

VPM's
DR VN BRIMS, Thane
Programme: PGDM (2014-16)
Fourth Trimester (Mktg.) Examination September 2015

Subject	Product Design and Development		
Roll No.		Marks	60 Marks
Total No. of Questions	7	Duration	3 Hours
Total No. of printed pages	2	Date	24.09.2015

Note: Q1 is compulsory and solve any FOUR from the remaining SIX questions.

Q1) 20 Marks (Compulsory)

The Finnish *Nokia* likes to present itself as the “world leader in mobility”; it is also an undisputed leading competitor in the mobile phone sector, on a global scale. Indeed, economic results of the company could hardly be better since both sales and profit are steadily growing over the last three years.

Compared with 2006, operating profit increased 47% in 2007 and gross margin is about 34%. Most of the profit comes from mobile phones sector, then multimedia. And, indeed, *Nokia* is the world’s largest mobile phone manufacturer (with about 40% of the world’s market share), the world’s largest camera manufacturer and a leader in digital music too. In order to become a world leader on a market as competitive as that of mobile phones, one may suspect that it takes a special ability to understanding and responding to –and most of the time preceding– the consumers’ needs and appetite for “beauty and novelty”. This is where design comes into play. In *Nokia’s* Design Backgrounder (2008), the company details its philosophy of design, which pertains to “beauty of use”: “design has to deliver objects and services that are not only beautiful to look at but that also work just the way people want them to.” And this philosophy has, over the years been validated and transformed in innovations. The Design Backgrounder proposes a history of design innovation, from 1982 to 2008. Over the last period 2007-2008 only, *Nokia* emphasizes 7 successes of design innovation. The table below shows how wide is the range of design-driven notable innovations.

In 2008, the full team comprises more than 300 people (over 30 nationalities) distributed into ten different locations. The design team includes designers, psychologists, researchers, anthropologists, engineers and technology specialists. *Nokia’s* global design community seeks to gather inspiration from around the world. The second key characteristic of design innovation pertains to the forward-looking facet of *Nokia’s* design. Looking ahead implies design practices which seek to both capture forthcoming novelties and to shape users’ future trends. In terms of the design philosophy, this translates into three main operational concepts. Firstly, “emotional feedback” consists in inventing new means by which mobile users’ senses are stimulated so as to give the product a specific ‘emotional appeal’ (texture, colour, etc.). Secondly, the ‘design for the environment’ notion encapsulates *Nokia’s* enduring attention to sustainability, in terms of the materials, manufacturing processes, packaging and recycling. Last but not least of the design philosophy’s approach features is ‘digital design’. That is *Nokia’s* most advanced design practice, as compared with other companies. In line with that orientation, *Nokia* has developed online applications such as Sports Tracker and Nokia Beta Lab in order to collect customers’ ideas from around the world.

On a larger scale, Beta Labs is an initiative that enables direct connection between customers and partners in innovation. *Nokia* Beta Labs’ web platform allows users to share and rate applications they have created such as screen-savers or games. Over the last year, *Nokia’s* designers have been so far as to ask users to draw the cell phones of their dreams. Not only did they gather ideas through internet but complemented the approach by a large world tour which visited the cities of Mumbai, Rio de Janeiro, and Accra in

Ghana. Indeed, since more than half the world's population will live in urban areas by end 2008, understanding city inhabitants' desires in terms of mobile uses is a strategic issue.

1. Discuss how Nokia successfully applies user-generated design innovation in its products. **(5 Marks)**
2. What do you think is the role of innovation in the success of Nokia? Explain. **(5 Marks)**
3. Explain the process of identifying customer needs in the product development process from Nokia's viewpoint. **(5 Marks)**
4. Critically evaluate the case and suggest future strategies for Nokia. **(5 Marks)**

Attempt Any FOUR from the Remaining SIX Questions

Q2) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- a) Write short notes on a) Technology-Push Products b) Platform Products
- b) What is the importance of organization structure in the product development organization?
- c) How does competitive strategy define the organization's basic approach to markets and products?

Q3) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- a) Explain the product development process.
- b) What are the factors to be considered while determining the timing and sequence of the product development projects?
- c) What is the importance of identifying customer needs in the product development process?

Q4) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- a) Explain the phases of the generic development process in brief.
- b) What are product specifications? Explain the process of establishing target specifications.
- c) What are the seven steps involved in the concept testing method?

Q5) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- a) Explain the concept generation method in detail.
- b) Write short notes on a) Delayed Differentiation b) Platform Planning
- c) What is design for manufacturing? Give an overview of the DFM process.

Q6) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- a) What steps are involved in the concept screening stage of the concept selection process?
- b) What is a Prototype? What are the various types of prototypes? What are they used for?
- c) Explain the cross functional role of marketing, manufacturing and engineering in the product development process.

Q7) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- a) What is product architecture? Explain the various types of product architectures.
- b) What is industrial design? Discuss the need for industrial design.
- c) What are the principles of prototyping?