2P) and possible (P10) estimates is used here, rather than the current, which is in parentheses for reference.

[9] Indeed, the former UK Prime Minister, Margaret Thatcher's husband Dennis was a director of Burmah from the mid-1960s (when his family company was acquired by Burmah) until she became the leader of the Tory party in 1975.

[10] The government also levied a royalty on the field and this structure of multiple bites at the cash flow is seen in other industries, for example, hotels.

[11] LSMO/SCOT Loan Stock and OPS Prospectus, 1976, p. 21.

[12] Arrangements were also put in place in the case of an increase in the Government's participation in Ninian.

[13] Many UK oil companies acquired US oil and gas interests to establish themselves as being in the oil business and thus to qualify for more favourable oil tax offsets.

Chapter 9

Skynet – the private finance initiative boldly goes into space

Why is this case interesting?

'To boldly go' is a memorable quote from the *Star Trek* TV and film series. This project financing of a military satellite was similarly bold in its potential scope and needed high levels of patience on the part of the lead finance arrangers to get it into orbit. What was the resulting communication like and what can we learn from a military project having taken private finance initiative (PFI) into space? How can public explanations of highly classified military secrets persuade investors and financiers? Were these two financing conditions of secrecy and the need for full disclosure not mutually exclusive?

Key project features

Exhibit 9.1

Key project features of the Skynet case

Feature	*Headline*	*Detail*
Financing	£963 million senior debt facilities, signed on 24 October 2003	Tranche 1: £880 million Tranche 2: £83 million
Borrower	Paradigm Secure Communications Limited (Paradigm)	
Sponsors	European Aeronautic Defence & Space Co (EADS) (100%)	BAE Systems had owned 25% of Astrium, Paradigm's holding company, but sold it to its co-owner EADS in 2003
Sector	Telecommunications	Satellite operator
Country	UK	

Source: Various public data sources

What was the project?

The genesis of the Skynet 5 project began over six years before the 2003 signing, when ownership and operational management for its predecessor constellation (Skynet 4) sat with the Royal Air Force. The UK Ministry of Defence (MOD)[1] was trying to decide how it could develop the next generation of military communications satellites ready for a scheduled 2005 operation. Having solicited ideas from the market it decided to go for what was described in 1999 as a 'novel acquisition approach, [under which] a contractor will be a service provider rather than a hardware deliverer'. This mechanism had been detailed in the UK Strategic Defence Review White Paper issued in 1998.

The MOD's base capacity requirements necessitated two satellites (or 'birds') in orbit with accompanying terrestrial systems. Skynet 5 was designed to provide the Ministry's secure data and voice communications requirements until 2018, when it would need replacing as it reached the end of its expected useful life. '[The MOD required] mobility, flexibility, out-of-area operations and battle space digitisation, according to the Satcoms marketing manager from British Aerospace, David Adams, whereas [Skynet 4] was designed for Cold War missions.' (Ackerman, 1999.)

IJGlobal noted in 2004 that the MOD chose a public private partnership (PPP) as 'it believed it would save the UK government £500 million over the life of the contract'. These savings were to be derived from a combination of cheaper equipment and risk sharing, but were not publicly itemised. The 'curved ball' that was added into the Skynet structural mix was the concept of third-party revenue streams. In order to produce the savings quoted above, and analogous to the Ninian pipeline decision detailed in Chapter 8, spare satellite capacity could be sold to other governments or allied international organisations such as NATO, the logic being that economies of scale could be derived from a multi-user project, provided that the essential secret nature of the underlying satellite could be preserved.

Two consortia were formed in 1998 and awarded a 20-month study contract for the design phase. Each was driven by large original equipment manufacturers (OEM):

- Rosetta – led by Lockheed Martin and including British Telecom and British Aerospace; and
- Paradigm – led by European Aeronautic Defence & Space Co (EADS) and British Aerospace.

The three manufacturers had long pedigrees in the space industry. In fact both consortia included equipment from what was to become BAE Systems PLC (BAE) in their design. BAE agreed to operate 'Chinese Walls' between the two teams, thereby segregating the two sets of commercially sensitive data in the bid phase. The acceptability of this position to all parties was aided by the fact that BAE was the supplier of the previous generation of satellites and thus was felt to have an 'incumbency advantage'.

The decision to proceed with a PFI approach, as opposed to a conventional asset-based procurement, was taken in March 2000 by the MOD's procurement team. However, the outright purchase option was not ruled out in case a fallback position was required.

Paradigm became the preferred bidder for the 15 year concession on 12 February 2002. The project company had a lengthy list of agreed subcontractors, split into two distinct groups:

- Satellites and Systems – EADS, BAE, Logica CMG and Cogent; and
- IT and Facilities Management – Serco, EADS, Logica CMG, Stratos, Cable & Wireless, General Dynamics and Qinetiq.

BAE had announced its intention to exit the 'space' market and that it had sold its 25% stake in Astrium for €165 million on 25 July 2002. However the announcement may have been premature as closing was extended and finally occurred in February 2003, when it formally sold its 25% share in Astrium to its co-owner EADS for £83 milion. The time lag evidenced the complexity of extracting BAE from the sector including the need to gain third party approvals. There was also mention of an equivalent 'restructuring' investment being made by BAE at the same time, suggesting the net proceeds to BAE may have been minimal.

In 2013, the defence arms of BAE and EADS were involved in aborted £28 billion merger negotiations. The compelling industrial logic of further consolidation of the European defence industry became irresistible to the two management teams, but not to the German government. The drivers for ongoing consolidation had been present ever since EADS was formed. This latest attempt to compete with giant US defence contractors was undertaken in the face of a prolonged expected squeeze by EU member states on defence procurement expenditure. Reductions in levels of full-time personnel in the various UK domestic armed forces are currently being discussed at the highest levels as defence spending remains a large share of gross domestic product (GDP). For a sense of scale, the government's budget for the Defence Department in fiscal year 2013 to 2014 was £40 billion, up 3% from the previous year against budgeted annual total expenditure of £720 billion. The three largest annual consumers of cash (operating expenditure) are: social protection (£220 billion); health (£137 billion); and education (£97 billion). (PFI effectively shifts capital expenditure to operating expenditure, making it an operating cost and not a capital expenditure item in the government's accounts, as mentioned in Chapter 4).

However, the challenge is that the defence interests of UK and EU member states are not necessarily aligned: similar issues had led to the failure of the Galileo PPP, a previous European space project.

Macro environment

A short introduction to the key elements of a satellite life cycle is probably helpful for the reader, in order to understand what the sponsors and the MOD believed they were contending with at the time.

The first artificial earth satellite successfully launched into space was the Russian Sputnik in October 1957. The first commercial satellite was launched in 1965, but it was not until the 1980s that truly commercial launches were available on non-governmental launch vehicles. Space is not a 'free market', with the whole industry being subject to multiple international agreements to aid coordination. The concern for all governmental stakeholders is about the potential for a costly in-orbit free for all, as countries and commercial organisations seek to undertake the space-equivalent of a terrestrial 'land grab'. Despite these processes, the

prevalence of paper projects and long lead times mean that many projects have provisional orbital slots allocated, but never actually launch.

There are six key stages in the satellite life cycle:

- build;
- launch;
- positioning – in the orbital slot;
- commissioning;
- operation; and
- decommissioning.

Errors at any stage can result in catastrophic loss of the satellite (bird). Even decommissioning can rapidly become a problem if gravity becomes the only power source and the aged lump of metal heads uncontrollably to a centre of population. Whilst small pieces of rock may burn up on entering the earth's atmosphere, a 5,000kg lump of reinforced metal is another matter entirely. The preferred methodology is to bring the bird down in a remote environment on a planned trajectory under the guidance of ground control.

From a technical perspective, manufacturers like to have multiple back-up systems on the birds, given the evident problems of in-orbit repair. Following the phasing out of NASA's space shuttle programme in 2011 and in the absence of a commercial alternative,[2] key systems failure will lead to the effective loss of an expensive piece of equipment. Operating out of reach also encourages the users of the equipment to seek to maintain the maximum amount of functionality (as they can) terrestrially.

Choice of launch vehicle is a function of payload size, but reliability and cost are the motivating factors behind the final decision. The heavier the payload, the more expensive the launch will be as the amount of fuel required to leave the atmosphere behind increases.

Satellites will fall into one of three orbital categories – each has its own pros and cons:

- LEO: low earth orbit – the orbit takes only 90 minutes;
- MEO: medium earth orbit – the orbit will take from two to nearly 24 hours; and
- GEO: geostationary earth orbit – the orbit is at the same speed as the earth's rotation.

GEOs, which operate the furthest out into space, maintain their relative position in the sky and are thus ideal for broadcast TV use. The subscriber does not have to own an expensive moving antenna that can track the bird's progress across the sky (or learn to switch from one bird to another as the footprint moves).

Since it is not possible to see the whole earth's surface from a single fixed point in space, operators will need more than one bird or a 'constellation' if their service offers a global coverage. Physics dictates that to achieve a specified footprint via a constellation of LEOs, an operator will need a lot more in-orbit equipment, than a comparable GEO system. However the system latency (the length of time that it takes for the signal to travel up and back) will be materially less, providing a potential competitive advantage to the operators of several bird systems.

There are two distinct uses for satellites:

- *direct communications* – where a signal is received via its uplink (earth to bird) and distributed through a transponder to a terrestrial termination point via its downlink (bird to earth), to connect the two parties; and
- *wider broadcast* – where a single signal from a known point is distributed to multiple end users, who in turn will have their own antenna pointed in the direction of the bird via a transponder placed over its specified footprint.

Appropriate risk allocation through third-party insurance is a key theme for this sector since the drivers are availability and the price of the cover. The fundamental issue with any infrastructure asset is that the more non-standard cover required, the more difficult it becomes to source and underwrite the insurance. A military-use bespoke satellite, where the asset could be attacked by a foreign power is atypical for a commercial insurer writing comprehensive cover and as a result would be very expensive. Implicit in this process is a credit review of the quality of the insurer as a stand-alone entity, or in the case of a syndicate, the nature of its reinsurance arrangements and the spread of its business (assuming that diversification should reduce the likelihood of an insurer 'blowing up' just as a multi-million sterling claim is lodged for 'your project').

So insurance experts had a prominent role in the transaction, focusing on a broad range of cover to make sure it was fit for purpose, including the terms of the launch insurance to be acquired and war risk insurance.

Operating in space is a hazardous activity, with the bird at risk from various natural phenomena. These range from an asteroid strike destroying the entire bird to micro particles of space dust accompanying a meteor shower that would shred the solar sail. On-board power systems could be 'fried' by cosmic radiation or exhausted through over use, all potential problems that lead inexorably to the bird ceasing to be under control and drifting helplessly from its correct orbital slot. Tracking telemetry and control (TTC) is the key focus of systems engineers, looking to maintain system integrity and satellite 'up' time.

History of the project's development

According to the consortium's website, Skynet 5 was based on Astrium's 4,000kg Eurostar 3000 model and used super high frequency (SHF) and ultra high frequency (UHF) communications. The 3000 model had an in-orbit design life of 12 years, but was not equipped with the required jamming, survivability and military specification encryption technology (for protection of the TTC systems).

Understandably, the actual specifications of each bird in the Skynet 5 constellation remain a closely guarded secret. Paradigm's website and executives have publicly confirmed the basic capabilities of each bird as being:

- 15 active transponders ranging in bandwidth from 20Mhz to 40Mhz;
- up to 9 UHF channels;
- multiple fully steerable transmit spot beams;
- four high performance active receiving antenna capable of generating multiple shaped uplink beams;

- highly flexible switching, allowing connectivity between any uplink beam and at least two different downlink beams; and
- a solar 'sail' with a 34m wingspan lengthening the platform's operational life to 15 years.

An insider's view of the whole procurement process was provided by Simon Kershaw[3] in his 2004 article for RUSI Defence Systems. The key contractual timeline 'acronyms' and milestones on the project he highlighted were:

- Invitation to Negotiate (ITN) – released in mid-2000 to the two competing consortia;
- 2000 to 2001 saw the boundaries of the deal adjusted – to make the deal more robust and deliverable;
- Best and Final Offer (BAFO) bid – delivered in November 2001;
- Contract for Implementation of Service Delivery (CISD) – the key contract for Paradigm specifying the overall communications service that it must deliver to the MOD;
- In-Service Date (ISD) – agreed for February 2005 using the Skynet 4 space segment;
- Intermediate Operating Services (INOS) – agreed to commence in March 2007 when services can be delivered through Skynet 5; and
- Full Operational Service (FOS) scheduled for March 2008.

The ongoing need for secrecy provided a major hurdle to Paradigm. Full disclosure to the banks (including the companies' own financial advisors) and the insurers was never going to be an option because of the military secrecy and the implications of the UK's Official Secrets Act. All parties with access to even low-grade intelligence information needed to be listed and their IT departments were required to restrict access and to use secure data storage to prevent unapproved parties viewing the data. Given subsequent press articles and a public bond issue, it is very doubtful if any of this original information actually remained secret.

By moving this project into a PFI environment, Paradigm was trying to create a structure for funders that could apportion all these risks and enable non-recourse (or at least partial recourse) funding of the £1.224 billion estimated total project cost. This was no small step for a potential bank lender, whose ability to foreclose was limited given the location of virtually all of its potential collateral in space. The concession required the sponsors and the MOD to draw up a unique agreement laying out the specific parties responsible for a wide range of potential systems failures. Milestones were going to be vital to maintain lenders' confidence that the project was on track.

In May 2003, as part of the concession agreement, Paradigm took over running of the existing Skynet 4 constellation. It was also focused on organising suitable launch windows, launcher contracts and insurance for the two initial Skynet 5 payloads. It would be four years before any revenues would flow from a partially deployed Skynet 5 and the extended launch timetable caused the business planners a major headache. No commercial insurer would be prepared to quote in advance for all their needs, when the insured did not know what they would be doing and when. So how could the business plan accurately project the costs of a volatile commodity like launch insurance?

It is relatively easy to think of Skynet 5 as a pure satellite project, but the terrestrial element was also crucial to the improvement in communications needed by the MOD. Indeed

it would form the backbone of the Global Communications Network (GCN), joining together with other similar capabilities such as HF radio and EHF satcom. Great leaps forward had occurred in the field of terrestrial telecommunications systems since Skynet 4 was designed, including:

- faster data transmission rates;
- greater systems reliability; and
- more efficient use of a given bandwidth via next generation switching technology.

The Skynet 5 systems architecture would be based on Internet Protocol (IP) switching technology. The system also integrated (according to Paradigm): global mobile from Iridium; commercial satellite communications through Intelsat and Inmarsat; and terrestrial fibre from Cable & Wireless.

The concession also included the provision of satellite communications terminals. Crucially they had to be able to operate with existing deployed military systems and facilitate the migration of Royal Naval systems to these IP interfacing terminals.

Kershaw suggested that the throughput of the system would be about 2.5 times greater than the Skynet 4 predecessor project, when he understood there would only be two birds in orbit (as compared with the larger number in the final project).

Exhibit 9.2

Skynet 5 launch, slot and commercial operation data

Satellite	*Launch date*	*Orbit slot*	*Commissioning date*
Skynet 5A	March 2007	34 degrees west	April 2007
Skynet 5B	November 2007	17.8 degrees west	January 2008
Skynet 5C	June 2008	1 degree west	–
Skynet 5D	December 2012	6 degrees east	–
Skynet 5E	n/a	53 degrees east	n/a

Source: Astrium website: data only

Whilst the first Skynet launch was subject to delays, the BBC reported that 'Sunday's lift off took place 24 hours after a first attempt was thwarted by a technical glitch and Skynet [5A] rode atop an Ariane 5-ECA rocket, which left the ground at 19.03 local time (22.03 GMT)'. There was to be no repeat of the Globalstar horror story that had seen 12

satellites destroyed in September 1998 on one Russian launch vehicle or the June 2014 Russian Proton satellite launch failure. Skynet 5 A, B, C and D were launched from Kourou in French Guiana also using the tried and tested Ariane 5 space rocket. (Arianespace has shareholders drawn from 10 different European countries and it is also supported by the European Space Agency.)

At the time of the financing only three birds were assumed to be built, however the plan developed as the:

- insurance issue became more complicated;
- MOD's demand for bandwidth grew; and
- third party revenue potential started to become a reality.

The move to self-insurance that was formalised in December 2005 to get around the in-orbit insurance issues, saved costly premiums by building more birds – a 'captive insurance solution'. This clearly benefited both EADS and the MOD in terms of sales and deployed a third satellite with a fourth partly built held in reserve to increase service capabilities and saw the concession end date shift to 2020. The 'temporary losers' were the Lloyds of London underwriters, who saw potentially huge short-term in-orbit premiums disappear from view. However, they benefited in the medium term as more of the terrestrially-bound insurance satellites ended up needing launch insurance.

In March 2010, the concession was extended again to 2022 as a fourth satellite was requested to be added to the in-orbit constellation. This saw the worth of the overall contract rise by another £400 million, according to Paradigm, to £3.6 billion.

The third party revenue stream certainly proved to be real. By 2010 Australia, Belgium, Canada, France, Germany, NATO, the Netherlands, Portugal and the USA had all bought access to the system.

Sponsors

EADS (now renamed Airbus) describes itself as a global leader in aerospace, defence and related services and is headquartered in Toulouse. The key brands it is associated with are Airbus, Astrium, Cassidian and Eurocopter. It is listed on the Paris and Frankfurt stock exchanges under the ticker AIR.

The business was formed in July 2000 through the three-way merger of the leading French, German and Spanish aerospace groups in a desire to create a European defence giant to rival the US OEMs: a merger of Matra – Aerospatiale Matra – France; DASA – Daimler Chrysler Aerospace AG – Germany; and CASA – Construcciones Aeronauticas S.A – Spain. EADS built the satellites at two plants in Britain – Stevenage and Portsmouth.

Some background on Paradigm itself was included in the bond prospectus, revealing by 8 December 2005 it had just 33 employees, was based in Stevenage and had a 31 December year end. At the time of the bonds issue, its directors were from Paradigm and EADS Space Service.

Structure

The level of sponsor recourse in the loan structure reflects the fact that the project company was not truly independent of the key stakeholders. EADS was both shareholder and supplier of the design, construction and delivery of the birds, their operation in space and the on the ground control and thus in a position to benefit from highly lucrative equipment sales well before any launch actually took place.[4] The UK government in the form of the MOD was the effective off-taker of the various satellites transponder capacity, but could be supplemented by third parties. This was always going to be subject to the MOD's base service requirements being met and potential counterparties being deemed acceptable by the project stakeholders.

Given these inter-relationships the loan structure was created in such a way as to only move the recourse away from EADS when the project achieved 'stand alone' status. Whilst it may have been possible to try and use the documented arrangements with Paradigm and its sub-contractors to create a non-recourse structure from day one, the economic benefits of the project were complex. In potential lenders' minds all recourse roads should lead to EADS until:

- Skynet 5 was in orbit;
- fully operational; and
- the MOD was paying to use it.

Citigroup (Paradigm's financial advisor) did consider an upfront bond arrangement and options were presented to the MOD, but the potential for a 'negative carry' (associated with raising any cash funding upfront) combined with the number of 'to be defined' parameters that were not settled, meant that bank or loan market execution was preferred over a bond private placement.

Once the original decision had been taken to operate the deal as a PFI, it was felt by both Paradigm and the MOD that there was value in the intellectual capital that the arranging banks had built up. Neither saw merit in changing the banks unless they failed to execute. Given HSBC, BNP Paribas and CIBC had started looking at the project in the autumn of 1997, the banks had already made a significant investment in the transaction.

The signing of the £963 million of senior debt facilities occurred on 24 October 2003. Pre-completion, both tranches carried an EADS guarantee and consequent 90bps pricing. The debt:equity ratio was 79:21 and the tenor reflected the full remaining life of the 15 year concession.

Exhibit 9.3

Bank financing structure for Skynet 5

Term	*Details*	*Comment*
Tranche 1	£880 million – 14-year term loan	120bps post completion
Tranche 2	£83 million – 13.5-year credit facility	145bps post completion, but subject to a downward ratchet depending on the third party transponder covenant
Borrower	Paradigm Secure Communications Limited	
Facility agent	HSBC	HSBC was also the documentation agent

Source: Various public data sources

The exact completion definition at the time the bank funding was put in place is unclear from public sources. From EADS's perspective the desire would be for completion to be as early and as 'objectively defined' as possible. From the lenders' perspective, full operational service (FOS) which was scheduled for March 2008, might feel instinctively safer. The MOD would probably have been supportive of this preferred bank structural position, given they had no desire to complicate their procurement any further.

Loan structures that incorporate a so called 'recourse flip' (moving from one risk counterparty to another at a point in time);[5] typically have differing levels of flexibility afforded to the sponsor during the two sides of the flip. The commercial logic for the sponsor is that by lending their name to the earlier stage they should benefit from less rigid controls. The project company covenants exist throughout the loan life, but act as more 'informational undertakings' than 'actionable covenants' at times of recourse. The concern for lenders under this arrangement is that multiple 'un-actionable' events in the underlying loan may have occurred, but they have to sit on their hands if they wish to call upon the credit support.

What is clear from the subsequent bond prospectus is that the: '… manner in which Paradigm performs its obligations under the CISD and its ability to meet various CISD milestones on schedule can have a direct and possibly significant effect on the level of service payment received under the CISD.'

The word 'guarantee' can also be the subject of much negotiation. Based on precedent, the most likely structure was a 'make whole obligation' based solely on certain events having occurred. Any experienced financial advisor would try and limit any 'acceleration' driven pre-emptive demands on their client or its customer, provided the project company could continue to service its financial obligations as they fell due.

Exhibit 9.4

Agreed documentary positions in Skynet 5

	Documented position	*Comment*
Delivery risk	EADS guaranteed the performance of Astrium under the system Prime Contract and Service Co under the Service Contract.	MOD termination payments would increase only as the MOD received deliverables, such as the first satellite. This grew on the second delivery and meant that after 15 months it would be at a sufficient level to cover Paradigm's full obligations to the lenders.
Off-take risk	MOD agreed a take or pay level of usage.	This was triggered when Paradigm had delivered an assured level of capacity.
Insurance risk	Risks were allocated between the insurance market, the lenders, the borrower, EADS and the MOD, based on their ability to manage them.	CIBC acted as the insurance bank on the deal. Un-commercially coverable risks were assessed as either 'Uninsurable' (where the MOD stepped in) or 'uninsurable' (where the issue was caused by the actions of Paradigm, EADS or its principal subcontractors where the risk was deemed to lie in the private sector).
Drawdown mechanism	Structured against progress under the systems upgrade programme with potential drawstops, milestone events and milestone clusters.	Balancing EADS's need to draw in a timely manner with an element of lender control over how much of their money can be drawn at any given stage in the project's life.

The prospectus for the bond made clear that the insurance would be subject to terms and conditions and 'certain circumstances occurring could enable the insurers to reduce or deny coverage altogether. Furthermore, that the level of insurance cover may not be sufficient to [fully mitigate] the losses or liabilities of Paradigm.' The insurance programme was designed to cover: third party liability; product liability; and loss and damage to assets in the system (including any associated loss of revenue).

Source: Paradigm bond prospectus (the authors assume that this was unchanged from the earlier loan financing)

Financing decisions

The Skynet 5 financing won the IJGlobal European Defence Deal of the Year award in 2003. Given the overwhelmingly positive response in syndication for what was a highly complex deal, this was well deserved. Thirty-three banks ultimately signed the deal, with 30 banks joining the three mandated lead arrangers (MLAs). All the general syndication lenders saw their commitments cut back as it was reported to be 300% oversubscribed.

Whilst a comparison with similar 'A' rated credits bank pricing at the time would have been instructive, there was little in the way of similar tenor, contingent, committed lines and thus the real structural premium paid was hard to gauge. Certainly aggregation of this exposure with other EADS facilities would have occurred by lenders' credit teams, given EADS's control over Paradigm and the extensive credit support commitments given.

The key to the financing's success lay in the education process that had been achieved with all the banks, based on extensive commercial, technical and financial due diligence. Whilst a project financier may have had experience of either telecommunications or PFI, there was only a very small crossover between the two groups. This knowhow crossover had evaporated when considering the specialist nature of this project. The knowledge gap led to initial teething problems as the different wings of the financial community worked out who should run the project at each bank – EADS relationship managers, PFI stalwarts, satellite gurus or terrestrial telecoms experts? Much like the project, the answer was a single lead and a network of sub-contractors within each institution who were called on to provide their input when required.

Lurking in everyone's mind were the three truly commercial satellite projects that had performed in an Icarus-like fashion for their sponsors and lenders – Iridium, Globalstar and ICO. These three, the largest commercial communications satellite projects, have been covered extensively elsewhere and some are detailed in the bibliography, but risk benchmarking is valuable. The key characteristics of what went wrong in those projects were very different from the risks associated with Skynet 5:

- each project (Iridium, Globalstar and ICO) was supported by a major space infrastructure player – Motorola, Space Systems Loral/Qualcomm and Hughes (now Boeing) – but crucially were not counterbalanced by a strong customer off-take agreement as they incorporated full market risk;
- they represented a higher technological risk. Nobody had attempted to launch, maintain and operate such large constellations before (77, 52 and 12 birds respectively) and the individual project costs were astronomical;
- they were subject to significant external shocks as the terrestrial GSM mobile market grew far more rapidly than had been thought possible and the long lead times on the satellite projects meant that they faced far greater competition than they had envisaged for land based communications;
- average revenue per user (ARPU) proved to be lower than planned due to increased competition from substitute products;
- significant leverage via the high-yield markets meant they were less financially secure when the results started to diverge materially from projections; and
- they suffered from a 'domino effect'. As confidence in Iridium was eroded it sapped the enthusiasm of potential supporters of the later launching projects, despite their varying business plans.

Iridium filed for bankruptcy protection in the US on 13 August 1999 having made its first call on 1 November 1998. Globalstar similarly filed on 15 February 2002, having made its first call in November 1998. ICO Global Communications filed in August 1999 (but had not launched) and had been a MEO project, unlike the other LEO systems.

What was needed in Skynet 5's bank facility syndication was a tailored approach to the financing. The challenge for the arrangers, in the authors' opinion, was:

- to translate an acronym-ridden procurement process and the official PFI financing 'how to do' guide into sufficiently plain English that 'layman' credit committee personnel would approve it;

- to ensure that the essence of the financing could be understood by the proposers, rather than getting lost in the vast quantity of detail on the project; and
- dealing with the fact that many of the 'large' budgeted cost numbers in the business plan were subject to significant volatility (at the time the information memorandum was put together and still at signing).

The structural implication of this raised questions about the provision of the necessary contingency support and how would those obligations be collateralised if the entity was not sufficiently creditworthy itself.

Financial leadership was key and the fact that there were three mandated lead arrangers (HSBC, BNP Paribas and CIBC) and a financial advisor (Citigroup) underlined the desire of EADS to spread the risk amongst industry experts.[6]

One ratings trigger did play a part in the life of the bond, when Citibank N.A., London branch's short-term rating dipped from A1+ to A1. This led the issuer to have to seek a new Account Bank under the Issuer Bank Account Agreement and give notice to the bond investors on 15 November 2012 that it was having difficulty in that regard: '[the issuer] has been unable to find a bank with the requisite ratings that is willing to act … and that it would report further by 16 January 2013.' Based on a public disclosure by the former financial controller at the business it appears that this issue was resolved successfully.

Lessons learned

So if the parties could have done it over again, would they have done something different? The following analysis includes input from John Worthy, a partner at international law firm Field Fisher Waterhouse LLP who has many years' experience in major satellite projects and was a winner of *Finance Monthly's* Dealmaker of the Year 2013 award.

From a Citibank 'sub-contractor's' perspective the complexity of the case meant that milestone driven risk transference was the key to a successful funding for its client. EADS wished to be paid for the equipment and services provided, whilst ensuring that Paradigm was sufficiently robust as an entity that it could obtain its own funding. EADS's worst case scenario was that it would face full recourse until such time as both birds were safely in orbit and the MOD had completed all the required testing. What would have happened to revenue recognition is debatable, but it would not have improved their negotiations with the auditors to accelerate the profit taking.

Only once complete (in a build operate transfer model of procurement) would the credit become a pure MOD payment risk, without further legal tie-ins in the form of a direct agreement or step in rights being created for the government.

To achieve market acceptance of the funding structure required:

- ongoing satisfactory insurance arrangements to be in place for Paradigm; and
- operating risks arising from the contract to be deemed acceptable.

The concession made clear that the MOD would backstop certain EADS obligations, if Paradigm were unable to find insurance. The MOD was also on the hook for both the 'termination payments' and its transponder leasing take or pay arrangements.

By virtue of the heavily contractual nature of the rolling satellite launch schedule, EADS was able to gain meaningful risk transference well before in-orbit acceptance of the entire constellation had occurred. The structure was able to leverage the concept of MOD termination payments, to drag forward the elements of UK government recourse in the timeline.

An innovative approach to structuring typifies what can be best about project finance, identifying how to use the tools provided and if they do not work then work with it until it does.

Operating risks in space are unique and outside of the traditional remit of PFI hospitals (see Chapter 12 for a more 'vanilla' structure) and other terrestrial infrastructure projects. MOD termination events were the structural glue and lenders' interests were closely allied with those of EADS, which was clearly keen on extending the constellation to meet the MOD's insatiable desire for bandwidth. As the sophistication of communications systems had grown, so what the MOD could do with its GCN expanded; from a relatively technically 'simple' satellite telephone connection to potential real-time streaming video communications from a hostile environment.

Seeing structural replication occur is a good way of assessing if something was successful for all or perhaps just some of the stakeholders. The problem with such a specialised project is that there were very few similar circumstances in which to try out the exact structure again. At the time, Skynet 5 was the largest PFI contract to have been placed by the MOD and you would have had to wait 10 plus years for the next scheduled Skynet generation to come along. The fact that EADS was able to refinance the project so quickly (December 2005) in the bond market, suggests that an alternative structure may have been preferable in 2003.

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[1] The MOD is responsible for all three principal armed forces: British Army; Royal Navy and Royal Air Force.

[2] Whilst historically Russia may have been seen as the likely alternative provider, recent advances by BRIC countries like India and China in space technology suggest that the next space race may well be an all Asian affair, rather than a proxy for the cold war. Perhaps, looking into the future, commercial salvage of space equipment may become economically feasible, encouraging entrepreneurs to clean up in space.

[3] Kershaw was the leader of the Satcom acquisition team in the Defence Procurement Agency at the MOD at the time.

[4] The negotiations are not dissimilar to those undertaken between the NHS Foundation Trust, its paymasters and the Australian contractors/financiers highlighted in the Chapter 12. In this case each stakeholder had access to highly experienced advisors, who ensured that the structural implications of the deal were understood by their respective clients. The advisors were also given the flexibility to suggest innovative solutions to perceived structural problems in the purchaser's mandate via their clients to the MOD.

[5] The nature of the flip may be a one-time event or indeed facilitate multiple switches. More complex deals run the risk of straying into un-bankable territory. Why? As investors reject the proposed structure or see the need for a significant pricing premium.

[6] Experienced arrangers were needed as structuring around the complex interrelationships between the borrower/issuer, the sponsor in its dual role and the MOD needed a lot of top quality computing power.

Chapter 10

MTN (Nigeria) calling

Why is this case interesting?

The MTN Nigeria calling case is interesting because it shows that leveraged transactions can be achieved in emerging markets, provided the key structural elements of a solid project are present. Obvious political risk areas were mitigated and the investors were backing a highly experienced operator that was competing against materially weaker opposition. The technology aspects have also been explained wherever possible for the benefit of the non-technology, media and telecommunications (TMT) focused reader.

Exhibit 10.1

Key project features of MTN Nigeria

Feature	*Headline*	*Detail*
Financing	US$395 million senior debt facilities signed October 2003 (of which US$345 million was cash funding)	US$250 million Naira based note issuance facility (NIF) US$35 million 'A' loan bilateral tranche US$50 million contingent backstop US$40 million equipment tranche US$20 million bilateral tranche
Borrower	MTN Nigeria Communications Limited (MTNN)	MTNN was the licence holder and operator
Sponsors	MTN Group of South Africa (MTNG) 76.5%, local investors 20.5% and International Finance Corporation 3.0%	Cell Telecommunications (16.8%) and Mobile Communications Investment (3.7%), each controlled by Nigerian investors
Sector	Telecommunications	Global System for Mobile Telecommunications (GSM) mobile – greenfield
Country	Nigeria	Nationwide network

GSM900 and DCS1800 are both 2G digital mobile telephony systems. They followed on from the previous analogue Nordic Mobile Telephone (NMT) systems and operated at a higher radio frequency (900 and 1,800Mhz rather than 450Mhz). By 2014, the UK had migrated through 3G technology to 4G and technical discussions are ongoing regarding 5G.

Source: Various public data sources

What was the project?

On 9 February 2001, the Nigerian Communications Commission (NCC) awarded three 15-year licences for digital mobile telephony following a formal auction. According to the International Finance Corporation (IFC), the auction had formed part of an ongoing liberalisation of the state-owned telecommunications sector, assisted by the World Bank. Whilst the Nigerian market was undoubtedly attractive in terms of potential subscribers with a population of circa 125 million in 2000, established American, Asian and European mobile operators were absent from the bidding. At the time it was felt that their interest was curtailed due to the perceived high risk of operating in an environment that featured prominently in the Transparency International country listings.[1] Four licences were originally awarded (one of which was reserved for the government-owned fixed-line provider, Nigerian Telecommunications Ltd (Nitel) whose wholly-owned mobile subsidiary M-Tel paid exactly the same licence fee as the other new entrants). The three winning consortia (excluding Nitel) included two who were controlled by individual African telecoms players with minority local partners: MTN Group of South Africa (MTNG) and the Econet Wireless Group (Econet) also based in South Africa. Local ownership (akin to post-apartheid black empowerment in South Africa) was not specified in the licence auction conditions, but was a tactical decision by both MTNG and Econet when formulating their business plans. The third winner, Communications Investment Limited (CIL), was an unknown entrant and some confusion reigned over how this bid had met the licence qualification criteria. In fact CIL's problems proved to be more fundamental, as it failed to pay the NCC the requisite licence fee following a dispute over allocated frequencies. This resulted in a withdrawal of its licence, leaving three final licence awards. (It is unclear if CIL eventually recovered its US$20 million deposit from the NCC.)

In contrast to Europe where competing with the incumbent operators often proved to be anything but a level playing-field, Nigeria offered a far more even chance to the two non-state owned licence holders MTN Nigeria Communications Ltd (MTNN) and Econet Nigeria. Analysts estimated there were only 400,000 fixed line telephones in service at that time and waiting lists for new lines were lengthy and slow moving. Neither grouping had the domestic fixed line legacy issues of poor service and crumbling infrastructure that bedevilled Nitel. This was frustrating for the third party management of Nitel. (Pentascope International BV, a Dutch firm ran Nitel under a three-year management contract awarded by the Bureau of Public Enterprises under a quasi-privatisation deal in April 2003.) Nitel was unable to either leverage its superior local knowledge or gain access to much needed third party capital. (The Nitel management contract was terminated early after 20 months in December 2004.)

Nigeria Communications Commission (NCC), the new telecoms regulator, was also an unknown factor. It did not have the same track record, experience or support as its international peers and the potential for anti-competitive behaviour by the various fixed or mobile telecom operators seemed very real.

In MTNN's case the licence fee of US$285 million was funded by its shareholders. The Shareholders' Agreement signed in July 2001, governs the shareholder relationship between MTNG, as the controlling party, and the local shareholders. The IFC was added in 2003. It remains a non-public document. MTNG, the parent, subsequently raised US$450 million in July 2001 on its own credit rating to cover its agreed share of the capital injection and

ongoing funding for MTNN. This enabled the local management team to focus on the network build and funding customer acquisition costs, rather than having to raise financing before they could begin either operations or their marketing efforts.

By August 2001, MTNN had launched its Nigerian mobile service having adopted a modular approach to network development. The approach enabled the business to start earning much needed local Naira currency cash flow, (see comments on convertibility below), to offset the heavy ongoing foreign currency capital expenditure programme as it rolled out across the various Nigerian cities, towns and villages. Modularity is a key distinguishing feature of mobile network financing and contrasts with other forms of infrastructure that operate with a 'completion guarantee' in relation to the physical assets being installed in the country. This explains why, in mobile telephony, the concept of a fully funded business plan can be somewhat nebulous.

The real driver for network rollout speed is often the underlying licence conditionality. Importantly, any such criteria were known to MTNG at the time the Nigerian business plan was put together. Rollout conditions are generally designed to force operators to achieve national coverage of a certain percentage of the population as quickly as possible, thus reducing the gap between a new provider that can cherry-pick areas of high usage and an incumbent with a 'universal service obligation' imposed on it. Coverage (by population or indeed geography) is only one side of the network coin, with the other being capacity. MTNN's commercial imperative was to provide a high quality service to new subscribers. Technically, this is typically measured in terms of both network availability and dropped call rates.

Ericsson was the primary network equipment supplier, although much of the civil works were undertaken by a South African contractor. This division of labour was more typical for African network rollouts where local knowledge was vital. It also reflected the general dwindling of appetite for traditional vendor finance in Africa (or indeed further afield). Telecommunications original equipment manufacturers (TOEMs) which were already reeling from the 2000 tech-market crash were under strain from three specific areas:

- ballooning balance sheets due to acting as a bank to their customers;
- renewed accounting focus on appropriate revenue recognition rules; and
- bad debts arising from the increasing concentration of trade debtors with materially higher risk profiles (for example, the third or fourth entrant in a developed market or in an emerging market with a poor credit history).

Another active TOEM at the time was Siemens which was looking to grow market share aggressively on the continent for turnkey network rollout contracts. For both Safaricom in Kenya (Belgian content) and Cell C in South Africa (German content), they were prepared to act as a traditional lender until such time as the project financing could be put in place. This was done through the provision of extended credit terms or soft loans. Ericsson had offered to provide a vendor bridge loan to MTNN of up to US$70 million, but this was not taken according to the current CFO, Andrew Bing.

From a technology standpoint, the licence conferred the right to utilise the radio frequency spectrum at both the 900Mhz and 1,800Mhz bands. Services based on these frequencies had

been deployed extensively across Europe and in other African markets by this stage and the resulting technology risk was deemed to be very low. In contrast to other industries, where more robust older generations of equipment may have been installed in an emerging market, mobile network operators (MNOs) saw 'state of the art' deployment of the latest TOEM kit. An alternative market model involves the introduction of mobile virtual network operators (MVNOs). These entities offer a way of introducing materially more competition into an existing market. By allowing new MVNO licence holders to enter into white-label agreements with existing MNOs (and thus avoid the capital costs of having to build their own network), they can operate on the basis of marginal cost pricing. The downside is that they do not have control over a key strategic asset and may find it more difficult to differentiate its resultant offering.

African markets presented stakeholders with many variations on traditional mobile financing issues. Interconnectivity and the need to achieve high resilience and availability for the 'backhaul' or links to the global network and the termination of communications traffic was a major concern. Calls that originated on MTNN's network would either be on-net calls (to other MTNN subscribers) or off-net. The latter would be terminated on Nitel's network for an agreed tariff. In addition, the actual backhaul of the traffic between the base station controllers needed to be performed by someone. Interconnect payments represented a significant credit risk to MTNN, whose management sought to ensure that they owed Nitel rather than vice versa. The problem was that the netting arrangement was complicated by the inclusion of Nitel's mobile subsidiary, M-Tel. The unpaid obligations from Nitel started to mount as more traffic terminated on MTNN's network. Management was left with the difficult position of deciding whether to cut off M-Tel and refuse to terminate their mobile traffic for non-payment reasons. Any such action would have clearly tested the regulatory regime to the full.

As a consumer-facing business, vital importance was attached to the customer service aspects of technology deployment. The network backbone and radio frequency equipment towers were more of a 'hygiene factor' than a 'strategic differentiator' for MTNN.[2] Failure to provide well-priced and reliable handsets or a robust logistics system for getting airtime cards to subscribers would rapidly put a brake on paid network minutes of use on the expensively constructed network.

In addition to general marketing costs, historically some mobile companies used to capitalise the handset subsidy and up-front payments made to third parties to acquire subscribers and then amortise them through their Income Statement. This proved to be a somewhat subjective task as it required an estimation of the life of the subscriber, based on averages seen across the operator's portfolio and became redundant as a profit inflator when the operator stopped adding lots more net subscribers to its customer base (as the annual capitalisation was set off by an equivalent amortisation of the balance sheet asset). This capitalisation methodology never affected true cash flow, but could complicate the definition of EBITDA depending on the exact accounting definition used.

In April 2003, MTNN agreed to lease three turnkey satellite earth stations in Lagos, Port Harcourt and Jos from Sub-Urban Telecoms of Abuja on a long-term basis. The lease in turn facilitated a small US Exim deal for the equipment sale from the US vendor to this third party provider. Ultimately MTNN decided to build much of its own trunk network

(optical fibre and microwave links). Whilst adding to network cost, the self-build decision would provide a level of service security and reliability that would aid MTNN's competitive position.

The network infrastructure also represents a very valuable asset and can be shared between multiple operators, rather like oil pipelines – see Chapter 8. This spawned significant sale and leaseback deals for towers, where ownership of the infrastructure is divorced from the mobile licence holder and proved to be a good way to release capital and improve return on equity. In some cases special purpose vehicles (SPVs) were created for the purpose, in others established tower-owning groups bid to acquire the existing network from the operator.

Power supplies also presented an issue. With no consistent power grid to tap into in much of the country, there was the need to build many base stations (BTS) with primary diesel generators, backup power supplies and sufficient security to discourage local looting. Diesel provision was a logistical issue with between 2,000 to 2,500 base stations being built over the first three years of the project. Most BTS and their 'parent' Base Station Controllers (BSCs) were to be situated in urban areas and 40% to 50% of those in rooftop locations, which aided security. However, as the network pushed into more remote locations the problems got bigger.

Whilst each Nigerian licence had detailed rollout conditions attached, they were all felt to be achievable by MTNN (and MTNG). The network rollout plan was designed to achieve the required goals in plenty of time, so as to try and avoid any issues. Protection of the licence status quo was vital to the plan, given any breach could have material implications. Why? Since it could lead to a wider renegotiation with the NCC or the government of key terms or even licence revocation.

Exhibit 10.2

MTNN network roll-out (2003)

Timescale	*Phase*	*New service areas*	*Zones covered*
T + 9 months	Phase 1 (complete)	Lagos, Ibadan, Abeokuta.	South west
		Abuja.	Capital
		Port Harcourt.	South
		Kano.	North west
		Kaduna.	North
		Enugu, Onitsha, Aba, Owerri, Asaba.	Central south east
T + 12 months	Phase 2 (complete)	Warri, Benin City, Calabar, Agbor.	South
		Jos, Zaria, Jaji.	North
		Ihiala.	Central south east

Continued

Exhibit 10.2 continued

Timescale	*Phase*	*New service areas*	*Zones covered*
T + 36 months	Phase 3	Bonny Island, Escravos, Forcados, Uyo, Ikot.	South
		Ekpene, Sapele, Eket, Yenagoa Sokoto, Katsina, Birnin Kebbi.	North west
		Akure, Oyo, Illesha, Ife, Owo, Ondo, Ogbomosho, Ijebu Ode, Shagamu, Oshogbo.	South west
		Illorin, Makurdi, Lokoja, Minna, Suleja.	North central
		Yola, Jalingo, Yobe.	North east
		Awka, Umahia, Abakaliki, Nsukka, Nnewi.	South east

Source: MTN Nigeria

Other key features worth mentioning were a valuable five-year tax holiday and a licence renewal option. The renewal would be for an upfront fee to be determined at the time and an ongoing annual licence fee. Under the original licence, MTNN had to pay a 2.5% levy on audited net revenues to the Nigerian government every year. (This ongoing fee arrangement stood to be a very significant cost to MTNN and also required an 'open book' approach, as the receiver of the levy clearly had a close interest in how this was calculated.)

The business plan estimate of the project cost was circa US$1.3 billion. Due to forecast subscriber revenues, peak funding was much lower and the business was assumed to be able to self-fund a significant portion of this cash project cost. The debut financing was structured on a 50:50 debt:equity ratio raising (just under US$800 million in aggregate) and represented a fully funded plan. The equity of US$400 million included deeply subordinated shareholder loans that were payment in kind (PIK) only until a level of financial maturity had been reached. This limited the cash cost to the business of servicing the shareholder loans (which were meant to be acting as equity), whilst maintaining some future tax efficiency for shareholder distributions. The financial maturity definition was that MTNN had 1.5 million subscribers and EBITDA of at least US$200 million. This was a huge inward investment for not only Nigeria, but the whole of sub-Saharan Africa.

Whilst costs could be estimated fairly accurately, the difficulty was in gauging the size and value of the addressable market. In the mid-1990s, market studies were a prerequisite for banks looking to underwrite or participate in European mobile financings. Ten years later in Africa, lenders may still have wanted them, but robust third party information was non-existent. The usual specialist report writers (Analysys, PA Consulting and Arthur D Little) did not have detailed benchmarking data for the potential revenues available and the sponsors seemed the only credible source of information based on their direct experience of other African investments. The dilemma was that all of these benchmark

projects were still immature, so extrapolation of a short history from a different country was fraught with danger.

- Would West Africa perform like East Africa?
- Were there characteristics of Cameroon and the surrounding France supported currency bloc that meant it was economically safer to run than Nigeria?
- Was the whole management strain on MTNG of having so many new operations going to mean they were horribly over-stretched and thus potentially over-trading?[3]

MTNN also gained a significant competitive advantage by tying up the services of the two main advisory players at the time in African telecoms financing.

Exhibit 10.3

Historic mobile growth rates in Africa

	Subscribers June 2002	*Subscribers December 2001*	*Subscribers June 2001*	*Annual growth June 2002*	*Penetration June 2002*
Nigeria	929,000	352,000	40,000	2,223%	0.8%
Cameroon	583,000	311,000	215,000	171%	3.6%
Congo	186,549	150,407	105,327	77%	6.3%
Kenya	770,250	615,500	340,000	127%	2.5%
Mozambique	155,000	140,000	92,000	68%	0.8%
Rwanda	79,000	39,000	32,500	143%	1.1%
Tanzania	501,300	350,412	224,407	124%	1.4%
Uganda	358,800	315,174	262,760	37%	1.5%
Zambia	91,400	75,207	66,696	37%	0.9%

Source: Global Mobile, 6 November 2002

The solution was to get Analysys[4] to review the MTNN business plan and produce a banking case sensitivity. This updated those plan assumptions where Analysys was less comfortable with the assumed trends and felt that additional changes were merited. The problem with sensitivity analysis in any of these models is the interrelationship between subscribers, minutes of use assumptions, customer acquisition costs and network capital expenditure (see also Chapter 7). However sophisticated an Excel model MTNN or its advisors built, it was never going to be able to deal in a realistic way with large movements in assumed subscriber numbers or network traffic. What it could do was show the impact of changing variables if management took only limited action to reconfigure their plans. Whilst in the short term this may make sense, over a 10-year planning horizon it does not as the cumulative impact of the implications of inaction become huge.

The MTNN business plan relied on an assumed decline in monthly ARPU[5] and rise in subscriber numbers over time. Whilst undoubtedly simplistic, it was felt that this would operate in an inverse linear fashion in the short term. This assumption was quite brave, as evidence from Europe suggested that the initial declines were steep and that the profile then flattened out as the higher using first adopters were rapidly diluted by the arrival of mass market communications. So more simply, these assumptions could seriously overestimate the revenue that was funding a huge portion of the network build.

To protect the business against acquiring ultimately valueless subscribers, MTNN's strategy was focused on pre-paying customers (minimising the credit risk) and modest customer acquisition costs. So it was happy for the penetration of mobile users to rise more slowly by making the entry costs higher. This had the added benefit of managing the load factors on their network and proving that the subscriber revenues were going to bring a strong return on investment. Thus whilst Pyramid Research in October 2002 were forecasting 8% mobile penetration by 2007 (but with no population estimate numbers), MTNN's plan was a more modest 4.28% or an addressable market of six million.

Currency mismatch is the last and crucial project feature common to almost all emerging market mobile deals, where the equipment can only be imported. Naira revenue streams will flow from the subscribers, but a significant portion of capital expenditure is foreign currency denominated (in this case euros, US dollars or South African rand) as are handset costs (euros or US dollars). This can have significant impacts on exchange rates when the conversion of such large sums is involved and thus coordination with the relevant central bank is vital.

Macro environment

In contrast to most European markets, it was typical for sub-Saharan African countries to have low or non-existent credit ratings in early 2000. Default was depressingly regular and some countries were excluded from the international capital markets due to their poor credit histories. In fact the overwhelming theme was of 'debt forgiveness' by donor countries and not new private or indeed public sector funding. It was against this backdrop that the sponsors sought to borrow upwards of US$300 million in new cash funding. This funding quest became the largest ever African non-natural resource fund raising (outside of South Africa).

Exhibit 10.4

Nigerian economic snapshot at the time of the financing

	2001[a]	*2002*[a]	*2003*[b]	*2004*[b]
Real GDP growth (%)	3.9	1.9	3.5	4.1
Consumer price inflation (% average)	18.9	16.9	14.0	10.5
Exchange rate NgN:US$ (average)	111.2	122.2	138.7	147.1
Trade balance (in US$ billion)	6.5	4.1	5.2	2.9
Current account balance (% of GDP)	2.8	–4.6	–3.6	–4.9
External debt (year-end; US$ billion)	28.8	29.9	30.3	29.9
Short term interbank rate	24.6	25.7	23.0	20.5

[a] EIU estimates.
[b] EIU forecasts.

Source: EIU country report, October 2002

Capital markets for local currency funding were limited in the Federal Republic of Nigeria and whilst there was a plethora of banks to choose from, management was well aware of the potential perils of taking credit risk on unknown entities for medium or long tenor commitments. Local knowledge was going to be vital, hence the early involvement of the advisors' in-country banking colleagues.

MTNN had a complex syndication or placement window. Any underwriting sell-down would need to contend with a series of State, Presidential and Legislative elections in Nigeria that were scheduled for 12 and 19 April 2003. Given the turbulent political history of the country, international lenders were understandably keen to see the election results prior to committing long-term funding and the lead banks were unwilling to underwrite the entire debt.

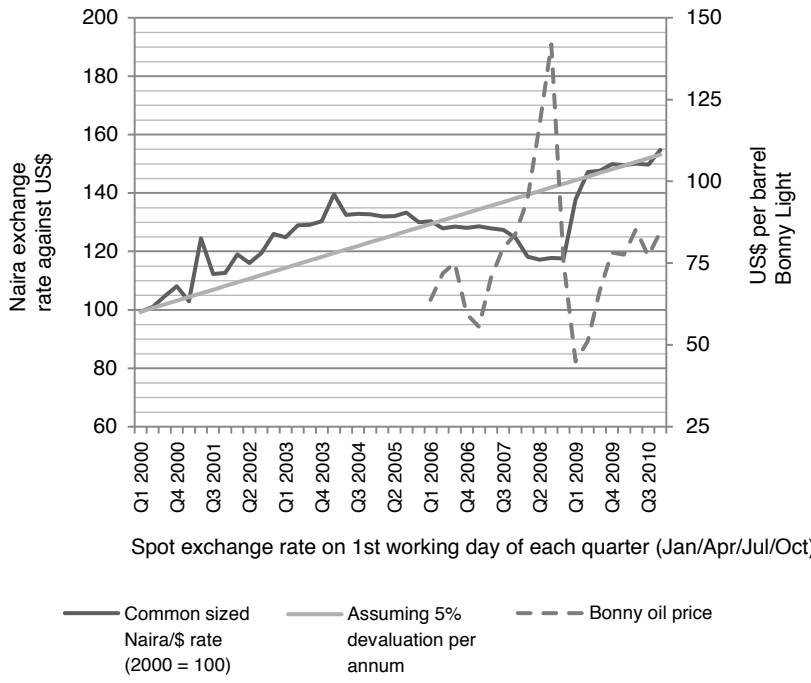
Safaricom in Kenya had shown in 2001 that it was possible to tap different investor bases (banks, pension funds and insurers) via the bond market.[6] These institutions were looking for medium-term assets, but with liquidity options and a strong credit profile. The answer was significant cross border credit enhancement in the form of 75% comprehensive insurance. In Nigeria's case, the banks had evidenced at an early stage a willingness to take short-term risk on the fledgling operator provided debt to equity ratios were modest (25:75). This contrasted with MTN's experience in neighbouring Cameroon, where to raise any local currency loans, they had needed to provide 75% comprehensive cover to the local banks via a pairing of two development finance institutions (DFIs).[7]

The naira is the functional currency of Nigeria and was introduced in 1973 following decimalisation in the UK and a Nigerian decision to move away from the previous pound, shilling and pence based system. The Central Bank of Nigeria (CBN) has steadily liberalised the way the naira exchange rate is managed whilst maintaining a goal of currency stability against the US dollar. In 2002, a 'Dutch auction' system was introduced to better reflect the

prevailing supply and demand for the currency in the market. This was operated through a club of domestic banks, authorised to bid based upon their requirements as market makers for their clients. By virtue of this 'domestic' market mechanism, the naira is probably best described as operating under a 'managed float'. It has never been convertible in an international sense in the same way as sterling, the US dollar or the euro is traded.

Exhibit 10.5

Exchange rate, Nigerian naira versus US dollar and US dollar Bonny oil prices, 2000 to 2010

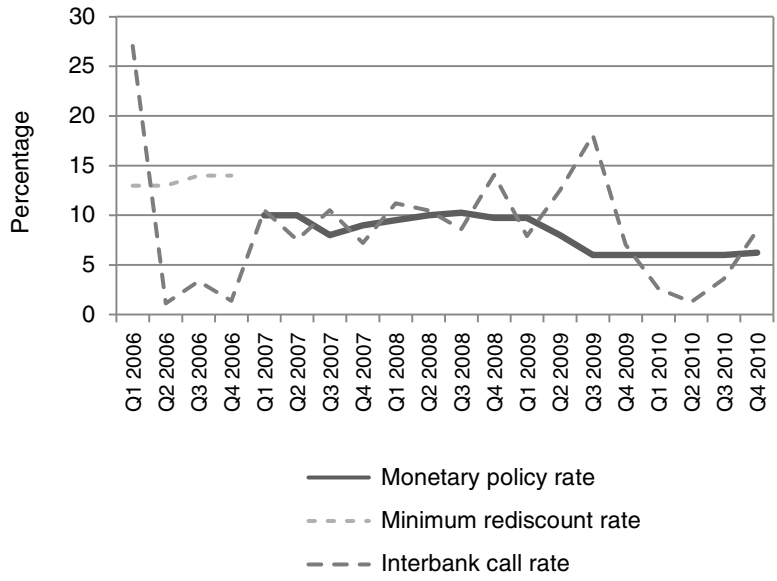


Source: Central Bank of Nigeria data, exchange rates from xe.com

For an exotic currency with high inflation, the performance of the naira over 44 quarters against the US dollar has been remarkably stable with the rate depreciating from 99.4 to US$1.0 at the beginning of 2000 to just over 150 by 2010. The average devaluation was 5% per annum, represented by the trend line. The performance is more impressive when comparing the movements in the oil price over the later years and Nigeria's reliance on that and agriculture for export earnings.

Exhibit 10.6

Interest rate and interbank call rate linkages – Central Bank of Nigeria statistics 2006 to 2010



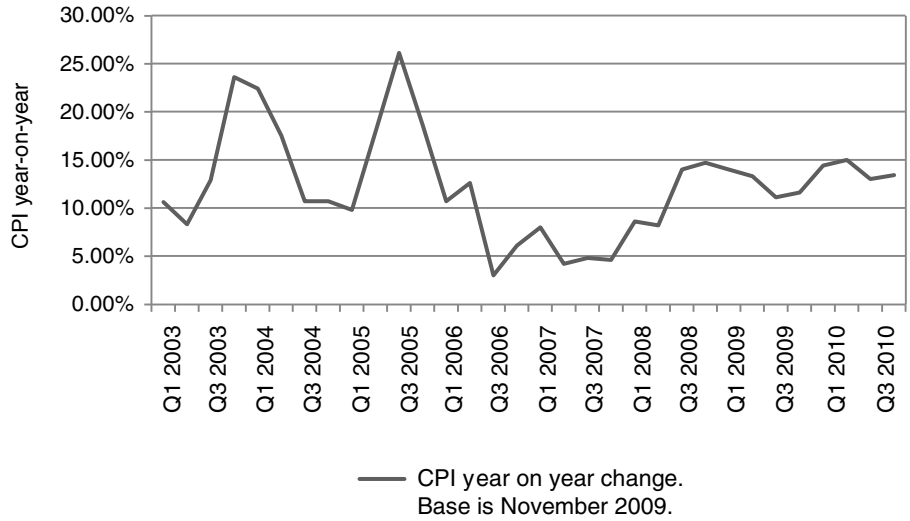
Source: Central Bank of Nigeria data

The explanation for the stability can be found in the double digit interest rates that the country maintained over lengthy periods. Monetary policy as directed by the CBN was undertaken via a minimum rediscount rate (MRR) until December 2006, when this was substituted for the monetary policy rate (MPR). As can be seen the interbank call-rate was far more volatile and evidences the complex economics of Nigerian banking at the time.

The CPI inflation measure remained stubbornly high in 2003 to 2005, but ameliorated to between 5% to 10% for 2006 to 2008. This success was short lived as it accelerated back to over 10% until 2010.

Exhibit 10.7

Nigerian CPI annualised inflation rate, 2003 to 2010



Source: Central Bank of Nigeria data

As the customer tariffs were naira based, MTNN had the ability to increase the face value of the prepaid vouchers (or reduce the number of minutes of use that a voucher bought). The stock of vouchers at any one time in circulation was limited and thus the risk to the business could be mitigated if required in periods of hyper inflation. Despite having higher inflation environments, the experience in many African markets was that as penetration grew subscribers demanded lower denomination airtime cards to facilitate budgeting as it was more affordable. Affordability was a key purchase consideration for potential lower ARPU customers who were assessing if they could support access to a mobile phone service.

History of the project's development

MTNN was very aware that it had the opportunity to become the dominant operator if it could roll out quickly and leverage its project finance experience. M-Tel's ability to fund itself was impacted by being government owned and Econet Nigeria, a private company with Zimbabwean origins, based in South Africa, did not have the same funding profile in the market.

MTNG was listed on the Johannesburg Stock Exchange and had already formed relations with a number of banks from its own fund raising experiences in South Africa and as it rolled out its networks in East and West Africa. However, the need for funding was growing in each of these markets too, and thus any capital market activity needed to be

well coordinated. Unfortunately, the list of international organisations willing to be involved in taking medium to long-term exposure on African projects was short and thus (ironically) easily manageable.

Geographically, MTNN sought to provide coverage to 56 cities and over 1,000 villages spanning all six geopolitical zones in Nigeria within three years. By 2013 they were able to boast 88.8% coverage of the Nigerian land mass and 86.2% of the population (that had grown according to MTNN to 157,000,000).

The speed of subscriber growth post-launch surprised everyone and significantly exceeded MTNG's business plan for its latest offspring. Having launched in August 2001, they passed 250,000 users in late February 2002 and the one million milestone 12 months later. What was crucial to returns was the high initial ARPU achieved. By September 2003 it was still at US$55 per month compared with US$28 for the South African operations. To put this in context, MTNG in its quarterly statement to the Johannesburg Stock Exchange reported an ARPU of US$7.11 in Q3 2013 for Nigeria and US$10.55 for South Africa, but on subscriber bases of 55.6 million and 25.2 million respectively.

Sponsors

MTNG is a listed telecoms company and had a market capitalisation of US$2.5 billion in 2002, having being formed in 1994. At the time of the financing it had some four million subscribers in South Africa and greenfield operations in Uganda, Rwanda, Cameroon and Swaziland. By 2013 it had grown significantly, both organically and through acquisition and operated in 21 countries across Africa, Asia and the Middle East. It celebrated reaching 200 million active subscribers in late Q2 2013.

MTNG owned its 76.5% stake in MTNN indirectly, through its Mauritian wholly-owned subsidiary MTN International (MTNI). The two Nigerian investment holding companies owned in aggregate 20.5% and were controlled by prominent Nigerians. Whilst the six names matter less (they are a matter of public record), the fact that they were well connected was clearly of benefit to the project by opening doors for the local management team and helping them avoid some of the pitfalls of doing business in the country. They included: the chairman of a local bank; the chairman of a local law firm; the director of a local investment bank; and a retired state governor/ex-military colonel.

IFC acquired its 3% stake in the business in 2003, as an adjunct to their involvement in the wider financing arrangements.

Structure

The primary financing drivers for MTNN's management team back in 2001 were threefold:

- to maximise the amount of local currency funding;
- to maximise the committed tenor; and
- to minimise their credit risk with the Nigerian banks (as a lender or depositor).

Any Nigerian banks that were commercially close to the rival operator Econet Nigeria would be excluded from the debut syndication for reasons of confidentiality.

The local banks were looking for clear international lender leadership, given MTNN's short operating history. Lenders appeared instinctively uncomfortable if they were being asked to move beyond the initial leverage limitations, which had been a central plank of their internal credit submissions. The one-year naira bridge loan was put in place in January 2002 and then rolled over for a further year at the beginning of 2003. This US$170 million facility provided by seven banks was ultimately to provide the core syndicate for the three-year financing signed in October 2003.

International bank lenders were pretty much closed for cross border exposure on Nigeria and the DFIs were balancing a desire to grow the local capital markets with constraining country limits or indeed prohibitions on further exposure. Exports Kreditnåmnden (EKN), the Swedish national export credit agency, backed funding for the Ericsson equipment. Though this seemed like an early win, the lines for Nigeria were very full and the quantity of Swedish content limited (given the civil works were being undertaken by a third party). Ericsson, whilst willing to discuss further direct credit support, was only really willing to do so for much shorter tenors than EKN could have done. Some sort of hybrid arrangement seemed the only realistic option, if it could be integrated with the rest of the structure.

One arm of the World Bank, the Multilateral Investment Guarantee Agency (MIGA), had already supported Econet Nigeria for its much smaller debut financing, but the party with potentially the largest single-lender cheque book for the project was the IFC. The IFC agreed to provide up to US$100 million of commitments to the project across debt, debt-substitutes and equity, approving this in June 2002.[8] With this significant level of flexibility the joint financial advisors on the project (Citibank, N.A. and Standard Bank London Ltd) were able to produce a structure that met everyone's needs.

IFC involvement in the transaction, as both a shareholder and lender via its 'A' loan programme, provided some key additional benefits to mitigate the political risk of operating a Nigerian business. Whilst implicit, the presence of such a party was felt to reduce the risk of punitive actions being taken against the company. Quasi or backdoor expropriation is very tempting for any indebted government viewing such a significant cash flow generator as MTNN. The ability to mitigate the perceived risk of that eventuality was critical to all stakeholders in the deal and contained the cash flow leakages to the agreed licence fee share of net revenues. Concerns over windfall taxes have subsequently proven to be not just an emerging market issue, with the UK's banks, oil companies and utilities having been targeted at one time or another in the last 10 years by successive governments looking for innovative ways to balance the books.

The provision of debt-substitute funding also helped to resolve another key issue – tenor mismatch. Whilst the Nigerian banks were willing to extend their tenors from 12 months to three years (based upon 90 day paper), they could not commit to provide five or indeed seven-year funds at that time.[9]

MTNN did not wish to incur either:

- the negative carry of drawing 100% of the funds on day one and placing them on escrow; or
- the credit risks associated with onshore escrow deposits.

The solution was for the IFC to provide a liquidity backstop to the extent that the naira facility could not be rolled over at maturity. Whilst the US$50 million foreign currency backstop represented only 20% of the initial naira facility of US$250 million this was:

1 a reducing facility with pre-agreed reduction at planned rollovers; and
2 in local currency locked at the exchange rate at signing. These factors combined with some sensitivity analysis helped all parties get sufficiently comfortable that it would properly mitigate the risk of multiple Nigerian lenders falling away after three (or five) years.

Should it be utilised at either the first or second rollover of the naira tranche, the backstop had a pre-agreed term-out schedule that would see it fully amortise over two years. Importantly, the backstop was only a liquidity instrument and not a credit backstop. Should an acceleration of the project loan have occurred then the naira debts could not be 'put' to the IFC.

Exhibit 10.8

Operation of the backstop (before the tranches were increased in syndication)

Date	*US$ million*	*NgN:US$*	*NgN value of backstop*	*Backstop as a % of local facility*
31 March 2007	50	187	9,334,435,874	42
31 March 2009	50	233	11,636,149,914	79

Source: MTN Nigeria

The final structure chosen for the local currency tranche was a note issuance facility (NIF) underwritten by a syndicate of Nigerian banks. The banks would have the pro rata ability to subscribe to the notes each time MTNN undertook an issuance. The notes,[10] which were ninety days in tenor, provided a far more liquid instrument for the Nigerian banks. The Naira benchmark interest rate was also an issue, given the varying individual lender Nibor rates. In Kenya, this had been resolved by pricing off a liquid, government-issued instrument, the T-bill. MTNN agreed to use a reference bank panel drawn from syndicate members who were also participating banks in the Nigerian Central Bank run currency auctions.

Whilst the Swedish content linked long-term funding had hit an obstacle, the South African Export Credit Agency (ECICSA) agreed to provide 100% political risk insurance (PRI) on a US$40 million tranche provided by a South African bank. This was the first time the agency had agreed to provide PRI-only cover, which reduced the overall upfront premium when compared with a comprehensive cover solution. Standard Bank of South Africa provided the funding under this tranche and assumed the commercial risk on MTNN, according to CFO Andrew Bing.

The final part of the structure was another DFI loan of US$20 million provided by Nederlandse Financierings Maatschappij voor Ontwikkelingslanden NV (FMO) from the

Netherlands and Deutsche Investitions und Entwicklungsgesellschaft (DEG) of Germany, which mirrored the IFC's 'A' loan in structure. This also had the benefit of being untied funding, unlike ECA funding. By providing direct loans MTNN also avoided the 'doubling-up' impact of using a credit enhanced structure on the all-in cost of a particular tranche.

The resulting structure was a mix of varying tenors and currencies, governed by a Common Terms Agreement (CTA) drafted by Norton Rose Fulbright LLP. This was in addition to a formal Intercreditor Agreement (ICA). The ICA was vital to the interrelationship of the various tranches in the structure and gave the sponsors the certainty of knowing what they would have to do to achieve any future waivers or amendments. The ICA sought to manage a complex situation in which many differing parties did not wish to see their view out-voted. In reality, only the local naira tranche operated with a typical '51% majority bank' consent mechanism, with the rest requiring 100% consent. Namely each other lender had a blocking ability on further changes that they did not wish to approve to the CTA (as well as their own facility agreement). Whilst deemed consent wording is a potential solution to lengthy approval mechanisms, sponsors find that the affected lender is simply pushed into saying no to any Facility Agent's request if they cannot complete their process in time.

Due to the extended signing timetable, the actual DFI/IFC loan tenors ended up getting shortened from the assumed seven years, as the maturity dates were fixed in the term sheet.

By blending the structure as shown in Exhibit 10.9, MTNN achieved a number of benefits:

- over 70% of funding was in local currency, providing a natural hedge to its revenues;
- a significantly enhanced tenor profile (up to seven years);
- liquidity support to the extent that the naira market dried up at rollover;
- nearly 90% of funding was non-tied, increasing availability period flexibility. (US$40 million out of US$345 million was linked to South African content);
- long-term funding risk on the 13 participating Nigerian banks[11] was minimised, as they rolled over the notes every 90 days; and
- the absence of complicated escrow arrangements.

Exhibit 10.9

Original banking case as prepared by Analysys Mason

Year-end 31 March	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Turnover (NgN million)	64,554	96,517	125,899	155,720	184,391	212,466	245,715	272,166
EBITDA margin	34%	35%	37%	39%	40%	39%	39%	39%
Medium term debt (NgN million)	24,648	47,608	54,159	51,798	39,090	32,196	20,368	14,724
Free cash flow (NgN million)	(16,410)	(10,572)	12,302	31,708	41,781	44,646	51,498	55,030
Closing cash balance (US$ million)	33,359	22,887	22,107	61,240	87,727	30,000	30,000	30,000

Continued

Year-end 31 March	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Blended ARPU (US$)	43	32	27	23	21	18	17	16
Cumulative capex per sub (US$)	814	729	651	616	598	595	608	633

Source: MTN Nigeria

However they remained exposed to:

- 100% floating rate funding, the naira portion of which could not be hedged; and
- a complex voting system that required unanimity across four parties, being the majority Nigerian banks, IFC, two DFIs and ECICSA to achieve changes in the CTA.

This latter point is of particular concern when virtually all the underlying covenants were in that document. Due to some covenant asymmetry (primarily related to information undertakings for reasons of confidentiality), some covenants were contained within the individual loan agreements. MTNN sought to replicate their obligations via the CTA as much as possible, but the multilateral agencies had some lender specific covenants that made this a sensible compromise for all stakeholders.

European mobile financings typically had a suite of financial covenants linked to the original business plan that saw the borrower move from a high risk credit to corporate status over the project life. A feature of African deals was that they tended to move through the financial ratios very quickly. Classic benchmarks like becoming EBITDA positive, being able to be covenanted at no more than 6.0 times debt/EBITDA and flat-lining at 2.0 to 3.0 times could occur within 12 months of signing the debt facility and not 36 months or more. (MTNN was covenanted to have a debt to EBITDA ratio of <2.5 times at signing and for this to have fallen to 1.5 times by 31 March 2005.)

Other covenants for deals of this type included:

- date based coverage requirements set ahead of licence requirements to warn of potential future breaches (or at licence dates if remedy periods were available to the operator);
- monthly information package (MIP) until EBITDA reached a certain level;
- maximum debt to shareholders' contribution ratios (usually a constant rate tested quarterly);
- absolute EBITDA levels (set at an agreed variance to the management plan and in-line with the banking case) and tested quarterly;
- EBITDA to interest cover ratios tested quarterly; and
- debt service ratios tested quarterly once amortisation had commenced.

Given the varying repayment and maturity profiles, the standard definition of a debt service coverage ratio was not used. However a hybrid, treating the pre-agreed NIF facility size cancellations as repayments (and ignoring the total quantum of rollovers or the NIF maturities) was possible. Lenders were comfortable that the modest forecast leverage and strong

interest cover meant that the refinancing risk associated with the maturity of the NIF at the end of year three was acceptable.

Security can also be a challenge as local laws vary in terms of what can be taken under the equivalent of an English law fixed or floating charge. Lender security tended to attract some punitive levels of stamp duty, forcing them to take a very pragmatic view when deciding what their minimum requirements would be. Nigeria had the advantage for international lenders that the domestic laws were at least familiar, having been based on the 1948 UK Companies Act.

MTNN's security package, confirmed in the information memorandum, included:

- a charge over all the shareholder loans;
- a charge over the shares held by MTNI in MTNN (this supported a 60% maintenance of ownership commitment by MTN Group); and
- a pledge over MTNN's assets, including the licence.

The most valuable asset of a mobile operator is its licence. Without that, expensive in-situ network assets are valueless to a new entrant. The dilemma that all regulators wrestle with (just as for oil and gas in Chapter 8) is that they care very much about who might operate a network and thus are unwilling to give any secured creditor the unfettered right to sell it. Equally, they realise that with no security the borrower may not be able to build its network in the first place, as it cannot secure non-recourse finance. In Nigeria's case the basis for taking security over the licence had been factored into the original auction conditions by the NCC. However in exactly the same way as in Kenya, the borrower could only perfect the security with the explicit acknowledgement of its regulator.

Whilst difficult to value, a key criterion for all lenders and investors was the maintenance of ownership conditions outlined in the Commons Terms Agreement in the Preliminary Information Memorandum (PIM). Under this condition, the ultimate holding company agreed to a minimum 60% ownership for the life of the debt financing. The form of the condition is not a public document.

Clearly any lender would have preferred that such an agreement was:

- actionable;
- in writing; and
- not something that simply caused a default under MTNN's financing agreements.

The best outcome for a lender would have been something that would have had wider ramifications for the whole MTN group, if that ownership was diluted below 60%.

Financing decisions

The advisory process trod a well-worn path for African cellular deals and saw a PIM issued to various DFIs and the export credit agencies (ECAs) arranging banks to gauge their appetite for a deal. At that time only an outline funding structure was provided and all capacities were expressed as ranges and not absolutes. Multiple funding options were included with

the proviso that a minimum of US$300 million of cash funding was required. Based on the feedback to the PIM, a formal structure was then agreed with MTNN and MTNG. Domestically, a short-form Information Memorandum (looking remarkably like the international PIM but excluding the financial model and certain highly sensitive commercial data) was circulated to raise the bridge financing. Exhibit 10.10 shows the original banking case.

Exhibit 10.10

Final funding structure

Facility	*Amount*	*Tenor*	*Pricing*	*Currency*	*Comment*
Note issuance facility	US$250 million	3 years (but see note)	100bp over Nibor	Drawn in naira, but denominated in US dollars	The US dollar linkage was to cover the devaluation risk inherent in the plan pre-signing
IFC A loan	US$35 million	6.25 years	425bp	US dollar	Bilateral senior loan
IFC backstop	US$50 million	7 years	425bp	US dollar	Liquidity not credit event instrument
ECICSA	US$40 million	4.25 years	n/a	US dollar	Linked to the provision of South African content
DFI loan	US$20 million	6.25 years	425bps	US dollar	FMO and DEG

1 The documented tenor of the NIF was seven years, but it was only committed funding for three years. The plan was to ask committed banks to recommit on two scheduled rollover dates, three and five years after signing. Amortisation of 25% of the original naira NIF amount was scheduled to occur at years three and five, contemporaneously with the rollovers.

2 As the NIF was to be used to redeem the naira bridge loan, the potential adverse impact on the project leverage of a devaluation of the naira was limited and the maximum naira drawings under the NIF were locked at signing at the then prevailing Central Bank of Nigeria exchange rate.

Source: Various public data sources

Given the extensive early stage information provided to potential lenders, the final syndication risk on the deal was (theoretically at least) fairly limited. This assumed that neither an aggressive advisor tried to switch previously disclosed terms at the last minute nor the lender uncovered new sector or country specific information that made its credit committee change their stance.

The naira tranche was scaled up 25%, from US$200 million to US$250 million based on the oversubscriptions received in syndication. However the 13 banks' aggregate commitments were still scaled down. Under the CTA, the structure permitted a maximum US dollar

equivalent amount, capping the overall local currency funding. All seven of the one-year bridge loan banks recommitted to the medium-term deal.

The implication of these changes was that discussions with Ericsson on a replacement US$55 million facility ceased,[12] the ECICSA tranche was reduced from US$65 million and the prospect of an IFC 'B' loan syndication formally ruled out. This had the added benefit to MTNN of reducing its weighted average margin, as it substituted 425bps with 100bps. Whilst the refinancing risk on the naira tranche went up, actual results in the form of a summary monthly information package that was shared with all parties evidenced performance well ahead of plan.

The business has continued to expand and remains the single largest mobile operator in Nigeria, a position it has held from launch. Exact market data is complicated, as defining a subscriber is somewhat complex in a prepay environment where someone may simply go and buy a new SIM card and stop using their old network provider.

Key developments included the impact of a series of fixed and mobile licences being awarded to Globacom[13] (branded 'Glo') on 1 September 2002 for the reserve price of US$200 million. Considerable merger and acquisition, and new licence activity since 2003 has led to a five player market (including M-Tel's 258,000 attributed subscribers) existing currently.

According to the NCC's website in July 2013 there were 114,760,406 mobile subscribers in Nigeria, an official teledensity of 81.97%. This was split:

- MTNN – 52.2 million;
- Globacom – 22.8 million;
- Airtel – 21.1 million;
- Etisalat – 15.5 million; and
- M-Tel – 0.3 million.[14]

MTNN's capital markets activity has seen seven rounds of financing having been successfully closed.

Exhibit 10.11

History of MTN Nigeria financings, 2002 to 2013

Financing	*Amount (US$ million)*	*Year*	*Comment*
Bridge	170	2002	1 year naira based facility
Renewal	170	2003	1 year naira based facility
Project finance	395	2003	Dual currency funding up to seven years
Refinance	595	2004	Upscale by US$200 million

Continued

Financing	*Amount (US$ million)*	*Year*	*Comment*
Refinance	2,000	2007	Five-year corporate style facility
Renewal	2,000	2010	Five-year corporate style facility
Refinance	3,000	2013	Seven-year corporate style facility

MTN collected African Telecoms Deal of the Year from *Project Finance* magazine in 2003, the US$2 billion refinancing won 'African Deal of the Year for African Telecoms' in 2007 and the latest refinancing was 'Highly Commended' in 2013. The 2007 deal comprised the naira equivalent of US$1.6 billion and US$400 million in foreign currency, an 80:20 split. Again syndication saw a huge oversubscription from an original target of US$1.2 billion across both tranches and the foreign currency commitments cut back by US$50 million.

Source: MTNN press releases

Few would have guessed, 10 years later, that MTNN would have raised some US$3 billion on its own credit rating and based only on a negative pledge. This was a 7.5 times multiple of the 2003 debut project finance deal, high even for a mobile financing market well used to sponsors coming back for more funding. What is most striking about the 2013 transaction is the quantum of local funding. Zenith Bank committed NgN55 billion (US$345 million) and two other banks, NgN40 billion each (Guaranty Trust and First Bank of Nigeria). This suggests that the market has deepened radically over 10 years, notwithstanding the transformation in MTNN's own credit profile. At the 2013 signing, Brett Goschen,[15] CEO of MTN Nigeria, noted: 'The signing of the loan deal marked another strategic collaboration between the telecoms service provider and financial institutions to deepen telecommunications services in Nigeria.'

Investor profiles

When looking at the structure, the disparity between the margin earned by the local banks and that for the DFIs was very material at 325bps. The rationale being that offshore parties needed to be compensated for taking cross border risks, using up their scarce country limits. Pricing is traditionally also incrementally higher for those parties providing longer tenors. The pricing asymmetry was fully transparent to all lenders/investors, given the desire for them all to be long-term financial partners of MTNN. This 'open book' approach of the advisors was vital to ensure that no party felt they were being disadvantaged (relative to their peers), when it came to fees and reward for bearing risk on the project company.

The asymmetry can be further explained by the contrasting visibility of the pricing benchmarks used (US dollar Libor and Nibor). Lenders pricing off Nibor potentially had a healthy margin over their real cost of funds. However, any margin was a volatile number impacted by variables such as the level of client deposits on their balance sheets and relative

borrowing capacity in the interbank market. The fact that the Nigerian banks were happy to receive 'only' 1% suggests that this perceived margin was real and the alternative assets less attractive from a reward (or perhaps risk) perspective. Given current well founded concerns over various benchmark interest rate settings in the global financial markets, perhaps Libor was not as 'clean' as the participants all thought.

With very limited cross border appetite for Nigeria at the time, the international lenders were pretty much price setters for longer tenor commitments and the issue became more whether margin ratchets could be introduced and if so at what level. The typical leverage-driven pricing matrix would have been ideal for MTNN, as they were forecast to go through it so quickly. The solution in similar deals was to guarantee a higher margin for a period or for the borrower to rely on a refinancing mechanism to secure future lower cost funding. MTNN chose the latter option in 2003 and thus there was no margin ratchet. Generally, there were no cost implications of a prepayment for DFI or naira floating-rate funding, but the CTA did seek to manage the risk that MTNN might seek to prefer one set of creditors over another in a scenario where very different tenors applied to the offshore and onshore money.

The primary advantage of using DFIs or similar non-governmental organisations (NGOs) as international lenders is that, whilst they may be materially slower than their commercial bank counterparts, they have more than an economic or relationship driven rationale for involvement. Commercially, this means that they are unlikely (even without also being a minority shareholder in the case of IFC) to act aggressively if the business starts to deviate from plan. They tend to have a deeper understanding of what it is like to operate with officialdom in emerging markets and have a network of local connections that can be brought to bear if required.

This rationale was highlighted by Haydee Celaya, IFC Director for Africa who in early 2004 said about the Euromoney African Telecoms Deal of the Year award:

> The project finance award for IFC's catalytic role in the financing package, which [MTNG] is using to expand and improve its network in Nigeria was all the more satisfying because the MTNN transaction fitted so well with IFC's strategy for Nigeria anyway, namely, it facilitated private participation in key areas of infrastructure, spurred financial sector deepening, and has supported the government's reform of the telecommunications sector.

Lessons learned

So if the parties could have done it over again, would they have done something different? To gauge this, the author has sought feedback on the chapter from the current CFO of MTN Nigeria, who was heavily involved in the financing at the time, the legal firm that documented the transaction on behalf of the lenders (NRFL), a leading market consultancy company (Analysys Mason) as well as his own perspective as the lead financial advisor from Citibank at the time, as well as others who have provided much help and guidance and wish to remain anonymous.

The Group Financial Director of MTNG at the time, Rob Nisbet, called an emergency meeting with the joint advisors in London. He had real concerns about deal execution in

light of the Cameroon experience and asked pointedly, 'Can you guys really raise me US$300 million [non-recourse] in Nigeria for this project?' Both advisors' answers were identical – a positive but guarded response and neither could commit to a definitive timetable. What is clear from the pointed question was the pressure that senior management felt over this Nigerian investment. Nigeria was fundamental to the wider group's business plan and dwarfed their other forays into Uganda or Cameroon. The latter project saw its financing timetable drag after variances from the 2000 drafted business plan forced management to withdraw it just prior to a planned signing. This had resulted in MTNG having to agree an element of recourse until certain project milestones were met.[16] Finally, a €93.5 million equivalent of facilities was signed for MTN Cameroon in October 2001.

From the advisors' perspective, the whole process became too protracted. This necessitated a renewal of the Naira bridge facility and some considerable internal angst over whether the success fee would be earned at all. Could the financing timetable have been truncated? In reality, it could not, despite the hopes of MTNN, MTNG and their advisors. The DFIs worked to their approval timetable and most of those approached were able to respond positively. Until soft commitments had been received it was difficult to finalise the structure from the PIM to the IM. Thus formally seeking approvals on agreed terms became delayed as parties sought to alter the proposed structure based on their credit team's feedback. The problem being that in some cases the interests of the various lender groups were diametrically opposed. (We can compare and contrast this with the Sadara case study syndication process in Chapter 16.)

A trend towards the 'lowest common denominator' can become a real issue in facility documentation. By including some 'outlier' covenants in the individual loan agreements rather than the CTA, it was at least possible to shelter MTNN from a global set of even more extensive requirements. This documentation burden had been a particular issue for Safaricom, where local management, on being asked to reflect on the deal, felt that the ongoing workload of a publicly listed bond was far higher than they or Vodafone had anticipated.[17] Unsurprisingly this did have a very significant impact on overall legal costs in both projects, which already needed to blend English Law CTA and loan agreements with Kenyan or Nigerian security law.

When looking back at the schedule of financings, the 2003 project financing needed to be amended within 12 months and certainly did not run to maturity. However, this does not mean it was not a success. The flip side of the modular network build benefit of mobile financings is that you never really finish rolling out. Due to changes in technology (2G to 3G and now 4G) or capacity (subscribers exceeding your minutes of use assumption or changed calling patterns that impact the load configuration of the network), perfectly reasonable assumptions on the quantum of licence fees or desired network configuration can be easily blown apart. To build a network in Africa, where the assumptions already came in wide ranges, the fact that the outcomes could be so variable should not have come as a surprise. With hindsight we can see the variance was all on the upside for MTNN, its shareholders and the lenders.

What is indisputable is that without the 2002 and 2003 non-recourse financings in place, MTNN would have seen its growth stifled and had its competitive position adversely affected. Management would have been forced to run the operation on a cash neutral footing,

self-funding investment in both subscribers and the network. The alternative of more shareholders' funding would have caused multiple issues:

- local investors would be forced to renegotiate their shareholders agreement with MTN;
- potentially impacting the group's share price as the broker community started getting concerned about the viability of an independent MTNN from its South African parent; and
- lowering MTNs return on equity on the project.

Michael Ings, Partner, Norton Rose Fulbright LLP noted that:

> MTNN has been a fantastic success story both generally and, specifically, in its ability to raise funds and so it is easy to forget how challenging this transaction was at the time given the quantum of debt involved, the number of different interested parties and the geography and stage of development of the business. There were many issues of concern to both the stakeholders and lending groups that needed to be considered and frequently their interests were not aligned where you might have expected them to be. In particular, from a legal perspective, bespoke intercreditor arrangements needed to be developed to deal with the requirements of different lending groups who were often coming at the same problem from completely different angles, as did a security structure to protect the interests of the lenders whilst not being impractical or prohibitively expensive. The key attributes of all parties were probably persistence and patience (seeking to rush through a transaction of this nature would have been counter-productive) and a willingness to look for innovative solutions, such as in relation to stamp duty when the issue threatened to derail the entire deal. Whilst, with the benefit of hindsight, it is always possible to improve any deal what was ultimately achieved was actually a pretty good solution for all concerned.

Bram Moerman and Edwin Grummitt from Analysys Mason reflected that:

> In early 2000, little was known about the Nigerian economy and indeed demographics with any degree of certainty. Therefore, even the most fundamental inputs to MTNN's business plan were subject to interpretation. What was clear from the outset was that there was significant pent-up demand for communications in the country. However, how many people would actually be able to afford it? Combined with regulatory uncertainty this was a challenging project throughout the financing phase to get everyone comfortable with the assumptions underpinning the proposed financing. Ultimately, MTN's African experience and Analysys Mason's track record in developing markets combined to provide the comfort investors needed to get them over the line.

Commenting in April 2013, in Ventures Africa, Brett Goschen summarised his feelings about the successful fund raisings that MTNN had achieved in the Nigerian market by saying:

> The essence of these deals was to enable MTNN to make the necessary capital investments to expand our network infrastructure and meet the growing demands of our

> customer base. We certainly put that financing to good use, built the most extensive telecommunications network in Africa and grew our customer base to over 50 million subscribers.

An anonymous source who worked at Citibank, N.A. at the time of the 2003 financing and was responsible for monitoring the loan after signing said:

> MTNN was a no surprises credit, which never [in my memory] missed an interest or capital payment in the life of this loan. It was/[is] a dynamic business, but they always kept their lenders well informed via the agreed reporting mechanisms, so we had time to react as new things came along.

This was a genuine pioneering partnership born of mutual trust between borrower and lenders/investors. Everyone knew what they were getting into and they were all rewarded for the risk they took. The fact that the loans were rumoured not to trade was testament to the fact that nobody had any real desire to sell, at least not as a result of anything that was under MTNN's control. Of course, silent sub-participations and dealing in highly liquid short-term paper mean that the Facility Agent is not always aware of what has occurred to beneficial ownership, but if the funders were trading then it was very discreet and certainly did not result in any major issues for the borrower.

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[1] Transparency International is a leading non-governmental anti-corruption organisation that produces both a corruption perception index and a global corruption barometer. In the 2003 publication, Nigeria came 132nd out of the 133 countries reviewed (above Bangladesh and just below Haiti). In 2013, it was rated jointly at 144 out of 177 alongside Cameroon, Central African Republic, Iran, Papua New Guinea and Ukraine.

[2] This assumed that MTNN could achieve the 99.9% availability statistics they were targeting. This contrasts with the 99.999% availability (so called '5 nines') that a modern data centre may provide its customers.

[3] It became clear to all stakeholders that MTNG would continue to find resources to parachute into MTNN as required. The personnel changed as the business developed and MTNG was able to replace expensive international staff with local talent. However some survived (or were suitably encouraged not to leave). Thus the current CFO has been there from the beginning, but was in a different role in 2003.

[4] The Analysys report, which had been demanded by the Nigerian banks, included an environmental study by Prodec-Fugro that also met some of the IFC's conditions.

[5] ARPU is the industry benchmark for looking at the revenue generation of the subscriber base. It is driven by three key factors: client mix (business and consumer users); overall penetration rates (early adopters tend to be higher users); and subscriber entry costs (handset purchase costs and subsidies provided to sales channels by the network operators).

[6] See Fabozzi, FJ and de Nahlik, CF, *Project Financing*, 8th edition, 2012, Euromoney Books. This bond was fully underwritten prior to its wider distribution and listing, by a small club of sophisticated Kenyan long-term investors (banks and pension funds).

[7] The two DFIs in this 2001 financing were the African Development Bank (ADB) and the Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden (FMO) together guaranteeing 75% of the principal amount of the CFA23 billion (€35million) domestic amortising senior debt facility (DASDF). This avoided the conversion risk for the guarantors, should the French supported currency block fail.

[8] A significant equity involvement was a pre-requisite of the IFC to providing such large scale support and should have significantly augmented their economics (in the form of any overall relationship return on asset calculation they may have undertaken).

[9] The documentation language was complex, but the impact of the banks' commitment was that they had the *option* to rollover at maturity dates, rather than an *obligation* to do so, the assumption being that they would do so at the time and this choice benefitted MTNN.

[10] The benefit of the note structure was that it carried relatively light treatment from regulators and each note was easy to sell on if required prior to the 90 day maturity. It enabled MTNN to access a strong commercial paper market, as opposed to a less liquid and prohibitively expensive long-term bank market.

[11] Nigeria International, Standard Bank, Diamond Bank, First Securities Discount House, Guaranty Trust Bank, Investment Banking & Trust, Standard Chartered, United Bank for Africa, Union Bank of Nigeria each was allocated US$20.5 million, FSB International Bank US$15 million and Habib Bank, Liberty Bank and Access Bank Nigeria US$7.5 million.

[12] Whilst management and advisors felt awkward, given the amount of work that had been undertaken by both EKN and Ericsson, both were happy to step aside given the funding for the underlying equipment contract had been secured and their US$70 million bridge loan repaid. Indeed, EKN was involved in both the 2007 and 2010 deals providing cover for a US$250 million ECA tranche. Ericsson did, however, see a second supplier come on board in 2007, being the Chinese TOEM Huawei (which in turn was backed by a US$200 million ICBC Bank buyer's credit facility).

[13] Globacom was the winner of the Second National (fixed-line) Operator Licence (SNO) in August 2002.

[14] NCC 2013.

[15] Brett had joined MTNN at the time of the project financing as the new CFO.

[16] Whilst falling well short of a full guarantee until 'Financial Maturity', the original business plan had proven to be far too optimistic on ARPU and the resulting revenues were materially below plan. That is not to say it performed badly, simply not as well as had been forecast and the lenders wanted something more than just a maintenance of ownership commitment by the parent.

[17] The rationale being that the lead arranger was keen to get an unbiased view from the local management on how it had all gone, after the excitement over the legal bills had subsided.

Chapter 11

Liverpool manage to 'walk on' with a change of sponsor

Why is this case interesting?

The acquisition of Liverpool Football Club and Athletic Grounds Limited (LFC) in 2007 appeared to be a step too far for two experienced North American investors, George Gillett and Tom Hicks. The economics of their plan required moving the team to a new larger capacity stadium, but as fans in the Liverpool ground Kop area will know, it is never over until the final whistle goes. Ultimately the sponsors, not the manager, were sacked by their bankers. LFC managed to avoid falling into administration and seeing precious points deducted and the structure appeared to work well for the two banks involved.

Exhibit 11.1

Key project features: Liverpool Football Club

Feature	*Headline*	*Detail*
Financing	£350.5 million	Facility A to KF Facility B to LFC Facility C to LFC RCF to LFC
Signing	1 February 2008	
Borrowers	Kop Football Ltd (KF) and LFC	
Guarantors	Kop Football (Holdings) Limited (06032200 – KFH) and the Borrowers	
Sponsors	George Nield Gillett Jnr Thomas Ollis Hicks	50:50 via a US registered Limited Liability Company (LLC)
Lenders	Royal Bank of Scotland plc and Wachovia Bank N.A, London Branch	Not syndicated
Incurrence tests	Stanley Park development costs	Facility C

Continued

Exhibit 11.1 continued

Feature	*Headline*	*Detail*
Intercompany	£60 million loan over three years	KF to KFH
Security	Charge over shares in LFC, cross guarantee web, fixed and floating charges and assignment over key contracts	
Sponsor recourse	£185 million	Several guarantees from Hicks and Gillett
Sector	Leisure	English Premier League (EPL)
Country	UK	

Source: Various public data sources

This financing redeemed an acquisition finance loan that had been drawn down in 2007.

What was the project?

LFC had a proud tradition going back to its formation in 1892. The genesis of the club was an argument between its founder and the rival Merseyside club Everton, over non-payment of rent. LFC had been owned by the Moores family for 50 years and still retains a large international following. There was also synergy between the Moores' family business (Littlewoods Football Pools, a weekly competition to guess football match results with a large prize) and the EPL.

LFC represented a very valuable brand and football brands can be monetised and traded, based not only on tangible assets but also intangible brand value. Specialist brand companies often use hybrid discounted cash flow (DCF) techniques to value these intangibles. The inherent problem for overseas buyers of EPL clubs is that there may be:

- an asymmetry of information;
- no independent brokers report; and
- the vendors' profit motive was often balanced by a stronger feeling of loyalty to the underlying club. (Some clubs had been formed in the late 1800s and that can bring with it a high level of emotional attachment for the incumbent owners.)

Techniques used to finance international football clubs and their infrastructure come direct from the project finance handbook. Stadia like the current Wembley or the Emirates would not have been possible without project finance structures.[1] Funding in each case was built on segregation of cash flows and detailed analysis of resulting debt service capabilities.

- *Wembley*: Wembley's project finance deal for a 90,000 seat stadium (via National Stadium Limited) was £426.4 million. The syndication proved highly protracted, with one false start and then an extended process as a revised group of underwriters sold down their position. Structured on a 55:45 debt to equity ratio, the equity was made up of a £161 million government subsidy and £163 million from the Football Association (FA). The 16-year loan was priced at 280bps over Libor.
- *Emirates*: Arsenal's new 60,000 seat ground at Ashburton Grove was financed through a hybrid 14-year £260 million project loan and £97 million refinancing of existing arrangements and was signed on 23 February 2004. Construction was undertaken under a fixed price contract valued at £220 million by Sir Robert McAlpine Ltd.

Perversely, a century of heritage can be a disadvantage to a club's future financial performance:

- their all-seat stadium may be too small limiting ticket revenues compared with rivals;[2]
- the executive management team, coach or indeed owner may be less financially savvy in a fast changing environment for EPL teams; and/or
- owners may be willing to sell at below 'market price' (as far as the purchaser is concerned) or have different business plan aspirations that may place artificial limits on what can be achieved on the pitch, because of the cash flow implications of potential expansion plans.

Many older football grounds used to have higher capacities, but the growth of television coverage and regulation (including Lord Justice Taylor's reports in 1989 and 1990), saw these capacities reduced as stadia were converted to all-seat affairs in the wake of the Hillsborough Stadium disaster and the tragic loss of life that occurred at the ground that day, many due to crush injuries. At its peak, LFC's Anfield ground officially held 60,000 supporters, of which one third were in the Kop area.

The constraints on the club's revenues and removing them may have been an influence in George Gillett and Tom Hicks' thoughts when they decided to bid for the club. They saw:

- an owner that had held discussions with many potential suitors;
- nervousness over finding the right partner for the future of the club; and
- any bidders' (stated) acquisition strategy would need to work with the existing plans of the family to replace their current home, Anfield.

There was also the example of Manchester United, purchased by the American Glazer family in a £790 million public to private transaction in the summer of 2005. The Glazers began buying shares in the London listed entity in 2003. The price paid reflected the new paradigm in football, which was no longer just about selling seats in a stadium, printed media revenues and other forms of merchandising, but a far larger revenue model built on sponsorship, broadcast media revenues and global not regional marketing strategies.

That the LFC brand was underinvested in 2007 was clear to all parties including the vendors, but how much money would be required to fulfil the club's potential?

Exhibit 11.2

Historic financials on LFC, including turnover breakdown

Season	*Turnover (£ million)*	*Pre-tax profit/(loss) (£ million)*	*Wages as a percentage of turnover*
2010–2011	183.6	(49.3)	70.2
2009–2010	184.5	(19.9)	61.9
2008–2009	n/a	n/a	n/a
2007–2008	159.1	10.2	56.4
2006–2007	133.9	(21.7)	57.9
2005–2006	119.5	(5.2)	57.6
2004–2005	121.1	9.5	52.4
2003–2004	92.6	(21.9)	60.0
2002–2003	102.5	3.6	53.1
2001–2002	98.7	9.1	56.8
2000–2001	82.2	0.4	59.5

LFC came 9th in Deloittes 2010–2011 and 2011–2012 revenue rankings, with Manchester United 3rd, Chelsea 5th, Arsenal 6th and Manchester City 7th. Fifty percent of the top clubs were from the EPL.

Season	*Turnover £ million*	*Matchday £ million*	*Media £ million*	*Commercial £ million*
2011–2012	188.7	45.2 (24.0%)	63.3 (33.5%)	80.2 (42.5%)
2010–2011	183.6	40.9 (22.2%)	65.3 (35.6%)	77.4 (42.2%)
2009–2010	184.5	42.9 (23.3%)	79.6 (43.1%)	62.1 (33.7%)
2008–2009	184.8	42.5 (23.0%)	74.6 (40.3%)	67.7 (36.6%)
2007–2008	161.8	39.2 (24.2%)	68.4 (42.3%)	54.2 (33.5%)

Matchday revenues are made up of gate receipts, season tickets and memberships.

Source: Various public data sources

The two outsiders had a clear plan to emulate (or indeed surpass) what the Glazer family had achieved with Manchester United. The Glazer's primary bank had been JP Morgan Chase and the resulting syndication of the debt was complicated by the perceived dangers of getting involved with iconic EPL clubs. The preferred financing solution at the time involved modest levels of senior debt and large mezzanine or high-yield layers between the senior tranche and the deeply subordinated shareholders loans/equity. Payment in kind (PIK) debt instruments were a favoured instrument as this had the beneficial impact of rolling up interest rather than imposing an additional debt service cash flow obligation on the club. The cost of PIK debt rolling up at a 10% to 15% annual coupon was very significant and this was always intended to be an interim financing tool and not part of a long-term capital

structure, given the negative implications for the owners' return on equity, assuming the PIK debt was provided by a third party institution.

Macro environment

The dominance of the EPL over other leagues is highlighted by a 2013 Key Note report showing turnover generated at main UK football clubs: the 2010–2011 season turnover was £3,060 million, of which 74.2% was from the EPL; whereas the 2003–2004 season turnover was £1,920 million, with 69.0% from the EPL. This shows how the growing revenue (59.4% over 10 seasons) was becoming increasingly concentrated in the upper echelons of the game.

Football clubs in the UK have mainly been owned by wealthy private individuals, who have been willing to support the clubs financially, particularly those outside the EPL, often lacking the broadcast revenues of the top clubs and thus having lower third party revenues and smaller stadia. However, football has become an important business in Europe and this has attracted a different type of owner aided by the fact that between August 1997 and July 2008 there were 22 English football clubs listed on various UK stock exchanges.

The historic family owners have seen the 'pendulum economics' of the game swing back and forth over many years. If the club underperforms and gets demoted, it can easily spiral downward through the leagues as the best players leave and they continually struggle to compete effectively against more stable teams from lower divisions.

UEFA Financial Fair Play (FFP) rules have been around since 2011 and apply to clubs partaking in any UEFA competition (such as the annual Champions League and Europa League). Initially it was aimed at ensuring that clubs could prove they did not have overdue payables to other clubs. However, its scope has expanded significantly. Today, clubs can only spend up to €5 million more than they earn per year under FFP rules. If the after tax losses are directly funded by the owners, this threshold can be raised. The idea was to force clubs to operate at least at breakeven.

The 'loss' cap maximum has been set at:

- 2013–2014 season – two year cumulative limit of €45 million;
- 2014–2015 season – three year cumulative limit of €45 million;
- 2015–2016, 2016–2017 and 2017–2018 seasons the limit is scheduled to drop to €30 million; and
- thereafter it is expected to reduce again according to UEFA.

Permitted carve-outs from 'expenses' in determining whether or not a club has exceeded the permitted cumulative loss include spending on: their stadium; training facilities; youth development; as well as player contracts signed before 2010. The calculations are monitored by UEFA through its Club Financial Control Body (CFCB) and sanctions (including competition exclusion) have already happened. Formal sanctions for a breach of FFP are mandatory and UEFA's options include:

- warning;
- reprimand;
- fine;
- deduction of points;
- withholding revenues from UEFA competitions;
- prohibiting registering new players in UEFA competitions;
- restricting the number of players that clubs can register for UEFA competitions;
- disqualification of clubs from UEFA competitions; and
- withdrawal of titles or awards gained in UEFA competitions.

According to Deloitte's Annual Review of Football Finance in 2013, this trend to cap losses and level the playing-field is also spreading to other non-UEFA competitions and domestic leagues.

What is intriguing about the relative table position of the current 20 teams in the EPL (see Exhibit 11.3) is:

- the position of Manchester United and Liverpool, given the former's previous dominance under the prior combined leadership of Sir Alex Ferguson and David Gill;
- that ranking appears to be inversely correlated with returns (to the owners), as investment in players, managers and backroom staff cannot be a one-off event;
- the bottom 11 clubs are closely grouped with six points between them. That is equivalent to just two wins in two games;
- the mix of sponsors wanting to be associated with football due to its profile and how long they have been associated with each club;
- how the size of grounds varies from club to club and appears to be positively correlated to league position (with Sunderland being the apparent statistical outlier);
- the mix of nationalities owning clubs today; and
- the year controlling parties decided to buy their clubs.[3]

LFC was no stranger to sponsorship. It was the first English football league club to have a sponsor on team shirts (Hitachi from 1979) and had four different shirt sponsors since then: Crown Paints, Candy, Carlsberg and Standard Chartered Bank.

Exhibit 11.3

EPL's 20 clubs for the 2013–2014 season

	Club	*Points as at 25 January*	*Controlling owner nationality*	*Date last listed in UK*	*Year control achieved (50.1%)*	*Stadium capacity 2011–2012 (000s)*	*Shirt sponsor 2013–2014 (season sponsorship started)*
1	Arsenal	51	US	November 1995	2011	60	Emirates (2006–2007)
2	Manchester City	50	UAE	October 1995	2008	47	Etihad Airways (2009–2010)
3	Chelsea	49	Russian	March 1996	2003	42	Samsung (2005–2006)
4	Liverpool	43	US	n/a	2010	45	Standard Chartered Bank (2009–2010)
5	Tottenham	43	English	October 2003	2001	36	hp/AIA (2013–2014)
6	Everton	42	NOC	n/a	1999	40	Chang (2004–2005)
7	Manchester United	37	US	August 2012	2005	76	Aon (2010–2011)
8	Newcastle	36	English	April 1997	2007	52	Wonga (2013–2014)
9	Southampton	31	German	January 1997	2009	32	aap3 (2012–2013)
10	Aston Villa	24	US	May 1997	2006	42	Dafabet (2013–2014)
11	Hull City	23	Egyptian	n/a	2010	25	Cash Converters (2013–2014)
12	Norwich	23	English/ Welsh	n/a	1996	27	Aviva (2011–2012)
13	West Bromwich	22	English	January 1997	2007	28	Zoopla (2012–2013)
14	Stoke City	22	English	n/a	2006	28	Bet365 (2012–2013)

Continued

Exhibit 11.3 continued

	Club	*Points as at 25 January*	*Controlling owner nationality*	*Date last listed in UK*	*Year control achieved (50.1%)*	*Stadium capacity 2011–2012 (000s)*	*Shirt sponsor 2013–2014 (season sponsorship started)*
15	Swansea City	21	NOC	n/a	n/a	20	GWFX (2013–2014)
16	Crystal Palace	20	NOC	n/a	2010	26	GAC Logistics (2013–2014)
17	Fulham	19	US	n/a	2013	25	Marathon bet (2013–2014)
18	West Ham	18	Welsh	n/a	2013	35	Alpari (2013–2014)
19	Sunderland	18	US	December 1996	2009	49	Bidvest (2013/2014)
20	Cardiff City	18	Malaysian	n/a	2010	26	Malaysia (2013–2014)

- Under Football League rules, introduced in September 2009, each club is required to publish the identities of the ultimate owner of each significant interest (10% of the voting shares) in the club.
- Clubs on equal points are allocated league positions based on goal difference.
- No overall control (NOC), although in 1999 Bill Kenwright (English) acquired 68% of Everton for £20 million. Today he owns 25.84%, with Robert Earl (American) having bought his 23.27% interest in 2006. The 3rd largest shareholder is Jon Wood (English) who owns 18.92%.
- West Bromwich Albion evidences the potential downside of shirt sponsorship as the club became involved in a televised racism row related to a French player's on-pitch gesture.
- Peter Coates, the controlling Stoke City shareholder, also runs Bet365 the club's shirt sponsor.
- Described as the 'ideal ownership mix' by Peter Scudamore (CEO of the EPL), Swansea is controlled by a mix of individuals and a 20% stake held by Swansea City Supporters Society Limited.
- The largest shareholder in CPFC is Martin Morgan with 22.5%. Four businessmen, each owning 25% of CPFC 2010 Limited, bought the club out of administration in August 2010. CPFC also purchased the ground from Lloyds Bank.

Source: Various public data sources

A few suggestions of the drivers affecting team performance in the 2013–2014 season include:

- management (executive and team) – Arsenal with the longest serving EPL manager[4] in 2013–2014 are now top and Swansea, Fulham (twice), Sunderland and Cardiff (15th, 17th, 19th and 20th respectively) have seen their coaches replaced mid-season;

- financial strategy (in the form of player investment and revenue underperformance) – accounting company BDO noted that 50% of the EPL finance directors who responded to its poll confirmed they were dependent on the principal shareholders to finance annual revenue shortfalls or operating losses (in 2012–2013 season);
- regulation (new Union of European Football Association's FFP rules, limited transfer windows and points deductions for entering into administration); and
- competitor actions (even deeper pockets arrived or decided to invest further funds in rival teams, with a resulting boom in player wages).

One key problem with football finance is reputational risk. Whilst lenders may have security over the assets of a club, the reputational damage to the bank of being the party responsible for pulling down a sporting icon to make way for a new superstore or social housing project could be immense. Lloyds was undoubtedly relieved when it was able to offload Crystal Palace's ground to CPFC 2010 Limited after the club's company voluntary arrangement was resolved.

From 2005, US investors keen to acquire their own club have needed to be educated as to the implications of:

- demotion (as they cast their eyes longingly at lower table 'cheap' potential acquisitions);
- parachute payments (up to £59 million over four years for relegated clubs in the ELP in 2013–2014); and
- the value of UEFA Champions League (or indeed Europa League) qualification.

This was a far more complex revenue model than US investors were used to dealing with domestically. Project finance is traditionally based on assured income streams but there is the possibility of significant volatility introduced by poor game performance, leading to relegation. Nevertheless, the acquisition of Manchester United generated intense interest in finding other quality branded UK sports teams for investment purposes.

Deloitte's Annual Money League (2014) reported that revenues for the top 20 global football clubs have risen another 8% in 2014. Businesses can see the benefit of association with football, underlined by their actions:

- the EPL is currently named the Barclays Premier League;
- major accounting and legal firms produce valuation-based league tables of clubs and review historic acquisition structures in expensive reports;
- banks have dedicated sports financing experts;
- club shirts are sponsored by huge multinationals;
- stadia are increasingly named after paying sponsors and not their heritage names;
- growing number of corporate memberships of football clubs around the country and the proliferation of corporate entertainment options at football grounds;
- clubs are bought and sold like regular stocks and shares and readily leveraged in the public markets; and
- 70% growth in the value of TV rights as the 2013–2014 season saw a new three-year broadcast contract come into effect. EPL live coverage is shared by BSkyB and new entrant

BT Sport, with the BBC maintaining EPL highlights' coverage. BSkyB paid £2,280 million for the right to show 116 games per season and BT £736 million for 38 games.

Good public relations and not just viewing the EPL as an investment opportunity could be the strategic rationale for sponsorship. Sponsors are regularly upgraded as clubs' fortunes rise (or vice versa). When a credit analyst is left with the question as to 'who is using who here?' then the balance of power is probably equal. Being seen to be associated with the 'correct' demographic is now a factor in football senior executives' thinking. However, there are also the problems of:

- primary assets (players, grounds) wearing out as they age or get injured;
- managing enormous egos (players, managers and owners); and
- collateral PR damage associated with the desire of the media to investigate the private lives of players for something that is 'of interest' to their reader demographic.

Whether for gain or loss, many owners simply want their team to win. They can afford to lose money on the club (call it a loss leader) and are quite happy to do so provided it is within their ability to regularly sustain that negative cash flow. Some of the owners' sons love football – if at acquisition you had asked Malcolm Glazer why he bought Manchester United his sons usually featured in the reply. Newcastle's owner, Mike Ashley, was regularly photographed in the stands with the fans cheering on his team in the early days and his sports apparel business interests were seeking to sell replica football shirts to supporters and their families.

John Williams on the cover of his 2002 book *Into the Red* notes that Liverpool under coach Gerard Houlier and Chief Executive Rick Parry sought to undertake a management revolution: 'After a decade in the football wilderness, weighed down by the legacy of unmatched domestic and European success in the 1970s and 1980s, Liverpool [under Houlier and Parry] faced up to the huge challenge of building a new team and a successful modern club at Anfield fit for the 21st century.'

Williams' interpretation of the Houlier vision on player loyalty (to any particular club or country) 'would see players [moving] around increasingly regularly and indiscriminately' (Chapter 1).

This followed the breaking of a social taboo, namely a transfer between the long-term Merseyside rivals Everton and Liverpool, whereby Houlier signed an Everton player. This was reportedly the first such transfer to occur in either direction for 40 years. It underlines that the rival managers had something other than the profit motive on their mind when they bought and sold their prize assets.

Whilst Parry, the founding Chief Executive of the Premier League in 1992, survived this turbulent period, the French coach had long since gone and was replaced by Rafael Benitez, a Spaniard in 2004.

History of the project's development

On 6 February 2007, Messrs Gillett and Hicks assumed control of LFC having made a recommended cash offer for the club through Kop Football (KF). The original acquisition bridging facility was structured in such a way as to keep the acquisition debt away from LFC.

The primary financing drivers for the American bidders were fourfold:

- secure the club;
- fund the day to day operations and working capital (for example, player transfers);
- fund the development of the proposed new ground at Stanley Park; and
- ensure they qualified for a European competition, ideally the Champions League in order to meet their revenue targets. (LFC has not qualified for the Champions League since 2009 and missed out on European competitions altogether in 2011–2012 for only the second time in 14 years.)

The American duo's bid saw off a rival offer from Dubai Investment Capital (DIC) of US$450 million, whose period of exclusivity ended, letting Gillett back into the auction. The financial advisor to DIC had been the Royal Bank of Scotland (RBS).

An extract from the official offer document reveals the following:

> The Offer is £5,000 in cash for each Liverpool Share, valuing the issued share capital of Liverpool at approximately £174.1 million. Together with the £44.8 million of net debt in the Club as at 31 December 2006, this represents an enterprise value for Liverpool of £218.9 million. Furthermore that the cash consideration payable under the Offer will be funded from facilities made available to Kop, which are personally guaranteed by the Gillett and Hicks families.

The offer document went on to note that the bidder 'is fully aware of the current requirements of Liverpool':

> - intends to build, as soon as reasonably practicable, the proposed new 60,000 seat stadium at Stanley Park for which the Club has already received planning permission and to facilitate the financing of its construction;
> - is committed to an annual budget for player transfers and is able to supplement this should Liverpool's management and Kop agree additional funds are required; and
> - is supportive of both the current executives and football team management at Liverpool to provide stability to the Club.

Despite the claims that work would start on the new ground within 60 days, the stadium development timetable ran into immediate difficulties as the new owners sought to change the design and further increase the proposed capacity. (The 2007 accounts note that £10.3 million of costs that had been previously capitalised in relation to the new Stanley Park stadium were written down as the old design for a 60,000 seat stadium was reconfigured and the timing pushed back materially.)

To outsiders, the fact that numerous stakeholders had a view about what was best for the club came as no surprise. Perhaps what the US owners underestimated was the strength of feeling. Tom Hicks Junior (and a fellow board member of his father at the club) was reportedly ejected from a Liverpool pub after making an attempt to win over disenchanted Liverpool fans to his father's stewardship.

The general economic situation was also being shaped by the fall-out of the US sub-prime crisis and this had implications for the sponsors' bankers as well. The loan syndication market had contracted rapidly to a small core of banks as many of the specialist conduits got into financial difficulty.

Whilst the owners may well have had long-term funding plans at acquisition, both men were forced to react to a fast changing landscape that saw the buoyant fund-raising environment evaporate. They also had to contend with mixed fortunes on the pitch and the resultant ire of fans.

Sponsors

Kop Football (Holdings) Limited (KFH) (the Guarantor) was a private company, indirectly owned 50:50 by two experienced American sports investors George Gillett and Tom Hicks. The various entities are shown in Exhibit 11.4.

Exhibit 11.4

2007 Liverpool Football Club acquisition structure

Structure	*Registration*	*Role*
Kop Investment LLC	Delaware	HoldCo
Kop Football (Cayman) Ltd	Cayman Islands	Intermediate HoldCo
Kop Football (Holdings) Ltd	UK	Intermediate HoldCo
Kop Football Ltd	UK	Borrower
Liverpool Football Club & Athletics Grounds Ltd	UK	Target

Source: Various public data sources

George Gillett was the architect of the deal. He knew Hicks from previous business dealings and was unable (financially) to complete the deal single-handed. Gillett was a successful entrepreneur in media and ski resorts, but sought Chapter 11 protection in 1992 after his companies collapsed under a weight of junk bonds. He went on to invest in several sports franchises, including Harlem Globetrotters and won a controlling interest in the Montreal Canadians ice-hockey team in 2000. Gillett has a reputation of being a private man and this contrasted starkly with his partner's more gregarious style. Eventually this contributed to a breakdown of relations between the two men that was analysed in the English Press. Gillett was reported as willing to sell his stake to DIC as early as 2008, which despite losing out to the duo had maintained an active interest in LFC. However, under a clause in their purchasing deal, neither co-owner could sell their stake without agreement from the

other. So both men were locked in a stalemate situation unless they could mutually agree on a deal, a position confirmed by Hicks who was quoted as saying in the Fort Worth Star-Telegram on 28 February 2008: 'Not only am I not going to sell, my partner cannot sell without my approval.'

Tom Hicks was co-founder of private equity group Hicks, Muse, Tate & Furst and owned two sports franchises via Hicks Holdings, the Dallas Stars ice-hockey team and the Texas Rangers baseball team. The foray into baseball's sport franchising sector proved equally as complicated as LFC. Hicks had bought the Texas Rangers for US$250 million in 1998 from an investor group that included George W Bush, the then Governor of Texas.[5] Hicks had experience of stadium development from the US, seen by the vendor as crucial to their bid.

While the public face of the LFC acquisition was low debt, the Cayman equity was also financed through debt loans in the US and led to pressure being exerted from the sponsors' financiers as well as KF's in a pincer movement.

Structure

KF saw three rounds of financing between acquisition in 2007 and the ultimate sale in 2010 and many negotiated extensions. Post the January 2010 maturity, the lenders were in effective control.

The initial leveraged capital mix was mitigated from a lender's perspective by significant levels of contingent sponsor recourse. This provided flexibility to the Americans and a potentially higher return on their investment, if they were able to refinance a high proportion (or all) of the initial bridging loan. The additional sponsor recourse meant that the lenders had confidence they had a fully funded business plan.

Exhibit 11.5

Financing rounds for Liverpool Football Club

Facility	*Date*	*Amount*	*Tenor*	*Comment*
Acquisition bridge loan	6 February 2007	£185 million*	1 year	
Refinance	25 January 2008	£350.5 million	1 year	Extended for 6 months to 24 July 2009
Restructure	July 2009	£297.0 million	24 January 2010	Extended again until 3 March 2010
Extensions	Various	Reducing	Various	Extended to 15 October 2010

* A note to the seven months accounts to July 2007 reveal that the acquisition finance figure was £296.5 million, including a letter of credit of £100 million.

Source: Various public sources

Although the financing amount increased materially between 2007 and 2008, the borrowers never seemed able to draw all the latter funding. At the time of the refinance, a pre-agreed level of initial shareholder debt was required to be injected as a condition precedent on or before signing. The exact amount is non-public, but by July 2008 Cayman had contributed £58.2 million to its subsidiary KFH for down-streaming to KF.

Based on the split of the interest hedging undertaken in 2008, RBS represented 75% of the facility and Wachovia 25%.

The 2008 loan was never publicly syndicated. However, KFH's audited accounts, the subsequent court cases and media coverage mean that a lot of information did make it into the public domain. This was despite the best efforts of the stakeholders to 'not keep washing their dirty linen in public' (to quote Rick Parry's heartfelt plea as a lifelong supporter of the club and CEO of LFC).

The 2008 loan was divided into four facilities:

- Facility A – £245 million to KF, a wholly-owned subsidiary of KFH; and
- Facility B, C and Revolving Credit Facility – £105.5 million to LFC.

Pricing was Libor plus 3.5%. We know from the accounts that Facility C was stadium related and the pre-build availability was limited to £60 million.

Facility B and the Revolving Credit Facility (that was also available in advances or convertible into ancillary facilities provided by RBS or its subsidiary NatWest) were both structured as super senior revolving credit facilities. Facility B could be used to issue letters of credit, but apparently not advances according to the mortgage form extract reviewed by one of the authors.

Facility A and C ranked behind those super senior facilities, but ahead of the subordinated shareholders loans that had been injected via KFH.

The security given by KF was extensive and included:

- legal mortgages over real estate;
- legal mortgage over its shares in LFC;
- fixed and floating charges over assets;
- assignment over insurance policies;
- assignment over key stadium related agreements, including:
  - funding agreement dated 10 October 2007 from Liverpool City Council, confirming their back to back arrangements with the European Regional Development Fund and North West Development Agency; and
  - new stadium joint venture agreement dated 10 October 2007 between LFC and LCC, including details of the 999-year lease to be granted and phase one of the works (demolition and preliminary works at the Stanley Park site);
- charge over bank accounts, including the Gillett SPV (Football UK Limited); and
- sponsor support arrangements, including letters of credit and personal guarantees totalling £185 million:
  - Hicks provided his guarantee directly;

- Gillett provided his through a mix of direct obligations and family related entity credit support. This included bank arranged letters of credit, which were required to have a minimum credit rating of AA/Aa2. Booth Creek Management Corporation, Mill Financial LLC and a family partnership were the other guarantors; and
- cross guarantee arrangements between KFH, KF and LFC.

Exhibit 11.6

KOP Football (Holdings) Ltd – consolidated accounts (18 December 2006 to 31 July 2010)

Season *£ million*	*31 July 2007 – seven months*	*31 July 2008 – 12 months*	*31 July 2009 – 12 months*	*31 July 2010 – 12 months*
Turnover	39.3	164.2	184.8	–
Gross profit	32.3	144.9	165.7	–
Administration expenses	(61.2)	(165.8)	(184.3)	–
Operating loss	(28.9)	(21.0)	(18.5)	–
Profit on player disposals	4.1	14.3	3.4	–
EBITDA	6.6	46.0	38.3	–
PBIT	(24.8)	(5.7)	(15.2)	–
Interest charge	(8.6)	(36.5)	(40.1)	–
Profit/(loss) before tax	(33.3)	(40.9)	(54.9)	–
Tax	0.2	(1.7)	2.1	–
Profit/(loss) after tax	(33.1)	(42.6)	(52.8)	–
GP margin %	82.3	88.2	90.0	–
EBITDA margin %	16.8	28.0	20.7	–
Player amortisation	(18.4)	(45.9)	(45.9)	–
Other depreciation/amortisation	(13.0)	(5.8)	(7.6)	–
Net worth	(33.1)	(75.7)	(128.5)	–
Net debt	(244.3)	(299.5)	(351.4)	–
Cayman loan	–	(58.2)	(144.4)	(174.9)

- PBIT from adding back depreciation charges and both player and goodwill amortisation.
- Cayman loan was included within net debt, although it was a PIK instrument.

Source: Data extracted from audited accounts, save EBITDA, which was calculated

Significant additional funds were loaned to KFH from its Cayman parent after 2007. Although the coupon was 10% on this debt, interest rolled up over the entire period of ownership and no upstream dividends were paid. In terms of leverage, net debt was 5.24 times (excluding the subordinated Cayman element) EBITDA of £46 million as of 31 July 2008 and 6.5 times including the down-streamed parental loan. Interest cover (PBIT/net

interest payable) for the same year was negative, with a net interest charge of £36.5 million. Net worth was also negative at £75.7 million up from a deficit of £33.1 million the previous year. Tangible net worth would have looked materially worse due to the preponderance of intangible assets on the group balance sheet. Although the development at Stanley Park was very much work in progress, a technical adviser EC Harris was retained in relation to the stadium project.

The *Financial Times* followed the unfolding story closely and noted: 'In January [2008], less than a year after buying the club, the US duo were having to refinance their purchase in a stalled debt market. The £350 million deal they arrived at involved huge personal guarantees equivalent to £90 million apiece.' In 2009, £45 million of the KF loans were repaid and the availability of the clubs' lines cut to £97 million (down £8.5 million). This was made possible because £60 million of corresponding personal guarantee obligations appear to have been settled. The interest rate also increased to Libor plus 5% at the time of the restructure. The size of the required loan from Cayman to fund the group became increasingly significant and grew to reflect the ongoing paying down of the senior obligations, as well as the funding of operating losses.

The 2010 audited accounts were issued in shortened form due to what was described as the 'unusual circumstances' surrounding the disposal on 15 October 2010 and the 'inability of the directors to obtain the relevant information required for a consolidation'. The Cayman loan to KF was fully provided for in its accounts in the following year (31 July 2011), where it had grown to £178.7 million. Interest stopped accruing on the loan at the time LFC was sold.

Financing decisions

The *Guardian* in 2010 provided some insight into the EPL rules on club insolvency, in which a Premier League source said: 'The aim of the regulations is primarily to capture clubs who have gone into insolvency. This is manifestly not the case with [LFC].'

The article went on to underline the formal position by stating that: 'Last year West Ham United's Icelandic owners went into administration but it did not lead to any Premier League action as the club itself was solvent. Prospective owners are obliged to give the league 10 days' notice of a takeover and prove they have the funds to sustain the club. Any prospective owners need to have a face to face meeting with Premier League management to convince them they have enough money for the season to come.'

The debt structuring ultimately meant that the club was able to see its shareholding structure change and be reborn without the need for some formal administration procedure. This appears to suggest a game-theory based behaviour towards the regulatory framework, given the real difference between a HoldCo (KF) and an OpCo (LFC) going through a formal legal process that results in the OpCo having a change of ownership and the HoldCo seeing its equity value plummet to zero and its loan becoming subject to financial provisions by the lenders. One Essex Court has made available an account of the 2010 LFC finale. Clearly 'the hotly contested claims between RBS, the companies and the owners' had a basis in fact, but it was up to the courts to determine who had potentially transgressed. That complex task fell to Mr Justice Floyd.

- RBS insisted as a pre-condition to a further extension of the major part of the facility that the owners agree to sell their shares in the companies and, in the meantime, relinquish their control of the management of the companies and bring in an independent chairman to run the sale process.
- The owners met the conditionality and the revised corporate governance rules and the facility was extended to 15 October 2010.
- On 3 October, the Chairman (of LFC), gave notice of board meetings to consider the two offers that had been obtained with the assistance of professional advisors including Barclays Capital (a 100% subsidiary of the current sponsor of the EPL).
- Messrs Hicks and Gillett sought to (protect their investment by) restraining the sale of the club to NESV.
- The independent majority of the board sought a mandatory injunction to reverse any purported reconstitution of the boards of the companies by the US owners.
- Lord Grabiner QC and Jamie Goldsmith (acting for LFC – Kop Football Ltd and Kop Football Holdings Ltd) successfully supported RBS's application for a mandatory injunction and resisted the owners' application for a negative injunction;
- Having been refused leave for appeal in the English courts by the Judge, Mr Justice Floyd, the owners launched their claim against the independent directors, as well as NESV and RBS in Dallas, Texas. The owners made claims of an 'epic swindle' and 'grand conspiracy' by the parties concerned.
- The English judge subsequently ruled and granted an anti-suit injunction preventing the owners from continuing with the Texas proceedings and ordering the owners to take steps to have the temporary restraining order (granted by the Dallas court) removed forthwith.
- The owners complied with that order and a sale of LFC to John W Henry's vehicle, New England Sports Ventures (NESV), subsequently completed in October 2010 for £300 million bringing to an end a tumultuous period of ownership.

The *Guardian* reported on 7 October 2010: 'The fight to control [LFC's] future is heading for the high court next week, after the chairman, Martin Broughton, insisted he has the legal right to sell the club despite the opposition of Tom Hicks and George Gillett, the American owners.' Broughton and the club's managing director, Christian Purslow, and the commercial director, Ian Ayre, said they had agreed a sale to [NESV], owners of the Boston Red Sox baseball team, a deal that would give Hicks and Gillett nothing for their shares nor their £144 million loans back to the club. The *Financial Times* reported on 15 October 2010: 'Under the terms of Friday's deal, debts built up by Mr Hicks and Mr Gillett will be virtually wiped out. NESV is paying £200 million of acquisition debt and £40 million of non-acquisition debt, both in cash, and taking on £60 million of liabilities to cover stadium costs and normal working capital.' In the 2012–2013 season, Fenway, the new owners injected £46.8 million to repay a stadium loan owed by LFC.

Lessons learned

So if the parties could have done it over again, would they have done something different? Passions ran high on and off the terraces about LFC and it would appear that time has not

been a great healer. The author's perspective is that this is a very difficult space in which to make money without a 'good slice of luck'. Why? The economic argument for leveraging a business with volatile revenues, fixed costs and resulting high operating leverage is very hard to justify from a senior debt provider's perspective. Furthermore, the security is often very difficult to realise; as the reputational damage of exercising your rights can be significant. The valuations of the clubs can also be volatile, such that valuing the intangible goodwill is complex.

Revenues and costs need to be predictable to form a financial base case from which capital structuring can be undertaken. The problem with many EPL clubs is that it is relatively easy to predict a situation where the club can service little or no debt.

From an equity perspective, owning a football club appears to be principally about timing:

- buy or inherit a poorly performing Championship club;
- professionalise the management and invest in the team;
- reach the EPL;
- maintain a solid mid-table EPL position (without spending too much money); then
- liquidate or cash-in the investment at a significant profit.

1 September 2013 saw the move of one player, Gareth Bale, from Tottenham to Real Madrid, on a reported €100 million transfer fee. Putting that cost into a discounted cash flow model and ending up with a positive net present value requires some heroic assumptions on either: the discount rate (a negligible cost of capital); or huge potential cash flows for the team (and that assumes the player in question does not get injured and can actually contribute to winning the games). Whilst players like David Beckham have very valuable image rights (and managed to hold onto them personally later in his career negotiations), Bale appears to be a far more private man.

The gravitational truism of 'what goes up must come down' operates continuously in the EPL. Over 60 UK football clubs were believed to have gone into a formal administration (bankruptcy) process by 2014. Given the current climate, governmental control of the Royal Bank of Scotland and scrutiny of their global restructuring group (GRG) work-out business, it is understandable why anyone would not wish to publicly comment. From the bank's perspective, the final outcome of the LFC deal resulted in:

- RBS managing to get full repayment of their existing loans to LFC;
- re-lending the money to a more credit-worthy entity;
- extricating themselves from a headline grabbing legal battle; and
- keeping their reputation in one piece and not having to be known as the bank that brought down LFC.

LFC was certainly not the only EPL club to see a financial crisis impact on its finances. West Ham United, another EPL team, saw an administration driven by the Icelandic financial collapse and evidenced the perils of corporate as well as personal ownership of a club. In a current example, away from the dizzy heights of the Premier League, Coventry City Football Club (CCFC) is mired in controversy that also echoes some of these issues.

The Ricoh Stadium in Coventry was owned by the City Council and a charitable trust, the Alan Edward Higgins Trust, and was operated by a separate company, Arena Coventry Limited (ACL), owned by the same shareholders. The Olympic class Ricoh stadium was built in 2005 by the club but spiralling costs required the City Council to bail out the club and assume ownership of the facility. CCFC resorted to paying to use the facility on a match by match basis of £85,000 per game. Thus the club forfeited the benefits of other corporate activities at the site and only received ticket and merchandising sales proceeds since it was not the sole user of the sports facility. In 2007, the club was in financial difficulties again and was bought by an offshore-based hedge fund, SISU – this transaction included the assumption of the rent agreement for the ground. However, in 2012, the club was relegated to League One from the Premier Championship League, claimed by some fans to be the result of SISU's failure to invest in new players. This posed a new financial challenge for the club – the rent was based on Premier League membership, but SISU claimed that it needed to be reduced to fit the new profile. A 12-month rent strike resulted in an offer to reduce the rent, unacceptable to SISU, but put pressure on ACL.

In 2013, SISU placed the club in administration ahead of the creditors seeking to enforce court judgments in their favour. The club announced it would be leaving the Coventry ground and though 2013–2014 fixtures would be played there, a new home would be sought in Northampton, about 35 miles away. The Football League agreed to the move, despite the fans' objections, not least as the stadium is much smaller and public transport links to the new site were not good. It was also discovered that players had been registered to the incorrect corporate entity in an error by the Football League and that the so-called Golden Share that entitles the Club to play in the League had been transferred to a separate company also controlled by SISU. At the time of writing, the fans are boycotting matches and merchandise purchases to force a further change of ownership. A recent judicial review upheld the decision by Coventry City Council to lend £14 million to the company that operates the stadium, in order to allow that entity to remain solvent whilst SISU withheld rental payments. The saga continued and as we go to press, CCFC returned to play at the stadium, but a sale of 50% of ACL to London Wasps, the Rugby Club, was agreed at the start of October 2014. This illustrates the messy situation that can arise when stakeholders fall out.

In summary, in the Liverpool case, the two American owners ultimately became hostages to fortune. Without the financial crisis, the strain on their personal relationships would never have happened and it could have been a very different endgame. Had they not solely used third party funding building the new stadium, rather than buying the club, then Anfield could already have been consigned to the history books and a lot more supporters could be watching their favourite team from something other than the comfort of their armchair. Governance issues in football need better transparency to balance the needs of all stakeholders.

Chris Morton who has been involved in resolving issues at a Premier League Club during an administration opines: 'Political pressures, especially when state-controlled lenders, such as RBS and Lloyds/HBOS were involved and a club is an important local social focal point, may also be brought to bear behind the scenes. Large urban land parcels of this size are very attractive to supermarkets and other commercial developers. Maintaining and upgrading grounds is expensive and owners often underestimate this, seeing a club as a potential cash cow.'

Dr John Beech of Coventry University, who has researched football finance in English football clubs for eight years, said:

> The Liverpool case demonstrates clearly the major obstacles that anyone approaching ownership of an English football club as an investment faces, especially with a lack of experience specifically in English football. The highly regulated and league-oriented franchise model practiced in all the major North American sports is very different from the benefactor-ownership, loosely regulated model found in the Premier League. The standard models of Marketing 101 simply do not apply. Brand loyalty is often something you are born with, and it is only in the Far East that there is the possibility of generating significant numbers of new fans. These fans are relatively fickle in their loyalty, and limited in the direct revenue they generate.
>
> The example of Manchester United as a club run as a cash cow is unique, and very difficult to replicate at another club. The Glazers have managed until very recently to pursue both profit maximisation and utility maximisation very successfully. That they have done so has been down, to some considerable extent, to a very long run of success on the pitch under the managership of Sir Alex Ferguson.
>
> Any owner of a Premier League club is faced with the fact that football as a business differs vastly from mainstream business sectors. The businesses' customers enjoy a unique relationship with a club – they see themselves as having psychological ownership of the club, and can all too easily be alienated from the legal owners if the latter's decisions are for whatever reason greeted by the fans as not in the best interests of the club.
>
> Any prospective owner of a Premier League club might well look to the owners of Arsenal, who persistently refer to themselves as 'custodians' of the club rather than 'owners'.

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[1] As an example, see the Blue Sky project in Fabozzi, FJ and de Nahlik, CF, *Project Financing*, 8th edition, 2012, Euromoney Books.

[2] Whilst ticket sales are a factor of both price and volume, benchmarking against other clubs and a desire to keep prices affordable for the core supporters, means that an owner cannot simply increase prices and not expect season ticket holders to fail to renew. Acquiring and retaining a large and active supporter base is fundamental to securing a football club's revenues. Anything that potentially increases churn of the most loyal followers should be avoided, especially given the fans' vocal support can assist the team in winning matches.

[3] Exhibit 11.3 only shows the current owners, such that the amount of selling and buying of clubs is hidden.

[4] Sir Alex Ferguson previously held this title, prior to his retirement at the end of the 2012–2013 season.

[5] His 12-year ownership of the baseball team ended in the bankruptcy courts with a voluntary Chapter 11 filing to speed a sale of the franchise in 2010, with the ice hockey team following in 2011.

Chapter 12

When the NHS Foundation Trust becomes the patient in its new hospital

Why is this case interesting?

Choosing a case study of a project that has got into difficulty will inevitably generate emotional reactions from those involved at the time. No sponsor wishes to be associated with a project that was been publicly criticised and thrust into the political cauldron of the British House of Commons Public Accounts Committee (PAC) hearing in December 2012. By any objective measure, something had 'definitely' not gone according to plan, but what went wrong and whose plan was it? Exactly how this PAC hearing came to focus on Cambridgeshire and the lessons to be learned are far more subjective matters. This chapter will try to ascertain the root cause of the project patient's ailment.

Exhibit 12.1

Key project features of the Peterborough Progress Health PFI project

Feature	*Headline*	*Detail*
Financing	£446.115 million 35.25-year project wrapped bond due October 2042. Listed on London Stock Exchange (LSE)	Priced on 29 June 2007 at a coupon of 5.58% and issued at fractionally over par (100.009%)
Borrower	Peterborough (Progress Health) plc (PPH)	Special purpose vehicle
Wrapper	Financial Guaranty Insurance Company's UK subsidiary FGIC UK Ltd	Monoline insurer
NHS Trusts	Peterborough & Stamford NHS Foundation Trust (PHT) – 84.3% Cambridge & Peterborough Mental Health Partnership NHS Trust (MHT) – 8.2% Peterborough Primary Care Trust (PCT) – 7.5%	Percentages relate to their relative share of the aggregate payment streams (as detailed in the bond prospectus)
Sponsors	Macquarie Bank Ltd – 70% Multiplex Construction Pty Ltd – 30%	

Continued

Exhibit 12.1 continued

Feature	*Headline*	*Detail*
Sector	Health	PFI project
Country	UK	

The wrapper guaranteed payments of principal and interest under the bond that were due from the Borrower, subject to certain exclusions such as default interest and amounts incurred due to prepayment or acceleration of the bonds that had not been effected by FGIC itself.

Source: Peterborough (Progress Health) plc bond prospectus

What was the project?

In February 2013, UK Members of Parliament (MPs) castigated their own Department of Health (DH) for the 'extraordinary decision to approve a private finance initiative (PFI) hospital in Peterborough in 2007 while another hospital was in financial difficulty just 24 miles away'. The MPs went on to confirm in the PAC forum that 'as a result, the East of England now had two hospitals [Peterborough and Hinchingbrooke] that were not financially viable and faced uncertain futures' and cited a 'complete lack of strategic oversight'. The report concluded that 'no consideration appears to have been given to the impact these two decisions [the original PFI and subsequent franchising to Circle at Hinchingbrooke] would have on the local health economy and health expenditure'. In other words it appears that something went wrong with the complex stakeholder management issues in this public sector project.

The £4.7 billion project, known as the Greater Peterborough NHS PFI Scheme was born out of a design build finance operate (DBFO) initiative run under the auspices of the DH. This two-site hospital development was governed by a 35-year PFI contract. Of the three NHS trusts involved, the dominant trust was the Peterborough and Stamford Hospitals NHS Foundation Trust (PHT), representing 84.3% of the aggregate payment stream to the Borrower. Additionally, Cambridge and Peterborough Mental Health Partnership NHS Trust (MHT) was the off taker of the Mental Health Unit and represented 8.2% of aggregate payment streams and Peterborough Primary Care Trust (PCT) represented the balance obligation of 7.5%. These off take obligations were crucial to the leverage and quantum of finance that the project could raise as it represented a high quality counterparty akin to UK sovereign risk.

The four key elements of the build were to be:

- a 612-bed acute four-storey hospital (including emergency care and a cancer unit) – 95,383sqm;
- a 34-bed diagnostic and treatment centre – 9,265sqm;
- a 102-bed mental health unit (MHU) to provide psychiatric intensive care – 9,043sqm; and

- a multi-storey car park (next to the acute unit for the use of their own patients and those of the adjacent MHU).

The largest unit was to become the new Peterborough Hospital and was constructed on the site of the original Edith Cavell Hospital, which had been built in 1988. The old Peterborough District Hospital (PDH), dating back to 1928, was on a different site. This second site was where the 34-bed diagnostic centre was built on top of what had been the PDH's Fenland Wing. The new MHU was called the Edith Cavell Hospital and is situated next to the new Peterborough Hospital and the multi-storey car park. So the choice to preserve the old names on new buildings offered scope for confusion between hospital names and locations for older residents.

Planning permission was granted in 2006 for the various developments, with Nightingale Associates commissioned as architects. The hospital was the first new build to feature cruciform wards, being large four-bedded bays.

The development would take place some 24 miles away from another acute hospital, Hinchingbrooke, controlled by Hinchingbrooke Health Care NHS trust and located in nearby Huntingdon. Both hospitals fell under the remit of the East of England Strategic Health Authority (SHA). SHAs were abolished in March 2013 as discussed in 'Macro environment' below, and the Peterborough Hospital was transferred with many other facilities to the newly created NHS Property Services entity.

A sense of scale for PHT can be gained from its annual reports shown in Exhibit 12.2. (The 2006 annual report for PHT was the reference document used in the prospectus.) Alongside its financial results, it provides a wealth of clinical data relating to its services and patient numbers. Remembering that the project company provided services to more than one trust, PHT alone accounted for 461,789 patients, up 3.5% year on year.

Exhibit 12.2

Patients treated at PHT (financial year 2013 and financial year 2012)

Patients	*2012 to 2013*	*2011 to 2012*
Inpatients	51,546	48,845
Outpatients	375,840	363,708
Day cases	34,403	33,550
Total	461,789	446,103

Source: PHT annual report

The growth in numbers reflected the enlargement of the PHT available market, from two primary sources:

- out of area patients using their specialist services; and
- population growth within the area.

The annual report notes that over the previous 10 years the latter had been 17.2% in PHT's catchment area, or an average of 1.7% per annum. It is, of course, possible that the Peterborough area demographics had changed as well, leading to greater use of the PHT services. (The 2011 census highlighted an influx of migrant workers into the PHT catchment area from outside the UK.)

The two sponsors for the project company, Macquarie Bank and Multiplex Construction, came from the Australian worlds of finance and construction. The equity commitment was reported by IJGlobal in its database to be £23.8 million, or 5.06% of the overall project cost of £469.91 million. (The prospectus also notes that Asteral, the contracted Managed Equipment Service (MES) provider, entered into the subordinated loan agreement suggesting it contributed a portion of this sum.) The prospectus notes that the holding company's issued share capital was only £50,000 (being 50,000 ordinary shares of £1 each out of an authorised total of £50,002).

Project equity commitments can be represented by new cash funding or a mixture of cash, future obligations and services provided in kind. Sponsors are able, subject to the project being fully funded on a cash basis, to treat any non-recovery of input costs incurred as part of their pro rata contribution. Relevant tax considerations mean that any equity injection in the form of shares is minimised. The preference is usually for the project company to be capitalised through redeemable loan capital, provided that there are no resulting breaches of accounting-based 'thin capitalisation' rules. In those circumstances the alternative structure is to issue multiple classes of shares, which again can be redeemed during the project's life and can be structured as instruments that appear higher up in any cash waterfall.

Contingent or deferred equity can improve the sponsors' returns as they are able to defer the time at which they have to inject their portion of the project funding.

High leverage (such as 90:10) is a regular feature of PFI, where there is a combination of:

- a high level of credit support provided by an investment grade off taker; and
- a stable (or at least highly predictable) cash flow in the project company.

Leverage always needs to be critically reviewed for appropriateness, especially when the project is not structured as asset procurement, but includes ongoing service provision. Why? The potential cash flow volatility can rise materially as the tenor of the procurement increases. This may arise as a result of the opening market assumptions in the business plan proving to have been incorrect and the cumulative compounding effect can be large, particularly over the long time spans of public private partnership (PPP) or PFI projects.

The entity contracted to provide the project by the three trusts was not an existing operation with a 25-year track record of continuous service provision, but a special purpose vehicle (SPV) created by the Sponsors specifically to undertake the project. The SPV needed to contract with various third parties on commercial arm's length terms to provide the ongoing services required under the PFI scheme. These parties' obligations added to the contractual risk of the project for lenders (or indeed guarantors). The role of the various legal counsel involved on the deal was to ensure that the documentation was appropriately structured and would have been an area of focus for the provider of the debt 'wrapper' or credit enhancement insurance.

Macro environment

The UK has a National Health Service that was created in 1948 to ensure that everyone has access to medical care free at the point of delivery. Whilst originally it was unique, it has been copied and developed as a system in many other countries. In some cases, compulsory health insurance pays for healthcare, in others the State pays in some form. Other frameworks may mirror the NHS with assets owned by the State and staff employed by an agency of the State. However, the cost of healthcare is rising as new treatments are found for conditions once diagnosed as terminal. Investigative techniques have changed radically following the development (also originally in the UK, but exploited elsewhere) of new less invasive and safer imaging techniques. A 2013 report by the influential Kings Fund (a health sector policy think-tank) looking at the next 50 years for the NHS, pointed out that 50 years ago health spending was 3.4% of GDP and by 2013 it was 8.32% of GDP and more than seven times as much in real terms. Local NHS decisions become political issues as life or its continued quality make emotional headlines.

When the NHS was created in 1948, its mandate was that services would be 'provided free at the point of delivery'. The original structure of the NHS in England and Wales (1948 to 1969) had three aspects, known as the tripartite system (in 1969 responsibility for Wales was moved to the Welsh Secretary of State).

1 *Hospital services*: 14 Regional Hospital Boards were created in England and Wales to administer the majority of hospital services. Beneath these were 400 Hospital Management Committees which administered hospitals. Teaching hospitals had different arrangements and were organised under Boards of Governors.
2 *Primary care*: GPs were independent contractors (that is they were not salaried employees) and would be paid for each person on their list. Dentists, opticians and pharmacists also generally provided services as independent contractors.
3 *Community services*: maternity and child welfare clinics, health visitors, midwives, health education, vaccination and immunisation, and ambulance services, together with environmental health services were the responsibility of local authorities. This was a continuation of the role local government had held under the Poor Law.

As the UK population increased, so the NHS grew to support it and the challenge of managing a budget and resources that supported clinical interventions became more difficult. The NHS has been the subject of countless reforms and restructuring efforts over the years as a result of:

- a cadre of health service managers competing with clinicians over resource allocation decisions;
- increasing layers of approval to negotiate; and
- increasing market-driven approaches via outsourcing or contracting giving control of resources to those with little direct experience in this area.

Private hospitals were built to offer a choice and to offer faster interventions than the NHS waiting lists permitted, so a mixed economy developed with many NHS staff also working part time in the private sector.

In the largest restructuring since its creation (and directly relevant to our case study) NHS England replaced the Primary Care Trusts on 1 April 2013 as the commissioner of primary care health services in England, as well as some nationally-based functions previously undertaken by the DH. According to NHS England's website the NHS spends £12.6 billion per annum on commissioning for primary care. This was the driver for the transfer of ownership to NHS Property of the Peterborough Hospital buildings mentioned earlier. As a result, one of the managed PCT assets was transferred to NHS Property Services Limited, which is wholly owned by the Secretary of State for Health.

So by 2013, the English health sector had become a hybrid mix of public and private sector business. To the layman it is fiendishly complex and seemingly ever changing in its structure as politicians of different political leanings strive to improve both service provision and cost control.

Thus, for individual patients the economics of care are not well understood and detailed business plan data is not publicly available in a granular format for all services. However, by moving projects into the public domain and allowing private hospitals to operate, significant light is being shed on the underlying economics of particular clinical and non-clinical services. The mechanism through which this is happening is twofold:

- financings like this one, that are the subject of public scrutiny; and
- ongoing regulatory control. The latter can be supplemented, when necessary, with independent advisor reports on specific problems as stakeholders seek to grapple with seemingly intractable problems.

Whilst the resulting information asymmetry should in theory work in the DH's favour as it is negotiating with parties who have access to less information, in reality any negotiations over such complex arrangements have to be undertaken with a 'cards on the table approach' in order to find an optimal solution for all stakeholders.

As health service provision has become increasingly commercialised, regulation of the service in England has become more visible to market participants and patients alike. Two key regulators are:

- Care Quality Commission (CQC), the independent regulator of all health and social care in England that undertakes spot checks on the participant's facilities; and
- Monitor, formed in January 2004, authorises and regulates NHS Foundation Trusts and reports to the UK Parliament.

It is Monitor that regulated the three trusts associated with the SPV in this case. Monitor rated PHT as a 1 (amber to red) for its Financial Risk Rating against their compliance framework in 2012 and had explicitly warned various stakeholders about the economic consequences of the PFI. Devolving power as part of the 2012 shake-up was intended to result in better quality decision making and local accountability. Monitor claimed at the PAC that it had expressed concerns about PHT's PFI plans as far back as 2006. Monitor admitted that it 'did not follow through on its expressed concerns as its regulatory role was [perceived] as light touch and powers to intervene were limited to cases where failure was

imminent, this is why [we] had not been able to stop the decision to proceed with the PFI'. The PAC concluded in response to their testimony: 'Monitor had not been sufficiently alert to the risks of PHT's weaknesses in its financial management.'

The implication of the English healthcare 'ownership tree' for project financiers, is that whilst it might appear that NHS based credit counterparties have the effective backing of the state (so called quasi sovereign risk credits, a form of implicit guarantee), the counterparties account separately and operate autonomously. The aggregate payment streams due to the Borrower from any of the three trusts can be funded from their own earnings or supplemented by additional public dividend capital (PDC) provided by the DH. Any such extra PDC needs to be approved in each instance. NHS-based assets were heavily in demand in 2007 from investor funded vehicles, driven by securitisation (as longer term assets could be funded by (cheap) short term money, yielding rich returns to fund managers and investors alike) that wanted an exposure to fixed coupon structured credit, but with a lower risk profile than an unwrapped bond.

The growth of PPP in the English health sector has been very significant, not least because transactions were very financeable. Community Health Partnerships (CHP), now wholly controlled by the DH and established in 2001, act as the bridge between public and private sector infrastructure stakeholders. (This was originally called Partnership for Health and was only 50% owned by DH.) Since the Health and Social Care Act (2012) they have been:

- the head tenant responsible for all NHS LIFT[1] buildings following the abolition of 150 PCTs (including the one on this deal); and
- owner of the shareholdings previously held by the PCTs.

History of the project's development

The project was formally approved by the Secretary of State for Health on 18 June 2007, but the consortium had been declared the preferred bidder back in 14 March 2005. Construction work was due to commence on the project in early July 2007.

The first technical challenge came in the form of an environmental problem with the discovery of rare lizards – great crested newts – a small and rare colony of indigenous reptiles found on the MHU development site. Legislation protects such animals and requires them to be moved under a Newt Licence (being a protected species in the UK) before any construction could begin. This was scheduled to happen by October 2007 according to the bond prospectus.

The structure of the PFI project was fourfold, obliging the Borrower to:

- build the various facilities for the three trusts – via a Construction Contractor, Multiplex UK, whose obligations were guaranteed by its Australian parent;
- provide an independent managed equipment service to the three trusts – via Asteral Ltd[2] for some of the medical equipment. Service provision was to the three trusts and a fourth entity, Stamford and Rutland Hospital;
- provide ongoing facilities' management services – described as being in 'hard' or 'soft' form via both Multiplex[3] and Compass Contract Services[4] respectively; and

- provide interim services during the build phase of the acute unit to PHT – again via Multiplex's FM team.

Importantly, what the Borrower was *not* contracted to do was provide the clinical services (or express a view on how big those clinical service demands may be). To get a sense of scale, PHT employs directly and indirectly through the various management contracts some 3,500 staff. In contrast the SPV had no direct employees.

Employment of clinicians remained the exclusive purview of the three trusts. That is not to say there was no upside to the project company from greater volumes of usage of the sites, as the facilities management contracts would have been directly affected by footfall. However the Borrower's exposure to market forces was materially less than if they had been pricing clinical services (staff wages or clinical operations) as well as the facilities management, MES and interim services they had agreed to provide.

To clarify, the Borrower's stakeholders would have expected to be remunerated in a significantly enhanced way if the DH had asked them to take on these additional 'footfall' volume risks. The PFI was set up on the basis that the trusts were bearing this 'internal market' risk from the very beginning. This shows how the politics of quasi-clinical privatisation in the health service remain very contentious in the UK, where the NHS is viewed by many as a national treasure and its resources to be protected at all costs. (It should be noted that when the Conservative/Liberal coalition came to power in the UK in May 2010, they were quick to ring-fence the NHS from the cuts being meted out to other UK government departments. However there were effective cuts in real terms in NHS budgets, as NHS inflation has traditionally run ahead of other measures like CPI and RPI. Thus any pledge to maintain the NHS's real budget by reference to CPI or RPI is not quite as generous as it may have appeared to the casual observer.)

Construction was to occur in five phases and commissioning was planned for December 2011. Mouchel Parkman Services Ltd was hired in the overall project manager role, signing off on the completion of the various stages of development to release funds to the construction contractor, Multiplex.

Security included a 3% reducing retention agreement in place from Multiplex and accompanying credit support in the form of a £60 million reducing construction-phase letter of credit from ABN Amro. The latter had a backstop date of 31 July 2012.

The exact details of the buildings are not a matter of public record, though the Interim PHT CEO stated that the build was completed within budget in the 2012 to 2013 annual report. The new facilities have won awards and appear to be 'leading edge' (including the radiotherapy unit which became ISO accredited within a year of opening in May 2011 and was judged the top performer in the whole country). Since they replaced older buildings dating back to 1928, they also represented a significantly improved working environment for all concerned.

In terms of meeting deadlines, the construction work finished on or ahead of schedule:

- the diagnostic and treatment centre and MHU were handed over on 13 and 24 April 2009 in line with the 30 April 2009 contracted date; and
- the hospital was handed over on 2 October 2010, ahead of the December 2010 contracted date.

The level of penalties imposed under the build contract on the SPV was minimal according to their report and accounts, indicative of a good performance.

So with this background of completion on time and within budget, what could possibly have led to the PAC hearing into the whole affair in December 2012 and a highly critical report from Monitor on the health of PHT and a detailed turn-around plan needing to be presented by PricewaterhouseCoopers (PwC) in 2013?

Sponsors

Both of the Australian project sponsors were very experienced in this type of PFI work and they would have known which questions to ask of their fellow stakeholders. So any asymmetry of information advantage in favour of the DH, as the expert, was absent.

Macquarie Peterborough Hospital Limited (MPH) was a holding investment entity for Macquarie Bank Limited (MBL). MBL was set up to manage and invest in social and public infrastructure assets. Its modus operandi was to partner with technical sponsors, with its contribution being the financing knowhow alongside its pro rata capital share.

The bond prospectus noted: 'The 30-strong Social and Public Infrastructure team has been pre-eminent in European PPP infrastructure for more than 10 years and is renowned for structuring innovative value for money financial solutions. Its PPP experience encompasses equity and debt funding, capital markets, derivatives and financial structuring. It has closed more than 45 PPP projects with a combined value exceeding £7.5 billion.'

The UK Healthcare PFIs that Macquarie worked on included: Forth Valley Hospital, Newcastle Hospitals, Leicester Hospitals, North Staffordshire Hospitals, and Tunbridge Wells Hospital. Macquarie was viewed as a strong sponsor and controlled 70% of the equity.

Multiplex Infrastructure (UK) Limited, the 30% equity owner, was a wholly-owned subsidiary of Multiplex Infrastructure Pty Ltd (incorporated in Victoria). The parent had been established in 2003 for the specific purpose of managing investment vehicles and investing in infrastructure projects and was listed on the Australian Stock Exchange.

Multiplex actively invested in both the UK and Australia and its credentials at that time included:

- Royal Melbourne Showgrounds;
- Long Bay Forensic and Prison Hospital; and
- Sydney University Student Housing.

As a contractor, Multiplex had exactly the sort of pedigree required to undertake a £4.70 billion dual-site development.

A listed global infrastructure business headquartered in Canada, Brookfield Asset Management Inc (BAM) acquired control of Multiplex in 2007, following a recommended cash offer in July of that year. The offer had first been mooted in February, although Multiplex did not officially delist until 18 December 2007. On 12 April 2012, it was reported in *Peterborough Today* that Brookfield Infrastructure Partners, in which BAM currently has a 28% interest, had sold their 30% stake in the Borrower to John Laing Infrastructure Fund Ltd (JLIF) for £26.7 million. Angus Maitland, COO for PHT is quoted as saying: '… this

change in shareholding does not affect the day to day running of the hospital, the existing arrangements in the PFI contract, nor the financial issues the trust faces'.

The JLIF business undertook its initial public offering in 2010 and is a FTSE 250 UK company with a market capitalisation as of 28 March 2014 of circa £9 billion. Its parent, John Laing plc (JL), was an international construction company of 160 years standing. As it expanded, it diversified into house building. It built, amongst others, the Mulberry harbours for the D-Day landings, the UK M1 motorway, the Sizewell B nuclear plant, the Millennium Stadium in Cardiff (a project on which it incurred significant losses) and Norfolk and Norwich University Hospital. However, by the early 21st century, restructuring resulted in the company selling the main house building activity, the property development business and the construction businesses (the latter to O'Rourke in 2001 for £1) as well as the newer venture into train operations, and leaving the infrastructure investment and asset management businesses built on its construction and project management heritage. John Laing plc was bought by Henderson in 2006 for £887 million and taken private.

That 30% of the project sold for such a sum in 2012 suggests that there was real value retained in the Borrower (an implied equity valuation of £89 million) post completion of the building phase of the project. The investment advisor at JLIF, David Marshall, was quoted at the time as saying: '[Peterborough Hospital] is a high quality operational project.' During that period no dividends were paid to the owners, but they had received all the debt service obligations on the various loan notes issued and what were described as life cycle management fees.

Structure

The debut project financing closed on 4 July 2007, although the underlying project bond was priced on 28 June 2007. A fixed coupon of 5.58% may seem high today, but UK 30-year gilts had a yield to maturity of 4.9% at the time, a spread of only 0.7% on a similarly tenor instrument but with no accompanying wrapper risk. Issued fractionally above par at £100.009, the issue included £50 million of so called 'variation' bonds.

The primary financing drivers for Macquarie and Multiplex are not revealed in the prospectus, but we can assume that it was to maximise return on the SPV and minimise their equity at risk. The relationship between the two parties was complex, as Multiplex also stood to profit from its construction contract and this would have created some negotiating tension.

The bond paid interest semi-annually and was due to amortise in 62 semi-annual instalments commencing in April 2012 and finishing in October 2042, based on a gently ascending profile of capital and interest payments. It was wrapped by FGIC UK, which enabled it to obtain better pricing in the bond market as the principal and interest payments were guaranteed by (at issuance) a AAA rated monoline insurer.

FGIC UK's US parent was privately held by PMI Group and affiliates of Blackstone Group LP, Cypress Group LLC and CIVC Partners LP and had been formed in 1972. It is described as a monoline, as its business activities were limited to wrapping debt and it did not undertake any projects itself. It had a reinsurance agreement with its wholly owned subsidiary, which whilst falling short of a full guarantee, meant that all parties were comfortable

Exhibit 12.3

Capital structure of the wider PPH Group

Feature	*Headline*	*Detail*
Financing	£446.115 million 35.25-year project wrapped bond due October 2042	Priced on 29 June 2007 at a coupon of 5.58% and issued at fractionally over par (100.009%)
Borrower	Peterborough (Progress Health) plc	
Holding company	Peterborough (Progress Health) Holdings Ltd	Owned 99.998% of Borrower
Other	Peterborough (Progress Health) Nominee Ltd	Owned 100% by Holding Company
Sponsors	Peterborough Hospital Investments Ltd – 49% Brookfield Infrastructure (UK) Ltd – 30% Macquarie Peterborough Hospital Investments Ltd – 21%	
Issued share capital	£50,000	Authorised capital was £50,002
Unsecured loan notes	£1,768,000	Due October 2026 and repayable in instalments from 2 October 2011
Subordinated unsecured loan notes	£26,273,000	Due March 2042 at a 13.5% coupon. Issued in financial year 2011

Source: Data taken from Peterborough (Progress Health) Holdings Ltd audited accounts

that the parent's rating was a suitable proxy for the UK entities financial strength. FGIC was rated AAA by S&P in 2003.

Step-in rights are a feature of wrapped deals (and indeed many project finance structures), given the wrapper wants the ability to bring someone else in to finish the job, if the original party proves to be unable to complete its obligations, whatever the reason. This is especially important for any financial party providing credit enhancement to a financial instrument as the credit enhancer is very keen not to get into a position where it might have to redeem the bond early or to do the work itself. In short, the aim is to make bondholders 'whole' during the life of the deal, namely if the project company fell short on its debt service obligations to top them up to the required level.

Proceeds of the bond were invested in fixed-rate guaranteed investment contracts (GIC) until the funds were required, thereby reducing the negative carrying cost associated with upfront funding. They could be realised on giving five days' notice.

In addition to the bond the remaining debt instruments available to the group consisted of:

- £14,500,000 short term Liquidity Facility Agreement dated 4 July 2007, that was fully repaid on 2 April 2008; and

- £1,768,000 by way of an unsecured loan note due in October 2026 under an Equity Subscription Agreement dated 4th July 2007.

Interest rates were: 7.47% interest rate during the construction phase – semi-annual coupon; 9.97% – semi-annual coupon thereafter. The debt was repayable in instalments from 2 October 2011.

In financial year 2011, the sponsors subscribed for an additional £26,272,570 of subordinated unsecured loan stock under the same equity subscription agreement with a fixed coupon of 13.5%.

The structure underlying this PFI financing was nothing new at the time, unlike several others in this book that won their respective Deal of the Year Awards. From the investors perspective it was a 'vanilla' FGIC transaction to be placed in a conduit or held on their balance sheet.

The wrapped bond market was growing at this time and investors focused on obtaining a portfolio of investments to provide an element of diversification across different industries and geographies. It is quite possible that such an asset sat beside the bonds issued by Skynet 5, detailed in Chapter 9, if the investor wanted a premium return on quasi-UK government risk and would acquire both wrapped and unwrapped bonds.

There was considerable implied competition to win the financing mandate to issue the bond and wrap it. No bank or wrapper provider would wish to see its structure priced above rivals because it was perceived as materially riskier by investors. PFI infrastructure assets were meant to be 'boring' in the sense that the returns are well understood and the risk of default is low. In this case, with a fixed coupon, the instrument would have been very easy for potential purchasers to value at inception.

The 2007 bond issue was listed in the Gilt Edged and Fixed Interest market sector of the London Stock Exchange (LSE). Listing provided enhanced liquidity options, which can be important for selection by key investor groups. As with the Sadara *sukuk* offering in Chapter 16, listing does not mean it will actively be traded. The LSE listing enables us to view its price performance over time. Interest rate movements affect the value of fixed rate bonds, especially ones with a long duration.[5] The beauty of the recently stable interest rate regime at both the short and long ends of the yield curve is that we can see the credit-implied market value fluctuations more clearly as they are not hidden by the yield curves' antics. However, price is only half the equation and a lack of movement can simply mean that there are no buyers, no sellers or potentially both.

Given the minimal trading undertaken, it is difficult to draw many conclusions other than the fact that the bond has traded five times comfortably above par (a price of 100) and that investors appear to be taking a take and hold approach to the transaction.

Financing decisions

The Borrower appears to have performed admirably, but was this at the expense of its key client? In November 2011, the neighbouring Hinchingbrooke Health Care NHS Trust was taken over by Circle Healthcare Ltd (Circle) in the first franchise agreement in the UK. The

Exhibit 12.4

Bond performance (28 January 2009 to 27 January 2014)

Year	*Number of trades*	*Value of trades*	*Price range*
January 2013 – January 2014	4	£326,603	107.62 – 108.27
January 2012 – January 2013	1	£43,956	107.68
January 2011 – January 2012	0	–	–
January 2010 – January 2011	0	–	–
January 2009 – January 2010	0	–	–

Source: London Stock Exchange website: 27 January 2014

franchise saw the executive role of an NHS Trust (in running the hospital) outsourced to a third party, Circle. Circle Holdings plc was listed on the UK AIM market in June 2011 and owns 50.1% of the operating company, Circle. By 2011, it had accumulated debts of £39 million. However the franchisee had pledged to save £311 million over its 10-year contract. Given the geographical proximity and service overlap, some sort of Darwinian 'survival of the fittest' battle was always potentially going to happen between PHT and Circle's rival hospitals, if the DH or a proxy organisation did not intervene to ensure that:

- services to the neighbouring local areas were not compromised; and
- best value was being obtained for the UK tax payer, which was ultimately funding the DH.

The role of revenue arbiter was effectively held by the Cambridge and Peterborough CCG, as the commissioning body for the region that included both Peterborough and Huntingdon.

PHT meanwhile had built up a deficit of £39.4 million by the end of March 2013 and needed one-off support from the DH of £44.1 million in additional PDC between January and March 2013. (Additional PDC takes the form of a loan with an unspecified repayment date and not 'equity'. The liquidity problem accelerated when the trust started to repay capital (from April 2012) as well as semi-annual interest.)

The PDC amount injected appears to have been calculated on a cash rather than P&L basis, to maintain PHT's liquidity rather than seeking to address its long-term solvency. By June 2013, the trust's own business plan reportedly showed a continuing deficit of at least £38 million per annum and a cash shortfall of at least £40 million per annum. It appears that the parties structuring the bond had perfected the look-through obligations from PHT to the DH as far as possible under the relevant Act. The prospectus for the bond dated 2 July 2007 notes that:

- the Secretary of State for Health (or a duly empowered official) has confirmed that, in relation to PHT, the Project Agreement, the Funders' Direct Agreement, and certain other Project Documents are 'externally financed development agreements' as defined in the

2006 Act. This enables the Secretary of State to grant a deed of safeguard, structured as a guarantee, in relation to PHT's obligations under these documents but does not have the same effect of clarifying powers or vires as it does in relation to an NHS trust, such as MHT; and

- MHT and PCT vires approvals were sought and gained as to the powers of the non-foundation trusts to enter into these obligations. It is difficult to imagine that any of MBL, Multiplex or FGIC had not known that PHT (their primary counterparty) had financial issues, although the prospectus had only one page dedicated to them. (The prospectus noted that then Chief Executive (Nik Patten) was the designated accounting officer under the relevant Monitor memorandum for NHS Foundation Trusts, with his official responsibilities being clearly set out in that published document.) This may of course have been fully reflected in the 'upfront' wrapper fee to FGIC and fees charged to put the financing in place by ABN Amro N.V. but the bond prospectus does not contain any forward looking financial information.

Exhibit 12.5

Statement of comprehensive income for PHT (financial year end 2013 and 2012)

	2013 to 2013 (£000s)	*2011 to 2012 (£000s)*
Income from patient care activities	202,404	189,502
Other operating income	16,641	18,294
Operating expenses	(246,247)	(242,098)
Operating deficit	(27,202)	(34,302)
Net finance costs	(12,171)	(11,537)
Deficit for the financial year	(39,373)	(45,839)

Source: Data taken from PHT annual report financial year end 2013

Exhibit 12.6

Consolidated account for Peterborough (Progress Health) Holdings Ltd from start-up until financial year end 2013

Financial year end March (£ million)	*15 January 2007 to 31 March 2008*	*31 March 2009*	*31 March 2010*	*31March 2011*	*31 March 2012*	*31 March 2013*
PROFIT AND LOSS						
Construction	116.5	163.9	68.6	31.4	5.2	–
Interim services	4.9	8.7	9.2	5.5	–	–
Services	–	–	2.5	10.9	23.1	24.9
Variations	–	–	–	7.8	3.0	8.6
Third party	–	–	–	0.1	0.1	0.1
Turnover	121.4	172.6	80.3	55.7	31.2	33.6
Gross profit	(2.2)	(3.5)	(4.8)	(1.0)	6.6	7.0
Profit before interest and tax	(2.2)	(3.5)	(4.9)	(1.5)	4.7	5.2
Interest received	14.7	12.4	6.1	21.6	30.4	29.6
Interest payable	(17.7)	(23.2)	(24.8)	(27.9)	(27.2)	(26.9)
PBT	(5.2)	(14.4)	(23.7)	(7.9)	7.9	7.9
PAT	(5.2)	(14.7)	(23.2)	(8.5)	17.5	5.7
BALANCE SHEET						
Debtors	131.5	290.3	359.0	391.8	411.5	416.9
Cash	36.6	31.9	19.6	15.5	18.0	17.5
Investments	260.9	87.5	6.9	–	–	–
Assets	429.0	409.6	385.5	407.4	429.5	434.5
Short-term liabilities	(30.0)	(24.3)	(16.7)	(25.9)	(31.8)	(31.1)
Long-term liabilities	(420.1)	(413.4)	(430.0)	(461.3)	(468.4)	(495.7)
Net assets	(21.0)	(28.1)	(61.2)	(79.8)	(70.7)	(92.3)
Net cash flow	(104.5)	(171.7)	(92.8)	(37.2)	2.6	12.0
Financing	402.1	(6.5)	–	26.3	(0.1)	(12.5)
Change in cash	36.6	(4.7)	(12.3)	(4.1)	2.5	(0.5)
Net debt	(126.6)	(286.7)	(394.9)	(445.8)	(462.9)	(485.8)

1 Fair value movements on the RPI swap impact the net debt level in each year.
2 Interest receivable line includes interest receivable on the 'finance debtor' and net income on the RPI swap.
3 Financing line:
- financial year 2007 includes the proceeds of the new bond and the bank facility;
- financial year 2009 includes the redemption of the bank facility; and
- financial year 2011 includes the issuance of the subordinated unsecured loan notes.

Continued

Exhibit 12.6 continued

4 Original loan notes started to amortise in financial year 2012 (£57,000) and saw a further amount be repaid in financial year 2013 (£114,000).
5 Subordinated notes started to be redeemed in financial year 2013 (£5.88 million) alongside the bond repayments (£6.51 million).
6 No dividends were payable as the company has a deficit on its profit and loss account.
7 Life cycle management fees were paid to the three ownership interests, being Peterborough Hospital Investments Ltd, Brookfield Infrastructure (UK) Ltd and Macquarie Peterborough Hospital Investments Ltd:
- financial year 2013 – £95,960, £156,735 and £67,172, totalling £319,867;
- financial year 2012 – £92,520, £151,116 and £64,764, totalling £308,400;
- financial year 2011 – £172,240, £281,325 and £120,568, totalling £574,133;
- financial year 2010 – nil;
- financial year 2009 – nil; and
- financial year 2008 – nil.

Source: Data extracted from the PPHH audited accounts

The KPMG audited accounts of this 'public benefit corporation' make for sobering reading and were signed by the Interim CEO. At 22%, PHT had the highest ratio of deficit to turnover in the NHS, according to the PAC, suggesting the public benefit concept may have been misconstrued.

The casualties at the trust included the original Finance Director at the time the deal was struck and his replacement. (According to the latest annual report, another Finance Director had joined PHT in June 2011 and left in June 2013.) The audited accounts refer obliquely to a 'substantive Director of Finance' as having control, presumably the interim CEO. KPMG concluded that PHT was a going concern on the basis that it could expect further PDC in 2013 to 2014 to meet its cash requirements.

The management structure of a Foundation Trust appears to be highly complex and multi-layered. The bond prospectus did not provide any CV information on PHT's executive team (including its Finance Director), but listed the names of the executive team. In addition the Trust had a Chairman and six non-executive directors.

The last Chairman of PHT, Nigel Hards, had been persuaded to stay on for an additional 12 months to make five years, rather than serve the usual four-year term. He formally retired on 31 March 2013. His replacement, Rob Hughes, is a former Managing Director of Mars UK and started on 1 April 2013. The interim CEO wrote in his summary in the latest published annual report (2013) that 'running costs are more than we can afford'.

PwC produced a final contingency planning team report for Monitor that was extensive and included many alternative strategic options for PHT. It also (helpfully) laid out the position with respect to regional NHS 'competition'. There are currently five alternative providers (including Hinchingbrooke) looking for a share of the financial year 2013 £854 million budget of PHT's principal service commissioning body, the Cambridge and Peterborough CCG.

The report also made several key findings:

- the estate issues contributed an estimated £22 million (nominal) to the deficit and included the underuse of Peterborough City Hospital run by PHT and the project company;

- PHT had identified three additional wards that could be created, generating another £9 million of contribution via increased capacity;
- with inflation the PFI was likely to present an ever increasing proportion of total PHT costs; and
- specific operational issues (unpaid medical activity bills of £5 million) and £10 million of performance improvements could be made.

This suggests that the cause of the malaise, and the reason that the DH has had to provide additional handouts of PDC to enable PHT to meet its obligations under the PFI, is multi-layered. Although the original business plan put together by PHT in 2006 is unavailable, it appears that realistically the Trust could never have afforded the 'non-build' obligations that it agreed to take on under the PFI. A so called 'banking case' sensitivity, based on a more modest set of income projections and higher clinical staff cost assumptions, may well have illustrated this perfectly. Even though the hospital may be world class, the available budget allocation was not infinite, though the PAC noted that PHT is winning some business from outside its natural CCG catchment area, to supplement its revenue line.

Monitor had warned the trust, the East of England SHA and the DH about the affordability of the PFI before PHT entered into its current obligations. Its September 2013 report allocated blame equally to: the relative inefficiency of the PHT; and the PFI undertaken by the previous management. Monitor notes that the Peterborough Hospital is 'one of the most expensive hospitals of its size to run'. The following text is extracted directly from its report.

> After careful consideration of all the issues, the expert team believes the trust could tackle its deficit and continue to provide appropriate quality hospital care for the people of Peterborough and Stamford if it adopted a four-point recovery plan. This recovery plan would take five years to implement and involves:
>
> - undertaking a comprehensive programme of cost savings to make the trust more efficient and cut £10 million off the annual deficit;
> - inviting bids from other providers to make better use of the under-utilised estate, develop new services and generate extra income;
> - facilitating joined-up working across the local health economy through a regional steering group to align the activities of commissioners and providers; and
> - seeking government financial support to fund the residual deficit.
>
> Monitor has accepted this analysis as well as the team's recommendation that the trust itself should lead the implementation of this plan over the next few years. The Trust Board has offered Monitor a set of commitments to implement the plan to close the financial gap and secure vital services for patients.
>
> Monitor has secured a formal agreement with the trust to ensure that it will:
>
> - deliver the efficiency savings required;
> - run a competitive tender exercise to find a business partner (or partners) to develop and fill extra hospital capacity;

- participate in the regional steering group; and
- make regular progress reports on the plan to Monitor.

> The trust is aware that if it fails to deliver on these commitments, we retain the power to appoint Trust Special Administrators. However, we also recognise the efforts that the trust's board and leadership have made to work with the experts on a comprehensive recovery plan that continues to provide the services local patients need and acknowledges the crucial role of staff in delivering them. Monitor is confident the current trust board will see this through.

Lessons learned

Stephen Hay, MD of Monitor, was quoted in the Health Service Journal (HSJ) in June 2013 as saying: 'This report clearly shows [the trust] is not financially sustainable.'

An erudite synopsis was given by Dr Peter Reading, PHT Interim CEO (with slight paraphrasing):

> What has been lost [in the furore over the deficits being accumulated at the trust], is that Peterborough now has a state of the art hospital with a building life of 60 years, which had replaced two hospital buildings that were unfit for purpose and had £200 million of backlogged maintenance.

The issue appears to be: did the PFI structure exacerbate the problem at PHT? Or is this financing being unfairly associated with a clinical operating risk that was never going to be transferred into the private sector anyway? Was this a case of gross mismanagement of a project by PHT in 2007? Or did the subsequent executive changes and costs of consultants make the problem worse? Should the DH be held accountable for structuring the PFI in the way it did?

Ultimately, the various professionals that were commissioned to execute the project simply did their job. The SHA looks unfortunately titled, given the apparent lack of oversight of the original business plan. This point was not lost on the PAC chair as she emphasised the distinct lack of strategy.

PHT was reported in late 2013 to be one of seven PFI deals across the UK that will receive financial aid from the government (even more PDC). However in the same article, *Peterborough Today's* journalist noted: 'There is no indication at this stage that [the DH] will provide the £25 million a year for which PHT is asking, initially over the next five years.' Based on recent performance at the trust, an annual funding gap request of (only) £25 million seems quite modest and needs further clarification. Is the article trying to downplay the cash flow implications of rising capital repayments, as the debt service mix slowly changes? The profit and loss statements will start to improve as the interest charges reduce, but unfortunately the cash flow demands of capital repayments is likely to offset any cash gain from lower annual interest costs.

Peter Reading, who remains firmly in Monitor's sights should he fail to execute on the latest PHT plan, went on to say:

> I'm not going to second guess the decisions made several years ago by people acting in good faith on the information available to them at the time.
>
> He continued:
>
> We also have to remember the economic assumptions in the country at the time the deal was made were very different, few people had spotted the financial problems that would emerge in 2008 and the projections from the NHS were very optimistic, with growing income, new hospitals and better affordability.

Ironically the PFI has probably shone more light on the problem, than would have existed under an asset procurement approach for any of the three trusts. The value for money (VfM) debate over the build element of the PFI is tricky to prove or disprove at this stage. The previous management appears to have got somewhat carried away with their PFI 'wish list' and the sponsors were only too happy to provide what they asked. Nobody at the DH or SHA appears to have been able to rein in PHT's evident enthusiasm for obtaining the best possible facilities for their patients in Peterborough.

Since running costs are being blamed for the ongoing financial problems at PHT, a quick overview of the ongoing services contracts may be helpful. It is impossible to judge if this represented VfM at the time, when viewed today, but an apparent focus on the 'headline' build costs when choosing a contractor and downplaying the annual costs are not confined to this project. The latent problem is that the annual costs add up to a very large sum over 30-plus years of operation.

Based on information in the bond prospectus, we can shed some light on what PHT signed up to:

> The service payments are subject to a detailed performance measurement regime and may be subject to deductions for poor performance.
>
> There was to be no marketing testing for the Interim Services, but certain services were subject to market testing on the date seven years for the Issuance Date [namely 2014] and thereafter at five-yearly intervals.
>
> Excluding employment costs, the [market testing] adjustment is subject to Retail Price Index (RPI)[6] from a base date of April 2006.

Pre-PFI and NHS Foundation Trusts nobody would have been able to calculate the cumulative impact of missed targets, unless they worked at the DH. The ongoing operational costs could have been easily lost within the Department's annual expenditure budget. So it is only now with greater transparency that the effects of the current 'internal market' in the NHS are more visible.

In an article in the *HSJ* by James Illman, PwC was described as making recommendations on the level of support required in order to ensure that 'services are delivered on a sustainable basis for the benefit of the local population'.

With the perceived structural deficiencies of the current internal market, can PHT be fixed by putting PwC's ideas into practice and is that even desirable without a wholesale renegotiation of this PFI contract? Those familiar with financial restructuring would note that if a series of 'off-limits' matters are created at the outset, then there are no surprises when

(even after putting in place the recommended solution) the same problems remain – recurring deficits and further annual PDC cash demands by PHT in this case. So any final solution will require the more radical shake-up of both the existing PFI deal and PHT flagged by Monitor in its September 2013 report. The local MP, Stewart Jackson, saw ultimate responsibility sitting squarely with the DH for its failure to listen. Lord Howe, the health minister, commenting on the affair said: 'It showed there were unique challenges for managing health care in the East of England' and then added 'we will not sweep these problems under the carpet, and in so doing our priority will be to ensure the needs of the local patients continue to be met in the best possible way.'

The dilemma that he highlights is that in achieving a clean house, it is very easy to undermine patient care and what is not required is any medicine that will either:

- 'kill or cure' PHT; or
- have terminal implications for the neighbouring hospital in the same catchment area.

Kevin Higgins (Divisional Head, EHC Thames Valley & South West, Santander UK) reflecting on the Peterborough situation (in his personal capacity) said:

> PFI was deemed an appropriate funding mechanism in 2007. Indeed it was seen as a competitive, robust, value for money and flexible solution to funding long-term public sector works. This project did provide the people of Peterborough with an award winning building to deliver quality care. However, the more you read, you realise that either too many assumptions were made in isolation or insufficient forethought occurred.
>
> In conclusion and despite the best intentions, the long-term winner may only be the financiers. Despite the evident quality of the physical facilities, the increasing costs of both financing the new hospital and funding the operating costs not only create a long term burden on the tax payer but may also impact future services in the region in the form of patient care. In 2014, seven and a half years after the project was initiated we have yet to see a solution to how the unit can be managed efficiently.

Whilst too early to tell as to whether the region's hospitals are on the mend, in March 2014, Circle Holdings announced that patient numbers at Hinchingbrooke had gone up by 9% and that it would post a loss of £500,000 to £1 million for the year to March 2014 due to increased agency staff levels. Circle had hoped to breakeven in that year.

The CEO of Laing Buisson, the healthcare intelligence company, was quoted by the *Financial Times* in 2014 as saying that Circle's improved performance 'was significant for all private sector providers to the NHS'.

Perhaps the most important lesson learned, based on this case study and others is that Trust members need specialist support mechanisms to negotiate PFI/PPP deals. Clinical expertise does not necessarily make for construction and operational excellence.

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[1] Local Improvement Finance Trusts (LIFT) provided infrastructure for GPs and community healthcare providers. They are discussed in Fabozzi, FJ and de Nahlik, CF, *Project Financing*, 8th edition, 2012, Euromoney Books.

[2] Asteral, as MES contractor, was undertaking the supply, installation, commissioning, maintenance and replacement of certain items of medical equipment. Its obligations were guaranteed by Brook Henderson Group Ltd. Given the nature of the facilities management (FM) and MES services, a permanent 'look through' obligation to their respective ultimate parents for 35 years would have been potentially problematic. Why? As if the subsidiary were to have been partially sold or spun out (as many FM companies were by their builder owners) in harder economic times, this would have been a barrier to that deal. Barriers mean that sponsors' potential returns could have been reduced as the changes may have led to a fuller renegotiation with the three trusts.

[3] Multiplex FM (UK) Ltd provided the building related ongoing facilities' management services, such as maintenance and also managed the previous infrastructure during the construction phase.

[4] Compass Contract Services (UK) Ltd trading as Medirest provided the softer facilities' management services. They included portering, traffic management, cleaning, security, catering, laundry and linen and associated materials.

[5] Duration is a measure of the bonds' responsiveness to interest rate movements, so a coupon-less bond which is repaid in a single bullet payment on one day in the future will have a duration equal to its tenor. The higher the duration the more sensitive the bond will be to yield curve movements.

[6] ABN Amro had provided a hedge to the explicit RPI risk being taken by PHT, which was also supported by the FGIC wrap.

Chapter 13

A-Model to follow?

Why is this case interesting?

Infrastructure projects are popular because they have long lives. This means that investors can undertake some asset and liability management, by acquiring long term instruments with a risk premium over their national government's debt. However toll roads are not risk free, as traffic is unpredictable and road users can avoid further transport taxes, if they can find alternative routes to their destination.

This project looks at the A1 road expansion project using a public private partnership (PPP) financing structure that closed successfully in the turmoil following the Lehman collapse. At a time of turmoil, investors focus on less risky assets and this project's investor demand proved remarkably resilient. The chapter also explores what happened when the German government tried to transfer additional risks into the private sector in subsequent deals.

Exhibit 13.1

Key project features of the A1 Mobil PFI Road expansion project

Feature	*Headline*	*Detail*
Financing	€595 million debt and equity facilities	€480 million term loan €35 million debt service reserve facility €5 million revolving working capital facility €60 million 4.5-year equity bridge €15 million 6.5-year performance bond
Borrower	A1 Mobil (A1 Mobil GmbH & Co. KG)	
Sponsors	Bilfinger Project Investments GmbH – 42.5% John Laing Ltd. – 42.5% Johann Bunte (Johann Bunte Bauunternehmung GmbH & Co. KG) – 15%	
Sector	Infrastructure	Toll road
Country	Germany	

Source: Kai Nehen based on various public data sources

What was the project?

At the core of the project was the expansion of a stretch of the German federal A1 Motorway from Bremen to Hamburg from 2x2 lanes to 3x3. The A1 Motorway ('Bundesautobahn 1' or Federal Motorway 1) covers a distance of 730 km and stretches from Heiligenhafen in Schleswig-Holstein to Saarbrücken in Saarland. It is economically and strategically important as it allows traffic from the Benelux countries to reach the German ports of Hamburg, Bremen, Bremerhaven, Wilhelmshaven and Lübeck, and then move onwards to Eastern Europe and Scandinavia. Due to its economic and strategic importance, the expansion of the A1 motorway represented one of the key pilot projects for the so called A-model. The term 'A-model' (A-Modell) is short for 'Ausbau-Modell' or extension model, a term introduced in 2005, about the same time as tolls were established for heavy good vehicles (HGVs) travelling on German motorways.[1] The aim of the €6 billion scheme was to expand several highly congested motorways from four to six lanes.

The expansion covered a total distance of 72.5km. The 30-year design, build, finance, maintain and operate (DBFMO) contract not only covers the widened motorway, including the construction of several bridges and underpasses, but also the operation of 65.5km of the same stretch. The public private partnership (PPP) project was the largest German PPP project to date in 2014. With a project value of €650 million, the estimated construction costs totalled approximately €540 million while the value of the overall concession for 30 years was estimated to be around €1 billion.

Several features of this deal stand out compared with other infrastructure deals. The A1 extension was the only prominent European road deal to come to market in late 2008 to include traffic risk, as it is a revenue-based model. A list of revenue-based models is shown in Exhibit 13.2.

Exhibit 13.2

List of A-model projects in Germany as at August 2013

A-model	*Route section*	*Concessionaire*	*Status*
A8	Augsburg-West – Munich-Allach	Autobahnplus	Completed
A4	State border Hessia/Thuringia – Gotha	Solutions Thüringen	Completed
A1	Buchholz – Bremen	A1 Mobil	Completed
A5	Malsch – Offenburg	Solutions Südwest	Completed
A8	Ulm/Elchingen – Augsburg-West	Pansuevia	Completed
A9	Lederhose – State border Thuringia/Baveria	Via Gateway Thüringen	Call for bids

Continued

Exhibit 13.2 continued

A-model	*Route section*	*Concessionaire*	*Status*
A7	Neumünster-Nord – HH-Nordwest	n/a	Call for bids
A94	Forstinning – Marktl	n/a	Call for bids
A6	Wiesloch-Rauenberg – Weinsberg	n/a	Announced
A1/BAB A30	Lotte – Münster/Rheine – Lotte	n/a	Announced
A44	Diemelstadt – Kassel Süd	n/a	Announced
A7	Salzgitter – Göttingen	n/a	Announced
A61/A650, A65	Worms – state border of Rhineland-Palatinate/ Baden-Württemberg	n/a	Announced

Source: VIFG

Both the lenders and the investors accepted the traffic risk. Although the deal was underwritten before the bankruptcy of Lehman Brothers, it went into syndication post-Lehman and the advent of the global financial crisis. Nevertheless, it still attracted several further banks in addition to the original group of mandated lead arrangers (MLAs) during syndication. This was at a time when lenders were only looking at availability-based road deals due to their more favourable risk profile. Finally, this deal stands out as it formed one of four pilot projects of the A-model.

The A-model and toll revenues

The A-model relies on a PPP structure in which a private company is put in charge of carrying out the extension of the motorway and its maintenance over the coming 30 years. After this period the ownership and the maintenance requirements are transferred to the respective federal and state entities. The tolls are collected by the Federal Government and are then forwarded to the private entity in charge of the motorway. Partial or complete funding of the construction period can be provided on a case by case basis to the private entity. In order for an A-model to be approved, a feasibility study has to demonstrate that the proposed A-model is at least as economically feasible as a purely public project (see the UK public sector comparators used for PFIs and PPPs and also mentioned in the Peterborough case in Chapter 12).

The A-model scheme was first put into practice in 2007 with a first round of four pilot projects being awarded between 2007 and 2009. Initial projects included the extension of the following motorway strips shown in chronological order:

- A8 Augsburg – München (Bavaria);
- A4 State border Hessia/Thuringia – Gotha;
- A1 Bremen – Hamburg (Lower Saxony); and
- A5 Malsch – Offenburg (Baden-Württemberg).

The purpose of the pilot projects was to see how well the PPP model would fare in practice when applied to a road infrastructure context and to evaluate how to improve the A-model for future projects. The first four projects all had a traffic-dependent payment structure.

In general, the following payment structure types can be observed:

- availability-based payment models:
  - revenue generation:
    - no tolls are collected; the concessionaire receives payments for making the road available (the A9 PPP project is an example of an availability-based payment model);
- real tolls:
  - revenue generation:
    - toll collection; the concessionaire receives a share of the tolls collected (the A1 PPP project is based on a real toll contract); and
- shadow tolls:
  - revenue generation:
    - no tolls are collected; the authority pays the concessionaire for the level of road use (the A8 II PPP project includes elements of a shadow toll road).

In practice, hybrid structures combining elements from the three different approaches are also possible.

Traffic-dependent payment structures (real tolls and shadow tolls) differ from availability-based payment structures as they entail specific risks. Two key risks for road PPPs are traffic risk[2] and revenue risk[3] and these risk factors are in turn dependent on a broad range of other factors, including, but not limited to:

- macro-economic factors, such as GDP growth rates per capita due to its close correlation with the volume of HGV traffic;
- inter-modal competition (for example, railway);
- competition with alternative routes;
- connections to the rest of the network, including feeder routes;
- fuel prices;
- taxation levels; and
- commercial and industrial activity adjacent to the motorway.

In the case of an availability-based payment model, the state assumes both the traffic and revenue risks. In the case of a real toll model both risks are transferred to the private sector, whereas shadow tolls structures transfer traffic risk, but not revenue risk. Availability-based payment structures can reduce project risk and thereby lower the cost of debt and potentially broaden the range of investors. Revenue-based projects entail higher risks for the equity and

debt providers as these projects transfer traffic and/or revenue risk to the project company. Therefore, these projects require a comparatively larger share of equity in order to reduce insolvency risk stemming from potential volatility in revenue streams. The more 'skin in the game' held by the special purpose vehicle (SPV), the lower its return on equity. This incentivises the SPV to control costs.

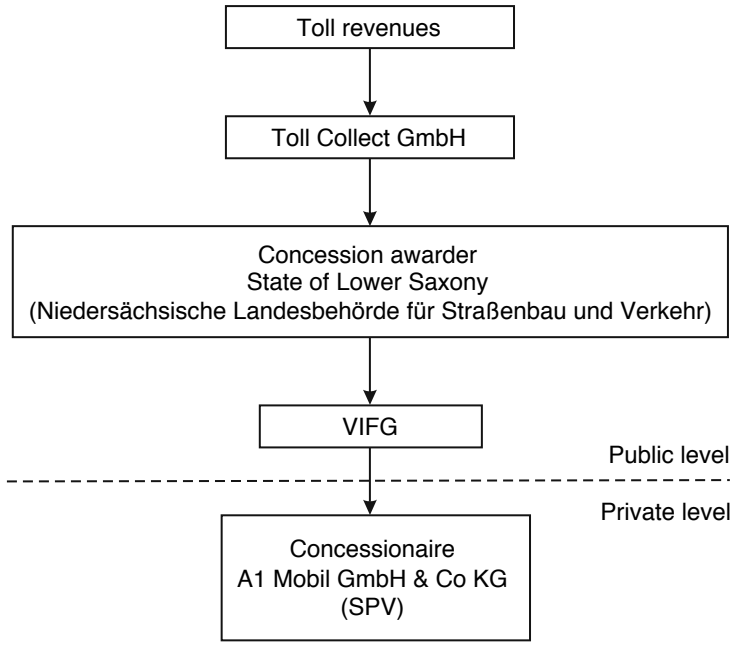
Another factor to take into consideration when discussing the different payment structures is that the traffic forecasts – and this is true regardless of which payment structure is used – are long term in nature. High level politics may change existing policies as there is pressure for transport policy change at a national, regional (and even global) level to manage emissions, pollution and avoid drivers of climate change. Therefore, the 30 year projections are subject to high levels of uncertainty regarding the validity and reliability of the data used and the models applied.[4]

Risk does not only reside with the concessionaire. From the government's viewpoint, PPPs based on shadow toll roads and availability-based payment structures can result in supplementary payments to the concessionaire when economic growth is slow, as a gap arises between collected tolls and what is paid under the concession. One example of how availability-based structures can cause fiscal problems is the case of Portugal and its shadow toll roads. With a view to promoting regional development, a shadow toll road system was first introduced in 1998 called SCUT (Sem Custos para os Utilizadores), with no costs being levied on the motorists using the Portuguese motorways. However, continued budget constraints and rising fiscal costs forced the Portuguese government to discontinue the shadow toll road system in 2010 and replace it with a real toll system. This decision was reflected in the renegotiation of seven motorway PPP contracts in 2012. Further adjustments have been made to Portugal's motorways by introducing tolls on more than 900km of roads in order to keep the country's €78 billion bailout programme on track. As a result, traffic has fallen sharply as toll costs may exceed fuel cost savings for some journeys. The Portuguese experience shows the *force majeure* risk of renegotiation of tolls during the life of a concession.

The A1 PPP project is based on a real toll contract. Toll Collect GmbH, a private company, has developed the technical infrastructure for toll collection and has been mandated by the German state to collect toll revenues. These toll revenues are then passed on to the Federal State, which in turn hands them over to the VIFG. The VIFG passes the toll revenues on to the concessionaire, as shown in Exhibit 13.3. In Germany, toll fees are collected in euros and only charged on HGVs (that is, transport above 12 tonnes) with the Federal State assuming collection risk, and indexing tolls to inflation. The exact amount of toll charges are vehicle specific – they depend on the number of kilometres travelled, the vehicle's pollution class, its number of axles and its weight. In general, toll revenues are earmarked for covering the expenses of operating the system, servicing the debt and for the enhancement of transport infrastructure. Whilst at the present time, tolls are not charged for private cars, this may change in the future in an attempt to widen the tax base of drivers.

Exhibit 13.3

Flow of toll revenues



Source: VIFG

While it is difficult to untangle the impact of toll charges on HGV traffic levels, evidence from the German experience suggests that companies involved in road freight transport and logistics react to toll price changes by increasingly using secondary roads, organising their logistic processes more efficiently (for example, by avoiding empty trips) or choosing an alternative mode of transport. The introduction of toll charges in Germany in 2005 led to a shift to secondary roads as the toll charge is directly linked to the amount of kilometres travelled. Average distance travelled to transport one tonne of goods declined from 149km in 2005 to 124km in 2012.

To conclude, the proposed advantages of the A-model include:

1 *Investments in infrastructure projects in times of insufficient public investment capabilities*: as public budget funds designated for the maintenance and extension of the federal road network were steadily declining from €7.1 billion in 2009 to €5.8 billion in 2012, the case for PPP infrastructure investments seemed particularly strong.
2 *Efficiency gains through the introduction of competitiveness*: while neither the VIFG nor A1 Mobil was willing to release information on the financial details of the deal, the German government stated that the A1 extension as a PPP was at least 10% more

economically viable as compared with a public sector comparator (PSC). A PSC, it will be recalled, is employed by a government in order to determine whether public procurement in its most efficient form would provide value for money to the state in comparison with private procurement. It is a mechanism which sets a benchmark for alternative private procurement bids by estimating the risk-adjusted costs of a hypothetical, non-existent public procurement contract. One of the key issues with using a PSC – apart from its purely hypothetical nature – is the matter of choosing the appropriate discount factor (to represent the public project's cost of capital) for the public procurement contract. Since governments refinance themselves by issuing government bonds, these marketable securities can be used as a guide. However, this inserts a distortion as the rating of a commercial entity residing in a state is generally at best equal to or normally worse than the state in which it is located.

3 *Toll charges on HGVs stimulate the use of more efficient methods of transportation and stimulate fleet renewal*: since toll charges are exclusively levied upon HGVs, the German toll system can effectively be viewed as a tax on road haulage as opposed to rail or waterway transportation of goods. Moreover, as toll charges vary across pollution classes, the toll system encourages companies to renew their fleets. In fact, the share of enhanced environmentally friendly vehicles (EEVs) has been steadily increasing from a paltry 0.2% share in 2009 to a share of 12.50% in 2012.

Macro environment

Branded the 'sick man of Europe' at the outset of the early 2000s, Germany embarked on a number of reforms in the coming years (Agenda 2010, Hartz reforms) in which, among other things, corporate taxes were reduced and efforts made to increase domestic investment. Regardless of these reform steps, economic growth was dismal between 2001 and 2005, averaging only 0.6% p.a. Against this backdrop, the German state called for bids for building and operating the A1 extension in December 2005. GDP growth recovered significantly in 2006 and 2007, averaging 3.5% p.a.

The macro environment during the time span of the project (December 2005 to October 2012) was influenced to a large extent by the credit crunch of 2007 to 2008, and the resulting financial and economic crises as well as the more recent Eurozone crisis.

The global financial crisis that began in mid-2007 hit Germany on the 1 August 2007 when a number of German banks bailed out their rival bank IKB for €8 billion after the bank sustained €1 billion of credit losses arising from the US sub-prime mortgage sector. The potential group of bidders for A1 had been shortlisted just three months previously. While the global financial crisis was starting to unravel throughout the course of 2008, best and final offers were submitted in April 2008 and financial close was achieved in July of the same year. When the US investment bank Lehman Brothers filed for Chapter 11 bankruptcy protection in September 2008 and was not bailed out by the US government, global markets became jittery or nervous (its smaller rival Bear Stearns had been bailed out by the Fed and sold to JP Morgan just six months earlier). The Lehman crash triggered the global financial crisis, which spilled over to cause the worst economic crisis (the so called Great

Recession) since the 'Great Depression' of the 1930s, causing Germany's real GDP growth to fall to 1.1% in 2008.

In 2009, GDP contracted by 5.1%, even though the German government passed a stimulus package worth €50 billion in January 2009, including €17 billion earmarked for infrastructure investments. The €17 billion in infrastructure investments was believed to be a reasonable step at the time – both from an economic and political point of view as congested motorways not only dampened the flow of goods in a recession-hit economy, but also impacted German motorists (who were going to the polls in September 2009 for a general election). However, due to the tight deadlines imposed on the available funds, states and municipalities rushed to 'go it alone' and tended to avoid PPP formats. PPPs required more time, by definition as the partnership needed to be structured and contracts negotiated in a way which would allow optimal outcomes for all parties involved. Additionally, from 2008 and the bailout of IKB, Germany's banks continued to operate under conditions of considerable financial stress throughout 2009, which saw the nationalisation of the second biggest property lender Hypo Real Estate. This impacted the banks' willingness to lend long term and raised their cost of funds.

The years 2010 to 2012 were marked by fairly strong domestic GDP growth rates (4%, 3.1% and 0.7% respectively) and the simultaneous 'periphery' Eurozone crisis. When news broke in early 2010 that Greece had 'massaged down' official data on its deficit and debt, the sovereign debt crisis began a new phase having successfully spread to the biggest economy in the European Union.

History of the project's development

Tenders for the project were invited in December 2005 and candidates were shortlisted in May 2007. Best and final offers were submitted in April 2008. The contract was awarded by the State of Lower Saxony to the winning concessionaire, A1 Mobil – an SPV set up for the sole purpose of the extension of the A1. A1 Mobil achieved financial close in July 2008 with the concession beginning in August 2008, as shown in Box 13.1.

Box 13.1
History of project development and key parties involved

Tenders announced	December 2005
Shortlisting of bidders	May 2007
BAFO (best and final offer)	April 2008
Financial close	July 2008
Commencement of concession	August 2008
Completion of construction	October 2012
Concession period	30 years
Financial advisor	Macquarie Capital Advisors
Concession awarder	Federal State of Lower Saxony
Concession awarder counsel	Norton Rose
Lender legal counsel	Allen & Overy
Sponsor legal counsel	Linklaters
EPC contractors	Bilfinger, Johann Bunte
Consultancy legal issues	Freshfields

Source: VIFG

The SPV contracted a well-qualified consortium for the construction works to be carried out. A1 Mobil tasked the CapCo (capital equipment or infrastructure provisioning company) ARGE A1 Hamburg-Bremen not only with carrying out the actual construction works, but also with planning the process of extending the stretch of the A1. The CapCo in turn outsourced several tasks to subcontractors, including signage works and landscape planning, among others. In order to maintain a constant flow of traffic, construction works would not take place at two adjacent construction sections at the same time.

A separate time schedule was set up for landscaping, which included planting, in order to lessen the environmental impact of the construction works on its surroundings.

While the task of coordinating all these different kind of activities across multiple public and private entities may seem daunting at first, the establishment of a cross-functional plan and document management system facilitated the efficient exchange of information across subcontractors, the construction consortium ARGE A1 Hamburg-Bremen and any relevant public entities and demonstrated good project management practice, in turn aligning the operations with the finances (see Chapter 7).

As the concession award included the potential rebuilding of 74 bridges and underpasses and given that most bridges had been constructed in the 1930s, it was simpler and more cost effective to demolish all existing bridges and replace them with newly constructed ones that met with current building standards.

The negotiation for and acquisition of 1,400 plots of land represented another significant challenge. A1 Mobil purchased the respective plots for the majority of the extension strip, for the account of the Federal Republic of Germany, since in order to allow a quick start

of the construction works shortly after contract award, the Federal Republic acquired the plots for two critical areas out of a total of seven pre-defined sections. A1 Mobil outsourced all tasks related to the acquisition of the plots to the CapCo and the basis for the negotiations with the owners of the plots were professional reports determining the value of each property or, where applicable, group of properties. Legal provisions allowed the construction work to begin even if there were delays in the acquisition process so whilst the original plot owners retained the right to negotiate purchase contracts, a compulsory purchase order or expropriation procedure made sure the project would not suffer any major hindrances because of a few plot owners seeking to hold out for better terms.

In summary, the project required the construction of the following elements on top of the actual extension of the motorway: 1 interchange, 8 junctions, 18 resting facilities, 38 underpasses, 36 bridges and 68 rainwater collection basins.

Germany's most dangerous road

The A1 Motorway had been divided into 13 separate construction sections, each of about 6km, with each construction section alternating with a non-construction section. In order to minimise the duration of the construction phase, the traffic in both directions was channelled through two adjacent lanes on one side of the road, while the other two-lane section of the road was being extended to three lanes. This sort of traffic routing was dubbed to be not only ambitious, but also 'downright dangerous' leading to 'otherwise unnecessary accidents' according to a leading German newspaper, *Die Zeit*. In order to support its claim, *Die Zeit* listed accident figures for the period of 2009 – 1,553 accidents happened in between the stretch of the A1 Motorway under construction. This represented an increase of 121% compared with the respective figures for 2008. However, most of these accidents were minor, happening in parallel traffic, a term referring to rear-end collisions and side-swipe contacts.

The project was completed some two and a half months ahead of schedule in October 2012.

The interplay of public private partnerships and public procurement

In the specific case of Germany, the German Government Accountability Office assessed the economic feasibility of PPP projects in 2011. The Accountability Office called into question the validity of the PPP feasibility studies and claimed that the studies assessed tended to exaggerate risks and associated costs for the PSC by using standard, non-project specific figures, while the same figures were underestimated for the PPP project equivalent. Additionally, it appeared that the transaction costs of PPP projects were not considered at all in some instances.

Sponsors

For the A1 extension, the concessionaire was A1 Mobil, the SPV. Its partners are Bilfinger Project Investments (formerly Bilfinger Berger Project Investments GmbH), John Laing Infrastructure Ltd. – each with a share of 42.5% – and Johann Bunte Bauunternehmung GmbH & Co KG (known as Johann Bunte) with the remaining share of 15%.

Bilfinger Project Investments is a wholly owned subsidiary of Bilfinger SE (formerly Bilfinger Berger SE). Bilfinger SE is a listed, international engineering and services company and had a market capitalisation of €3.80 billion at the end of 2013. The company's business segments include industrial services, power services, building and facility services and a construction business segment. The company is headquartered in Mannheim, Germany and operates in Africa, Asia, Europe and the US.

John Laing Infrastructure Ltd was the holding company for all road investments carried out on behalf of its parent company, John Laing plc. This is the parent company of JLIF, the stakeholder in the Peterborough hospital project. John Laing Infrastructure Ltd had a market capitalisation of £882.8 million at the end of 2013 and is primarily focused on infrastructure investments and asset management for the public sector.

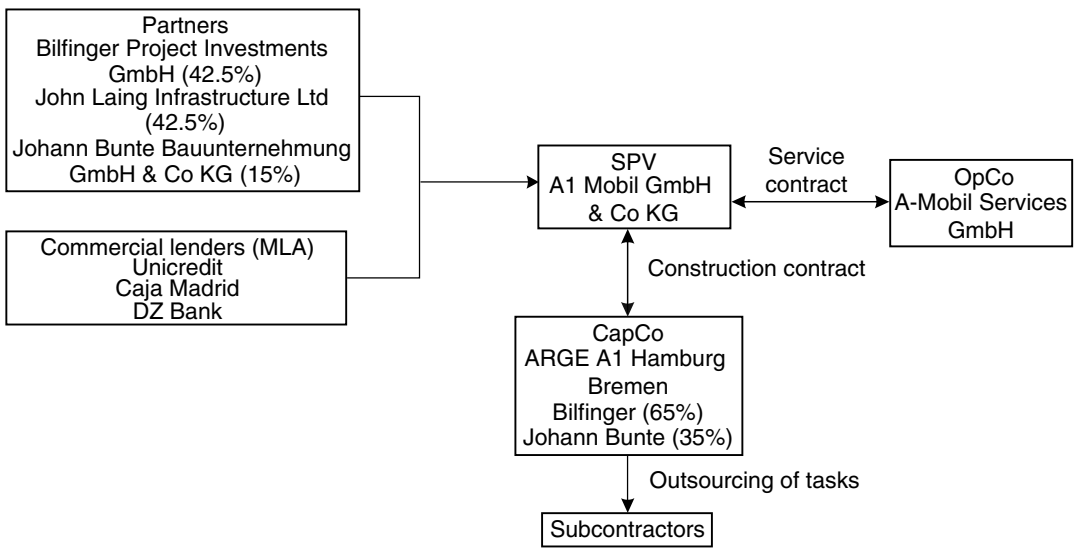
Johann Bunte is a privately owned construction company headquartered in Papenburg, Germany. With total revenues of €560 million in 2012, the company is among Germany's 10 largest construction companies.

Structure

The CapCo carried out all work related to the actual extension of the Motorway on behalf of the SPV. This includes, but is not limited to, the acquisition of adjacent plots, the creation of plans of execution, and the coordination of traffic flows through the various construction sections. The CapCo consists of Bilfinger Construction GmbH (formerly Bilfinger Berger Ingenieurbau GmbH) (65%), a fully owned subsidiary of Bilfinger AG, and Johann Bunte (35%). The CapCo outsourced some of its work to local engineering and construction companies.

Exhibit 13.4

A1 project structure



Source: Kai Nehen based on various public data sources

The engineering consultant company EHS Beratende Ingenieure für Bauwesen Stuttgart GmbH (EHS) monitored the construction process on behalf of A1 Mobil during the construction phase, providing an independent quality review. In addition to EHS, the engineering consultant company Bung AG functioned as the main lenders' technical advisor (LTA) and thereby provided an additional layer of checks on the kind of quality of the construction and carried out periodic schedule reviews. The engineering consultant company Kortemeier Brokmann Landschaftsarchitekten GmbH was in charge of the environmental supervision of the project.

The company in charge of day to day maintenance and operation, that is the OpCo, was the A1-Mobil Services GmbH.

The Federal Republic of Germany was the concession awarder and was represented by the Federal State of Lower Saxony. In order to efficiently manage the project, a team within the Lower Saxon Federal State Authority for Road Engineering and Traffic Development (Niedersächsische Landesbehörde für Straßenbau und Verkehr) was set up to monitor contractual compliance and to carry out all the relevant tasks the concession awarder was supposed to carry out, such as official approvals.

Financing decisions

As mentioned above, the deal was unusual in the project finance market at the time, as it was an underwritten deal with market risk. At the outset, the MLA group underwriting nearly €600 million of senior debt consisted of Unicredit, Caja Madrid, DZ Bank and the Royal Bank of Canada. However, before financial close was achieved in July 2008, the Royal Bank of Canada dropped out of the underwriting group, so that in order for the three remaining banks to get the deal closed on time, Unicredit, Caja Madrid and DZ Bank had to increase their underwriting commitments with Unicredit taking on the lion's share of the larger underwriting commitment.

The three banks aspired to expand the group of syndicating banks. Unicredit, Caja Madrid and DZ Bank were able to bring in Deka Bank and Commerzbank through their 'relationship pull'; the existence of an underwritten commitment and several 'tweaks to the concession'. Deka Bank and Commerzbank joined during the 'early bird' syndication phase, which lasted up to August 2008. Four undisclosed banks joined until the end of the official syndication phase in November 2008. Unicredit acted as coordinating MLA and coordinating bookrunner. According to IJGlobal, the first RfP (Request for Proposal) had been rejected by banks for being 'too aggressive'. In addition, the impact of the recession started to show, which required GDP and HGV traffic forecasts to be adjusted downwards.

The non-recourse financing had five components.

First, there was €480 million as a term loan with a 29-year maturity. The concession lasted one further year beyond the debt's maturity with this figure becoming two years in case of the cash sweep paying down the debt as forecast (see below). The 29-year senior term loan benefits from a cash sweep starting from year 20 that effectively cuts the tenor to 28 years in the base case scenario. This allowed the sponsors to reap the benefit of a 29-year repayment profile over the first 20 years. In turn, the sponsors were thereby able to put in more aggressive bids. The senior term loan benefited from a pricing flex. Originally, the

debt margins were laid out as follows: 125 basis points over Euribor during the construction period; 120 basis points during the years 6 to 12; 130 basis points during the years 13 to 20 and 140 basis points during the years 21 to 29. The pricing flex led to an average margin of 150 basis points to 160 basis points over Euribor.

Second, a debt reserve facility of €35 million with a tenor of 29 years was set up to manage some lender caveats. While the tolling profile could be well established, as there was more than a decade's worth of data on traffic history available, the financial model took into account several of the potential caveats. In the base case scenario of the financial model, the potential impact of competing roads was accounted for. Moreover, the financial model was adjusted to take account of more pessimistic predictions of HGV traffic by using GDP growth figures, which are closely related to the overall HGV traffic figures. The debt service reserve resolved several issues arising from uncertainties by providing a cushion.

Third, in order to secure the day to day operations of the business, a revolving working capital facility with a tenor of 29 years and a volume of €5 million was set up.

Fourth, there was a €60 million equity bridge with a tenor of four and a half years. Equity bridges optimise the equity holders' return profiles as the contribution of equity in the amount of the equity bridge loan is delayed.

Fifth, there was a €15 million six and a half year performance bond.

(These last two components were solely provided by HVB/Unicredit. Both feature bullet repayments and benefited from bank letters of credit.)

Tranches on offer were €10 million for 30 basis points, €30 million for 60 basis points and €50 million for 75 basis points over Euribor. According to the three initially mandated lead arrangers, the strong take-up allowed them to scale back their underwriting commitments, thereby shifting these closer to their original intention.

Apart from the sensitivity analysis performed, the German government played a decisive role by assuming the uninsurable *force majeure* risks, toll collection risk, tariff and inflation risk.

Finally, the SPV had raised an estimated €50 million of equity through its owners Bilfinger, John Laing (each contributing €21.25 million for a total of €42.5 million) and Johann Bunte (contributing the remaining €7.5 million).

The project reached financial close in less than five weeks from the concession being awarded, and a strong take-up in syndication allowed the lead-arrangers to scale back their commitments to their intended values. While the two-phase syndication and fees that topped out at 75 basis points for €50 million definitely helped to move the deal, the key facilitators were the flex in the margin and a concession which had been adjusted in order to accommodate market sentiment.

The A-models following the A1

The success of the A1 tender process was not to be repeated in the short term. The tender process for the next A-model, the A5 tender process, proved to be less successful. What went wrong? As the A5 PPP project was another deal with market risk, macroeconomic factors such as lowered traffic projections made it harder for the group of bidders, including Bilfinger Berger (as it then was) and the Hochtief/Vinci consortium, among others, to justify

the assumptions in the business plan. Moreover, in light of the government's revenue-sharing terms, decreased levels of bank liquidity led to rising construction and financing costs. These factors led Bilfinger Berger to put in a non-compliant best and final offer. The Hochtief/Vinci consortium, which should have been named preferred bidder after the strategic retreat of Bilfinger Berger, was thrown out of the bidding process after Hochtief reduced its stake in the consortium without adjusting the bid documentation. This incidence did not hinder Vinci from submitting a bid and it was in turn selected as the preferred bidder, subsequently triggering a lawsuit filed by Bilfinger Berger against the German state arguing that the financial crisis of 2007 to 2008 made it impossible for the construction group to submit a fair bid. However, the legal challenge was turned down and Via Solutions Südwest – a consortium led by Vinci concessions – was named the sponsor of the project.

BBVA, Dexia, HSBC, ING, NIBC and Santander initially backed the deal. The legal dispute and pricing issues led ING, Dexia and HSBC to drop out while KBC joined the underwriting group. Total financing equalled €479 million and was comprised of a 28.5-year €200 million term loan, a €43 million 4.5-year bridge loan, a €200 million 28.5-year loan from the European Investment Bank (EIB), and a €11 million 28.6-year revolving credit facility.

Additionally, a €25 million so called EIB Loan Guarantee for TENS Transport (LGTT) was set up. The LGTT facility is designed as a buffer in order to minimise the risk of reductions in traffic revenue from the project during the initial phase of operation. Whenever a pre-determined traffic downside threshold is met, the LGTT is called upon and the EIB becomes a subordinated lender to the project (the EIB is still above the equity providers in the pecking order). The LGTT is then used to partially repay the senior debt at time of loan refinancing. The LGTT thereby not only helps refinancing in case of a traffic shortfall, but also increases the cover ratios for the outstanding senior debt. This, in turn, improves the position of the senior lender. The main challenge with the A5 tender process was the timing, and trying to keep a deal in play that was founded on assumptions made before the Lehman's collapse and the consequent effect on the markets.

Following the abortive syndication process for the A5 tender, the German state started off the first tender process after the financial crisis, with a call for bids on a tender of the A8 II. The inherent challenge of the tender process for the A8 II was that at launch of the tender process no one knew what shape the debt markets would be in at financial close of the project. In the case of the A8 II concession, the toll payments being forwarded to the concessionaire were based on the average toll per HGV using the road. With previous concessions, a scenario could be envisaged whereby, despite higher HGV traffic levels, revenues would stay flat or even fall due to more environment-friendly HGVs. Overall debt for the project stands at €298 million consisting of two pari passu tranches – one from the EIB (€149 million) and the other one from a group of commercial banks, including a €62 million tranche from BBVA. In addition, a LGTT facility (€59.6 million) provided by the EIB allowed banks to offer far less restrictive terms on the senior debt. On top of this, the German government provided start-up financing of €75 million. Margins on the deal reflect the persisting 'Keynesian animal spirits' at the time and start at 270bp over Euribor rising up to 320bp. These pricing step-ups are coupled with a cash sweep in order to encourage refinancing. Lastly, a minimum debt service coverage ratio of 1.4 times net operating income provided banks with the needed assurance to commit to the deal.

While structural enhancements like the LGTT facility used in the A5 tender process went a long way in providing comfort to banks and all other players involved, bankers still had a clear preference for availability-based structures. Moreover, the less than ideal tender process for the A5 fortified the view that an availability-based structure might be needed for subsequent tender processes.

As a result, in the subsequent 20-year tender of the A9 concession, the German state opted for an availability-based payment structure (see above). The concession requires the extension of 46.5km of the A9 motorway located in the Federal State of Thuringia in East Germany. The geographic location of this stretch and the resulting low levels of traffic meant that the German state felt compelled to offer an availability-based structure, as this would provide a healthier revenue stream to potential investors. The actual sum received by the concessionaire is dependent upon operating performance, which is measured through several key performance indicators, and the actual availability of the lanes.

Lessons learned

Forming a part of the first round of pilot projects under the newly established A-model, the extension of the A1 provided some useful lessons to all parties involved. These lessons helped to improve subsequent deals. The VIFG and the German Federal Ministry of Transport used the A1 extension to evaluate the feasibility of the A-model operator model. Key points raised in the evaluation were a call for a more dominant position of availability-based payment structures, an increase in overall deal activity (deal flow), and a call for simpler, less complex remuneration mechanisms. The lessons learned from this evaluation were reflected in the subsequent tender processes: adjusted risk sharing mechanisms (traffic risk) through the introduction of shadow toll and availability-based models, a decrease in private sector financing through an increase in start-up financing provided by the public sector and possible alternative financing concepts like forfeiting structures and the streamlining of the bureaucratic process.

In addition, the VIFG stressed the fact that all A-model projects featured reduced construction times and traffic impacts.

As the extension of the A1 not only formed the A-model programme's largest financing to date, but also Germany's biggest PPP project to date, it only seems natural that – given all obstacles the deal had to face in terms of the macroeconomic situation in Germany at the time and the financial turbulences on a global level – it was awarded the 'European Road Deal of the Year 2008' award by IJGlobal.

The true value of the A1 extension as a PPP lies in a combination of these facts: it showed that large PPPs are generally possible in Germany; provided useful insights for future A-model projects; and provided a blueprint for future road extension projects in terms of project management.

[1] A proposed new toll arrangement for passenger cars driving on any type of German road is currently in the works with draft legislation expected for autumn 2014. The toll arrangement has been heavily criticised publicly due to its intention to charge foreigners for driving on German roads while German drivers shall be exempted from any extra costs (German drivers would be granted a tax exemption equal to the amount they pay in road charges). This presumption is seen to be against EU law and it remains questionable whether the toll arrangement

will be introduced at all as two out of three coalition parties remain opposed to the measure (*The Economist*, 'Charging the neighbours', 12 July 2014).

[2] Traffic risk is the risk of forecasting adequate numbers of vehicles using the road.

[3] Revenue risk is the risk stemming from the risk of forecasting adequate revenue numbers. This is difficult, since revenues are based on traffic volumes and/or toll rates and collection risk.

[4] The Campaign for Better Transport, a UK advocacy group, stated in one of its reports that there is strong empirical evidence that traffic forecasts on toll roads are systematically over-optimistic (Campaign for Better Transport (2012)).

Part 3

Case studies II: projects in progress

The following cases are mostly shorter and focus on a single or two issues. Several are 'works in progress'.

We begin with a short but unusual case study from China (Chapter 14), that describes a dynamic legal and policy background against which an airline sought to lease a plane. It is anonymised for reasons of sensitivity, and whilst elegantly simple, illustrates some of the issues faced whilst banking in a huge dynamic economy with an institutional framework that is also co-evolving.

We continue in Chapter 15 with the CPV Sentinel project, a former Deal of the Year project that came on stream in 2013 providing peak electricity in the hotter parts of California under a standard structure. This project represents a classic merchant power project and shows how the legacies of previous power shortages and the necessity to balance the needs of various stakeholder groups can almost delay a project. This case, like the A1 road case (Chapter 13), also mentions what happens when market overconfidence or the over complication of hedging products can cause challenges for later projects in a sector.

We return to oil and gas in Chapter 16 and to the giant Sadara petrochemical project in Saudi Arabia, partly financed by a *sukuk* issue. Sadara uses an Islamic *sukuk* financing, a former Deal of the Year, to partially fund the largest petrochemical project in the world – an effective partnership between Saudi Aramco and Dow Chemical that shows how great project management can close a complex financing package in record-breaking time. This project will be completed over the coming years.

Finally, in Chapter 17 we look at how port privatisation strategies can offer opportunities to project finance providers through three mini cases looking at national port reform strategies in different countries and the opportunities they offer to project financiers.

We hope that all of these projects in progress will have happy endings!

Chapter 14

Up, up and away: a Chinese aircraft leasing case

Why is this case interesting?

This much shorter case looks at how a relatively recent aircraft financing operated in China and how financiers carefully designed the transaction structure to obtain maximum security. Whilst it may not be a typical project financing when compared with other cases in this book, and in many ways it is very cautious, it offers some insights into an important new and fast growing market. We have disguised the identity of the parties to the transaction to meet the requests of various stakeholders.

Exhibit 14.1

Key project features of the Cheng Jiu aircraft finance project

Feature	*Headline*	*Detail*
Financing	Maximum US$9.5 million five-year fixed-rate non-recourse loan to Hong Kong special purpose vehicle (SPV) backed by lease payments from majority state-owned airline	Secured by lease payments and other security package
Borrower	LESCO 2 (Hong Kong Ltd)	A subsidiary of a large listed US group
Sponsors		
Sector	Airports and air services	
Country	China	

Source: Based on various internal documents

What is the project?

The project was to provide funds for a Hong Kong subsidiary of one leasing company, LESCO2, to purchase a B757-200 passenger aircraft from another international leasing company, LESCO1. Both of the leasing company parents are US-based and traded on large American exchanges. The agreed sale price for the aircraft, manufactured in 1989 was US$13 million and the loan was for a maximum 70% of the independently appraised asset value.

The aircraft was subject to a new operating lease agreement that was coterminous with the five year loan.

The lessee, Cheng Jiu was an airline formed as a company established under the law of People's Republic of China (China). The borrower was seeking a five-year bank loan to partially refinance the acquisition cost of the aircraft. Cheng Jiu would make quarterly lease payments as the sole source of repayment for the bank loan. Since Cheng Jiu was a Chinese company and the aircraft was registered in China, it also made sense to find a Chinese bank to provide the loan.

Macro environment

This deal took place in 2010, so the following discussion refers to the information available at that time.

Global industry environment

The aviation industry had been through difficult years in 2008 and 2009 due to the global recession. Airfreight volumes, which are always a timely indicator of international trade and economic activity, started to decline during the second quarter of 2008, and coupled with a dramatically falling GDP in the year of 2009, the number fell further in the first half of 2009 – premium travel fell 25%, economy travel fell 9%, and led to an annual loss for the industry of up to US$9.9 billion. However, from mid-2009, air travel markets began to turn upward, boosted by the massive fiscal and monetary stimulus measures taken by governments. The International Air Transport Association (IATA) forecast a more positive outlook for 2010 in the form of an expected US$5.6 billion global net loss which was just over half of that for the year 2009.

IATA believed that improvements would be driven by economic recovery in the emerging markets of Asia-Pacific and Latin America based on their performances in January 2010. Carriers in these two regions posted international passenger demand gains of 6.5% and 11.0% respectively, compared with those in North America and Europe which were 2.1% and 3.1% respectively for the same month.

According to Boeing's market outlook report for 2010 to 2029, the global economic downturn would recover with highest demand for new aircraft expected from the US, China and the United Arab Emirates, in that order. The Asia Pacific region's intrinsic economic strength, progressive trade agreements among the region's countries, and recovering global demand were the key drivers for the regional growth. Boeing forecast the Asia Pacific region's economy would grow at a rate of 4.6% per year for the next 20 years, and that its share of the world GDP would expand from 26% at the time of writing to 34% by 2029.

China

China's air travel improvement has been promoted by strong economic growth, increased trade, rising personal income, and progress in market liberalisation. In 2009, GDP was up by 8.7% over the previous year. China's GDP was forecast to grow by 9.0% in 2010 and

about to keep a high speed at an average 7.3% per year over the next 20 years. The country's fiscal stimulus package was expected to benefit this sector amongst others: the value added of the transportation, storage, post and telecommunication sectors was projected to grow up to 3.7% over the previous year. China's GDP per capita has increased from US$1,120 in 2000 to US$2,600 in 2009 and is anticipated to approach the world average of US$10,000 by 2029.

This expansion and the size of the country ensured that China's air travel market developed at a rapid pace.

Over the last decade, China had replaced Japan as Asia-Pacific's largest player. In early 2010, China's fleet was 1,400 aircraft compared with Japan's 540. Its domestic market of 5.7 million weekly seats was more than double Japan's 2.6 million. China's 1.4 million weekly international airline seat market was now slightly larger than Japan's 1.3 million. In the US, there are three aircraft seats per year for each of the population of 300 million; in contrast, China's population of 1.3 billion is served by only 0.3 seats per person. So there was significant potential for the development of China's air travel market, both internally and overseas.

Since the time of the case study, infrastructure capabilities have improved significantly again. In 2010, there were 175 transport airports in total, covering 91% of the business centres, 76% of the population and 70% of county-level administration regions. The airports with over 10 million passengers were up to 16 million. The Capital Airport (Beijing) and Pudong Airport (Shanghai) ranked the second and the third worldwide in terms of passenger transport and cargo transport respectively.

There were about 30 domestic airlines companies in China, which fell into three strategic groups. The first comprised the 'big three' based in the largest cities in China – Beijing, Shanghai and Guangzhou respectively. This group were state-owned and dominated the market in China. The second group were regional carriers, mostly state-owned, but including a large privately owned airline. Finally, the third group was made up of privately owned airlines, mostly low cost carriers.

International events impact on air traffic. The 2008 Olympic Games brought many visitors to Beijing, and another such event, 'World Expo', was scheduled to be held in Shanghai in 2010. It would last 6 months and was expected to attract 60 million tourists and business people travelling to Shanghai either internally or from international destinations. All airlines were expected to benefit.

Jet fuel price effects

The commodity market spot price of jet fuel (or kerosene), the largest cost for any flight, was extremely volatile during the period 2009 to 2010. On a monthly FOB basis, it ranged between US$1.47 and US$2.45 for a US gallon. With the recovery of economic conditions, IATA expected further rises to come and at the time of writing, the price is US$2.81.

In China, there is only one jet fuel importer and provider – the China Aviation Oil (Singapore) Corporation Ltd (CAO), controlled by China Aviation Oil (CNAF), a state-owned jet fuel company. Jet fuel prices in China are mainly determined by factory prices and a purchase and marketing price differential. The National Development and Reform

Commission (NDRC) regulates factory prices in tandem with international gasoline and coal oil prices, and Civil Aviation Administration of China (CAAC) adjusts the price differential. The frequency of adjustment of domestic fuel prices was low, so the reaction to international oil price fluctuations was not sensitive enough. Therefore, jet fuel prices in China were facing an 'up easy – down hard' situation. The domestic prices were an average ¥750/ton (US$120/ton) higher than those on the international market.

For Cheng Jiu, with over 45% of its operating cost coming from jet fuel, there was a significant vulnerability to these price movements. In China, at the time of this deal, individual airlines had few if any mechanisms to address the impact of fuel prices. The hedging techniques widely adopted by many airlines were still new and some Chinese airlines, in common with other international airlines had made huge losses in 2008 on hedging contracts. (The Beijing based Air China was said to have lost nearly US$1 billion when hedging contracts were marked to market at the end of 2008.) Instead, Chinese airlines often use credit to postpone the payment of their fuel bills. The normal credit period is five to 10 days, but the actual credit period will reach 30 days or even longer. This passes the price pressure to the state owned fuel supply company, and CAO had peak monies owed of ¥16 billion (US$2.5 billion). Placing a surcharge on passengers, as is common in Europe, is another way that airlines can try to reduce fuel price pressure, and this was used by some Chinese airlines. Before December 2008, the surcharge was determined by the civil aviation authority, CAAC, as a fixed rate or amount. However, this was adjusted even less frequently than jet fuel price changes, so it was not very effective in ameliorating fuel price fluctuation. After November 2009, CAAC gave the right to determine the surcharge rate to the airlines, so they could set a rate according to jet fuel prices. During the interval between December 2008 and November 2009, CAAC cancelled the surcharge and reduced airlines' income from surcharge fees for the year 2009. (In respect to Cheng Jiu, this reduction was an income drop of about ¥800 million, equating to US$128 million.)

Aircraft leasing in China

The development of China's domestic aircraft leasing companies started relatively late in 2000. China's domestic leasing companies had a relatively difficult environment: complicated approval procedures, higher taxes (25% domestic tax on operating aircraft leasing business, 5% sales tax, 17% import VAT, 5% customs duties, 0.1% stamp duty; if the airline leased aircraft from abroad, a 6% withholding tax was payable based on a rent payment; there was no import tax preference for airlines!), foreign exchange controls and restriction on establishing SPVs in mainland China, all of which made them less competitive in the aircraft leasing market (typically, 20% more expensive than foreign leasing companies). This provided an opportunity for foreign leasing companies that captured a large proportion of the China aircraft leasing market (66% before 2012).

However, the aircraft leasing market was booming in China. In 1995, the entire country had a fleet of 400 aircraft, increasing to 1,417 aircraft at the end of 2009, of which 37% (431 aircraft) were leased. As a capital-intensive industry, the civil aviation sector needs to strengthen cooperation with financial institutions. By 2025, 60% of commercial aircraft are expected to be leased.

History of the project's development

The steady and rapid development of China's economy led to strong and positive growth in air traffic, which is expected to continue and create significant opportunities in the aviation industry.

The 12th 'Five-Year' period plan for China's aviation business forecasts that, the total turnover of China's air traffic will reach 99 billion ton/km, with the passenger traffic volume of 450 million, and that of cargo and mail will be 9 million tons, with an average annual growth of 13% by 2015. With the increasing demand for transportation capacity, China's airlines need more aircraft, both new builds and a speedier replacement of ageing aircraft. According to a Boeing forecast Chinese airlines will need about 4,330 new aircraft by 2029.

However, Chinese airlines could not buy as many aircraft as they wanted since there was a long import approval procedure requiring sign-off by various government agencies including CAAC, NDRC and SAFE (State Administration of Foreign Exchange). Before 2002, aircraft could only be purchased through one state owned purchasing agency – China Aviation Supplies (CAS). Even after most major airlines had been given independent procurement authority, CAS still played an important role in aircraft imports, as it had the knowhow to manage some of the political issues associated with the purchases. As a more recent example, Airbus signed a deal to supply 70 jets, worth more than US$10 billion (£6 billion), to CAS during the state visit to France by the Chinese president, Xi Jinping in 2014. The order includes 27 long-haul A330s and 43 smaller A320 planes, and the aircraft will then be allocated to individual airlines.

So aside from capital intensive issues, the constraints on aircraft purchasing in the early 21st century was a further challenge for Chinese airlines. Leasing offered flexibility for the airlines company to arrange its fleet structure to meet market needs and, worldwide, over two thirds by number of all civil aircraft are leased by airlines. Leasing offered Chinese airlines, including Cheng Jiu, access to aircraft to increase capacity, and in 1999, Cheng Jiu leased a Boeing B757-200SF aircraft from LESCO1.

There are two basic alternatives in aircraft leasing, namely, operating leases and financial leases. Lessees make a decision on leasing aircraft according to their financial status. Under current Chinese accounting rules, assets under operating leases are not capitalised onto the lessee's balance sheet. The lessee incurs an operating expense, the lease rental payable is written off in the profit and loss account. Under financial leases, however, the lease is recorded on the balance sheet and depreciated under a depreciation policy consistent with that for depreciable assets which are owned by the lessee. The principal difference is the transfer of the asset at the end of the lease – operating leases retain title with the lessor. Cheng Jiu already had embarked on a capital intensive expansion programme and did not want to increase its gearing ratio, so wished to lease the Boeing B757-200SF under an operating lease.

A lease can also be either a wet lease, which includes the aircraft, crew, maintenance, insurance (ACMI) or a dry lease, a lease of the aircraft, excluding crew, maintenance and insurance (similar to a bare-boat charter). Since a wet lease would result in higher costs for the lessee, it tends to be adopted by airlines to cover a short-term operating need, such as opening up new routes, operating a new type of aircraft or in a season of high demand. In contrast, dry leases are used to meet longer term operating demands. Cheng Jiu also

owned several B757s and had experienced crew available. It had a longer term requirement but did not need to buy the aircraft, so it chose to lease the aircraft under a dry operating lease structure.

LESCO2 is a subsidiary of a US-listed aircraft leasing group company. Its core business is providing dry leasing solutions and the emerging Chinese market offered new opportunities including further development of the burgeoning regional Asia Pacific market. In 2010, LESCO2 was able to acquire the second hand 757-200SF from LESCO1 together with the lease to Cheng Jiu for a consideration of US$13 million.

Cheng Jiu is a significant airline in China and also operates international flights, giving it access to non-yuan income. Established in the 1980s and funded by the local authority and other municipal entities it has grown into a significant player. In common with the prevailing industry strategy, it has links to other airlines and has an impressive safety record. It is listed on the local stock exchange and remains majority state-owned.

Both seller and buyer agreed that the aircraft delivery should take place in a jurisdiction that would minimise taxes, fees and other changes. Logically, as an offshore centre of China, Hong Kong was such a location and was known as an aircraft delivery centre. An SPV was established in Hong Kong, namely LESCO2 Aviation (Hong Kong) Limited, as a 100% controlled subsidiary company of LESCO2 and became the buyer.

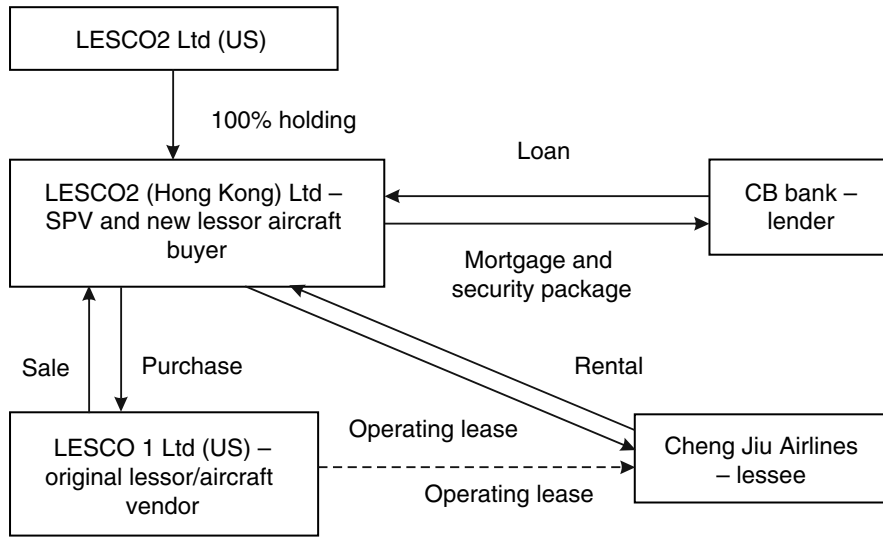
For the rights related to the aircraft:

- the seller and lessee were required to execute and deliver the leasing assignment agreement to the buyer, so that LESCO2 (Hong Kong) Limited could become the lessor of the aircraft;
- the sale agreement provided for the receipt by the buyer of an insurance certificate for the lessee naming the buyer as additional insured with respect to the lessee's liability coverage and naming the buyer as sole loss payee under the lessee's hull, spares and war risk coverage (part of this particular risk management approach was mentioned in Chapter 6); and
- after financial close, the seller would assign the manufacturer and engine manufacturer rights and assignment of warranties.

Exhibit 14.2 illustrates the relationship between parties in this transaction.

Exhibit 14.2

Cheng Jiu transaction structure



Dashed arrow represents original lease; solid arrow represents transaction and finance structure.

Source: Based on various internal documents

Financing decisions

One of the most important things for any project financing decision is to analyse the cash flow generated by the project. In this example, rather than analysing the discounted cash flow generated by a single aircraft which may be difficult to separate out unless it runs on a dedicated route, the cash generating capacity of the Cheng Jiu to make the lease payments is key. So this differs from a more traditional approach as it relies on pooled cash flows, rather than project cash flows to make the lease payments, though those lease payments provide the dedicated stream for repayment.

Cheng Jiu experienced consecutive losses in the year of 2007 and 2008 even though revenues increased. The major reasons were explained earlier – the overall economic recession and fuel adjustment losses accounted together for almost 90% of the total loss. At the end of 2008, total assets of Cheng Jiu had increased by over 10% on a year on year basis, but liabilities were increasing even faster, leading to a high level gearing ratio of over 90% at its peak. Much of this was down to loans, especially short-term loans and resulted in the short-term debt funding route closing to Cheng Jiu, necessitating an increase in short-term bank loans.

However, although Cheng Jiu experienced losses, its net cash flow and cash flow generated by operating activities were always positive, and in 2009, the company had received the capital injection from the government through a private offering of shares that relieved the pressure.

Aircraft financing has some special features, some of which are derived from ship financing. In order to prove title for this second hand aircraft, evidence of the title chain 'back to birth' including certified true copies of the various bills of sale were needed. The nationality of the plane is also important, and records need to show the owner and the operator. Most critical is the certificate of airworthiness, with proof of planned and required maintenance being carried out. The aircraft has to have a current valuation by an approved valuation expert and to be insured. The latter is evidenced by a copy of certificate of insurance in respect of the aircraft and a broker's (Air Union, a Chinese insurance broker incorporated in Beijing) letter of undertaking in respect of the aircraft issued by the lessee's insurers and brokers. War risk is especially important for international flights, so a copy of the Chinese government indemnity in respect of war risk liability was obtained.

The Cape Town Convention (CTC) on international interests in mobile equipment that can cross national borders was promulgated by the Institut International pour l'Unification du Droit Privé (UNIDROIT) an intergovernmental organisation. The convention relates to three types of mobile assets: aircraft over a certain size and aircraft engines (signed 2001); railway equipment (signed 2007); and space equipment (signed 2012 – see the Skynet 5 case study in Chapter 9). It covers international contracts of sale, liens and mortgages, leases and remedies in the case of default for assets that move between jurisdictions by providing a standard set of rules and a central registry. China and the US are both signatories to the protocol accepting the convention. For this transaction the borrower needed to show proof of registration as a transaction user entity, and to provide the authorisation codes issued by the aviation authority in relation to first priority mortgage, lease and security assignment for registration of its respective international interest and priority search certificates issued by the International Registry. However, though China had joined the convention, its membership only applied to China and not to the Hong Kong SAR. Since the debtor was incorporated in Hong Kong, the international interest over the engines could not be created – it was only practicable to register the international interest over airframe.

This transaction was supported by a security package that included an aircraft mortgage, an assignment of insurance and warranties, a charge over the SPV shares, and a security interest in the borrower's bank account into which the lease payments are made. (The fixed rate was obtained by converting the three-month Libor plus margin into a fixed rate five-year loan equivalent.)

There are two mortgage agreements governed by Chinese law and English law respectively. CB bank holds a first priority mortgage on the aircraft as the main security measure but this caused some legal conflicts concerning the applicable law to the mortgage given the governing law of the other agreements. Following advice from lawyers representing all parties involved, the decision was made to draw two mortgage agreements governed by Chinese law and English law respectively.

Choice of law can be contentious when state-owned assets are involved. The reasons to choose Chinese law were logical:

- the aircraft was registered and physically situated in China, so to ensure the efficient cooperation of the registering authority in order to realise the bank's security interest in the aircraft, Chinese law is an obvious choice;
- Article 186 of the Civil Aviation Law of the People's Republic of China, the state law under which the nationality of a civil aircraft is registered, applies to a mortgage of a civil aircraft;
- Article 266 of the Civil Procedure Law of People's Republic of China provides for a people's court recognition of the legally effective judgment or order of a foreign court in accordance with the international treaties concluded or acceded to by the People's Republic of China or based on the principle of reciprocity; and
- finally, since the provider of the loan was a state-owned Chinese bank, it had a natural preference for Chinese law to govern the mortgage.

But the reasons to use English law were also reasonable:

- the loan agreement and other finance documents were all governed by and construed in accordance with English law; and
- the leasing company insisted on using English law.

So it was also reasonable to consider applying English law to the mortgage as well.

The challenge was that at the time of the transaction, China and the UK had not entered into a civil and commercial bilateral mutual legal assistance treaty. This meant that judgments rendered by an English court would not be recognised and were thus potentially non-enforceable in China. In other words, China could not be viewed as a qualifying jurisdiction for English law. To resolve this dilemma required the use of the concept of a 'non-exclusive jurisdiction' of the two legislative systems and their courts over any mortgage disputes, and establishing mortgage agreements under both jurisdictions. Thus any submission by the mortgagor and the mortgagee to Chinese jurisdiction would not limit the right of the mortgagee to sue the mortgagor elsewhere in a jurisdiction deemed competent to try the case.

Whilst the mortgages and the CTC registration secured the financier's right over the aircraft, other challenges emerged. The aircraft was over 20 years old and thus less liquid as an asset. To bolster security, the bank required the Hong Kong SPV to assign 'all its rights, title, benefits and interest, present and future, actual and contingent, in, to under or in respect of the assigned property and all benefits to and in favour of the lender'. The assigned property related to the lease, insurance, warranties and any requisition compensation and proceeds and notice was served on all related parties. The lessee, Cheng Jiu, undertook to carry out its obligations under the lease in the lender's favour and for the lender's benefit as if the lender were named in place of the Borrower (or in fact the Lessor, LESCO 2 (Hong Kong Ltd)). Any insurance settlements would be paid to the lender rather than to a repairer and any warranties and their customer support services would benefit the lender in the place of the borrower.

Lessons learned

This case study tells us that the aviation industry is highly regulated. It is not only about legal issues, but also and more importantly about policy issues, especially in China, where the government departments play significant roles in the aviation market. To keep tracking policy and regulation changes is a core task for those active in aircraft finance in China. In such a fast developing market, this case study just provides a 'snapshot' of what is considered a 'moving picture'. After the case closed, many changes have taken place which shows the Chinese authorities' ambition in aviation industry reform.

First, after 1 August 2011, NDRC announced a new pricing policy for jet fuel that shortened the adjustment period of factory prices to a month and allowed it to be negotiated provided prices did not exceed the landed duty-paid import price from the Singapore market. In November 2011, NDRC and CAAC announced an improved mechanism of passenger fuel surcharges rate on domestic routes, in which the surcharge rate would vary with the changes of jet fuel price, and play a real role in offsetting rising fuel costs. This shows how the Chinese government has moved towards a market-based approach to fuel pricing.

Second, the new government has announced a set of reforms to start addressing issues related to domestic aircraft leasing business. On 27 September 2013, the State Council published the 'General Plan for China (Shanghai) Free Trade Zone', stating that there would be no minimum registered capital requirement for single aircraft or single vessel subsidiaries set up by financial leasing companies within the free-trade zone and that all domestic financial leasing companies or project subsidiaries set up by financial leasing companies, if registered with the free trade zone, would be entitled to import VAT benefits if purchasing aircraft of a certain size and leasing to a domestic airline. This government support allowed qualified aircraft leasing companies to raise capital via bonds, medium-term notes and asset securitisation. In addition, the State Council issued 'State Council on accelerating the development of aircraft leasing industry views' (GuoBanFa [2013] No.108). From the 'views', we can see that the government started to allow aircraft leasing companies to purchase aircraft directly and independently; qualified aircraft leasing companies can raise funds through financial measures such as issuing corporate bonds, medium-term notes, non-financial institution commercial paper and asset securitisation. A group of Chinese domestic leasing companies backed by the resources of various commercial banks seized this opportunity. One example, ICBC Financial Leasing Co Ltd had delivered 151 aircraft by 2013 with 84 aircraft registered in Ireland and 67 registered in Tianjin Dongjiang Bonded Port and Shanghai Free Trade Zone.

Third, great efforts have been continuing to increase air transport capacity in China. The 12th Five Year Plan (2011–2015) of the Civil Aviation Administration of China (CAAC) anticipates that China will have more than 230 airports by 2015, covering 83% of the population. In addition to the airport expansion projects, in terms of air traffic control issues, many new projects will be undertaken, such as building the new airport for the Sanya tourist market and covering the 8th Upper Air Traffic Control Area and 27th Lower Air Traffic Control Areas for general aviation and helicopter airports. In November 2010, the State Council and Central Military Commission of China introduced reforms to regulate airspace below 10,000 feet, which signals an opportunity for the expansion of China's general aviation industry.

This case also tells us that the aviation industry is profoundly affected by global and regional economic cycles. According to Boeing's latest released market forecast 2013 to 2032, China's GDP is expected to rise 6.4% per year over the next 20 years (although China has slowed down the growth speed after 2013). China's share of the total world GDP is expected to grow from 8.5% in 2012 to 16% by 2032. Boeing adjusted its forecast in the year of 2010, and expects over the next 20 years, that international travel in China will grow faster than domestic travel, increasing at an annual rate of 7.2%, compared with 6.8% for domestic travel. This suggests that over the next 20 years, Chinese airlines will need nearly 6,000 new airplanes, valued at US$780 billion, accounting for more than 40% of forecast deliveries to the Asia Pacific region.

Finally, this case study illustrates a typical aircraft financing combined with a lease. In practice, financiers can also consider enhancing the creditworthiness of the borrower SPV by getting a guarantee from parent companies or other key stakeholders. A tripartite (three-way) agreement can also be used to help in realising security in an efficient manner. This is an agreement between the financier, the operator and the borrower of the aircraft whereby the operator agrees to act in accordance with the financier's instructions to enforce its security, such as flying the aircraft to a lender-friendly jurisdiction of the financier's choice to enable the financier to enforce its security.

Chapter 15

How Desert Hot Springs stayed cool – CPV's Sentinel Standby Power Project

Why is this case interesting?

This project had a number of interesting features that draw on themes from earlier chapters of the book. It filled a local need and did so quickly. The project team drew on the strength of existing relationships formed over previous projects to work together to deliver the project quickly once it received the final green light and also took regulatory challenges in their stride. The project came in early and on budget and the financing was managed alongside the project so that there were no delays. With supply and power purchase agreements in place, the structure looks back to the beginnings of private power deals where the risks are minimised.

Exhibit 15.1

Key project features of the CPV Sentinel peak power project

Feature	*Headline*	*Detail*
Financing	10-year construction and term loan Letter of credit and working capital facilities	US$635 million US$160 million
Signing	26 May 2011	
Borrower	CPV Sentinel LLC	
Sponsors	Mitsubishi, Japan Competitive Power Ventures (CPV) General Electric Financial Services Off take agreement/PPTA	50% 25% 25% (now sold on to Voltage Finance LLC) Southern California Edison
Lenders	Lead arrangers: ING, MUFG, Natixis, RBS, Sumitomo Mitsui Banking Corporation	Syndicated
Sector	Power	800MW gas-fired peak load electricity generation
Country	US	California, Coachella Valley

Source: Various public data sources

What is the project?

The CPV Sentinel project in Desert Hot Springs, located in the Coachella valley in Southern California, is an 800MW gas-fired electricity generating plant. It was conceived to address a challenge that exists in many other countries – managing electricity demand at peak periods. It was an important local project because much of the surrounding new power generation was produced using renewable energy sources in line with California's 'green agenda' supported by successive Democratic and (moderate) Republican governors and a Democratic majority in both houses of state legislature, Congress and the US Senate.

The major power production mechanism (nuclear) in California was about to close down and so a replacement source of power was needed that could fire up quickly to meet peak power demands if required. Renewable sources were the obvious route but can have longer lead times to reach full capacity, so for a 'quick-fix' at peak times, after all renewable sources were working, thermal or gas-fired power offered a good solution. Whilst a high dependence on renewable sources (wind and solar power) in the local electricity production portfolio was a good thing, the local and state energy supply portfolio would benefit from diversification into other generation methods to deal with peak demand. Finally, there was a nearby source of gas as a fuel for a gas-fired peak plant, making this the logical power generation choice.

The project also benefited from the previous shared cooperation history of the equity partners and the contractor, all of whom had worked together before. So, many of the softer team work issues were already addressed and trust levels were high. This contributed to the project being completed on budget and almost three months early.

CPV Sentinel is typical of a merchant power project structure, where a third party entity or merchant acts as an intermediary buying in the gas as fuel and selling the power to the electricity company. In other words, the 'merchant' or intermediary links the contract for fuel supply and the off take contract (in this case via a power purchase agreement (PPA)) and constructs the power station in the middle. Merchant power projects became very fashionable as a project format in the 1990s as electricity and gas monopolies were broken up and as markets in power developed and were particularly common in the US. Smaller local pockets of gas that might not be material to a larger company could be used by other companies to generate local electricity. Smaller plants designed for local needs could be set up and managed by merchants or independent power producers who were able to undercut the larger state monopolies because they were smaller and did not have legacy systems to maintain, legacy contracts to honour, or the obligation to provide power to all.

A classic example of an early merchant power project structure can be seen in the Lakeland Power Ltd (LPL) project in the UK, in development by ABB and partners in the late 1980s/early 1990s and coming to the financing market in 1991 against the backdrop of the electricity privatisation process and the first of this project format in the UK.

LPL was identified as a potential project for the new regulatory regime by a group of senior managers from the former UK state electricity monopoly, the Central Electricity Generating Board (CEGB). During privatisation in 1989 to 1990, the CEGB was split into 12 Regional Electricity Companies (REC) that supplied local consumers, both wholesale and retail; three power generating companies (including nuclear) the National Grid, the entity that still manages and operates the transmission system, and an electricity pool that operates

the wholesale markets. (This model is very similar to the electricity pool model used in California in 1995, described below.) The former CEGB managers identified an old power station located close to the onshore landing point of gas from the Morecambe Bay gas field in the Irish Sea and with an existing cable connection into the National Grid system. They found a partner in the Swedish-Swiss ABB conglomerate that could supply the equipment and operate the plant and formed the Lakeland Power Ltd entity to develop it. As LPL began to structure the project, it became clear that there needed to be a number of things in place to attract bank financing:

- a long term supply contract for the gas fuel;
- a matching long-term off take contract with an electricity distribution company;
- both contracts needed to provide sufficient revenue to meet all operating costs; and
- aside from the construction contracts, an operations and maintenance contract needed to be in place to ensure delivery and support.

This meant the inclusion of a capacity charge and a unit rate charge in the off take contract that allowed all fixed costs to be met, some variable costs covered, debt serviced and a return to investors. All needed to be inflation linked.

In this case, the project enjoyed the benefit of expert knowledge from the former managers. So, as the project reached financial close, there was:

- a long-term interruptible gas supply contract with a minimum 'take or pay' volume from British Gas, the privatised former state monopoly that had a contract to purchase all of the nearby Morecambe Gas Field output at the time;
- a long-term sales agreement or PPA with Norweb, the REC for the area (both of these were inflation protected); and
- a 15-year operations, maintenance and repair contract with ABB, the equipment supplier.

In this substantially de-risked financing, the banks were being asked to take non-recourse risk after the project had been completed and sold by the development company to the operating company. (The sale is a common mechanism in many project financings.) The final structure was more complex than outlined here and included a lease, some subordinated loan stock (see Chapter 8) and shares with Norweb taking a 20% interest in LPL, later sold to Edison Mission, the parent of Southern California Edison (SCE) that provided the off take for the CPV Sentinel project.

Whilst this deal was the first of its kind to close, many others followed and so pricing fell, and risks assumed by lenders and investors increased. The gas supply and PPA agreements included the assumption of market risk including price risk – and the full pass-through model seen here, mutated under market pressure. It is interesting that the CPV Sentinel structure appears to follow the simple model of LPL and this risk management stance undoubtedly contributed to the successful syndication and the swift financial close. However, Sentinel uses a power purchase tolling agreement (PPTA) instead of a PPA. In the PPTA contract, the utility is responsible for the procurement and delivery of the fuel (for example, natural gas) to the seller's power plant generating units, and those costs are passed through to the end user.

An alternative approach to the 'pure' PPA for power project contracts is under debate in the US, and the UK. In this new contractual structure, there is a reliance on contracts for difference (CFD) instead of the pre-determined price PPA of the type seen in Lakeland or the PPTA seen in CPV Sentinel, both a form of fixed-price forward sale. CFDs are also used in renewable energy financing, a growth area, so will be discussed briefly here, though already mentioned in Chapter 6.

A CFD is a contract between two entities in which an asset value is marked to market value at designated intervals and a payment of the difference in values is made or received by the appropriate party. In other words it is a form of derivative contract with some characteristics of a swap. CFDs emerged in the 1990s as a form of equity swap where the trade was on the margin, not the full market value of the 'underlying', the equity and the periodic reconciliation between the two parties reflected the difference in values, not the absolute amount. In these contracts, there was no need to purchase the underlying shares and the use of electronic trading platforms and the absence of the stamp duty tax payable on share trades popularised this approach.

In the context of a renewables power project, the CFD can represent the difference between the estimate of the market price for electricity (used as a 'reference price') and the price needed to make the investment work (both from a financing perspective and with a transparent rate of return) forming a 'strike price'. (In other words the subsidy that may need to be paid to ensure the project goes ahead and is financially viable.) So a CFD arrangement can enhance and simplify the PPA by offering a fixed or minimum price for the electricity, allowing key stakeholders to model the project economics with a degree of certainty.

Although the CFD structure is not directly relevant to the CPV Sentinel case, it is the subject of debate in another 2014 CPV project – the St Charles in Maryland. In this project, the use of a CFD structure has required changes to the original project in order to remedy the delays in marketing the financing deal. In the modified version, a hedge is used to insert a floor price for the electricity, as opposed to an off take agreement structured on a CFD basis. This suggests that banks may be wary of CFDs and want to go back to the more conventional PPA or even PPTA.

This links back to Chapters 5 and 6 on regulation and risk at the bank level rather than the project level. A CFD approach may be seen as a derivative too far by banks and their regulators especially when cases such as Quinn and the Anglo Irish bank are in the headlines in 2014. Another reason might be concern about market distortions as a result of the hedges in place arising from insulation of the project from real time pricing. Further concerns arise if the electricity system operator (to use the US terminology) assumes the role of hedge provider. The debate about CFDs continues.

So to summarise the CPV Sentinel project:

- gas fuel supplies are already available to the power plant;
- there is good data for demand at peak loading times;
- there is a clear PPTA contract;
- the technology used has already been demonstrated to be successful; and
- the team had worked together before.

What could possibly go wrong?

Macro environment

Electricity

Electricity and the constant supply of power to industry and homes has become a norm in industrialising and industrialised economies. In Europe, undersea cables feed power across national boundaries to ensure the lights stay on, industrial power supplies are not disrupted and IT systems are online. Whilst a mini generator is essential for hospitals and various plants, the scale and fuel source (normally diesel) make this onsite or captive generation choice uneconomic other than for large integrated heavy power consumers such as petrochemical complexes, server farms, and so on.

The power supply mix of different countries has been traditionally reliant on fossil fuels. California is no exception to this, having relied on coal burning power stations in the past. By 2012 however, the percentage of energy supplied by coal had fallen to 0.8% with a further 6.7% being bought in from outside the state. The largest component of the power supply mix was natural gas at 61.1% with large hydroelectric at 11.7%, both of which were supplemented by power bought in. (The closure of the coal-fired power stations, together with the retirement of the nuclear stations had placed pressure on the system and power was being imported into the state from other nearby areas.) A vigorous renewable energy source programme, also supplemented by out of state purchases, contributed to a mid-teens percentage of the mix, but it was clear that power supplies to users in the state were tight and anecdotal stories of brownouts or power reductions, or even blackouts, more usually associated with developing countries and enforced by the state's power grid management companies, were common in the late 1990s and within many memories.

Regulatory reform of power generation was kick-started when, in 1995, the California Public Utility Commission opened up the state's industry to competition, saying that the system of energy regulation was 'fragmented, outdated, arcane and unjustifiably complex'. Control of the transmission system was ceded to CAlifornia Independent System Operator (CAISO) and the legislation created the California Power Exchange, a privately owned not for profit operation to set prices at auction. As required, power companies began to divest the generation activity with prices capped until this was completed and new generation capacity was expected to be provided by third parties (merchants). Long-term contracts for power were interpreted by the California Public Utility Commission (CPUC) as incompatible with support for the new wholesale market structure and the restructuring plan. This meant that some 50% of electricity was supplied through the spot market. As a result, energy prices rose steeply as wholesale power costs soared, with a knock on effect in consumer prices, tripling in some cases. A rise in natural gas prices, a number of plants closed for routine maintenance, decreased rainfall affecting hydro production and high temperatures in summer 1998 all contributed to a need for blackouts, water pump shut downs and power rationing, as well as an investigation into possible price manipulations. Out of state suppliers were reluctant to supply power as several Californian utilities were in poor financial health, including Pacific Gas and Electric Company (PG&E) which filed for Chapter 11 protection in 2001 and Southern California Edison (SCE) (integral to the CPV Sentinel case) rescued by a deal with CPUC.

By 2001, the Federal Energy Regulatory Commission (FERC) had intervened to insist on longer term power purchase agreements by the Californian utilities to try and stabilise the market. This tried to cap prices to US$150 per MWh. Wholesale prices had risen from US$45 per MWh the previous year to a high of US$1,400 per MWh as power supplies tightened. After some federal attempts to manage the situation, not least by emergency power purchases and support for the state in its attempts to stop the blackouts, the utilities begin to default on bonds and file for bankruptcy. Law suits were brought against some of the power generators for overcharging. (Settlements from this continue. In August 2013, the British Columbian (Canadian) company Powerex agreed a US$750 million settlement.) Among other companies central to this claim was Enron, about whom S David Freeman, the former director of the Department of Water and Power in Los Angeles and later an adviser to the then California Governor, Gray Davis, testified to a Senate committee that: 'Enron and their fellow gougers [were] picking the pockets of Californians to the tune of billions of dollars.' Following Enron's bankruptcy, the State of California is believed to have only received US$202 million of the US$1.52 billion settlement agreed by Enron with a group of California agencies and private utilities on 16 July 2005.

The positive outcome from these unfortunate events was that new power plant application approvals were streamlined, even though higher prices were locked in for 10 years as part of the crisis solution. A new transmission line running north to south in the state was constructed to ease power supply bottlenecks. SCE ran a series of auctions for power supplies to ensure continuation of supply.

The history forms an important part of the background to CPV's decision to invest in their project.

An additional contributor to CPV and their partners' decision to invest and the strategic importance of the CPV Sentinel project was the anticipated decision to take the remaining two units in the 30-year old local San Onofre Nuclear plant off line. The nuclear plant's second unit had been shut down in January 2012 for routine maintenance and the third unit was safely shut down at the end of that month following some steam generation issues, leaving the plant closed pending investigations of a leak inside a tube that generated steam. By June 2013, with the plant still shut down, the decision had been made to retire and decommission the plant on cost grounds. This has effectively removed 2,200MW of base load generation capacity from the California power system and 19% of the power provided by SCE to its customers, placing further stress on power provision and highlighting the need for new sources of power generation. As CPV contemplated the investment, it was clear that the nuclear plant would be closed as a minimum for maintenance in the near future, creating a need for additional power generation capacity.

Even though CPV Sentinel is a peak power provider, in other words coming on stream within 10 minutes to 'top-up' existing suppliers or supplement on overcast wind-free days, it is expected to provide enough power to service 6,400 homes in the local area and beyond into the Coachella Valley community.

California and the project locale

The Californian economy was ranked 12th largest in the world in 2012, and as such was larger than the individual economies of Australia, Spain and Mexico. The state lies at a

latitude similar to the Mediterranean and North Africa and the southern part of the state, in which Desert Hot Springs is situated, regularly experiences high temperatures of around 40 degrees centigrade in the summer months, with little rain.

Unlike a number of other countries such as the UK, Sweden and Italy, the US has no federal renewable energy policy but has a stated national target that expects electricity supply companies to generate 3% of electricity from non-hydro renewables by the end of 2013. In California, 19.6% of all retail electricity sales came from renewables in 2012, of which SCE had a 19.9% renewable provision. The photovoltaic/solar and wind renewable energy industry is important in this part of California as a result of the many hours of sunshine and low precipitation rates. Indeed this features on the list of Freeway Corridor opportunities in the strategic plan, as both an employer and a revenue generator providing power to the state. A new California Assembly Bill, AB 327 signed into law in October 2013, can potentially increase the amount of renewable energy in the electricity utilities' portfolio from 33% by 2020 to a greater number. In the US, solar and wind power installations have benefited from lower cost financing through guarantees and tax incentives.

The Desert Hot Springs city, located in the Coachella Valley close to Riverside and Palm Springs also lies close to a branch of the San Andreas Fault, best known as an earthquake zone. This branch of the main fault, the Mission Creek Fault, separates two natural aquifers feeding the springs that give the area its name – one hot and one cold. The area experienced a major earthquake in 1948 (6 to 6.5 on the Richter Scale) with some damage in Palm Springs and a smaller one (3.6 on the Richter scale) again in 2006 – however, minor tremors are relatively common in this area and businesses and residents are well adapted to deal with them.

The local population in Desert Hot Springs has grown rapidly to around 25,000 as the area has become known as a retirement centre, with an expectation that it will continue to rise to a forecast 30,000 by 2015. It consists of a number of very diverse groups with a surprisingly low overall median age of 30. (The low median is the result of younger families attracted to the area to find work.) Surveys suggest some evidence of economic hardship in sectors of the community including a claim that 'in 2006 to 2008, 22% of people in Desert Hot Springs lived in poverty'. This level seems to be static or even rising with increasing unemployment rates from the 2010 level of 21.6% and later parts of the report suggest that many of these households had children, making them especially vulnerable to energy price movements. Many residents travel to work outside the city and thus are exposed to gas (petrol, as opposed to gas as in gas-fired) price movements as well as a need to manage domestic energy consumption. The strategic plan suggests a future emphasis on attracting inward investment, especially to supply local needs, presently met by out of city suppliers; hospitality and resort activities and film-shoot locations. All of these need high-quality, stable power supplies. Presently city (and individual) income is from the hospitality industry, supported by the spas and the natural springs.

The city municipality had faced financial troubles in 2001 to 2004 when it resolved a potential bankruptcy, resulting from a discrimination lawsuit brought by residents. It achieved this by selling municipal bonds. It had been rumoured to be financially stretched once more in 2013.

History of the project's development

The project began in 2006 as an initial 50/50% partnership between CPV and General Electric. At the time, SCE was soliciting interest in a mix of longer-term power purchase agreements and the partners had identified a suitable site for a power plant at Desert Hot Springs. The expectation was that there would be a financial close in 2008. In 2007 and 2008, the partners bid into the fast and standard tracks of the SCE solicitations and had signed PPAs for 728MW of power (the summer peak loading of the proposed plant). These agreements were for 10 years and included power purchase and tolling for reasons discussed below. The planned plant was based on eight GE LMS 100 turbines, a proven technology, but there was some concern expressed about the availability of a secure supply of water for cooling. Gemma Power Systems LLC was appointed as project manager.

The challenge to this scenario did not come from the water issue but from a California State Court decision to bar the South Coast Air Quality Management District from issuing the essential emissions offsets to power projects from its priority reserve programme – placing all thermal projects in Southern California (the category in to which this project fell) under a moratorium for almost a year within the period 2008 to 2010. During this time, CPV engaged with various stakeholders, including the project manager and SCE, since the PPAs needed to be extended. Eventually, Governor Schwarzenegger signed Senate Bill 827 (Wright) into law as a stop gap measure for projects in the pipeline lasting until May 2012. SCE confirmed that the CPV Sentinel plant was needed for system reliability. The delays in resolving this matter affected the syndication process and threatened to delay the project so it would not be up and running for the hot season in summer 2013.

At the same time, the water issue also reappeared, since water is used as the most efficient cooling mechanism for a power plant. In a desert area with water as a scarce resource, the use of spring water in this way in the plant was controversial and specifically addressed in the application for certification. The original plan was to use reclaimed water provided by a water treatment plant, part of the local water company, Mission Springs Water District and situated five miles from the CPV project. However, by 2008, it was clear that the original plan, which included a payment from the project for a new sewage treatment plant was not going to come to fruition and an alternative source was proposed. This used water from the Colorado River – and has been the subject of some dispute with arguments on various blogs that the Colorado water is not as clean as the local spa water and will cause contamination. The Mission Creek aquifer is reported to be in overdraft as a result of the continued drought in California. The CPV project has made arrangements to import sufficient water to meet the demands of the proposed facility and cannot extract water from Mission Creek that it has not already replenished. This allows for the project to be water neutral at a minimum.

Once the permit from the California Energy Commission for construction and operations had been approved, the project could formally go ahead and the financing go out to syndication. The lead banks, as described below, also undertook due diligence concerning the implications of the delay arising from the emissions offset issue. At this point, Mitsubishi, through its Diamond Generating Corporation subsidiary joined the consortium, agreeing to be the plant operator and taking a 50% interest in the project (acquired pro rata from the GE and CPV interests).

The plant occupies a 37 acre (14.97ha) parcel of land north of the Interstate I-10 and east of the State Route SR 62. It has a stack height of 90 feet (27.43m). It employs a permanent staff of 14 having generated 350 jobs as well as more than 380 indirect jobs during the construction period. Formal start up was revealed in a press release dated 16 May 2013, three months ahead of schedule.

Since it is a 'peaker plant', it has restricted use – 30% of the time and 300 starts per unit, per year, for a total of 2,500 hours.

A US$53 million offset payment, made to equalise air pollution emissions from the plant, 30% of which is required to be spent within a six mile radius of the plant, under California State Law, was used to upgrade school buses and pave roads in a series of local projects, though at one point there was a suggestion in the press that it might be used to provide a golf buggy track to connect various communities.

Sponsors

The original sponsors were GE and CPV with Mitsubishi coming in and Gemma Power Systems as the contractor, but why did these companies decide to work together? The answer lies in the information that they were partners before! In 2001, the Governor of California, Grey Davis, responding to the state power crisis discussed earlier, directed the Energy Commission to expedite its emergency power permitting process to bring 1,000MW of new peak power and renewable power projects on line by September 2001. These were small (less than 300MW), locally based, simple cycle plants (as compared with Sentinel's combined cycle process) that did not require water cooling and could be quickly constructed and connected to existing transmission lines and other infrastructure.

As part of this initiative, two plants, the Larkspur Energy Facility, a 90MW Emergency Peaker Project and the 135MW Indigo Emergency Peaker Project were built and became operational in 2001. At that time, they were owned by Intergen, a Shell–Bechtel venture formed in 1999 and a global power generation company. The Larkspur hearings documents indicate that the project was developed by Coral Power a 70/30 Shell–Bechtel joint venture and present at the open hearing was Mark Turner, now the VP Development of CPV and at that time a member of the Wildflower team managing the development of Larkspur and Indigo. Indigo was located close to the CPV site in Desert Hot Springs and the local stakeholders were very similar. Both plants were operated by Wildflower Energy LP, a privately held company, related to Intergen, and acquired by Mitsubishi via its Diamond Generating Corporation subsidiary in 2004, following which it assumed operation of the projects. Power from the plants continued to be sold under tolling arrangements with Coral Power, LLC and Coral Energy Management, LLC (see above).

The CPV Sentinel plant used the same type of GE aero derivative generators, building on the previous relationship.

Finally, Gemma Power Systems, a wholly owned subsidiary of the US quoted Argan Inc is a specialist engineering procurement and design company – and also built both the Indigo and Larkspur plants for Intergen.

The reason for dwelling on this information is that it illustrates an important point about the advantages of long term working relationships within a project team context. If trust levels

are high because partners know each other well and more specifically the individuals have longer term working relationships, then potential problems can be resolved more speedily.

Structure

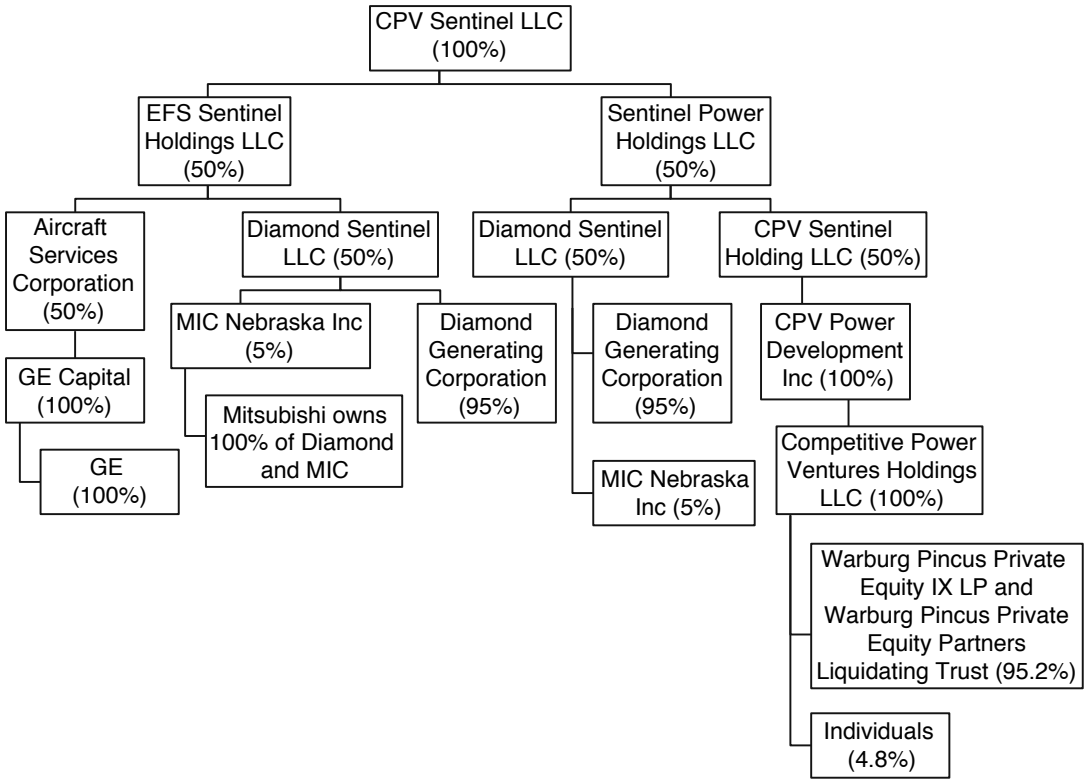
The project is owned by CPV Sentinel LLC.

At the start, there were two sets of interests – CPV and GE via GE Energy, later succeeded by GE Energy Financial Services, a part of GE Capital. In the original structure approved by the banks, CPV Sentinel LLC was 50% owned by EFS Holdings and 50% by Sentinel Power Holdings LLC. EFS Holdings was itself 50% owned by Aircraft Services Corporation LLC (a subsidiary of GE) and 50% by Diamond Sentinel LLC and Sentinel Power Holdings LLC was 50% owned by Diamond Sentinel LLC and 50% by CPV Sentinel Holding LLC. The sale by GE to the Guggenheim group's Voltage Finance LLC was of the interest in EFS holdings LLC.

In an FERC document authorising the sale, docket no EC13-136-000, dated 27 September 2013, ownership was revealed as in Exhibit 15.2.

Exhibit 15.2

Ownership of CPV Sentinel



Source: Various public data sources

Voltage Finance appears to pass through ownership to passive investors and to manage the investment via a management committee, consisting of three managers.

The 10-year PPTA required the completion of construction and operation by summer 2013 in order to be triggered. Additionally, the plant has to be available when needed – demonstrating a 10 minute power up time and had to achieve a designated heat rate to gain the certification required by FERC.

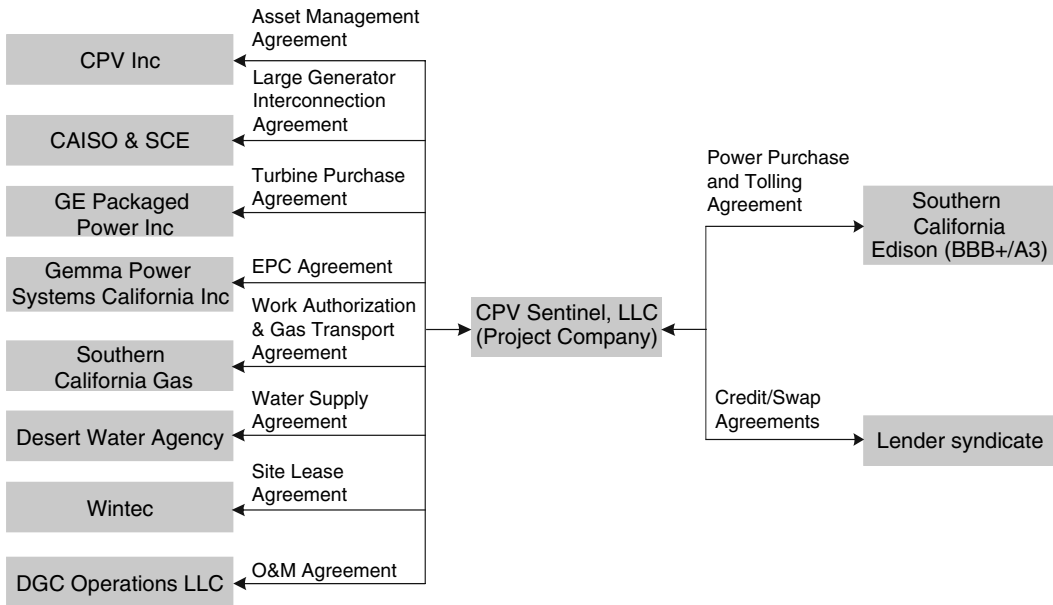
Originally, SCE had a fast track request for offers (RFO) program for power that could be online by 1 August 2010. CPV won the following:

- Sentinel I: a 10-year PPA contract covers five turbines (for 455MW); and
- Sentinel II: a 10-year PPA added 273MW from three further turbines.

From the SCE Standard Track RFO program, CPV signed four PPAs for up to 1350MW for new generation that could be online by 1 August 2013. In these peak power projects, SCE supplies the gas-fuel and allows the project to pass through the fuel transport costs. The PPTA included a fixed capacity payment for 10 years that covered the project's fixed costs. To manage costs further, CPV signed a fixed price turnkey engineering procurement and construction agreement with Gemma Power Systems – linked to turbine purchase from GE Aero. This allowed the project to have a high level of price certainty and schedule certainty. Power goes to SCE Devers facility via a rented spur line. The key contract structure is shown in Exhibit 15.3.

Exhibit 15.3

Contract structure for CPV Sentinel project



Source: IJGlobal (reproduced with kind permission)

The challenge posed to the bank group was to commit to the financing before seeing a resolution to the issue of the litigation surrounding the emissions offset described above. The lead bank group performed extensive due diligence and were comfortable that the project they were being asked to finance would not suffer material change as a result of this and went ahead with underwriting commitments to CPV Sentinel.

On this basis, the lead banks were able to coordinate efforts to open the deal for syndication to other banks. The construction/term loan tranche was priced at Libor + 225bp and 18 more banks joined the group in different roles – total commitments from interested participants were around US$1.55 billion, making the loan 2.4 times oversubscribed. The secret of this rapid success (the syndication was closed in around a month) was down to the attractiveness of the project – the first of its type for a while with a 10-year PPA-style agreement. Roles were allotted as follows: senior managing agent to Bank of Nova Scotia, BBVA, CoBank, Lloyds, Mizuho, Siemens and SG, whilst co-agency roles went to Bayern LB, DNB, DZ Bank, Helaba, Intesa Sanpaolo, Sovereign Bank and West LB. Other lenders were Associated Bank, Sumitomo Trust and CIT Capital.

The deal was reportedly not underwritten; the lead banks received a structuring fee rather than an underwriting fee, but did set a pricing benchmark for deals that followed – however, given the market disruptions, this is more likely to be a floor price.

The construction/term loan was structured to maximise leverage with 1.35 times projected debt service coverage ratio (a previous benchmark had been 1.40).

Financing decisions

The sponsors had identified the joint lead banks back in December 2010. In March 2011, the first public announcement about the financing appeared, stating that the mandate was awarded to Mitsubishi UFJ. In late April, press announcements revealed that the lead bank group had been expanded to include ING, Natixis and RBS as well as Sumitomo Mitsui Banking Corporation, each committing US$200 million, so enough to meet the project needs and deal with the departure of any one of the five banks as a form of execution insurance.

Since the loan was oversubscribed, and the deal completed so quickly with a single close on 26th May 2011, just four weeks after first syndication, the project was able to progress swiftly to get production online three months ahead of schedule (May 2013).

One quarter of the equity of the project has already been sold on to a pooled investment fund, Voltage Finance LLC, promoted by Guggenheim Partners Investment Management as an alternative investment class. The price has not been disclosed. This suggests infrastructure projects like this are attractive investments and therefore exits are available for equity holders. The logical next stage might be a bond issue to replace the bank debt and it would be unsurprising if this project were not bundled with others at some future point and this route explored. CPV Sentinel was the Deal of the Year in 2011 for both IJGlobal (North American Single Asset) and PFI (Americas Power).

Investor profiles

This information has been taken from company websites in 2014.

CPV website.

Competitive Power Ventures, LLC (CPV) is dedicated to increasing America's sustainability; both economically and environmentally. Using domestically-available energy sources, like wind and natural gas, and partnering with host communities to support their tax base and school districts, CPV works to stabilise and improve local and state economies. CPV's corporate mission is built around a belief that progressive companies can be powerful agents of change for a better world and a cleaner environment. To this end, we have focused our core activities around developing and operating energy facilities that can make a significant difference in improving the environments and economic well-being of a region. Headquartered in Silver Spring, MD, with offices in Braintree, MA, and San Francisco, CA the company currently has 5,000MW of conventional generation projects in various stages of development across North America. The company's Asset Management division has ramped up to more than 4,700MWs of natural gas generation and wind power under management. CPV Renewable Energy Company is currently developing 1,300MWs of wind power projects across North America.

Diamond Generating Company website.

As a wholly owned subsidiary of Mitsubishi Corporation (A+/A1), one of the world's most diverse enterprises, with over 700 subsidiaries and affiliates worldwide, Diamond Generating Corporation has developed a reputation for financial strength and long-term stability. Our expertise in power development and generation, including Greenfield development, acquisition, fuel procurement, financing, construction, operations management and asset management has resulted in a portfolio of efficient, state-of-the-art, environmentally sound generating facilities.

Headquartered in Los Angeles, DGC currently owns 10 operating power generating facilities around the US totalling 6,226MW, with about 2,000MW of net equity. Of these projects, two are wind projects, the 125-MW Goshen II Wind Project in operation and the 80-MW Rockland Wind Project, which is under construction. The remainder of the portfolio is natural-gas fired. DGC currently operates two of its facilities in Southern California.

Various Guggenheim/Voltage company websites.

GE (NYSE: GE) is an advanced technology, services and finance company taking on the world's toughest challenges. Dedicated to innovation in energy, health, transportation and infrastructure, GE operates in more than 100 countries and employs about 300,000 people worldwide.

GE also serves the energy sector by providing technology and service solutions that are based on a commitment to quality and innovation. The company continues to invest in new technology solutions and grow through strategic acquisitions to strengthen its local presence and better serve customers around the world. The businesses that comprise GE Energy Power & Water, GE Energy Services and GE Oil & Gas work together with more than 90,000 global employees and 2010 revenues of US$38 billion, to provide integrated product and service solutions in all areas of the energy industry including coal, oil, natural gas and nuclear energy; renewable resources such as water, wind, solar

and biogas; as well as other alternative fuels and new grid modernisation technologies to meet 21st century energy needs. (GE website)

Voltage Finance is owned by a group of private investors and is managed by an independent board of directors. One of the directors is a member of the Infrastructure Group of Guggenheim Partners.

Guggenheim Investments serves as an advisor to Voltage Finance and will provide administrative and operational services in connection with the financing of the transaction.

The Guggenheim Infrastructure Group comprises investment and operating professionals with financial and energy asset management expertise. The Group focuses primarily on North American core energy infrastructure assets, with a particular emphasis on thermal and renewable power generation, oil and gas midstream infrastructure, and electricity transmission.

Guggenheim Partners is a privately held global financial services firm with more than US$180 billion in assets under management. The firm provides asset management, investment banking and capital markets services, insurance services, institutional finance and investment advisory solutions to institutions, governments and agencies, corporations, investment advisors, family offices and individuals. Guggenheim Partners is headquartered in New York and Chicago and serves clients around the world from more than 26 offices in eight countries.

Lessons learned

CPV, as the lead sponsor, was in a position to make a number of decisions that allowed for this deal to be syndicated and closed quickly.

First, CPV chose an area, both geographic and business, where the CPV key players had already gained experience.

Second, by choosing a technology that was already proven, they were able to de-risk the project by letting contracts which could be priced to reflect that known risk element and choosing suppliers and partners that they already knew, so the trust factor was high.

By ensuring that the core bank group had committed to underwriting more than the amount required, they had built in enough redundancy in the system to ensure that if a bank dropped out, the transaction would still close.

The risk over the resolution of the emissions offset problem was handled by investing in good legal counsel and keeping all informed and using the trust built to ensure that the transaction would proceed once the green light appeared. This was also important as the project was a peak load plant and thence demand would be greatest in the heat of the summer – so timing was critical. The pricing was generous enough to ensure the deal closed quickly, though full details are not in the public domain.

CPV continues to grow its portfolio. Woodbridge in New Jersey (US$842 million gas-fired power) closed in the autumn of 2013 with some different partners; Smyth (also gas-fired power) in Virginia is under development as are other projects including wind energy power provision. AQMD is monitoring air quality from the plant as at summer 2014 but with a continuing drought in California, concern about water issues continue.

Chapter 16

Sadara: a large complex cracker!

Why is this case interesting?

This case study looks at the Sadara Islamic finance *sukuk* offering forming part of the Sadara project financing. Sadara is one of the largest petrochemicals project in the world. It is the largest single foreign direct investment in the Kingdom of Saudi Arabia (KSA) and uses a blend of sources of finance. Although it is still early days, it illustrates why outstanding project management has a key role in financing a complex project in a very tight time frame.

Exhibit 16.1

Key project features of the Sadara Sukuk financing

Feature	*Headline*	*Detail*
Financing	SAR7.5 billion (US$2 billion) *sukuk* securities issue based on an underlying *musharakah* agreement. This is one tranche of a much larger financing package	SAR50,000 face value limited recourse *sukuk* securities, issued at par to Saudi residents with a minimum subscription of SAR1 million and a maximum of the whole issue
Issuer	Sadara Basic Services Company	Special purpose vehicle (SPV)
Sponsors	Saudi Aramco (Aramco), the state-owned oil company of the KSA	65% (but this is likely to alter following a proposed future flotation of 30% of the project equity)
	Dow Chemicals (Dow) – publicly listed in the US	35%
Sector	Petrochemicals	
Country	Kingdom of Saudi Arabia	The *sukuk* is governed by KSA law

Source: Sadara Sukuk prospectus

What is the project?

The Sadara project is a state of the art petrochemical complex under construction in Jubail in the KSA. When completed, it will include 26 world scale manufacturing units that will transform crude oil, natural gas and chlorine-based chemicals into high value polymers and other speciality chemical products. First production is expected in the second part of 2015

with all units fully operational in 2016. Products will include amines, glycol ethers, isocyanates, polyether polyols, propylene glycol, polyethylene and polyolefin elastomers. It is the largest petrochemical project built in a single phase in the world. When complete it will supply regional and world markets with an estimated 3,500 kilotonnes per annum of products.

Owned by a joint venture between Dow Chemicals of the US (Dow – 35%) and the national oil company Saudi Aramco (Aramco – 65%), it also represents the largest foreign direct investment in the petrochemical industry in KSA. It forms part of a greater petrochemicals scheme in the industrial city of Jubail that includes an industrial park, Plaschem. The total Sadara project value is estimated at US$19.3 billion as of March 2014 and it is funded on a 65:35 debt:equity basis. The company has said it expects to deliver EBITDA margins of 35% to 40% and 'positive cash flow to Dow within five years of start-up'.

Macro environment

KSA is one of the world's largest producers and exporters of oil and is believed to hold some 15.9% of the world's known proved oil reserves. As at March 2014, official data suggests that it has the potential to produce about 12 million barrels of crude oil per day (from the 9.7 million barrels per day reported by OPEC in 2013). Production levels have increased in times of market turmoil to manage price fluctuations and stabilise the market, so KSA acts as a 'swing crude oil producer'. Reserves are owned and developed by the 100% state-owned company, Saudi Aramco, (formerly Aramco which until 1980 included several US oil company shareholders). Saudi Aramco is believed to be one of the world's most valuable companies. In common with other national oil companies, Saudi Aramco has sought to capture more of the 'crude oil to products' value chain, thus increasing margins. The first step in this process has been to increase the sophistication of KSA located crude oil refineries as reflected in the Nelson Complexity Index (NCI). Many US based crude oil refineries have a high NCI compared with many refineries in other parts of the world and hydrocarbon product streams can flow both from and to crude oil refineries from petrochemical plants as found along the US Gulf Coast.

The new 400,000 bpd full conversion refinery complex, Satorp, (owned by Saudi Aramco 62.5% and Total 37.5%) a joint venture export refinery based on Arabian heavy crude oil commenced production in Jubail in September 2013 and is one of several such value-added projects in KSA. Construction of Satorp began in April 2010 and the estimated project cost is US$14 billion. Satorp is located close to Sadara in Jubail and will supply the company with naphtha as a petrochemical feedstock. With interests in both plants, Saudi Aramco coordinated discussions to ensure the projects interconnect smoothly. Satorp and Sadara with a combined investment of over US$33 billion reflect the current level of investment required to seek to extract maximum value from processing a barrel of heavy crude oil in modern world scale plants.

KSA enjoyed a sovereign rating from Standard and Poor's of AA– with a 'stable' outlook when the Sadara Sukuk securities offer was launched. The non-oil private sector contribution to GDP was over 72% in real terms in 2011, showing the transformation of the economy as part of the government's strategy to diversify away from a dependence on oil, with the non-oil sector showing the fastest growth.

The city of Jubail was a new conurbation created and built in the 1970s as a new industrial city with access to the sea, and was established as the home for prospective world scale petrochemical and energy consuming basic industries including steel and fertiliser production. In the US and the North Sea, gas associated with crude oil production is shipped to consumers by pipeline. In crude oil producing locations remote from consumers markets such as KSA, traditionally such associated gas was flared at the wellhead. In the 1970s Saudi Aramco embarked on the Master Gas System a major project to capture associated gas and ship it by pipeline to Jubail for conversion to value added hydrocarbon products. (Today, in contrast with LASMO and the early North Sea days (see Chapter 8), associated and non-associated gas is processed in liquefied natural gas (LNG) plants and transported by LNG vessels to consumer markets.)

A smaller industrial city was built at the same time on the Kingdom's Red Sea coast at Yanbu.

Development and management of infrastructure for both industrial cities is the responsibility of the Government Royal Commission for Jubail and Yanbu (Royal Commission). Jubail is in the Eastern province of KSA and located on the Arabian Gulf, some 96km from Damman and 490km from Riyadh, the capital city of KSA. It is the largest industrial city in the Middle East. The original project (Jubail I) was built and managed by Bechtel, also managing the latest city expansion, (Jubail II) valued at US$3.8 billion. Jubail II is claimed to be the largest civil engineering project today and accounts for 7% of KSA GDP. Technically known as the Jubail Industrial City II, it is where Sadara will be based and is being built over four phases simultaneously with final completion envisaged in 22 years' time. Phase 2 is where the Saudi Aramco–Total joint venture Satorp refinery is located and the Sadara complex with the Plascom Park represents Phase 3 of Jubail II. Provision of supporting infrastructure to both plants is the responsibility of the KSA Royal Commission supported by Bechtel; planning has included detailed provision of appropriate linkages and infrastructure in the city such as water and power as well as supply agreements for various chemicals needed for the Sadara processes, such as ammonia and ethane. Jubail has the world's largest integrated Independent Water and Power Project (IWPP), generating 2,745MW of electricity and 800,000m^3 of desalinated water daily.

Crude oil and gas are important as fuels, but also as precursors of many of the petrochemical based products we use in daily life. The petrochemicals market is not a single market but a series of markets for the different products that come from breaking down or 'cracking' the cleaned up oil or various product streams from crude oil refining or ethane, propane and butane gas. Integrated oil companies that controlled the value chain from oil to olefin were a dominant force in the oil industry in the days of the US 'Seven Sisters', but the plant has started to age and needs to be replaced and also some oil companies have restructured their operations. The fragmentation of the value chain has changed the industry landscape to include integrated companies, but also companies concentrating on sections of it – so upstream versus midstream or downstream.

In some cases, it makes more sense to break the petroleum products down closer to the regional markets that will consume them to ensure security of supply. The trade off is the high capital costs of building a cracker and other plants and access to cheap feedstock, versus importation and transport costs, transport often requiring specialist vessels or trucks.

Whilst in the past, the 'cracking' to convert oil to olefin occurred in Europe or the US, several factors have caused changes:

- first, Western labour costs are higher than those in growing economies;
- second, Western plants are ageing and technology has changed. Replacing these facilities in the West has also been affected by the environmentalist agenda and the population increases in the UK have meant sites are closer to larger population centres;
- third, the global shift in outsourcing manufacturing to newer economies (though the latter is now showing some signs of reversing) support the argument for supplies of olefins close to production;
- fourth, the catalyst and process technologies are now licensed overseas as most nations recognise the intellectual property ownership rights in such products; and
- finally, national strategic needs have driven the current shale oil boom in the US and elsewhere requiring a different approach to the production of downstream olefin products.

The most important input cost is that of feedstock: the project's long-term supply contract with Saudi Aramco means that Sadara has a cost advantage with respect to products using olefins and polyolefin feedstock. Aromatic feedstock related products are cost comparable and competitive when compared with other producers supplying to the growing centres of demand. A new world class complex like this one will use the latest technology in all of its sub-plants and not be constrained by legacy technology or plant.

Industry experts quoted in the Sadara Sukuk prospectus suggest that the oil price will stabilise at around US$100 per barrel, a level with some headroom over the estimated US$75 per barrel cost for finding and developing new oil reserves (in constant dollars). Whilst OECD demand forecasts look stable for petroleum and petroleum products, future growth in oil demand is expected to come from the BRIC countries (Brazil, China and India – Russia is likely to be self-sufficient) and the Middle East.

The worldwide low-density polyethylene (LDP) market (one of the key outputs from Sadara) will also grow in these markets as well as other high growth countries such as Indonesia. To meet this new LDP demand and that for the related polyolefin, linear low-density polyethylene (LLDP), requires additional capacity sited close to these growing centres of demand. The planned capacity to meet this includes plants in KSA and Iran.

Demand for all of the Sadara products will be affected by developments in China, but the plant is anticipated to be cost competitive for most products.

Complex chemical plants need specialist engineers, operators and managers. Since the 1970s KSA has invested heavily in the development of domestic universities and colleges, also sending nationals overseas for postgraduate education. King Fahd University of Petroleum and Minerals, founded in Dhahran in 1963 and other universities have supplied many of the national engineers and others who comprise many of the employees in the Kingdom's hydrocarbon industry. Continuing world scale upstream development of oil and gas fields in such locations as the Rub'al Khali (Empty Quarter), construction of world scale domestic and export crude oil refineries and growth in world scale petrochemicals production facilities led by Saudi Basic Industries Corporation (SABIC) has provided a demanding environment for Saudi and other project and production engineers.

Today, KSA has a ready supply of well-qualified engineers that have been trained both domestically and overseas. The newer and well regarded domestic post-graduate university is the King Abdulla University for Science and Technology (KAUST), built and sponsored by Saudi Aramco. It has collaborative agreements with many of the world's leading academic institutions including the California Institute of Technology. From its formation in 2009, KAUST has gained a reputation as one of the world's most productive universities in terms of research, especially interdisciplinary research. Also, other higher education institutions, such as the King Fahd University of Petroleum and Minerals and the Jubail Industrial College, offer degree level specialist training in petroleum and chemical engineering. As an example of why this resource is critical, some 600 Saudi nationals were hired and sent for overseas training at the beginning of the Sadara project during the front end engineering phase and it is believed that the company will ultimately employ several thousand Saudi staff.

Saudi Arabia is also home to the two most holy cities in Islam and indeed one of the King's titles is 'Custodian of the two Holy Mosques'. It is to Saudi Arabia that each devout Muslim hopes to make the Haj pilgrimage in his or her lifetime, and the emphasis on Islam also extends to Islamic finance tranches of funding for all major projects. In this case, a large *sukuk* (see Chapter 2) public offering was expected to be an integral part of the funding structure.

History of the project's development

Industry analysis suggests Dow is the market leader of a group of around 80 companies, with about 15% market share in the LLDP industry. Dow has had a presence in KSA for 35 years. It invested in Arabian Chemical Company Ltd (ACCL) in partnership with the al-Juffali family in 1976, producing expanded styrofoam for packaging and is a 25% partner in the Saudi Acrylic Monomer Company (SAMCo) established in 2009 through its acquisition of Rohm and Haas. The other partner is Saudi Acrylic Acid Co (SAAC), owned by various Saudi interests. It funds the Dow Middle East and Africa Centre at KAUST, investigating water, water treatment and oil and gas projects.

Dow had investigated earlier KSA joint ventures as follows.

- A partnership with the 70% KSA government owned SABIC in the Arabian Petrochemical Company (Petrokemya) project to design build and operate the first regional acrylonitrile butadiene styrene (ABS) plant. The plant was to be located in Jubail in 2008. SABIC continued with sole ownership of the Petrokemya project.
- An earlier partnership with Saudi Aramco in the PetroRabigh petrochemicals project near Jeddah. The latter closed as a joint venture with Sumitomo Chemicals to produce ethylene and polypropylene. Following an IPO in 2008, it is now 25% publicly owned.
- A memorandum of understanding signed in 2007 with Aramco envisaged a project that would use naphtha and ethane from the Ras Tanura refinery as feedstock for a clean fuels project entailing two crackers – the refinery was going to be expanded to accommodate this. However, the plan was conceived at a time that affected many of the cases in this book – just before the crash and the tightening of demand for and the provision

of finance. Though the original cost at US$20 billion was close to the cost of Sadara, the latter fits more closely with the stated KSA national agenda of diversification away from just ethane-based added value products. The other challenge at Ras Tanura was that the requirement to put in additional infrastructure was likely to make costs escalate further, not least as the scope changed. Finally in 2010, the decision was made to switch to the new complex at Jubail and the Sadara project was born.

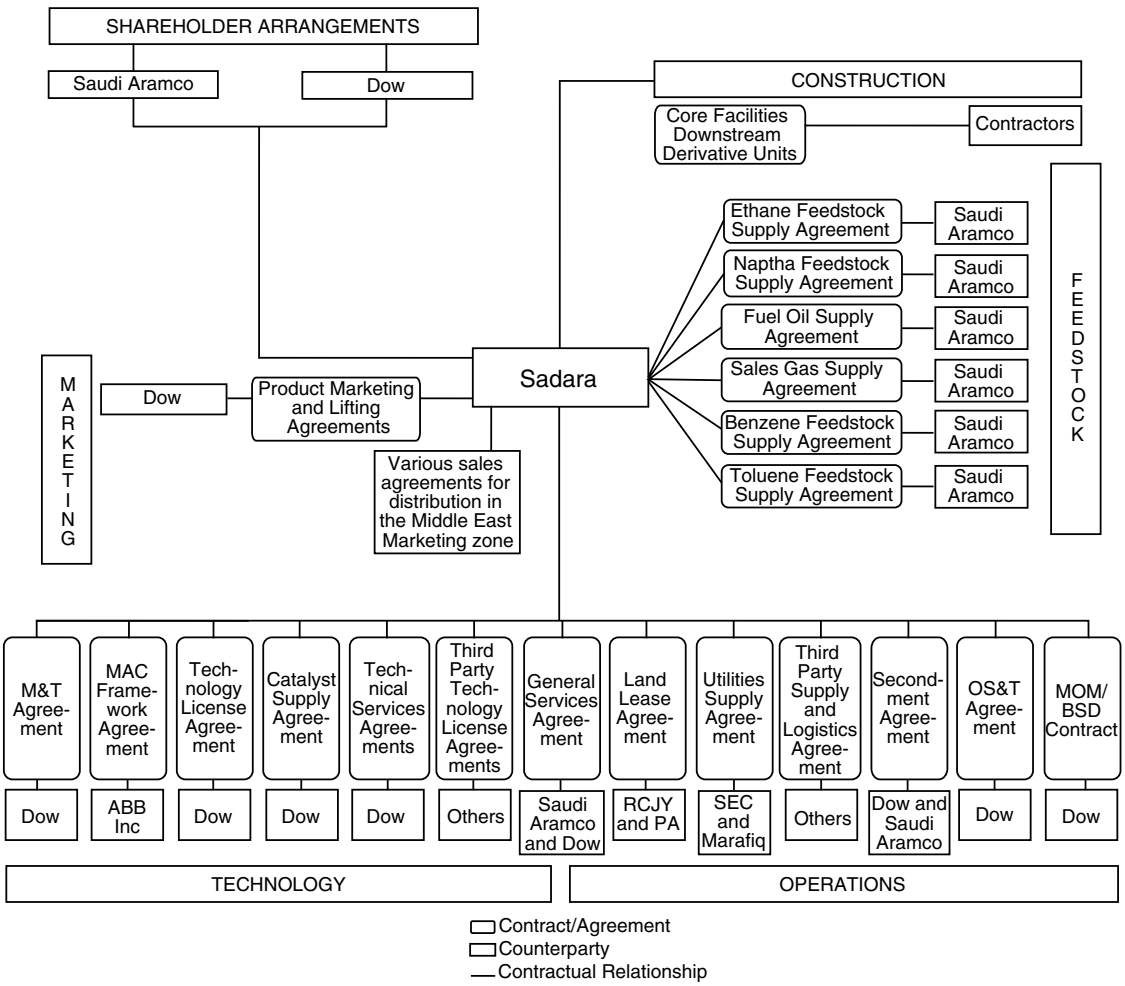
With 26 different plants in the Dow-Aramco complex, managing the project successfully required considerable investment by both parties to establish good coordination, especially at the start of the project. The law firms acting for each of the partners initially worked for their respective clients, but in an unusual move, joined together to help the joint venture roll out the contracts needed to get the project underway. All members of the project teams and their advisers needed to develop trust and good collaborative working relationships in order to facilitate the management of such a complex programme of projects in a tight time frame. Contracts were let quickly, with 98% being fixed price. Two contract models – lump sum turnkey (LSTK) and engineering procurement and contract management/lump sum procure and build (EPCM/LSPB) – were used to manage the different sub-projects including sensitive issues around ownership of intellectual property and the requirements of the different providers of finance with respect to procurement. There are over 70 US contractors alone and the List of EPCM contractors includes Daelim, Fluor, Jacobs Engineering, ABB, Foster Wheeler, Linde, Tecnicas Reunidas and Maire Tecnimont. Dow is supplying many of the catalysts and process knowhow and handling the marketing agreements outside the Middle East area, with Sadara handing the local marketing.

The project includes a mixed feed cracker and an aromatics plant that use four feedstocks: ethane, naphtha, pygas and bought-in benzene and toluene to produce polyurethanes (including isocyanates and polyols, propylene oxide, propylene glycol, polyolefin elastomers, LLDP, glycol ethers and amines).

The contractual relationships are shown in Exhibit 16.2.

Exhibit 16.2

Contractual relationships in Sadara



Source: Sadara Sukuk prospectus: reproduced with kind permission of Milbank, Tweed, Hadley & McCloy LLP

As at October 2014, the project was 70% complete and is on target for a late 2015 start-up phase with full production in 2016. (EBITDA margins on this project for Dow are forecast to be 35% to 40% and equity earnings for Dow are expected to average US$500 million per annum for the 10 years after start up.)

Sponsors

The sponsors are Saudi Aramco and Dow Chemicals, the latter through its indirectly held subsidiary, Dow Europe Holding BV – an entity also providing significant technology to the project.

To manage the complex relationships between the many financing providers, an inter-creditor agreement and a set of common terms were paramount. There is the possibility of additional senior debt as part of the scope of the Sadara facilities, to allow for expansion or refinancing, subject to various ratio tests. The use of pre-completion net revenues to meet costs, refinance equity and make some shareholder distributions is the subject of defined conditions that must be met. Creditor reliability testing as part of a completion, operation, reliability assessment process is also in place. The key role of US EXIM is recognised through the requirement for a simple majority of export credit agencies (ECAs) in a majority vote where the majority must include US EXIM. (As an aside, there are over 200 conditions precedent in the Sadara documentation.) The *sukuk* closing required that the core finance documents, the security documents, the direct agreements, the subscription agreement, the indenture related agreement and, naturally, satisfaction of the due diligence and the conditions precedent.

Whilst the *sukuk* holders have a more restricted set of rights in any voting matter, their importance is recognised in the procedures set up. They rank largely pari passu with senior debt holders. To manage concerns about timeliness of responses in voting matters, a 'snooze you lose' clause was inserted to ensure that non-responding voters could not delay decisions. Most *sukuk* holders in KSA buy to hold, so the expectation is that there will be little churn in the *sukuk* holder population.

One legal concern was about the enforceability of a decision concerning interest bearing finance within KSA. This was managed by ensuring that the core financing documents are subject to English or New York Law and would be ruled on there. The challenge of enforceability of a UK court judgment in KSA is partly managed by offshore accounts holding most of the revenues, even though the assets are local to KSA. Arbitration decisions are subject to new laws in KSA suggesting that decisions ruled outside the Kingdom may be enforced within it following agreement between the parties.

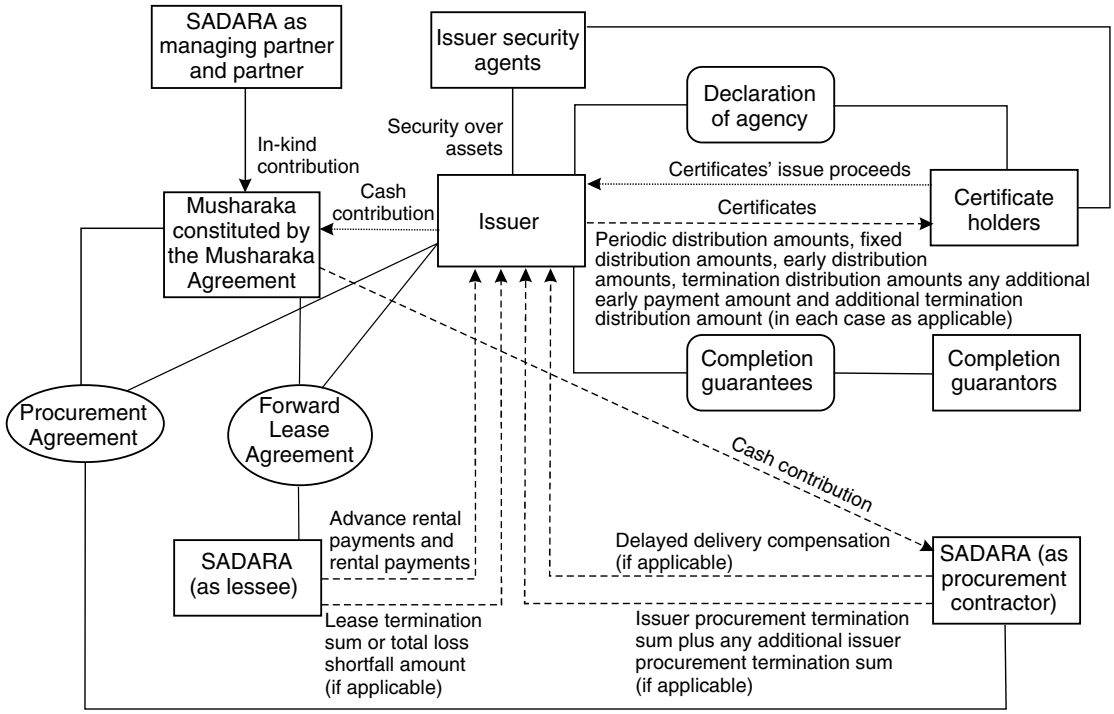
The *sukuk* offer closed on 2 April 2013, followed by signings in June 2013 and the final senior debt financial close on 30 June 2013.

Structure

The various elements of the complex financial structure of the Sadara Sukuk transaction is shown in Exhibit 16.3.

Exhibit 16.3

Sadara Sukuk structure



Source: Sadara Sukuk prospectus: reproduced with kind permission of Milbank, Tweed, Hadley & McCloy LLP

The arrangement of the financing package and the swift follow-on of the closure of the senior debt tranche after the *sukuk* offering were only possible as a result of extensive upfront work and cooperation.

The *sukuk* offering is denominated in SAR and has a final maturity of 16 years. It is priced at six-month Saibor (Saudi International Bank Offered Rate) + 95 basis points, and a distribution occurs semi-annually. It launched in March 2013 after the debt commitments from ECA and senior banks but before any senior or ECA debt agreements had been signed. It is the second ever project finance *sukuk* to launch in Saudi Arabia, following the one billion SATORP issue from 2011 and will be used to refinance loans from sponsors. Deutsche Bank, Riyadh Bank, Alinma Bank and Bank Al-Bilad were mandated lead arrangers. The *sukuk* issue was 2.6 times oversubscribed. Once this tranche of the project funding was increased, the sponsors could fix the size of debt allocations for the ECAs and the banks.

The export credit facilities include a US$4.9 billion loan to Sadara from US EXIM that supports around 70 US companies exporting to Sadara. This is the largest loan in US

EXIM's history and signals the perceived importance of the project to the US, not least in terms of American job creation – US$600 million of the facility is to be used for smaller business exports. Another eight ECAs participating in the transaction include UK Export Finance, formerly the Export Credits Guarantee Department of the UK (ECGD), Euler Hermes of Germany, Compagnie Française d'Assurance pour le Commerce Extérieur of France (COFACE), the Korea Export-Import Bank (KEXIM), the Korea Trade Insurance Corporation (K-Sure) and El Fondo para la Internacionalización de la Empresa (FIEM). FIEM, from Spain, has committed US$225 million in direct lending to support the involvement of Tecnicas Reunidas in the construction of the plant. KEXIM has provided US$320 million in direct debt and US$80 million of cover for a bank-funded tranche. The other four ECAs have provided cover to bank-funded loans: UK Export Finance is providing US$700 million (that will be administered by Standard Chartered Bank), Euler-Hermes of Germany (US$425 million), COFACE of France (US$70 million), and K-Sure of Korea (US$500 million). The pricing on the K-Sure backed piece, which is often higher than other ECA debt, was lower than normal thanks to the presence of local Saudi banks.

The commercial debt tranche was cut from US$2.7 billion to US$1.5 billion in November 2012 after attracting better than expected ECA support. The bank facilities are split equally between Islamic and commercial debt, with 31 banks providing the loans. Local participants include Riyadh Bank (also advisor to sponsors) Bank Al Bilad, Alinma Bank, Banque Saudi Fransi, SAMBA, Arab National Bank, Saudi Hollandi, Al Jazira bank and National Commercial Bank. Other Gulf banks included Qatar National Bank and the National Bank of Abu Dhabi. Other international banks were Deutsche Bank, RBS, Standard Chartered, SMBC, BTMU, HSBC, Export Development Canada and Korea Finance Corporation. US banks included JP Morgan. The bank debt was oversubscribed and the high level of secrecy meant that no one knew who else was in on the deal until the signing and the allocations were not advised until a few weeks before close.

Implicit support from the Saudi Arabian state in the event of default and the anticipated project revenues pushed the debt pricing to below current market levels. Sponsors have provided completion guarantees and are obligated to pay *sukuk* holders in full if the plant is not completed by 31 December 2020.

A future IPO for 30% of the equity to be sold down to Saudi public investors is also mentioned in the *sukuk* prospectus, alongside the requirement for Dow and Saudi Aramco to remain in possession of 51% collectively or at least 20% each of the project equity before construction is complete. Mention is also made of a future Rule 144a paper issue, provided for in the documentation. This might be used as refinancing mechanism, possibly associated with a mini perm.

The financing of the Sadara project breaks down as shown in Exhibit 16.4.

Exhibit 16.4

Breakdown of Sadara financing by layer

	Amount (US$ billion)	*Sources*	*Comments*
DEBT			
Senior bank debt	1.1	31 international banks	Conventional senior debt – 16 years, Saibor + pre-completion margin of 125bp over Libor, rising to 185bp
Export credit	7.0	Various export credit agencies	ECAs – 17 years
Development funding	1.3	Domestic development funding	PIF/SIDF
ISLAMIC FINANCE			
Sukuk	2.0 (SAR7.5 billion)	Public *sukuk* offering	KSA residents only – 15.75 years, Saibor + 95bp
Ijarah linked facilities	1.1 (SAR4.13 billion)	*Istisna'a-ijarah* and *wakala ijarah* facilities	11 local KSA banks equivalent of Saibor + 75bp, rising to 135bp
Total 'debt'	12.5		
EQUITY			
Future IPO	6.8	IPO	30% of the Sadara shares – date to be advised by Sadara
Total 'equity'	6.8		

Source: Various published data sources

The arrangement of the financing package and the swift follow-on of the closure of the senior debt tranche after the *sukuk* offering were only possible as a result of extensive upfront work and cooperation.

A novel 'split-closing' whereby the *sukuk* closed first, ahead of the senior debt and the ECA financing packages (but following commitments from those lenders) managed potential further delays by protecting the *sukuk* holders' key rights under the common terms and intercreditor agreements, and including provision for redemption at par for the *sukuk* if the senior debt was not signed within a specified time period. Details were disclosed in the *sukuk* prospectus. The thinking behind the split-closing was to allow enough flexibility to continue negotiations with other finance providers and also to 'size' the tranches once the appetite for the *sukuk* was known.

Financing decisions

From the outset, the two project sponsors wanted the financing to reflect the Islamic tradition of KSA and to be set up so that a future share IPO would allow participation in this mega project by Saudi nationals. The success of the earlier *sukuk* issues in the UAE and the need for infrastructure capital in KSA, coupled with a large indigenous KSA population (75% under 35 in 2009) were factors re-stimulating the market which had not been insulated from the worldwide financial market event of 2007 to 2009. An Islamic finance component to include a public *sukuk* offering was a key part of the overall structure alongside export credits and non-governmental organisation (NGO) multilateral finance, an investment by the Public Investment Fund of Saudi Arabia (PIF) and a conventional debt package. Managing such a complex financial package (the public *sukuk* offer document alone was over 600 pages in English) required the appointment of financial advisors (Royal Bank of Scotland and Riyad Bank) and excellent timetable management and coordination as well as some unusual sequencing decisions.

The first phase was when the 400 page draft term sheet was released to the ECAs and PIF in August 2011, with meetings to finalise interest in early 2012. The ECAS were organised into work groups that focused on specific aspects of risk management and the development of a common project model. PIF undertook a bridging facility signed in May 2012 to manage continued progress on the project whilst the term sheet that the ECAS had agreed went out to the commercial banks.

At the same time, Dow and Saudi Aramco developed the *sukuk* offering (following the success of the SATORP issue in 2011). This required a number of steps to get final approval, including a sign-off by the appropriate Islamic scholars for compliance with the tenets of the Holy Qur'an and the Saudi Arabia Capital Markets Authority, as the *sukuk* was to be listed on the Tadawul, the Saudi Stock Exchange. The *sukuk* uses a *musharakah* arrangement – a form of Sharia compliant partnership between Sadara and a special purpose vehicle (Sadara Basic Services Company (SBSC). Shares in SBSC itself held by five separate companies that stand between Sadara and the issuer. The five entities each provide a board member to SBSC, and the directors are not independent of Dow and Saudi Aramco.

The *sukuk* issuance proceeds are contributed to the *musharakah*, which is then applied by Sadara to procure project assets under the procurement agreement. The *musharakah* also holds the property rights under the land lease that governs the project site. The project assets are leased to Sadara under a forward lease agreement and the rental payments are paid to the *musharakah* for distribution through the issuing company to the *sukuk* holders. Pre-completion, the *sukuk* holders are also guaranteed by the two partners, Dow and Saudi Aramco.

The two Islamic finance tranches follow an *istisna'a-ijarah* and a *wakala ijarah* format. The *istisna'a-ijarah* is a procurement structure that applies an *istisna'a* contract to the construction phase and an *ijarah* 'lease' to the operating phase. Risks concerning contractors and performance are managed by the use of parallel contracts whereby under the *istisna'a*, the borrower undertakes to procure, deliver and construct and a separate direct construction contract between the borrower and the contractor mirrors the *istisna'a* conditions. Title to the assets is transferred to the *istisna'a* providers, with the consideration being in the form of advance payments. In the event of a problem, the financiers can accelerate or

require remedy and if this occurs prior to completion, the financiers can require repayment of advances under the contract as liquidated damages. A *wakala ijarah* allows the borrower to be appointed as the agent for the lenders and then procures, delivers and constructs as above and title passes at the end of the agreement. Both structures have been used in project finance: the difference lies in the agency relationship in a *wakala* structure rather than the ownership relationship of an *istisna'a*.

Investor profiles

Saudi Aramco was founded in 1933 as a response to the discovery of oil in the Gulf (in Bahrain) and the perceived limitation of the US participation in the oil fields of what was then Mesopotamia by the Red Line Agreement. The latter followed the break-up of the Ottoman Empire after the First World War and the assumption of control of oil in Mesopotamia (modern day Iraq) by companies representing the various victorious powers – UK (BP), France (Total), Shell, NEDC (a consortium of five large US oil companies) and Calouste Gulbenkian (who held 5%). The various states had realised the strategic importance of access to oil during and following the war effort and were determined to control what promised to be significant reserves. The area covered by the Red Line Agreement initially included KSA and Bahrain. In 1932, the Bahraini subsidiary of SoCal, one of the participants in NEDC, struck oil in Bahrain, promoting the company to negotiate successfully with the Ruler of KSA for a concession to look for oil. Texaco bought 50% of the concession holding company in 1936 with no oil discovered, but by 1938, oil was discovered in commercial quantities at Dammam. This led to the formation of Aramco in 1944, with other NEDC shareholders participating once released from the Red Line Agreement.

King Abdul-Aziz, the Saudi Ruler, gained a 50% profit participation for KSA in 1950: this was agreed because the US companies had already faced nationalisation in Venezuela. By the early 1970s, and following US support for Israel during the Yom Kippur war, KSA bought first 25% of Aramco, increasing this to 60% in 1974 and 100% in 1980. By 1988, the name had been changed to Saudi Aramco and full operational control of the oil fields was vested with the Saudi company. Today, Aramco is a fully integrated oil company, including tanker fleets as well as petrochemical operations and with a global presence including joint ventures in China, Japan, Korea and Indonesia. It had a workforce of 57,000 in 2014 of which over 79% were Saudi nationals and controlled 260 billion barrels of recoverable oil and condensate.

Dow was ranked 52 in the US Fortune 500 in 2013 and is the world's second largest chemical company, behind BASF. Publicly held, its shares are listed on the New York Stock Exchange. The Dow Chemical Company was formed in 1897 by a Canadian chemist who had found a way to extract bromine from underground brine pools in Michigan and produced bromine and bleach. Various price wars were waged to force the new company out of the market, so Dow diversified its product range almost immediately into dye stuffs, agrochemicals and magnesium production, providing import substitutes during the First World War and moving into plastics in the 1930s. The company returned to its Canadian roots with its first overseas subsidiary in 1942 (closed in 2006), its second being in Japan in the early 1950s.

It grew into a multinational chemical giant producing around the world and in the early 21st century embarked on a process of rationalisation and consolidation. In 2007, Dow announced the sale of several global businesses to a new 50/50 joint venture, K-Dow, formed with the Petrochemical Industries Company (PIC), a subsidiary of Kuwait Petroleum Corporation. The transaction was blocked by the Kuwaiti Government citing market events. (Dow received damages in 2013 of US$2.2 billion.) Dow continued to seek opportunities to manage the cyclicality of many of its business areas, buying the specialty chemicals company, Rohm and Haas. The completion of this purchase was affected by the breakdown of the K-Dow deal, and was delayed by a year. Dow has encountered controversy over the years as a manufacturer of chemicals used by the military, in breast implants, and through its acquisition of Union Carbide some years after the Bhopal disaster. It is committed to the Middle East through its involvement as a 42.5% joint venture partner in the Equate petrochemicals project in Kuwait (1995), a 42.5% partner in the Kuwait Olefins company (2004), and of course Sadara. In 2013, Dow's annual sales were around US$57 billion with an EBITDA of US$8.4 billion.

Lessons learned

The project management of a complex project financing, such as Sadara was an essential component of its success. The lawyers and advisors, as well as the two sponsors had clearly thought this through and had developed a successful programme management approach. Economies of scale and scope (such as the sizing decisions) and the use of common terms and an inter-creditor agreement reflected a lot of upfront investment in the project's success, as did the innovative closing strategies.

The project won a number of awards for its design and execution and it is hoped that it will deliver the anticipated benefits to all parties. It is of course, still under construction (and runs an active social media campaign to keep stakeholders up to date) but when completed it will transform the petrochemical industry in the region and beyond.

Colin Edwards, former founding Head of Projects & Direct Investment, Abu Dhabi Investment Company, Head of Corporate Finance Riyad Bank and Founding Director of the Ernst & Young Lead Advisory Practice in the Middle East observed:

> In many parts of the world, large scale bank-led syndicated project finance has been a dying art – replaced by bonds and other capital market instruments. Not so in the Gulf Cooperation Council of Gulf States (GCC). A review of past transaction tombstones reveals recurring names such as Riyad Bank, SABB and more recently Deutsche Securities KSA and others as Lead Arrangers and Facility Agents. Historic syndicated financing transactions such as US$2 billion and US$2.6 billion for Saudi Aramco and the many SABIC syndicated project financings have built good working relationships between GCC bank project finance teams together with their regional professional advisors.
>
> The development of Islamic or Sharia Compliant finance is being led from the GCC Region with firms such as Ernst & Young leading this advisory sector. Many GCC banks have Islamic banking teams and this facilitates cooperation on structuring complex project financing combining both Islamic and conventional financing tranches. Historic

precedent already existed where GCC project finance teams worked with one or several ECAs in a single project financing transaction.

The GCC is currently experiencing a wave of large scale project development and strong growth in Islamic financial institutions. The above transaction paves the way for future activity.

Chapter 17

Pret-a-Port privatisation: opportunities for project finance?

Why are these cases interesting?

For the last case study in this book, we decided to take a slightly different approach and rather than look at a specific case study that would result from a series of policy decisions, to turn this process on its head and to examine aspects of the opportunities such choices can present for project finance. We can also see common themes with the public private partnership (PPP) projects that have been discussed earlier in this book. Ports are complex entities and so disentangling the different activities, contracts, safeguards and stakeholder needs require the same level of diligence that we saw in the Sadara case study (Chapter 16), with its multiple contracts in both the construction and operation phases. Additionally, the Sadara project cannot export successfully without the existence of two nearby ports that form part of the integrated industrial city: Jubail commercial port and King Fahd industrial port. Whilst entire books could be (and several have been) written about ports and their governance and financing, space considerations mean this case study, like others, is a primer – the bibliography contains references for those who need to know more.

Port privatisation offers a good context to draw together many of the themes and strands that run through other parts of the book and make it a fitting case study with which to end the book. Different approaches to port development and thus different opportunities for project finance providers and investors reflect the different ownership, national context and governance structures of these strategic assets.

The expansion of world trade and the growth in outsourcing to Asia, Africa and Central and South America has required the development of enhanced port facilities and economic zones to support the logistics necessary for successful production, movement and delivery of goods. In China, the majority state-owned Qingdao Port raised equity through an issue of H-shares to expand and used an unusual book-building approach to price it, only to hit the headlines after the IPO when queries were raised about the operation of core facilities. In this example, state control is still very evident.

In India, the port of Mundra was held under a private company concession and the sale proceeds of a 10% shareholding were to be used to expand facilities and develop a newly created Special Economic Zone. The issue was substantially underpriced at the time. The company has performed well but the share price has fallen substantially from those heady first days. In this example, while state control is evident, stakeholder pressures can also affect the success of a project.

The privatisation of the New South Wales Ports (NSW Ports) – a large Australian infrastructure project – was always going to attract international interest. The concession structure was awarded to a winning consortium that certainly had deep pockets, but raised a question about control of these strategic assets going forward.

The chapter closes with some observations about other reported national views on port financing in today's world and poses a difficult strategic question with relevance for financiers when politics intersect with economics. Should governments try and control port facilities because of their strategic relevance? We discuss what happened when a Middle Eastern company, DP World, acquired P&O Ports, including some ports in the US. Would the Americans, traditionally exponents of the free market, be prepared to allow control of some of their ports to pass to a company controlled by a Middle Eastern government, albeit an ally?

Key project features of the main cases

Exhibit 17.1

Summary features of the port case examples

Qingdao, China

Feature	*Headline*	*Detail*
Financing	HK$2,919 million (US$ 377 million)	Cornerstone take up of US$167.7 million equivalent from six investors
Issuer	Qingdao Port International Co Ltd (QPICL)	Formerly 90% but now 75% owned by Qingdao Port (Group) Co Ltd (QDP), a PRC state-owned enterprise
Signing	Listed 6 June 2014	Prospectus issued May 2014
Sponsors	QPICL and related companies	
Equity	Global IPO of fixed-price H-shares (25% of company post IPO)	Listed on Hong Kong Stock Exchange
Sector	Infrastructure	Ports
Country	China	Shandong Province

Continued

Mundra, India

Feature	*Headline*	*Detail*
Financing	Rs1,770 crore (US$446 million)	Minimum 60% of issue to qualified institutional buyers (QIBs) minimum 30% to individuals
Borrower	Mundra Port and Special Economic Zone Limited	
Signing	November 2007 Listed Bombay Stock Exchange; National Stock Exchange	
Sponsors	Adani Family	
Equity	IPO of 10% of company (post dilution)	100% book-building
Sector	Infrastructure	Ports
Country	India	Gujarat State

New South Wales Ports, Australia

Feature	*Headline*	*Detail*
Financing	AUS$2.02 billion	Term loan 1: AUS$962.5 million Term loan 2: AUS$962.5 million Capital expenditure: AUS$85 million Revolving credit facility: AUS$10 million
Borrower	NSW Ports Finance Co Pty	
Signing	12 April 2013	Financial close achieved on 31 May 2013
Sponsors	NSW Ports	Consortium
Equity	AUS$3.05 billion	60% of the consideration
Sector	Infrastructure	Ports
Country	Australia	New South Wales

Source: Various public data sources

Background to port privatisation

Ports are complex entities. Materials arrive on ships (or as the idea of a port has been reclassified, by plane) and the first interaction takes place when the ship needs to be piloted into the port itself prior to docking, offloading and refuelling as well as taking on any further cargo before departure. The cargo needs to be handled and moved to its next location and to pass through any government controls required to move goods across a national boundary. Letters of credit, the key trade movement and verification documents that are still widely used today, need to be checked against documentation prior to payment being authorised, all of which takes time. Goods may also require secure storage or reconfiguration prior to onward movement as part of a value added logistics chain. They may be stored in bonded or other secure facilities if pledged as collateral for loans. The crew need to be rested, have any medical needs met and possibly relocated either home on leave or to their next voyage. Finally it may provide other services such as maintenance, offices, and so on.

Each of these activities, in what is a very simplified series of descriptions, will require the use of resources that may or may not be owned by the state, the local government, the port itself or contracted in or out by a port administrative function for the operations of the port. Indeed there may be further splits between the ownership and users of the physical assets involved such as leased pilot boats or cranes or even the terminal buildings and a need for specialist treatment of some workforces, such as unionised labour used to handle the cargo and government services, such as customs and excise, veterinary or health inspectors and police and immigration services. To try to simplify things for the reader, Exhibit 17.2 shows a 'spectrum' of port reform tools that a state might consider when looking at privatising a port function.

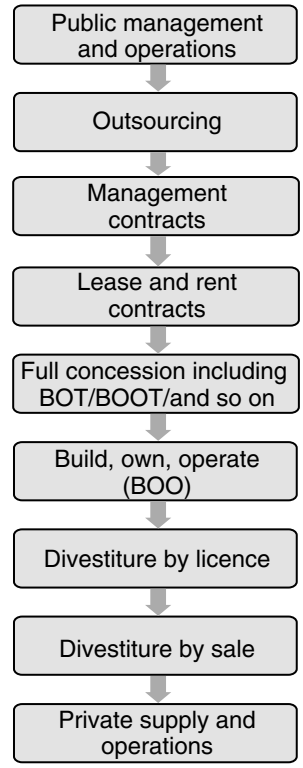
All ports require a clear set of regulations, many of which will be linked to supranational initiatives such as minimising damage to the environment by managing pollution from directly flushing out fuel or other holding tanks into the harbour water. There are also requirements to indicate charges for different services and maintenance activities to be carried out such as dredging.[1] How the rules, tariffs and other activities are set and administered is dependent on the existence of state departments that may or may not be unified, such as transport ministries or local government entities, a Port Authority (that may or may not be privately owned), autonomous port institutions (again possibly in the private sector), port operators (again, state or privately held) and other entities such as separate terminal operators, or developers and operators of special economic zones (SEZs) that use land adjacent to port facilities to manufacture or host other service providers.

Three main forces have shaped port reform:

- the external changes in the shipping industry including those related to technology, the success of the containerisation of much cargo and the concentration of container traffic in strong negotiating groups and the growth of the leisure cruise market;
- the general success of the introduction of private sector management and resourcing into many previously state operated activities, such as toll roads, satellites and hospitals, and the use of private capital to make these changes; and

Exhibit 17.2

The spectrum of port reform tools



Source: World Bank Port Reform Toolkit

- the diversification and globalisation of players in the logistics sector, including port operators and investors and the creation of new major global players, such as DP World, now a major international marine terminal operator.

The value of port assets has seen considerable volatility over the last 20 years as the changes in the shipping industry to larger containerised vessels and variations in the flow of international trade have changed the value of these strategic assets. Understandably cyclical, ports can become out of date as demand changes over time. Certain strategic deep water locations will always be needed.

In a 2011 Competition in Ports and Port Services report, the OECD, noted that:

> Competition in maritime ports and port services is central to countries with significant volumes of maritime-based trade. Inland and river ports can also play important transport

> roles within countries in particular for heavy or bulky goods where alternative ways of transport are more costly. Ports are, therefore, important for the functioning of the world economy and effective competition in ports and port services plays an important role in the final prices of many products.

A port strategy report prepared in 2013 by Holman Fenwick Willan (HFW) classified the functions of any port corporation into three groups:

1 *regulatory functions* – providing marine services (for example, harbour control, pilotage) and emergency pollution response, maintaining maritime safety and promoting general efficiency of the port;
2 *landowner functions* – providing port planning and development, navigational aids, breakwaters, entrance channels and maintaining basic port infrastructure such as wharves and berths; and
3 *operator functions* – providing cargo-handling services and other value-adding functions such as warehousing, storage and towage.

The World Bank sponsored Port Reform Toolkit (2nd edition, 2007), citing Baird (2000) suggests four broad categories of ports.

- *Public service ports*: where the state owned or controlled port authority provides all services needed to support the sea port functions. This group is falling in number as ports require expensive upgrades to remain competitive affecting government expenditure. It has the advantage of a core of unity between functions avoiding any integration issues, but dated work practices, lack of commitment to innovation or to change and underinvestment may lead to inefficiencies as market realities are ignored.
- *Tool ports*: where the tasks are split between state-sponsored port authority staff and third party companies contracted by shipping agents, and so on, but with the port retaining the handling equipment and its operation. Coordination can be problematic and thus incur additional costs, as control is incomplete. Since the essential services remain with the state, this is not a privatisation and thus can be politically more palatable but the same challenges as for public service ports exist around innovation and underinvestment.
- *Landlord ports*: where the port authority acts as the regulator and landlord and other tasks are carried out by private sector companies, to whom land and equipment is leased or may be installed by the third party operators. Labour is also contracted by the third party operators. The danger is potential over capacity of facilities leading to a price war and corporate failures. This is the prevalent model for many large successful ports today such as Hong Kong, Singapore and New York.
- *Private service ports*: where the entire operations are within the span of control of a non-government entity. Risks here include the sale of and development of land around the port without state veto and without the state's ability to control and accrue rents from a regional development plan and prevent speculation. This approach was used successfully in the UK, but has raised security issues elsewhere. The self-regulation of these ports requires some surveillance for monopoly behaviours that may require regulatory intervention.

The last two categories are most often the subject of concession agreements and most suitable for PPPs. However, just as in PPPs, performance or service level agreements need to be in place to ensure that ports are functioning, since they have a political as well as a logistic significance, which is why the private service port option is often rejected.

Ports usually have terminals that act as the loading (and unloading), storage and processing areas for goods bound onto or coming from their ships. Whilst many shipping companies are happy to share facilities and thus also minimise switching costs, some prefer or even require dedicated terminals at ports. Terminal operation is often separated from cargo handling activity and companies such as DP World are also significant terminal operators, as well as port managers. For the port authority, competition can be 'intra-port' as well as 'inter-port' to retain business, hence the need to be able to intervene over tariffs. Today's value chain also includes entities such as freight-forwarders (including multimodal transportation) and trans-shippers who may move cargo at sea to different sized vessels in order to access smaller ports or specific areas. Other strategies may include hub and spoke ports analogous to hub and spoke airline facilities, such as KLM in Amsterdam. This can allow aggregation of cargo into smaller ships for single destinations and limit multi-port visits by ships, thus managing port charges and time delays.

The relative competitive position of ports is crucial, with the OECD suggesting that:

> In addition to inter-modal competition, a port may be constrained when setting price and service quality by inter-port competition. As neither the initial origin nor the final destination of freight or passengers tends to be ports themselves, customers may in principle choose between different ports of origin and ports of destination. The degree of substitutability between ports at or around these locations will determine the extent of competition between ports.

Port cost structures usually entail a high level of fixed costs that may be mitigated through leasing and comparatively low marginal costs. Upfront set up costs are high, requiring large amounts of capital, so many ports are incrementally developed. Jubail is an exception, as is Yanbu, developed about the same time (though the latter, a Red Sea port, was active in the incense trade in historic times). Infrastructure expenditure tends to be 'lumpy' or non-linear. Finally, ports as security for finance providers have the same drawback as any fixed immobile asset – and they may have long investment recovery times, so may not be attractive to lenders.

What are the projects?

The three projects are quite different.

Qingdao in China is to all intents and purposes a public service port, though with some tool port aspects. The configuration will eventually allow for more private sector involvement. It raised the equivalent of US$337 million through an IPO for H-shares in Hong Kong in May 2014.

Mundra, in India, is part of a larger group owned by a well-connected local family and has a joint venture container operation with a foreign operator. It has aspects of both a

landlord port and a private sector port. It raised the equivalent of US$446 million through an Indian rupee based IPO in November 2007.

Finally, the New South Wales ports case is a private sector port and part of a privatisation programme in an economy where project finance is a well-established concept. This case example is about debt rather than the minority public equity issues in the other two cases.

Qingdao Port International Co Ltd, China

Background

The port of Qingdao was established in 1892 and the present company dates back (in a different form) to 1949, when throughput was 720,000 tons. (To give an idea of scale, the port of Qingdao throughput exceeded 400 million tons in 2012). Located in north east Asia it is an important hub of international trade in the West Pacific with routes to over 700 ports in 180+ countries as of 31 December 2013. It ranked as the seventh in total throughput and eighth in container throughput as well as sixth in metal ores throughput in the world in 2012. The Qingdao Port International Co Ltd (QGGJ) handled 76.4% of the total cargo throughput of the port, some 365 million tons.

The company offers a wide range of port related services including stevedoring and storage through to logistics and financing-related services, such as secure storage of goods pledged to support loans. In March 2014, the company operated 22 terminals with 69 berths at the port of Qingdao including 47 berths dedicated to handling a single type of cargo and 22 berths capable of handling ore, coal and other general cargo. It ran operations in Qingdao in four port areas: Dagang (ore, fertiliser, coal and general cargo), Qianwan (containers, ore, pulp and general cargo), Huangdao (oil and other liquid bulk) and Dongjiakou (metal, ore, coal and general cargo). Qianwan and Dongjiakou are under further development. It operates container terminals at the ports of Rizhao and Weihai, also in Shandong province.

Some of the largest vessels in the world can be accommodated in the Qingdao port and in 2012, the company was ranked as the world's highest for container stevedoring efficiency according to Port Productivity 2012, published by the US-based online *Journal of Commerce*.

The company is also connected to a well-developed intermodal transportation system to allow it to move goods and services as well as information efficiently in support of customer logistics. It owns much of its own equipment. Port charges and regulation are heavily controlled by the state and observance of the latest rules, changes and permit requirements is an important activity for any port operator in China.

The company

QGGJ is a joint stock company with limited liability that holds the core operations of its parent and 90% owner, the Qingdao Port (Group) Co Ltd (QDP) – a percentage that reduced to around 73% following the share issue. QDP in turn became a wholly state-owned enterprise with limited liability replacing the Qingdao port authority. QGGJ was set up in September 2013 with approvals from the sole shareholder of QDP, Qingdao SASAC, the

State-owned Assets Supervision and Administration Commission of Qingdao. Other shares are held by Malai Storage (2.8%); Qingdao Ocean (2.4%); China Shipping Terminal (2.4%); Everbright Qingdao FLC (1.2%); and Qingdao IIC (1.2%). QDP and Qingdao IIC are both owned by Qingdao SASAC.

The corporate structure is complex with equity interests in 14 subsidiaries largely established to handle the different activities of a port such as shipping repair, bonded port area storage, insurance agency and so on, and a further 17 joint ventures and associates and three entities with equity interests. Additionally, there are 11 branch operations.

One significant joint venture, QDOT, was established in January 2014 and acquired two metal ore and coal handling berths for 300,000 and 200,000 dead weight tonnage (DWT) vessels and some related assets at Dongjiakou from the company's majority shareholder, QDP. QGGJ holds 30% of QDOT with the remaining 25%, 25% and 20% held by Mighty Star Investment Ltd, Cosco Pacific (China) Investments Co Ltd and IMC Qingdao Port Investment Company Limited. All of these come under the description of connected persons. A subsequent QDOT acquisition brought two multipurpose berths for 50,000 DWT vessels and some other assets into the company. These acquisitions have been necessary because the Qingdao municipality intends to move the company's port operations from Dagang to Dongjiakou.

A separate initiative announced in 2014 by the government of the Qingdao Economic and Technology Development Zone will require relocation of the company's port operations from Huangdao to Dongjiakou. In both cases, whilst the company can move its own assets, it has historically been dependent on support facilities provided by the other two locations and as such has signalled that whilst there will be no material adverse impact on the overall business, there may be some disruptions, increased costs and logistical challenges to overcome. QDP has signed a noncompetition agreement with QGGJ to manage any situations that might arise because it also has an interest in Dongjiakou. The company also owes a payment to QDP for the second half of the Dongjiakou acquisition and the company is confident that it will make that payment on time or to borrow from financial institutions to make the payment. An existing unsecured credit facility from the Bank of Qingdao appears to be adequate to cover the obligation.

Additionally, the company leases land and buildings, tugboats and structures under an agreement with QDP that will finish in 2016 that is expected to roll over for a further three years. This largely relates to property in Dagang and with the proposed move to Dongjiakou, this obligation would possibly migrate in that QDP is also involved in eight port construction projects in Dongjiakou which QGGJ has bid for and won and will undertake for QDP. QGGJ also provides services to QDP although value of about 2.5 times a provision of services from QDP to QGGJ. There are a number of other reciprocal contracts of this type.

Of the nine QGGJ directors, three non-executive directors are not directly linked to QDP and of these only one, from Hong Kong, is apparently independent from other connected operations. To manage this, QGGJ has stated that it will be capable of operating independently of QDP and its associates.

What this section illustrates is the difficulty of disentangling the affairs of closely related companies in what is a hybrid between a public service port and a tool port. The complex web of interrelated companies and contracts make it very difficult for an investor to see this as anything other than an investment in QDP or in the Qingdao administration.

The fundraising

In 2006, Tianjin Port Development Holdings Ltd used the Hong Kong Stock Exchange to raise HK$1.09 billion (US$140.6 million at the time). Priced at HK$1.88, the top end of the range, the individual investors' tranche was nearly 1,700 times oversubscribed with the institutional portion 40% oversubscribed. Dalian Port also used the Hong Kong Stock Exchange in 2006 and was similarly oversubscribed. Both of these ports are in the Bohai area and smaller competitors of Qingdao. Qingdao reportedly planned to use this route in 2007 but was prevented from doing so by the global financial crisis. However, looked at in the market at the time of writing, both Tianjin and Dalian port shares had fallen from those dizzy heights of the debut issue prices. Nevertheless with global investor interest in China, a global trade slant and an infrastructure investment, as well as an increasing domestic market, the company had clearly planned the issue carefully.

The global offering of H-shares in Qingdao Port International Co Ltd (QGGJ) was expected to provide funding for the construction of port facilities at the Dongjiakou port area including oil tanks, an ore stacking yard, a crude oil berth, two further general berths and a liquid chemical berth with the remainder to be used as general working capital.

An additional agreement with six cornerstone investors for between 38.7% and 44.54% of the H-shares issued in the offering ahead of the road show and worth a combined total of US$167.7 million, sent a strong signal to the market of confidence and the potential for restriction on the number of shares available. Almost all of the cornerstone investors were involved in the domestic logistics industry in China: marine transportation company Shanghai Zhenhua Port Machinery, No. 2 Engineering Company, China International Marine Containers, truck manufacturer Sinotruk International Investment, marine logistics and development company DP World Asia, and Ming Cheng Company, one of China's largest port operators. These shares were the subject of a six month lockup.

The issue for approximately 16.5% of the enlarged issued share capital of the company was pitched on an unusual fixed-price basis (as opposed to a book-building approach) at HK$3.76 and was sponsored jointly by BOC International, Citic Securities International and UBS AG with CLSA and Deutsche Bank also acting as joint bookrunners. It was fully underwritten and a stabilisation agreement was in place so that the full HK$ 2.9 billion (US$377 million equivalent) was raised. It was split into a tranche of approximately 77.64 million H-shares forming the Hong Kong public offering and an international offering of approximately 699 million H-shares which were to be selectively marketed to QIBs, as defined under Rule 144a in the USA as well as other institutional and professional investors.

The H-shares, though notionally denominated in yuan, were priced in Hong Kong dollars. The shares are regulated by Chinese law and are subject to Chinese taxes but are listed in Hong Kong dollars and trade like other international shares on the Hong Kong Stock Exchange. In the past, H-shares were only available to non-Chinese residents, but a change in the rules in 2007 allowed investors from the mainland to own these shares. Companies can also list A and B shares on domestic Chinese exchanges and an arbitrage position often exists between A or B shares and H-shares.

Risks

The company highlighted the following risks:

- the decreasing rate of growth of the Chinese economy and changes in the global economy, especially those sectors exposed to trade with China may well affect domestic and foreign trade volumes;
- whilst the development of the new facilities at Dongjiakou port began in 2008, they are not without risk and have been financed through cash and/or bank debt to date;
- port operation is capital intensive and whilst cash has been the primary source of historic funding, bank debt will continue to be important. There has been some speculation in the financial press that China may raise lending rates or restrict bank funding;
- the move to Dongjiakou and also to Qianwan port from Dagang will affect about 10% of the company's throughput;
- in common with many Chinese companies, the company operates through joint ventures in which it does not hold a majority equity interest nor have management control (some 33.6% of the net profits in 2013). A particular problem can be that the local company is held accountable for a foreign partners compliance with Chinese laws and regulations, which as we saw in the earlier case study of Cheng Jiu (Chapter 14) can be the subject of unexpected change;
- reliance on external logistics and networks can also cause unexpected problems. In November 2013, an explosion in Phase 2 of the crude oil Donghuang pipeline in Qingdao, operated by Sinopec, resulted in 62 deaths and 136 injuries as well as significant damage and disruption to the company;
- other port operators in the area are expanding, such as Busan in South Korea and other ports in the Bohai Rim region and the Yangtze River Delta;
- port charges are centrally regulated and subject of the schedule set by the Chinese government, specifically the Ministry of Transport;
- the currency exposure and management between renminbi, HK dollar and other currencies needed to operate a global port; and
- following the success of the Shanghai FTZ in 2013, the Shandong provincial government has announced that it has submitted a proposal for a Qingdao FTZ, but the timing of any decision is unknown.

Post transaction developments

Just as the issue closed, reports emerged of a probe into trade financing practices of some companies using Qingdao Port warehouses. As a result, the price weakened and private investor appetite waned. Commodities stored in safekeeping in the port formed security for bank loans, in a long established tradition of commodity financing. However, the economic downturn in China has led to a demand for commodities flagging as centrally sponsored investment has fallen with the result that banks are looking at loans supported by commodities where the underlying value has fallen. One insider estimated in March 2014 that the value of transactions using commodities as collateral is about US$160 billion, or 31% of

China's total short-term foreign exchange loans. As at July 2014, it is now estimated that lender exposure to a possible commodity fraud at the Dagang facility at Qingdao is possibly over US$500 million.[2]

Mundra Port and Special Economic Zone, India

Background

India is dependent on its ports for the import and export of goods to support a fast changing economy – in 2007, the date of the case study, ports were believed to handle about 95% of India's total trade by volume and 70% by value. Ports in India are classified into major and minor categories with 12 major and 187 minor ports spread across nine coastal states. The difference lies in control and governance of the ports – port trusts, regulated by the central government, manage 11 of the 12 major ports under 1963 legislation. (The exception is a corporate entity commissioned in 2001 at Ennore in the Bay of Bengal, close to the other major port of Chennai.)

Major ports handled a total traffic of 464 million metric tonnes during 2007 with a strong emphasis on petroleum products, accounting for about 33% and increased containerisation accounting for 16%. In general, major ports have suffered from a lack of investment rendering them less capable of handling the modern cargoes anticipated at other steps in an international logistics chain. Additionally, underinvestment in infrastructure, unlike both Qingdao and the New South Wales ports contributed to poor operational efficiency, exceptionally high turnaround times measured in days compared with hours in other Asian ports and fuss increased through port and transport costs leading to exports becoming non-competitive and cost inefficient. The distribution method used to manage the movement of high-value urgent goods by container shippers included transhipment to Colombo, Dubai or Singapore as a way of managing the process but with increased fuel costs, leading to additional costs and transit times. As ship sizes have increased, especially the larger container ships now available, major Indian ports have faced significant investment requirements for survival and a national maritime policy, a comprehensive programme for the sector, has earmarked significant investment. The inclusion of private sector container terminal operators and foreign investment promotion in the ports sector led to a number of significant world players becoming partners in port facilities. Among the companies were P&O Ports and Dubai Ports International, both now part of the DP World group.

Whilst the major ports enjoyed strengthened regulatory structures including tariff rationalisation and a change to a corporate structure from the public sector, the minor ports of which Mundra was one such were more dependent on the state for legislation – the Maritime Board of Gujarat (GMB) in the case of Mundra.

The Indian government had also taken steps to encourage foreign investment to support the export of goods and services through a regime designed to develop SEZs. These zones would include offshore banking units and international financial centres to provide financing at international rates and enjoy favourable tax treatment. It was also anticipated that the SEZs would cause new jobs to be created and uplift the wealth of areas adjacent to the

zone. At the time of the Mundra IPO, there were 14 SEZs in operation of which seven had been initiated by central government and seven through a PPP model. An SEZ includes factory space for leasing as well as developed plots and the Mundra SEZ was approved and ready to be set up at Kutch on the north-west coast of India, approximately 850km north west of Mumbai.

The company

Mundra has a deep water draft close to the shore making it suitable for larger vessels and is well protected against the monsoon season. About half of India's commodity trade is centred in the north and north-west area so that Mundra serves what is a largely landlocked area. Set up as Gujarat Adani Port Ltd on 26 May 1998, phased operations began at Mundra in 1998 with commercial operations beginning in 2001. The company, Mundra port and Special Economic Zone Limited (Mundra) operated and developed the port of Mundra under a 30-year build operate own transfer (BOOT) concession agreement signed by GMB and the government of Gujarat in 2001. This permits the development, operation and maintenance of about 3,400 acres of land at the port with a compensation payment on expiry of the concession based on an independent valuation of the assets. As a minor port, Mundra sets its own tariffs.

Bulk cargo is handled through a multipurpose four cargo berth Terminal One that can also take a barge berth so that four cargo vessels can be handled simultaneously. Terminal Two comprises four berths for bulk cargo and was funded immediately prior to the IPO, largely through debt. There are also container berths facilities in Container Terminal One which was constructed by the company but operated under a 30-year sub-concession agreement held in an entity called MICT. The container terminal was let to a subsidiary of the UK P&O shipping group for which Mundra was paid a royalty. The sub-concessionaire also collected the waterfront royalties, payable to GMB. Dependent on a performance related trigger, MICT could request handover of a second container terminal, construction of which had commenced in 2006, in order to operate it as well. Extensive storage facilities are also in place and dedicated to certain users. As examples, among other agreements there is a port services agreement with the Indian Oil Corporation Ltd providing handling and transportation of crude from the port to the refinery at Panipat for which the company receives rental fees for the land used for its storage tanks and a fixed charge based on the volume of crude. There is also a port services agreement with Coastal Gujarat Power Ltd for a build operate own (BOO) power project using coal as a fuel source. This power station was promoted by companies in the Tata group.

The company is a member of the Adani group, headed by Gautam Adani and founded in 1988. The Adani group of companies holds interests in coal trading, coal mining, oil and gas exploration, ports, multimodal logistics, power generation, agri-infrastructure and many other businesses and describes the group as a globally integrated infrastructure player. It is believed to be worth US$8 billion and Gautam Adani to be among the top 25 richest people in India. Adani Enterprises is the publicly listed parent company and was 66.7% owned by Adani family members with 9.5% held by the Indian public.

The fundraising

The IPO was for an issue of 40.1 million equity shares (around 10% of the post issue paid-up capital of the company) of which a number of groups of potential investors were pre-identified. QIBs, as defined under Indian legislation, were expected to take up about 60% of the issue of which 5% was reserved for mutual funds. Around 30% was earmarked for retail individual investors. The issue was underwritten.

The purpose of the issue was to achieve the benefits of listing and raise capital for the construction and development of basic infrastructure and the allied facilities in the proposed SEZ at Mundra (Rs7 billion), a terminal for coal and other cargo at Mundra Port (Rs20 billion) and make contributions towards investment in Adani Petronet (Dahej) Port Private Limited; Adani Logistics Limited and Inland Container Private Limited (Rs4.1 billion), with the remainder used for general corporate purposes. The book-building period ran between 1 November 2007 and 7 November 2007. The issue was described as the most successful since the Reliance Group's R-power in 2006, with the QIB portion some 115 times oversubscribed and the retail tranche some 16 times. The shares were issued in 100 share bundles at Rs440 (US$11.06), listed at Rs770 (US$19.35) and promptly rose to Rs1150 (US$28.90) on the Bombay Stock Exchange according to one blogger (who suggested it had been underpriced).

DSP Merrill Lynch Limited, JM Financial Consultants Private Limited and SSKI Corporate Finance Limited were both global coordinators and book running lead managers, with Enam Securities Private Limited, Kotak Mahindra Capital Company Limited, ICICI Securities Limited and SBI Capital Markets Limited taking a book running role. Little more detail has been released.

Risks

The prospectus listed a number of risks including the company's reliance on continued licensing by the government and the potential disruption if GMB terminated the sub-concession agreement for the management of the Mundra International Container Terminal Private Limited (MICT). The Container Terminal, developed by Mundra and hived off into the MICT company had been sold to P&O Ports (Mundra) Private Limited, a subsidiary of P&O Ports on a sub-concession basis for US$195 million. An undertaking was given to GMB in May 2003 that P&O Ports would continue to hold over 51% of the MICT shares. All of the companies in the P&O Ports group were bought by Dubai Ports World in 2006 and thus the management and ownership control of the container terminal changed though not the share ownership. (This is common practice in acquisitions in order to keep tax benefits and contract structures intact.) A legal debate ensued with GMB arguing that the sub-concession agreement should be cancelled because P&O Ports did not honour its undertaking and a counterargument that said that P&O Ports continue to hold 100% of the MICT shares and thence the agreement was intact. A ruling was awaited at the time of the IPO and the case continued unresolved for several years after the issue.

Other risks included comments about the concentration of a larger proportion of income arising from a small number of customers and partners; the risks associated with related party transactions inside the Adani Group and the risks associated with joint ventures and strategic partnerships. The SEZ was newly approved and is subject to a development period

and further planning approvals, and the benefits in terms of tax exemptions might impact on revenues should they be withdrawn or changed. Ongoing litigation related to allegations of price manipulation of the shares in Adani Enterprises Ltd. Finally, in a long list of risks environmental issues were discussed in the context of spills and hazardous waste disposal.

Post transaction developments

The company changed its name to Adani Ports and SEZ Ltd and expanded to own and operate four ports – Mundra, Dahej and Hazira in India and Abbot Point in Australia as well as developing ports at Mormugao, Visakhapatnam and Kandla in India. It returned to the markets to raise funds from QIBs in June 2013 through an international private placement (IPP) of 66.67 million shares at Rs150 per share (Rs9.9 billion, US$167.9 million) to meet the Indian regulators requirement that 25% of any listed company should be held by the public. The issue was 2.26 times oversubscribed, and the funds raised were to be used for 'capital expenditure, working capital, strategic initiatives (including acquisitions) and general corporate purposes'.

Material risks described in 2013 included:

- risks in connection with the reliance on concessions, sub-concessions and licences from government and quasi-governmental organisations;
- restrictive provisions in the MICTL sub-concession agreement could adversely affect business and results of operations; and
- business and operations may be adversely affected due to violations of environmental regulations during the development of port facilities at Mundra.

The MICT terminal dispute continues to linger. The DP World website shows DP World as operating Container Terminal One as at July 2014 and DP World restated its commitment to India, where it operates five terminals – four in major ports. Mundra has continued to develop further container terminal, operating the second terminal itself and two more planned with other partners including CMA CMG of France and Mediterranean Shipping Company SA (MSC).

Ports are inevitably located in marine environments that may have been undisturbed until the port needs to be expanded. In such situations, sensitive stakeholder management is key, remembering cultural approaches to natural disruption are often specific and that powerful non-governmental organisations (NGOs) can also become involved. Providers of finance also have stakeholders who are concerned about environmental issues and they can decline to finance projects that are seen to be environmentally sensitive or likely to become contentious.

New South Wales Ports privatisation: Australia

Background

The origin of the transaction was a proposed AUS$10 billion privatisation programme instigated in 2011 by a new Liberal-National coalition state government in New South Wales.

In September 2011, Port Botany was slated for sale and was joined in June 2012 by Port Kembla. The privatisation valued the two leases (Port Botany and Port Kembla) at 2.5 times the Port Brisbane sale price in 2010. The AUS$5.07 billion consideration was significantly above the original expectation of the new state government (AUS$1.6 billion to AUS$2.2 billion for Botany and AUS$0.5 billion for Kembla).

The proceeds were to be used to fund the New South Wales (NSW) government's infrastructure fund, Restart NSW. The NSW population makes up almost one third of the Australian total population of 23 million and the need for significant new infrastructure spending within the state and maintaining the state's credit rating in the face of structural budget deficits incurred by the previous labour administration were key drivers for the incoming politicians. Restart's capital has been earmarked to support NSW infrastructure development, primarily the West Connex Toll Road project and the North West rail project. In a public response to a petition to stop the privatisation in November 2012, it was noted that 30% of the funds would be reserved for regional infrastructure. The MP went on to confirm that the Illawarra region would receive AUS$100 million from the lease of Port Kembla, with the particular infrastructure projects to be determined by Infrastructure NSW.

This privatisation followed successful port asset disposals in other Australian states, including the Port of Brisbane (PoB), assets in Victoria (Port Geelong and Port Portland in 1996) and South Australia (Port Adelaide in 2001). The other significant NSW port asset, the Port of Newcastle (the world's largest coal exporting port and the third largest port by mass tonnage in Australia) was privatised in May 2014.

Valuing such assets was difficult as the next example shows.

The Admiral consortium triumphed with an offer of 910p per share in June 2006, valuing the London listed Associated British Ports PLC[3] at £2.8 billion after the rival Britannia Ports consortium, made up of Australia's Macquarie Bank and Industry Funds Management, 3i and the Canadian Pension Plan Investment Board, confirmed their interest in buying the business. Earlier that same year ABP had rejected an offer from Admiral (Borealis Infrastructure Management (33%), GIC Special Investments (33%), Goldman Sachs (23%) and Prudential (10%)) that had valued the company at 730p per share. Subsequently there had been two agreed offers by the ABP board at 810p and then 840p. The advantage to the Admiral consortium of buying ABP was that it was less exposed to domestic competition, from alternative UK port operators, than NSW Ports was in Australia.

Unlike the mobile telephony licences discussed in the MTN Nigeria case study (Chapter 10), that are typically 10 to 20 years in duration, or the three year rollover seen in the Qingdao port case above, or even the 30-year concession awarded to Mundra, the time frame associated with a 99-year port lease encourages a far longer term investment horizon to be adopted by the port lessee or concession holder. It also means that should the project development be delayed materially, it is not going to put undue pressure on the financing structure. Restructuring a transaction, in the knowledge that the 'right of use' is finite, will significantly influence stakeholder behaviour and reduce the likelihood that sponsors will inject further funding to protect their investment.

The cost of buying into Australian assets in US dollar terms, was also high as the Australian dollar had performed strongly over the equivalent period.

Finally, the implications of the commodity super-cycle have meant that Australian exports had also boomed over the period.

The companies

Port Kembla

Kembla is the older of the two assets and can trace its roots back to the 1890s when it was established to export coal from the Illawarra region of NSW. It is located in Wollongong approximately 90km south of Sydney and is Australia's ninth largest port.

The port expanded to allow the import of steel in the form of raw materials and products. It subsequently diversified into general and break-bulk cargoes, containers, motor vehicle imports and grain exports.

The asset includes an inner and outer harbour that has been the subject of much expansion and redevelopment over the years. Some of the rail assets dated back to the 1940s. Its value at privatisation was AUS$0.76 billion (15% of the total paid).

The asset came with some negative revenue news in that the Port Kembla Port Corporation (PKPC) 2012 to 2013 statement of corporate intent noted a recent announcement from BlueScope Steel indicating closure of one of its blast furnaces. PKPC's conclusion was that this would lead to a significant reduction in exports and lower the trade throughput of steel and related products through the port in future.

In the financial year ended June 2013, PKPC noted that: 'Port Kembla had a total trade volume of 28.9 million tonnes. This comprised 10.2 million tonnes of imports and 18.7 million tonnes of exports. This volume is slightly down on the 32.2 million achieved in 2011 to 2012.'

Post privatisation, PKPC's role is to remain as the 'waterside' operator for Botany. Duties include: harbour master; port marine operations including the operations of the vessel traffic information centre and pilotage service; port safety operating licence functions including dangerous goods, surveys and the maintenance of navigation aids; and emergency response and security for the waterside of the port.

Port Botany

Botany is located 12 nautical miles south of the entrance to Sydney Harbour and the city's central business district. From a technical perspective, the channel to the Port Botany estate is 213m wide and has a minimum depth of 15m, with a swinging basin at Brotherson Dock dredged to 15.6m. Its value at privatisation was AUS$4.31 billion (85% of the total paid).

The landside facilities consist of: two container terminals with six container vessel berths; a bulk liquids berth complemented by container support businesses; bulk liquids berth storage facilities; and private berths at Kurnell (the site of a desalination plant that was privatised earlier in May 2013 by the NSW government). By April 2013, the proceeds of the sale of the Sydney desalination plant and these two assets was becoming clearer and were expected to bring in AUS$4.0 billion to Restart, according to the NSW State Treasurer Mike Baird.

The Port Botany Expansion project saw 63 hectares of land developed (with significant reclamation work required), of which 45 hectares were leased to Hutchison as the third stevedoring operator on the site. The other 18 hectares were leased to Patrick to expand its existing stevedore operations at Botany. This had significant implications for the intermodal transport as existing rail and road services needed to be enhanced and reconfigured in order to cope with the increased throughput. The implication is that the landside operations that were acquired on privatisation had significant room for 'handling' growth and this would have been factored into the stakeholders' bidding strategy. Asia represented 65% of the total trade volume through Botany in 2012 to 2013.

Port Botany (pre-expansion) was the second largest container port in Australia, behind the Port of Melbourne, which handled circa 2.4 million containers in 2012 to 2013. A second bulk liquids berth (BLB2) was officially opened in February 2014. The original bulk liquids berth (BLB1) has been in operation since 1979. The main products handled at BLB1 are refined fuels, gas and chemicals. In 2013, the facility handled 90% of NSW's liquid petroleum gas (LPG) requirements and 26% of the jet fuel requirements for Sydney Airport. In addition to the port facility, the landside infrastructure included:

- intermodal logistics centre at Enfield; and
- Cooks River rail depot and empty container park.

Key cargo concession contracts for Botany existed with three major stevedores:

- DP World;[4]
- Patricks; and
- Hutchison (from 2011 to 2012).

The fundraising

The project began by the transfer of the 'to be privatised' assets into a new state entity called the Port Assets Ministerial Holding Corporation (PAMHC). This vehicle retains the freehold interest in the ports. The enabling act was the Ports Assets (Authorised Transactions) Act 2012.

Subsequently in October 2012, a 99-year lease was created by the PAMHC for the two primary port assets and associated infrastructure. An expression of interest (EOI) was issued contemporaneously to interested parties. The benefit of this approach was that the complex tariff and labour negotiations could be undertaken within the confines of the NSW government machine prior to the EOI being circulated, thereby giving bidders clarity on exactly what they were buying.

The original terms of the EOI were kept deliberately confidential by the NSW government and its mandated advisers, fearing that disclosures could derail the bidding process. However this lack of transparency did not go unnoticed or unchallenged by the NSW electorate at the time.

New South Wales' treasurer Mike Baird said: 'NSW Ports would ensure the operational integrity of the ports of Botany and Kembla and would bring greater access to capital for the ongoing development of these trade gateways.' He went on to note that: 'NSW government will retain regulatory oversight of port matters, and a price-monitoring regime will be

established to ensure transparency. Pilotage, the role of Harbour Master, and security and emergency response functions will stay with state-owned Sydney Ports Corporation and Port Kembla Port Corporation.'

This clarified some of the open issues that had been publicly raised earlier.

HFW noted in its 2013 report:

> To make the sale attractive, the government removed the cap on the amount of cargo that can be moved through Port Botany each year. This will mean a massive increase in trucks in and out of Port Botany. Currently, over three-quarters of containers are transported to and from Port Botany by road. The goal of the government is to transport 40% (or 1.28 million TEUs) of the containers in and out of Port Botany by rail by 2017, through the new Enfield Intermodal Logistics Centre scheduled for operation in the 3rd quarter of 2013, and the new Moorebank intermodal facility due to commence operations in late 2017. With container throughput predicted to grow to 7.5 million TEUs by 2030 to 2031, urgent action is needed from the NSW government to upgrade the M5 East motorway and to develop a new F3-M2 link.

These valuable concessions and the significantly expanded capacity may explain why the eventual price was so high, compared with the earliest governmental estimates.

Following various parties' responses to the EOI, four bidders were shortlisted in December 2012:

- Canadian Pension Plan Investment Board and Queensland Investment Group;
- Hastings Fund Management and Ontario Teachers;
- NSW Ports consortium; and
- Citi Infrastructure Investors.

All four named parties were certainly credible, with the rival Canadian parties being very experienced cross border infrastructure investors. Global Infrastructure Partners (GIP) which was originally part of the NSW Ports consortium and Q Port Holdings (until it disposed of its 26.7% stake) withdrew shortly after the announcement.

NSW Ports was a consortium of investors including:

- Industry Funds Management (IFM) – 35.05%;
- AustralianSuper – 20.0%;
- Tawreed Investments, a wholly-owned subsidiary of the Abu Dhabi Investment Authority (ADIA) – 19.9%; and
- IFM managed funds – Cbus, HESTA and HOSTPLUS – 9.96%.

Led by IFM, over 80% of the ownership was Australian. This would undoubtedly have settled any protectionist challenges that may have existed in the NSW government, which could also see ADIA as bringing an international dimension to the consortium in the same way as it was involved with PoB.

IFM is a global investment manager headquartered in Melbourne, Australia, with offices in Sydney, London and New York. At acquisition, assets under management totalled AUS$44

billion across four asset classes – infrastructure, debt, private equity, and listed equities. Over 18 years IFM has invested in a range of sectors including airports, seaports, renewable energy, toll roads and electricity generation.

AustralianSuper is one of Australia's largest superannuation funds with more than two million members, including over 500,000 NSW members. At acquisition it had assets under management of AUS$60 billion and has been an active investor in infrastructure since 1990 with stakes in over 100 infrastructure assets.

ADIA was established in 1976 and is a globally diversified investment institution owned by the Government of Abu Dhabi. ADIA manages a substantial global investment portfolio, which is highly diversified across more than two dozen asset classes and sub-categories, including quoted equities, fixed income, real estate, private equity, alternatives and infrastructure. Although the overall size of this sovereign wealth fund's portfolio is not disclosed, it had assets under management of US$627 billion according to a 2014 Preqin report. The investment horizon is ideally suited to projects of this type as it has a long-term focus and does not seek an active role in the management of the companies in which it invests. Seventy-five percent of its portfolio is managed by external parties.

ADIA's infrastructure investment interests of just over US$19 billion, according to Preqin, include:

- Map Airports (2002);
- Macquarie International Infrastructure Fund (2005); and
- DS3 Fuel Infrastructure Fund (2011).

Cbus is another large domestic superannuation fund and the industry fund for the construction, building, infrastructure and allied industries. Established in 1984, Cbus provides superannuation benefits to over 700,000 members, and had assets under management of AUS$21 billion.

HOSTPLUS was the third and smallest of the superannuation funds, focused on the hospitality, tourism, recreation and sport industries in Australia. The Australian Hotels Association (AHA) and United Voice (formerly the Liquor Hospitality and Miscellaneous Union) jointly established the Fund in 1987. It had one million members and assets under management of AUS$12 billion.

The NSW Ports consortium formally acquired the two leases in May 2013, after triumphing in a four-way competition. In the cases of the Ports of Brisbane, Botany and Kembla, only a lease on the port land was for sale to the private sector. Through new legislation, new owners, as lessors, would have an interest in the right to charge rent and specified port charges (such as site occupation, wharfage and infrastructure charges). However, this economic right came with significant regulatory risk.

The template for financing NSW Ports had been firmly laid out with the 2010 financing for the Port of Brisbane. All stakeholders were clearly going to benchmark what had been achieved on the prior transaction and there was commonality amongst the bidding consortium members (IFM and ADIA).

The primary financing drivers for the consortium were to:

- acquire the asset;
- fund short-term capital expenditure obligations; and
- fund day to day working capital requirements.

The syndication of the debt was undertaken by three banks, ANZ, Credit Agricole and National Australia Bank (NAB) engaged by the consortium in 2012. They were ultimately joined by seven other lenders:

- Bank of Tokyo Mitsubishi (BTM);
- Canadian Industrial Bank of Commerce (CIBC);
- Development Bank of Singapore (DBS);
- Industrial Commercial Bank of China (ICBC);
- ING;
- Korean Development Bank (KDB); and
- Sumitomo Mitsui Banking Corporation (SMBC).

The bullet structure, tenors and relatively modest leverage, suggests a likely partial bond take out structure mirroring the Brisbane transaction. This could be used to enhance the sponsors' internal rate of return (IRR) on the project, by returning some of the initial shareholder funds, or extending the tenor of the existing senior obligations.

Risks

Norton Rose Fulbright LLP, Australia had identified various potential key risks that had to be considered in formulating the leased package of assets. They included:

- regulatory clearances (from the Australian Competition and Consumer Commission);
- cross ownership considerations;
- state-based regulation of port charges;
- commonwealth-based regulation of port charges;
- impact of land access bottlenecks at Port Botany; and
- outer harbour developments at Kembla.

The key existing terminal leases also needed to be reviewed to ensure that the transfer of ownership did not have any unforeseen implications.

Other key risk areas included:

- compliance with key pieces of safety regulation including the Port Safety Operating Licence (PSOL) and the Rail Safety Act 2008. Operating under safety regulation was something that the previous bodies running the two ports infrastructure had undertaken in prior years. In the case of PSOL the bodies maintain responsibility for these licences and not NSW Ports;
- contract renewal risk;
- setting future port tariffs;

- security; and
- performance risk.

Post transaction developments

If the parties could have done it over again, would they have done something different? Q Port's main risk issues for investors were:

- evaluating trade growth;
- capital expenditure requirements; and
- obligations arising from the PoB motorway construction project.

It is interesting to see that GIP was able to sell its 26.6% stake in Q Port Holdings for over AUS$1 billion to Caisse de Depot et Placement de Quebec in November 2013. The Canadians beat off competition from Borealis and AustralianSuper and the stake went for more than the original range assumed of AUS$800 million to AUS$1 billion.

This followed a successful AUS$300 million debut 17-year bond issue by QPH Finance Co in July 2013, that again sets a marker for NSW Ports. At issuance the bond was rated BBB and was priced at a coupon of 5.75%, or 190bps over mid-swaps.

Reflections on the port cases

The three port cases are set in very different national and economic contexts, but they have common themes:

- the need to be able to work effectively in joint venture partnerships;
- the need to have access to adequate funding to be able to upgrade facilities; and
- logistical infrastructure to support changes in trading patterns, and the need to operate transparent governance.

Implicit in all of the cases is the understanding of a port as an entry point to a nation state and the political issues that can come into play when ownership of these assets could be transferred to a company from another country or a state-owned company from elsewhere. Vietnam has recently instigated legislation to ensure that its privatising ports will always be 75% owned by the state, and this is thought to have deterred incoming investors. When P&O Ports were purchased by DP World, from Dubai, we saw in the Mundra case that this led to litigation that is still ongoing. P&O Ports also managed six ports in the USA, including New York, Baltimore and Miami and had operations in a further 16 ports. Despite advice from former President Clinton and initial approval by the executive arms of the US government, other agencies objected on security grounds and carried the debate into the media. The association of Dubai, a peaceful commercially-focused member of the United Arab Emirates, with the 9/11 events in New York was unfounded but still aired publicly. Ironically, Zim Lines (the Israeli shipping company) supported the transaction. DP World offered to follow the route used by providers of military equipment by placing the ports

in a separate company and turning it over to a 'US entity' but this proved insufficient to placate the politicians and eventually DP World sold the US port operations to the Global Investment Group, part of American International Group's operations.

For those investing in ports or lending money to ports, the stories of events at Mundra and in America suggest that regardless of the legal documentation, ports are political investments and as such need to be treated with care. The political risk and its management should be discussed openly from the beginning, difficult though this can be. Port privatisations are increasing and foreign port managers offer an attractive way to redevelop and renew port facilities. These two stories offer a chilling tale of what can happen when a company is taken over by an entity controlled externally, and what can occur when the company taking over attempts to do the right thing, but political rhetoric prevails.

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[1] Dredged depths are important as they impact the size of ships that can be accommodated at the facility. It is also a source of cost, given the fact that rivers will silt up over time and the channel will require maintenance.

[2] CITIC Resources Holdings (part of the CITIC group) and Standard and Chartered plc have commenced legal action to recover monies and exposures disclosed are of US$50 million and US$250 million respectively, with a further US$170 million exposure to aluminium backed loans held by Standard Bank Group.

[3] ABP is currently a private company and owns 21 ports throughout the UK, making it the largest UK port operator. It was originally privatised by the Thatcher government in 1983.

[4] DP World and Asciano are the operators of Port of Brisbane. They are paying the lease payments and as such the consortium that acquired the lease is not taking volume risk on cargoes.

Chapter 18

Final reflections

Whilst we started with a longer and completed petroleum-based project, in some ways it is fitting that we included a project from the same sector that is in the process of completion and will be transformative for the regional economy and other economies beyond the Middle East and that uses Islamic finance. We have looked at a range and number of projects that we think will be useful to a wide range of stakeholders and that are topical – and considered the risks: things that have gone well and those that offer lessons to learn for others hoping to use those approaches, especially in the public private partnership area.

All projects have a political dimension, especially those where privatisation or private sector investment is involved. In the book we have looked at how things can go well and how they can run into problems.

Project finance can be frustrating at times but it can also be very rewarding because often the project makes a difference to the lives of other people. The A1 Mobil upgrade in Germany (Chapter 13) was one such where stakeholders were frustrated during construction but now enjoy benefits – another is the power project in California (Chapter 15). Even projects that touch our personal activities such as mobile phones or satellites or football clubs require finance to expand and respond to changes in expectations from consumers and well-designed project financings can assist in meeting these needs. We hope that these cases give our readers pause for thought but still encourage and inspire more creative transactions to generate benefits for future generations.

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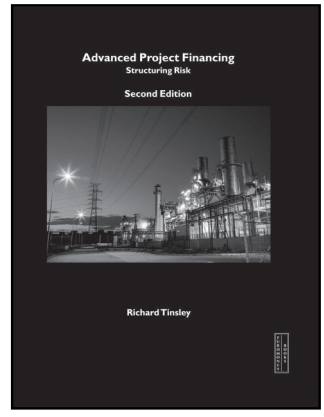

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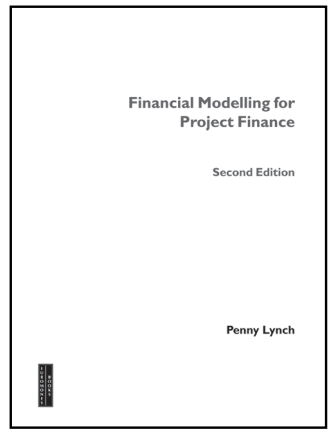

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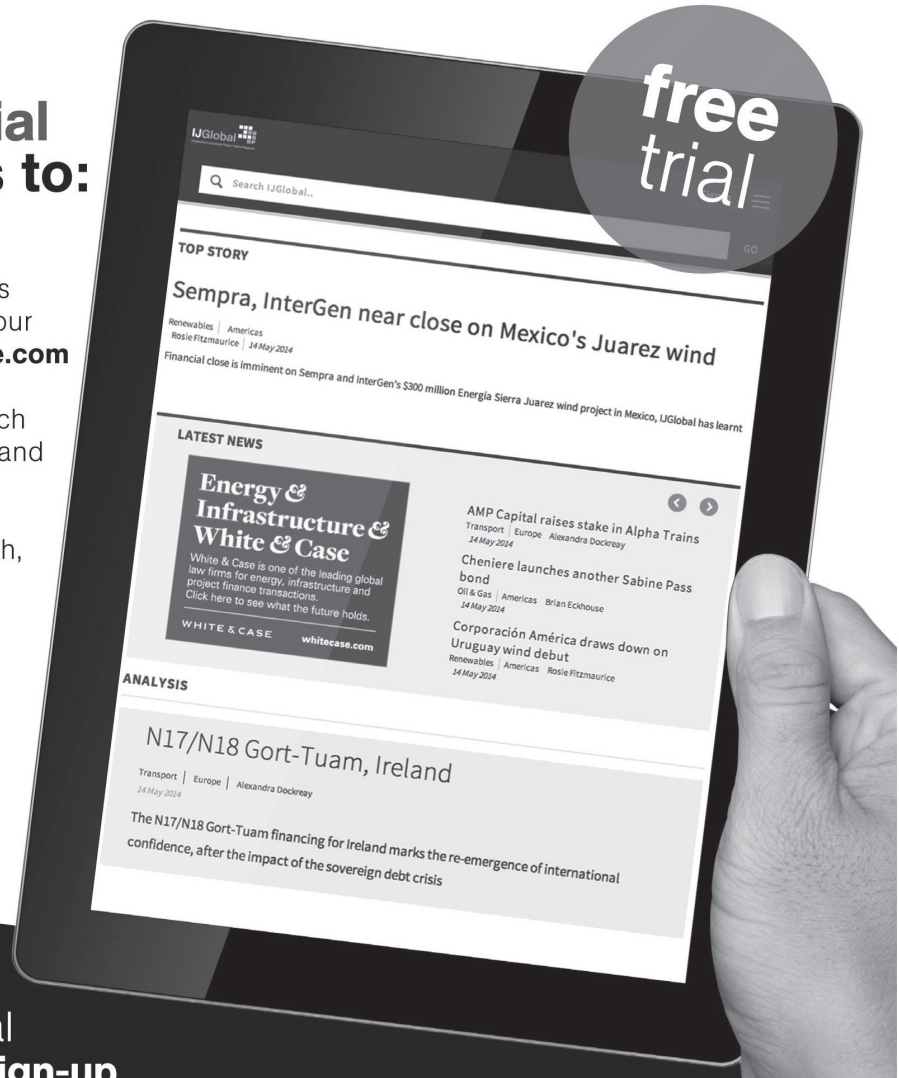

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