FYBBA-SEMESTER-II

Unit 1: MANAGEMENT FOR INNOVATION

Meaning –characteristics - Importance –Process of Innovation – Principles of innovation – Models (Interactive, Simultaneous, Linear & Serendipity models)

MEANING

Innovation comes from the Latin *innovationem*, noun of action from *innovare*.

The Etymology Dictionary further explains *innovare* as dating back to 1540 and stemming from the Latin *innovatus*, pp. of innovare "to renew or change," from in- "into" + novus "new".

Innovation can therefore be seen as the process that renews something that exists and not, as is commonly assumed, the introduction of something new. Furthermore this makes clear innovation is not an economic term by origin, but dates back to the middle Ages at least. Possibly even earlier.

What does "Innovation" really mean?

The term "innovation"— along with its shopworn adjective, "innovative" and it's breathless verb, "innovate!"- has become the rallying cry of every product manager, the pursuit of every design consultant, the auto complete of every press release writer. The word's been wrapped around everything from the Apple iPod to a new template in Microsoft Word. So how can one term be used to describe such vastly different things?

In essence, what does "innovation" really mean?

Technically, "innovation" is defined merely as "introducing something new;" there are no qualifiers of how ground-breaking or world-shattering that something needs to be—only that it needs to be better than what was there before. And that's where the trouble starts when an organization requests "innovation services" from a consulting firm. Exactly what are they really requesting? The fact is, innovation means different things to different people

The central meaning of innovation thus relates to renewal. For this renewal to take place it is necessary for people to change the way they make decisions, they must choose to do things differently, make choices outside of their norm.

Schumpeter seems to have stated that *innovation changes the values onto which the system is based*. So when people change their value (system) the old (economic) system will tumble over to make room for the new one. When that happens innovation has occurred. So innovation must be seen as something that *does* not something that *is.*

On a lower level, innovation can be seen as a change in the thought process for doing something, or the useful application of new inventions or discoveries. It may refer to incremental, emergent, or radical and revolutionary changes in thinking, products, processes, or organizations.

Following Schumpeter, contributors to the scholarly literature on innovation typically distinguish between invention, an idea made manifest, and innovation, ideas applied successfully in practice. In many fields, such as the arts, economics and government policy, something new must be substantially different to be innovative. In economics the change

must increase value, customer value, or producer value. The goal of invention is positive change, to make someone or something better. Invention and introduction of it that leads to increased productivity is the fundamental source of increasing wealth in an economy.

Innovation is an important topic in the study of economics, business, entrepreneurship, design, technology, sociology, and engineering. Colloquially, the word "innovation" is often synonymous with the output of the process. However, economists tend to focus on the process itself, from the origination of an idea to its transformation into something useful, to its implementation; and on the system within which the process of innovation unfolds. Since innovation is also considered a major driver of the economy, especially when it leads to new product categories or increasing productivity, the factors that lead to innovation are also considered to be critical to policy makers. In particular, followers of innovation economics stress using public policy to spur innovation and growth.

In the organizational context, innovation may be linked to changes in efficiency, productivity, quality, market share, etc. can all be affected positively or negatively by innovative forces. All organizations can innovate, including for example hospitals, universities, and local governments. Some will flourish under its influence. Other will die.

So as innovation typically changes value, innovation may also have a negative or destructive effect as new developments clear away or change old organizational forms and practices. Organizations that do not compensate effectively for innovative forces (mainly from outside) may be destroyed by those that do. Hence managing an organization typically involves risk. A key challenge in management is maintaining a balance between the current processes and business model.

Distinguishing from invention

Invention is the embodiment of something new. While both invention and innovation have "uniqueness" implications, innovation is related to acceptance in society, profitability and market performance expectation. An ’invention’ is an idea, a sketch or model for a new or improved device, product, process or system. It has not yet entered to economic system, and most inventions never do so.

An ’innovation’ is accomplished only with the first commercial transaction involving the new product, process, system or device. *It is part of the economic system.*

Innovation, like many business functions, is a management process that requires specific tools, rules, and discipline." From this point of view emphasis is moved from the introduction of specific novel and useful ideas to the general organizational processes and procedures for generating, considering, and acting on such insights leading to significant organizational improvements in terms of improved or new business products, services, or internal processes.

An improvement on an existing form or embodiment, composition or processes might be an invention, an innovation, both or neither if it is not substantial enough. According to certain business literature, an idea, a change or an improvement is only an innovation when it is put to use and effectively causes a social or commercial reorganization.

In business, innovation can be easily distinguished from invention. Invention is the conversion of cash into ideas. Innovation is the conversion of ideas into cash. This is best described by comparing Thomas Edison with Nikola Tesla. Thomas Edison was an innovator because he made money from his ideas. Nikola Tesla was an inventor. Tesla spent money to

create his inventions but was unable to monetize them. Innovators produce market and profit from their innovations. Inventors may or may not profit from their work.

"Innovation . . . is generally understood as the successful introduction of a new thing or method . . . Innovation is the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes, or services.

"Innovation is the multi-stage process whereby organizations transform ideas into new or improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace."

Innovation typically involves creativity, but is not identical to it: innovation involves acting on the creative ideas to make some specific and tangible difference in the domain in which the innovation occurs.

"All innovation begins with creative ideas . . . We define innovation as the successful implementation of creative ideas within an organization. In this view, creativity by individuals and teams is a starting point for innovation; the first is necessary but not sufficient condition for the second".

For innovation to occur, something more than the generation of a creative idea or insight is required: the insight must be put into action to make a genuine difference, resulting for example in new or altered business processes within the organization, or changes in the products and services provided.

Joseph Schumpeter defined economic innovation as –

- The introduction of a new good — that is one with which consumers are not yet familiar — or of a new quality of a good.
- The introduction of a new method of production, which need by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially.
- The opening of a new market, a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before.
- The conquest of a new source of supply of raw materials or half-manufactured goods, again irrespective of whether this source already exists or whether it has first to be created.
- The carrying out of the new organization of any industry, like the creation of a monopoly position or the breaking up of a monopoly position.

Innovation is commonly defined as "the introduction of something new" or "a new way of doing something". Peter Drucker said "Innovation is change that creates a new dimension of performance." Many successful innovations improve on an existing product to make it faster, cheaper, or more efficient. Other valuable innovations apply procedures and systems from one industry to another. An innovation can result in a new product or an enhancement of an existing product - such as adding a new feature to the product.

For example, Henry Ford is not credited with inventing the car nor did he invent the assembly line. His innovation was to change the way cars were built by applying a moving assembly line (already in use in a different industry) to the automobile manufacturing process. Thus, Ford's innovation was the combination of an existing product (cars) with an existing

procedure (the assembly line). The moving assembly process developed by Henry Ford allowed individual workers to perform specific tasks while the vehicles moved along the assembly line, which greatly improved efficiency. This assembly process also reduced the time required to build each car, increased vehicle production levels and reduced the cost to manufacture each car. Ford's innovation of bringing the moving assembly line to the automotive industry allowed the company to sell more vehicles at a significantly lower cost, which distinguished it from other companies in the market that used less efficient manufacturing techniques.

Innovation is not limited to technology-based companies. Businesses of all sizes in any industry can benefit from creative thinking and business innovations. Many companies apply innovations to their internal procedures to streamline operations and reduce operating expenses. Other companies apply techniques from other industries to improve their own internal operating procedures.

Innovation is about solving problems and addressing unmet needs in the marketplace. New innovations address those problems or unmet needs by "introducing something new" (a new product or service) or "finding a new way of doing something" that solves the problem or meets the particular need. The first step in innovation is identifying those problems or unmet needs, and then developing desirable solutions.

To get started, spend some time brainstorming about ways to innovate your business' products or procedures. Is there a particular unmet need in your own market that your company can fill? Are there procedures in other industries that can be adapted to your business to improve operations? After you identify several potential solutions, record your answers for future reference.

IMPORTANCE

Why you have to innovate

- Advancing technology
- Changing environment
- Changing industrial structures and strategies
- Evolving society
- Evolving customer desires
- Competitors improve their products, processes and services
- Customers stop buying your old products and services so you need to replace them and add new products and services

Innovation happens in every industry:

From new industries such as genetic engineering, electronics and telecommunications through automotive and aerospace to old industries such as shipbuilding and mining.

What happens if you don't innovate

- Customers stop buying your products, processes and services
- Sales drop

- Revenues drop
- Shareholder returns drop
- Stock price drops
- Key employees leave
- More customers stop buying your products, processes and services
- Sales drop

Why innovation is becoming more important

- Technology is changing fast, new products come from new competitors
- Fast changing environment, product lifetimes shorter, need to replace products sooner
- Products are increasingly difficult to differentiate
- Customers are more sophisticated, segmented and demanding, and expect more in terms of customization, newness, quality and price
- Customers have more choice
- New technologies no-one understands
- Apparently separate technologies come together
- Markets forming and changing fast
- With markets and technology changing fast, and good ideas quickly copied, there is continual pressure to devise new and better products, processes and services faster

NEED

Why We Need INNOVATION

This century has been full of innovation. New technologies, new products, new services, whole new industries have emerged. Yet the call for innovation in business has never been more intense. Why? Here is my list of the top ten reasons for why we need innovation.

- For economic growth : This is the most often cited reason for needing innovation. Innovation is the route to economic growth. Industries are maturing. Products are maturing. Innovation is the creation and transformation of new knowledge into new products, processes, or services that meet market needs. As such, innovation creates new businesses and is the fundamental source of growth in business and industry.

- For the progression of human well-being : This may be the least cited reason for needing innovation but perhaps the most important result of achieving innovation. As given in POINT, innovation creates new businesses. As such and at the same time, new businesses create new jobs. For reasons obvious, new jobs create personal income and thereby provide the where-with-all for achieving the personal well-being of humans.

Innovative new products are essential to the progress of any society. Imagine if we had not progressed beyond stone-age tools and implements: we might go home tonight and do a load of laundry by banging our socks with a big stone in the neighborhood stream. New

Products respond to the wants and needs of the populace and stimulate higher standards of living. The processes of developing new products provide employment and economic well-being for those directly associated with them and for persons employed in supporting

industries. Thus, when innovation processes are properly managed (the proper management of innovation processes is the subject of another discourse), an expanding variety of new products stream forth. These products respond to the changing needs of a society whose welfare is constantly increasing.

- For competitive advantage: Companies that use and act on their insights get a jump on the competition. They are the competition. They leave behind those that are lulled by the security of strong, enduring economic performance and the conventional corporate wisdom that stays the course. Often, the leader loses. The battle is swift; it's too late to respond. This is not a theory. It is fact.

- Because cost-cutting is not enough anymore: Profit = revenue cost. The profit equation shows that for profits to grow, or even be maintained, you've got to manage cost, even reduce it. It is the most obvious way to grow profits. And companies have been doing this: with technology; by downsizing; through re-engineering. While U.S. companies have been very good at squeezing the last ounces of efficiency out of their organizations and work processes, and while companies have pared their costs to the bone, many are looking anorexic. These practices simply allow you to stay in the game, to stay in the business. They alone are not enough.

- Desire for higher business revenues: On the same side of the profit equation as cost is the revenue term. It is the most often neglected term, but it takes only a little insight to see that profits can be increased by increasing revenue. With costs reaching bottom and few opportunities to reduce them further, companies can turn to increasing sales. Marketing innovations come to mind here and do well to sell more of what you have to sell. But new products and services bring in new revenues too. Innovation sells.

- To take advantage of opportunity: It is no surprise that surprises, often disappointing surprises, are the seeds of innovation. Take the oil companies. It is no surprise that some oil companies are becoming oil-and gas companies. Why? - Because gas is found more often and in greater abundance than oil is. After the surprise and disappointment of continued gas finds, oil companies realized that opportunity might be presenting itself. With large amounts of a raw material considered to be the less desirable one, you can be sure that utilizing the abundant raw material in hand became the focus of many innovations in the oil industry.

- For a more constant flow of innovation: For some companies, it's feast or famine. They find themselves either scooping up the wealth of new ideas turned into new products or waiting for one to arrive or pouring money into existing operations with no visible new output. Or cutting back so hard that output is a trickle. Innovation and the deliberate systematic management thereof can even out the surges and slumps by providing a continuous stream of ideas for the innovation pipeline.

- For better returns: Innovations themselves not only break the mold (i.e., are truly novel, different, never done before), but also yield far better returns than ordinary business ventures.

- INNOVATION AS A PROCESS

- The eight steps of Innovation Process Management

- With the growing popularity of innovation initiatives, ever more companies are launching their own actions. However, many are going forward in a piecemeal fashion, running a brainstorming event here, trying out an ideas campaign there and promoting innovation in vague ways in marketing communications. Such an approach works, somewhat, but it is not ideal.

- The best approach is to have a comprehensive innovation process management (IPM) structure that treats innovation as a series of cycles that run within a grand, enterprise innovation process cycle.

- The Innovation Process Cycle: *An innovation process cycle combines creative problem solving (CPS) with scientific peer review evaluation and some typical business tools.*

- 1) The Challenge: The cycle starts with a problem or goal which needs to be formulated into an innovation challenge. Once this is done, the challenge is presented to the problem solving group. This may be done in the form of a brainstorming event, ideas campaign or other activity. The group problem solving group may be a team, all employees in the firm, the public or any other group of people.

- 2) Collaboration: In order to maximise the creative potential of the problem solving group, the idea generation activity should be collaborative in nature. This can be accomplished in many ways. Idea management and innovation process management software often provides on-line collaboration tools, while facilitators of brainstorming and other ideation events should promote collaborative idea development.

- 3) Combination: Because an innovation process cycle starts with a challenge, ideas tend to be interrelated and many are complementary. Hence, before going further, it is best to combine such complementary ideas into larger, more sophisticated ideas so that they can be handled as a single package. This makes the next steps in the cycle more efficient.

- 4) Scientific Peer Review Evaluation: Here is where a lot of innovation initiatives break down: choosing the best ideas. Many poorly thought out approaches use voting, which is a good way to identify the most popular idea, but an appallingly ineffective method for identifying the most potentially innovative idea. I have also seen organisations put a great deal of effort into idea generation, leaving the final decision to a manager who basically picks out her favourite idea. Assuming the manager has suitable business expertise, such an approach is better than voting – as it is based on expertise rather than popularity – but it is typically far from perfect.

- The scientific approach of peer review by expert, on the other hand, is ideally suited for identifying the most promising ideas in a cycle. Instead of basing selection on popularity (can you imagine Einstein sending his special theory of relativity to the public for a vote in order to determine its validity?) or the whim of a manager, you apply a set of business criteria to the idea and rank how well the idea meets each criterion. If an idea achieves a sufficiently high ranking, either as is or through additional modification, it should be developed further.

- 5) Testing and Development: Ideas identified as being potential innovations are now ready to be tested and developed. Here is where typical business tools come in useful.

A business case is a useful means of hypothetically implementing an innovative idea and projecting the potential results. Of course it is not perfect, but it indicates possible issues in the implementation of the idea, as well as benefits that may not have been obvious to the original idea developers.

- Prototypes are an excellent means for testing ideas. Not only do they allow you, your colleagues, customers and others to see how an idea would actually look in implementation, but building and playing with a prototype is a good method of further improving upon the core idea. Prototypes are, of course, ideally suited towards material ideas such as new products. But more abstract ideas, such as new services, process improvements and other concepts can often be prototyped through role-play, building structural models and making diagrams.
- 6) Implementation: Ideas that make it through testing and development are ready to be implemented. Unless the idea is a radical change from your usual activities, you don't need me to tell you how to do this!
- 7) Review: Once ideas have been implemented, they need to be reviewed, probably against an ongoing series of milestones. If an implementation does not achieve a milestone, it needs to modified or killed. Moreover, even the most spectacularly effective and profitable breakthrough innovations need to be improved on a regular basis.
- 8) New Needs and Inspiration: Hence, reviewing the implementation of new ideas should indicate new needs which can be transformed into challenges which, in turn, start a new innovation process cycle. Likewise, implementations can inspire new corporate goals. Again, these can be turned into new challenges and new cycles. Integrated Innovation Process Management
- An innovative company, however, should not have a single innovation process cycle in operation. Rather it should have many of them! Large cycles are suitable for enterprise-wide innovation. Meanwhile, business units can run somewhat smaller innovation process cycles in order to manage their own ideas (although it should be noted, collaborative groups need not be limited to employees of that business unit). Teams, departments and any other group can also run their own innovation process cycles.
- However, these innovation process cycles should not be in isolation. Rather they should inspire and feed other cycles elsewhere in the organisation. For instance, the implementation of a new product idea should inspire innovation cycles in the marketing, sales and customer service divisions as well as at the enterprise level.
- Managers should watch their colleagues' innovation process cycles and ruthlessly copy ideas as inspirations for their own cycles.
- The Result: a Highly Innovative Organisation: By applying innovation process management across your entire organisation, you can transform it into one which is innovation driven. And that is a sure way to keep well ahead of the competition, survive this financial crisis and make your firm a great place to work. Is there anything more you could possibly want from work?

PRINCIPLES:

- Innovation starts when people convert problems to ideas : New ideas are born through questions, problems and obstacles. The process of innovation is indebted to the trouble that comes about when we are surrounded by that which is not solved, not smooth and not simple. Therefore, in order for the innovation process to flourish, it needs a climate that encourages inquiry and welcomes problems.

- Innovation needs a system: All organizations have innovation systems. Some are formal, designed by the leadership, and some are informal, taking place outside established channels. Informal channels are untidy and inefficient, yet innovation is always associated with them.

- Passion is the fuel, and pain is the hidden ingredient : Ideas do not propel themselves; passion makes them go. Passion, in addition to talent and skill, is a valuable company asset. Passion is what transforms other resources into profits, but it never shows up on a balance sheet. Unfortunately, there seems to be some universal law that says when pursuing a passion or following a dream, pain is part of the process. Innovation leaders need to take the pain with the passion and learn to manage both effectively.

- Co-locating drives effective exchange: Co-location refers to physical proximity between people. It is a key for building the trust that is essential to the innovation process. It also increases the possibility for greater exchange of information, cross-fertilization of ideas, and stimulation of creative thinking in one another and critique of ideas during their formative stage.

- Differences should be leveraged : The differences that normally divide people — such as language, culture, race, gender and thinking and problem solving styles — can be a boon to innovation. When differences are used constructively and people move beyond fear, suspicion, mistrust and prejudice, differences can be leveraged to enhance and sustain the innovation process.

Some of the other principles of innovation crystallized by the experiences of managers are:

- Analyze: purposeful, systematic innovation begins with the analysis of the opportunities. It begins with thinking through the sources of innovative opportunities.

- Conceive and Perceive: Innovation is both conceptual and perceptual. Successful innovators use both the right side and left side of their brains. They look at figures and they look at people. They work out analytically what the innovation has to be to satisfy an opportunity and then they go out and look at the customers, the users, to see what their expectations, their values, their needs are.

- Be Focused: An innovation, to be effective, has to be simple and it has to be focused. If it is not simple, it won't work. Even the innovation that creates new uses and new markets

should be directed toward a specific, clear, designed application. It should be focused on a specific need that it satisfies, on a specific end result that it produces.

- Start small: Effective innovation start small. They are not grandiose. They try to do one specific thing.
- *It may be as elementary as putting the same number of matches into a matchbox (it used to be fifty), which made possible the automatic filling of matchboxes and gave the Swedish originators of the idea a world monopoly o matches for almost half a century.*

- Aim at leadership: a successful innovation aims at leadership. It does not aim necessarily at becoming eventually a "big business". But if an innovation does not aim at leadership from the beginning, it is unlikely to be innovative enough, and therefore unlikely to be capable of establishing itself.

- Target present: Don't try to innovate for the future. Innovate for the present.
- *The first innovator who fully understood this caveat was probably Edison. Every other electrical inventor of the time began to work around 1860 or 1865 on what eventually became the light bulb. Edison waited for ten years until the knowledge became available; up to that point, work on the light bulb was "of the future." But when the knowledge became available-when, in other words, a light bulb could become "the present'-Edison organised his tremendous energies and an extraordinarily capable staff and concentrated for a couple of years on that one innovative opportunity.*

- Build on strengths: To succeed, innovators must build on their strengths. Successful innovators look at opportunities over a wide range. But then they ask, 'which of these opportunities fits me, fits this company."

- Beneficial : Innovation is an effect in economy and society. Innovation therefore always has to be close to the market, focused on the market, indeed market-driven.