Innovation-IPR-Entrepreneurship Sessional – 1 Questions

Essays:

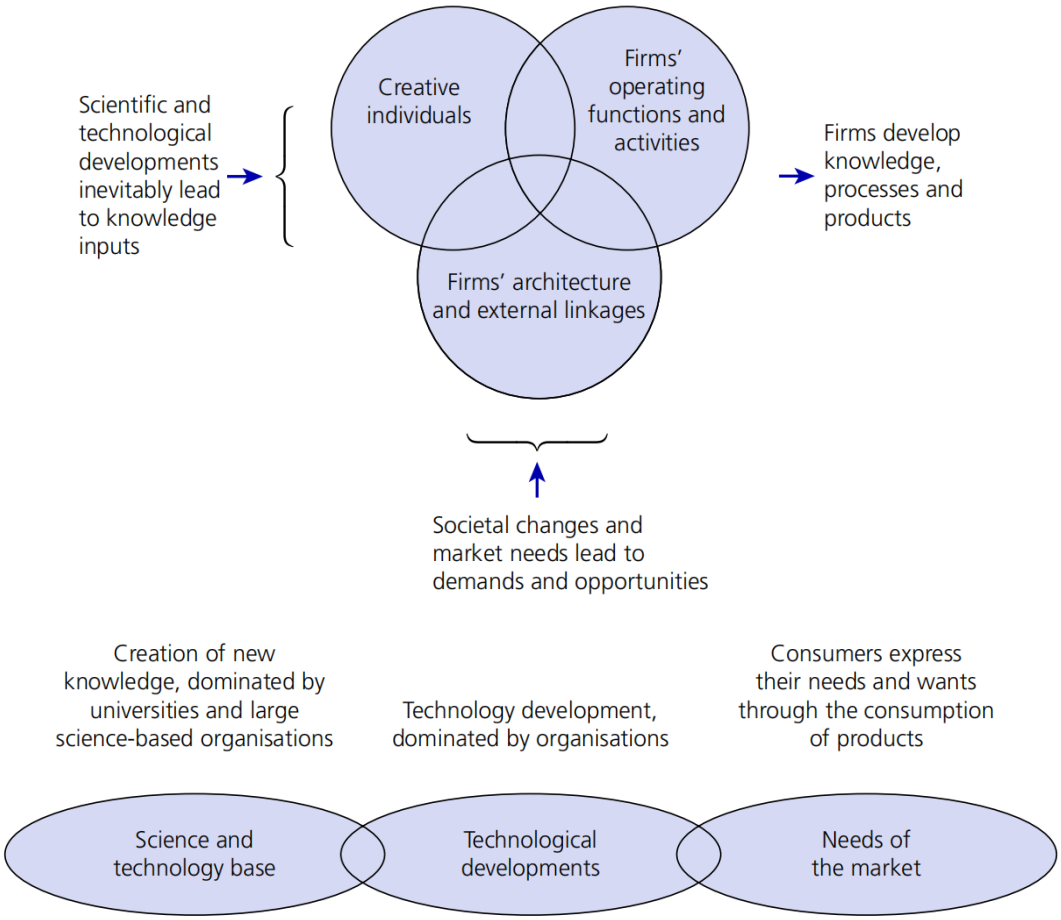
Unit – 1:

1. Explain the process from idea to enterprise.

Innovation needs to be viewed as a process. If one accepts that inventions are new discoveries, new ways of doing things, and that products are the eventual outputs from the inventions, that process from new discovery to eventual product is the innovation process.

The varying emphasis placed by different disciplines on explaining how innovation occurs is brought together in the framework in Figure. This overview of the innovation process includes an economic perspective, a business management strategy perspective and organisational behaviour, which attempts to look at the internal activities. It also recognises that firms form relationships with other firms and trade, compete and cooperate with each other. It further recognises that the activities of individuals within the firm also affect the process of innovation.

Each firm's unique organisational architecture represents the way it has constructed itself over time. This comprises its internal design, including its functions and the relationships it has built up with suppliers, competitors, customers, etc. This framework recognises that these will have a considerable impact on a firm's innovative performance. So, too, will the way it manages its individual functions and its employees or individuals. These are separately identified within the framework as being influential in the innovation process.



2. Explain the importance of innovation in your view.

Corporations must be able to adapt and evolve if they wish to survive. Businesses operate with the knowledge that their competitors will, inevitably, come to the market with a product that changes the basis of competition. The ability to change and adapt is essential to survival. But can firms manage innovation? The answer is certainly yes, as Bill Gates confirmed in 2008: "The share price is not something we control. We control innovation, sales, and profits."

Today, the idea of innovation is widely accepted. It has become part of our culture—so much so that it verges on becoming a cliché. But even though the term is now embedded in our language, to what extent do we fully understand the concept? Moreover, to what extent is this understanding shared? A scientist's view of innovation may be very different from that of an accountant in the same organisation.

The Apple Inc. story "Apple Watch app designers scramble ahead of launch" puts into context the subject of innovation and new product development. In this case, Apple's launch of a new product in the mobile phone market will help Apple generate increases in revenue and grow the firm. Innovation is at the heart of many companies' activities. But to what extent is this true of all businesses? And why are some businesses more innovative than others?

'Not to innovate is to die', wrote Christopher Freeman (1982) in his famous study of the economics of innovation. Certainly, companies that have established themselves as technical and market leaders have shown an ability to develop successful new products. In virtually every industry, from aerospace to pharmaceuticals and from motor cars to computers, the dominant companies have demonstrated an ability to innovate. Furthermore, in The Boston Consulting Group's annual report on the world's most innovative companies, these same firms are delivering impressive growth and/or return to their shareholders.

A brief analysis of economic history, especially in the United Kingdom, will show that industrial technological innovation has led to substantial economic benefits for the innovating company and the innovating country. Indeed, the industrial revolution of the nineteenth century was fuelled by technological innovations. Technological innovations have also been an important component in the progress of human societies. Anyone who has visited the towns of Bath, Leamington and Colchester will be very aware of how the Romans contributed to the advancement of human societies. The introduction over 2,000 years ago of sewers, roads and elementary heating systems is credited to these early invaders of Britain.

3. What are the different types of innovations?

Innovation is defined as the application of knowledge. It is this notion that lies at the heart of all types of innovation, be they product, process, or service. It is also worthy of note that many studies have suggested that product innovations are soon followed by process innovations in what they describe as an industry innovation cycle.

Furthermore, it is common to associate innovation with physical change, but many changes introduced within organisations involve very little physical change. Rather, it is the activities performed by individuals that change. A good example of this is the adoption of so-called Japanese management techniques by automobile manufacturers in Europe and the United States.

Hence, technological innovation can be accompanied by additional managerial and organisational changes, often referred to as innovations. This presents a far more blurred picture and begins to widen the definition of innovation to include virtually any organisational or managerial change. Table shows a typology of innovations.

Type of innovation	Example
Product innovation	The development of a new or improved product
Process innovation	The development of a new manufacturing process such as Pilkington's float glass process
Organisational innovation	A new venture division; a new internal communication system; introduction of a new accounting procedure
Management innovation	TQM (total quality management) systems; BPR (business process re-engineering); introduction of SAPR3*
Production innovation	Quality circles; just-in-time (JIT) manufacturing system; new production planning software, e.g. MRP II; new inspection system
Commercial/marketing innovation	New financing arrangements; new sales approach, e.g. direct marketing
Service innovation	Internet-based financial services

Unit – 2:

1. What do you mean by a New Product? Classify New Products.

According to Musselman and Jackson: "A product is said to be a new product when it serves an entirely new function or makes a major improvement in a present function."

According to Kotler: "New product mean original products, improved products, modified products and new brands which are developed by the firm through its own research and development efforts and includes those products which the consumers see as new. A new product is thus perceived differently by different people."

According to Limpson and Darling: "Product development involves the adding, dropping, and modification of item specifications in the product line for a given period of time, usually one year".

Classification of New Products:

It is worthy of note, however, that only 10 per cent of all new products are truly innovative. These products involve the greatest risk because they are new to both the company and the marketplace. Most new product activity is devoted to improving existing products. At Sony, 80 per cent of new product activity is undertaken to modify and improve the company's existing products. The following classification identifies the commonly accepted categories of new product developments.

1. New-to-the-world products:

These represent a small proportion of all new products introduced. They are the first of their kind and create a new market. They are inventions that usually contain a significant development in technology, such as a new discovery, or manipulate existing technology in a very different way, leading to revolutionary new designs, such as Dyson's vacuum cleaner. Examples: Apple's iPad, 3M's Post-it Notes and Guinness's 'in-can' system.

2. New product lines (new to the firm):

Although not new to the marketplace, these products are new to the company. They provide an opportunity for the company to enter an established market for the first time. For Example: Google, Sony and Microsoft have all entered the smartphone market to compete with market leaders Apple and Samsung.

3. Additions to existing lines (line additions):

This category is a subset of new product lines above. The distinction is that, whilst the company already has a line of products in this market, the product is significantly different from the present product offering, but not so different that it is a new line. The distinction between this category and the former is one of degree. Example: Hewlett-Packard's colour ink-jet printer was an addition to its established line of ink-jet printers.

4. Improvements and revisions to existing products:

These new products are replacements of existing products in a firm's product line. Example: Hewlett-Packard's ink-jet printer has received numerous modifications over time and, with each revision, performance and reliability have been improved.

5. Cost reductions:

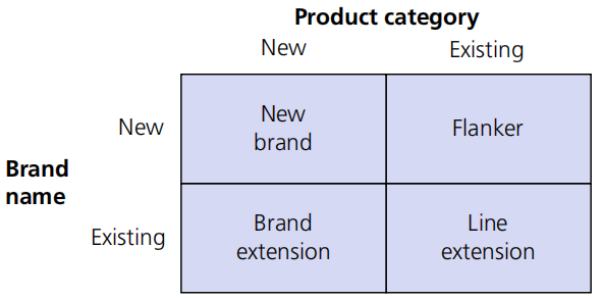
This category of products may not be viewed as new from a marketing perspective, largely because they offer no new benefits to the consumer other than possibly reduced costs. The difference between this category and the improvement category is, simply, that a cost reduction may not result in a product improvement.

6. Repositioning:

These new products are, essentially, the discovery of new applications for existing products. This has as much to do with consumer perception and branding as technical development. This is, nonetheless, an important category. Following the medical science discovery that aspirin thins blood, for example, the product has been repositioned from an analgesic to an over-the-counter remedy for blood clots and one that may help to prevent strokes and heart attacks. In practice, most of the projects in a firm's portfolio are improvements to products already on the market, additions to existing lines (line extensions) and products new to the firm, but already manufactured by competitors (new product lines).

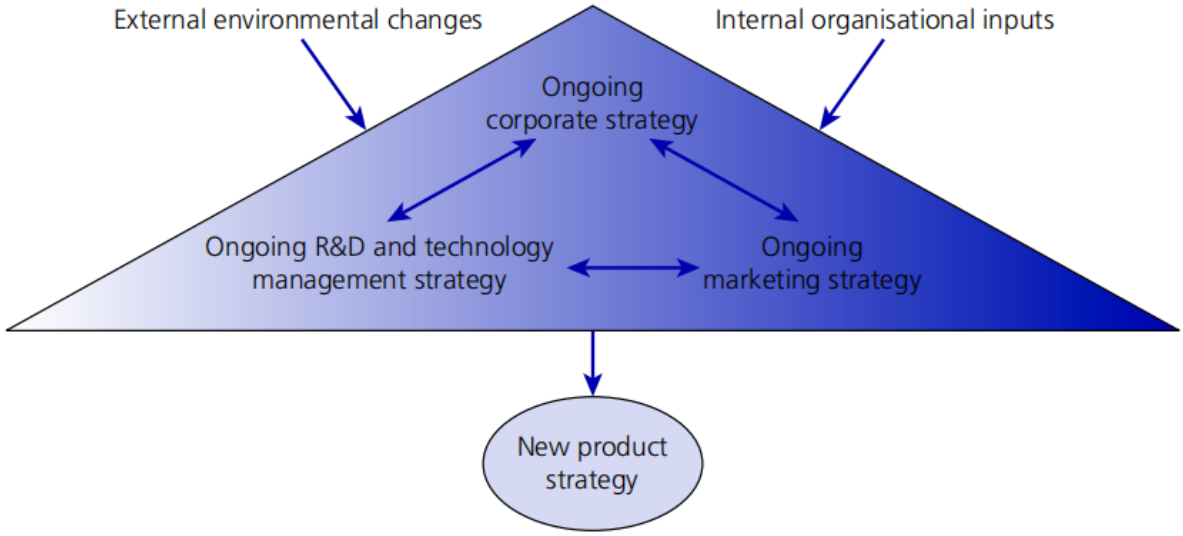
7. Repositioning and brand extensions:

The concepts of brand extension and repositioning appear as two distinct elements within classifications of new product development. When it comes to brand extension Tauber's growth matrix categorizes a firm's growth opportunities using two different dimensions: product category and brand name used.



2. Explain the considerations while developing New Product Development strategy.

It is more useful to view the new product development process as a series of linked activities. It should be clear that establishing a direction for a business and the selection of strategies to achieve its goals form an ongoing, evolving process that is frequently subject to change. This is particularly evident at the product strategy level. The process of product strategy is the creative process of recognizing genuine business opportunities that the business might be able to exploit. It is commonly referred to as 'opportunity identification'.



1. Ongoing corporate planning:

In large organizations this can be a very formal activity involving strategic planners and senior managers with responsibility for setting the future direction of the business. In smaller organizations this activity may be undertaken by the owner of the business in an informal, even ad hoc way. For many businesses it is somewhere in the middle of these two extremes. The effects of any corporate planning may be important and long term. For example, the decision by a sports footwear manufacturer to exit the tennis market and concentrate on the basketball market due to changing social trends will have a significant impact on the business.

2. Ongoing Market planning:

Decisions by market planners may have equally significant effects. For example, the realization that a competitor is about to launch an improved tennis shoe that offers additional benefits may force the business to establish five new product development projects. Two of these projects may be established to investigate the use of new materials for the sole, one could be used to develop a series of new designs, one could look at alternative fastenings and one could be used to reduce production costs.

3. Ongoing technology management:

In most science- and technology-intensive industries, such as the pharmaceutical and computer software industries, this activity is probably more significant than ongoing market planning. Technology awareness is very high. The continual analysis of internal R&D projects and external technology trawling will lead to numerous technical opportunities that need to be considered by the business. Say that a recent review of the patent literature has identified a patent application by one of the company's main competitors. This forces the business to establish a new project to investigate this area to ensure that it is aware of any future developments that may affect its position.

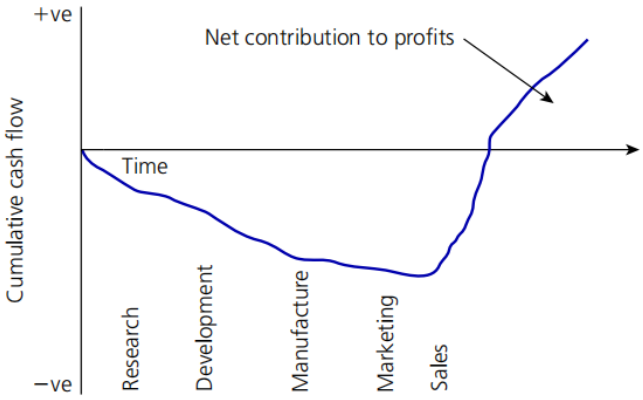
4. Opportunity analysis/serendipity:

In addition to the inputs that have been classified above, there are other inputs and opportunities that often are labelled miscellaneous or put down to serendipity. Discoveries may not be expected, but in the words of Louis Pasteur, 'chance favours the prepared mind'.

3. Explain New Product Development as an industry innovation cycle.

The early stages of the new product development process are most usually defined as idea generation, idea screening, concept development and concept testing. They represent the formation and development of an idea prior to it taking any physical form. In most industries, it is from this point onwards that costs will rise significantly. It is clearly far easier to change a concept than a physical product. The subsequent stages involve adding to the concept as those involved with the development (manufacturing engineers, product designers and marketers) begin to make decisions regarding how best to manufacture the product, what materials to use, possible designs and the potential market's evaluations. The organisational activities undertaken by the company as it embarks on the actual process of new product development have been represented by numerous different models. These have attempted to capture the key activities involved in the process, from idea to commercialisation of the product. The representation of these tasks has changed significantly over the past 30 years. For example, the pharmaceutical industry is dominated by scientific and technological developments that lead to new drugs; whereas the food industry is dominated by consumer research that leads to many minor product changes.

Consequently, this simple linear model is ingrained in the minds of many people. This is largely because new product development is viewed from a financial perspective where cash outflows precede cash inflows. This graph shows the cumulative effect on cash flow through the development phases, from the build-up of stock and work in progress in the early stages of production, when there is no balancing in-flow of cash from sales, to the phase of profitable sales that bring the cash in-flow.



Virtually all those involved with the development of new products dismiss such simple linear models as not being a true representation of reality. More recent research suggests that the process needs to be viewed as a simultaneous and concurrent process with cross-functional interaction. For the reasons outlined above, the different perspectives on NPD have produced a wealth of literature on the subject. In addition, the subject has attracted the attention of many business schools and business consultants, all interested in uncovering the secrets of successful product development. Numerous research projects have been undertaken, including in-depth case studies across many industries and single companies and broad surveys of industries.

As a result, research on new product development is varied and fragmented, making it extremely difficult to organise for analysis. Brown and Eisenhardt (1995) produced a highly regarded review of the literature. In their analysis, they identify three main streams of literature, each having its own strengths and limitations. These streams have evolved around key research findings and, together, they continue to throw light on many dark areas of new product development. Slater et al. (2014) offer a more recent literature review of radical new product development.

Whilst this is an important development and a useful contribution to our understanding of the subject area, it offers little help for the practising manager on how he or she should organise and manage the new product development process. An analysis of the models that have been developed about new product development may help to identify some of the activities that need to be managed.

Shorts:

1. Define innovation.

Innovation means solving real-world problems using technology, leading to progress and change in development.

2. List the three categories of prototype products.

- Innovation problem—Existing solution
- Existing problem—Innovation solution
- Innovation problem—Innovation solution

3. Define innovation process management.

Innovation Process Management (IPM) is a systematic approach to nurturing the creative capabilities of employees and creating a workplace environment that encourages new ideas for workflows, methodologies, services, or products.

4. Define innovation management.

Innovation management refers to the process of managing and directing the various activities involved in creating and implementing new ideas, products, or services within an organization. It encompasses a wide range of activities, including ideation, research and development, product design, testing, commercialization, and marketing.

5. Which tool is used to calculate your solution worth?

Product Innovation Rubric (PIR) is used to calculate your solution worth.

6. State the importance of innovation in startups.

Innovation is important for startups as it provides a competitive advantage and enables them to meet customer needs more effectively, leading to increased growth and success.

7. Define commercialization.

Commercialization refers to the process of introducing a new product or service to the market and making it available for purchase by customers.

8. Abbreviate MVP and NDP.

- MVP—Minimum Viable Product
- NDP—Net Domestic Product

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