# Gateway School of Business

# MANAGEMENT OF INNOVATIONS

# UNIT-1

# INNOVATIONS

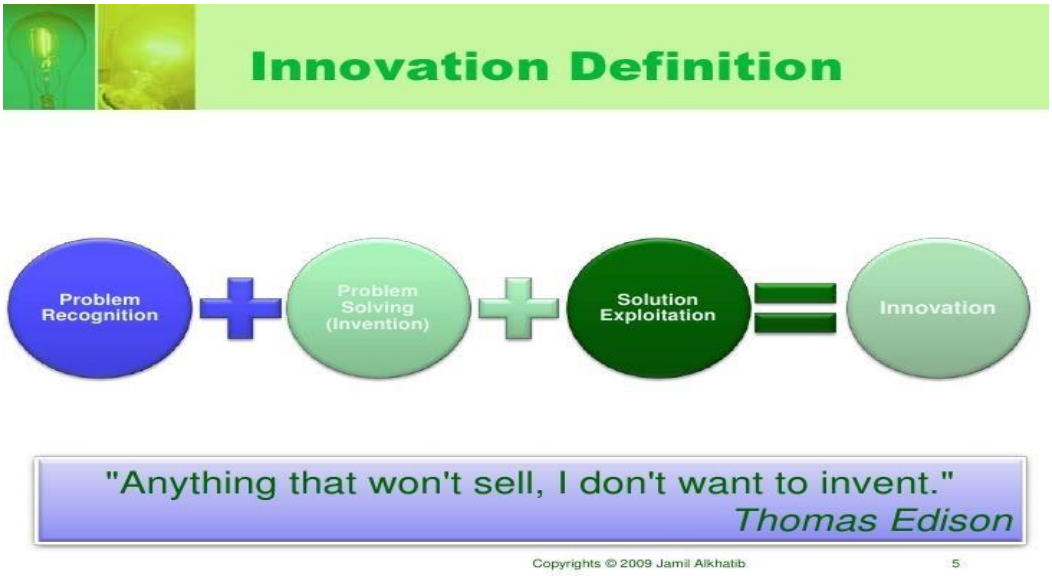
## CONCEPT OF INNOVATION

Innovation can be simply defined as a **"new idea, creative thoughts, and new imaginations** in form of device or method". However, innovation is often also viewed as the application of better solutions that meet new requirements, silent needs, or existing market needs. Such innovation takes place through the provision of more-effective products, processes, services, technologies, or business models that are made available to markets, governments and society. The term "innovation" can be defined as something **original and more effective** that "breaks into" the market or society. Innovation is related to, but not the same as, invention, as innovation is more apt to involve the practical implementation of an **invention** (i.e. new/improved ability) to make a meaningful impact in the market or society. All organizations can innovate, including hospitals, universities, and local governments. Innovation processes usually involve: identifying customer needs, macro and micro trends, developing competences, and finding financial support for new inventions and at last practically applying those inventions for better solutions.

**Innovation is:**

- New stuff
- That adds value
- For various stakeholders
- Can be monetized
- Creates a competitive advantage
- And is sustainable
- Until the advantage deteriorate


Innovation is the process of **turning opportunity into new ideas and of putting these into widely used practice**. It is the management of the entire activities involved in the process of idea generation, technology development, manufacturing and marketing of a new (or improved) product. The process of translating an idea or invention into a good or service that creates value or for which customers will pay. In business, innovation often results when ideas are applied by the company in order to further satisfy the needs and expectations of the customers.




For example, Godin (2008) defines 12 concepts of innovation which can be described as follows: A: innovation as process of doing of something new

- innovation as imitation;
- innovation as invention;
- innovation as discovery;

B: innovation as human abilities to creative activity:

- innovation as imagination;
- innovation as ingenuity;
- innovation as creativity;

C: innovation as change in all spheres of life:

- innovation as cultural change;
- innovation as social change;
- innovation as organizational change; political change; technological change;

D: innovation as commercialization of new product

**IMPORTANCE OF INNOVATION**

- **Solving problems**: Most ideas are actually derived from attempts to solve existing problems. As such, when you encourage innovation, you are opening doors for solutions to problems both within and outside your company. If your business provides services, you might realize that your customer do not have an avenue to share their opinions, complaints, and compliments. The only avenue available could be the physical office. So, to solve the problem, you could decide to operate a virtual office where customers' needs can be attended to within a short time. The customers will be happy and as a result, your sales will go higher.

- **Adapting to change**: This is especially evident in the technological world where there are rapid changes defining the business. Change is inevitable and innovation is the method to not only keep your business afloat, but also ensure that it remains relevant and profitable. With the rise in mobile phones, traditional telephone had to find ways to remain relevant. Same case with your business, when you develop an innovation culture, you remain relevant at all times.

- **Maximizing on globalization:** With markets all over the world becoming more interlinked, greater opportunities are emerging in these new markets and with that, new needs and challenges. For instance, China and India are estimated to be the leading markets, and Africa is predicted to be the next "hot spot". Therefore, if your company hopes to tap into this market share, innovation is a must to enable you to capitalize on the opportunities opening up.

- **Facing up the competition**: The corporate world is always very competitive, and with many new companies coming up, the top position in the industry is no longer a reserve of a few. To retain or establish your company's cutting edge, you can compete strategically by having a

dynamic business that is able to make strategic and innovative moves and thus cut above the rest.

- **Evolving workplace dynamics**: The demographics in the work place are constantly changing. With the new generation that has entered the market place; new trends are also coming up. Innovation is therefore critical to ensure the smooth running of the company.
- **Customers' changing tastes and preferences:** The current customer has a great variety of products and services available to him and is well informed of his choices than before. The company must therefore keep itself abreast with these evolving tastes and also forge new ways of satisfying the customer.

| BASIS FOR COMPARISON | INVENTION | INNOVATION |
|---|---|---|
| Meaning | Invention refers to the occurrence of an idea for a product or process that has never been made before. | Innovation implies the implementation of idea for product or process for the very first time. |
| What is it? | Creation of a new product. | Adding value to something already existing. |
| Concept | An original idea and its working in theory. | Practical implementation of new idea. |
| Skills required | Scientific skills | Set of marketing, technical and strategic skills. |
| Occurs when | New idea strikes a scientist. | A need is felt for a product or improvement in existing product. |
| Concerned with | Single product or process. | Combination of various products and process. |
| Activities | Limited to R & D department. | Spread across the organization. |

**DIFFERENCE BETWEEN INVENTION AND INNOVATION**

**INNOVATION MANAGEMENT**

**Innovation management** is a combination of the management of innovation processes, and change management. It refers both to product, business process,

and organizational innovation. Innovation management includes a set of tools that allow managers and engineers to cooperate with a common understanding of processes and goals. Innovation management allows the organization to respond to external or internal opportunities, and use its creativity to introduce new ideas, processes or products. It is not relegated to R&D; it involves workers at every level in contributing creatively to a company's product development, manufacturing and marketing. By utilizing innovation management tools, management can trigger and deploy the creative capabilities of the work force for the continuous development of a company. Innovation management helps an organization grasp an opportunity and use it to create and introduce new ideas, processes, or products industriously. **Creativity is the basis of innovation management;** the end goal is a change in services or business process. Innovative ideas are the result of two consecutive steps, imitation and invention. The goal of innovation management within a company is to cultivate a **suitable environment to encourage innovation.** The suitable environment would help the firms get more cooperation projects, even 'the take-off platform for business ventures. Senior management's support is crucial to successful innovation; clear direction, endorsement, and support are essential to innovation pursuits.

## HISTORIC RETROSPECTIVE OF INNOVATION

Just as humans evolve, so too does the process of innovation. Humanity is slowly getting better at it simply because our brainpower keeps growing. It would make sense that the evolutionary process would express upwards as well as downwards

If we look at humanity's slow rise from prehistory, there have been **three waves** or evolutionary acceleration. The first was the transition from **hunting**-gathering to the development of the **agricultural age**, propelled by man's ability to fashion basic tools, like hammers, spears and plows. This happened roughly a few thousand years ago. The second was **the industrial revolution,** propelled by the invention of automation, assembly lines and organized workflow and standardization. This happened a few hundred years ago. And the third is the **information revolution,** which is rapidly evolving humanity's relationship with the tools it invents, and this started a few decades ago.

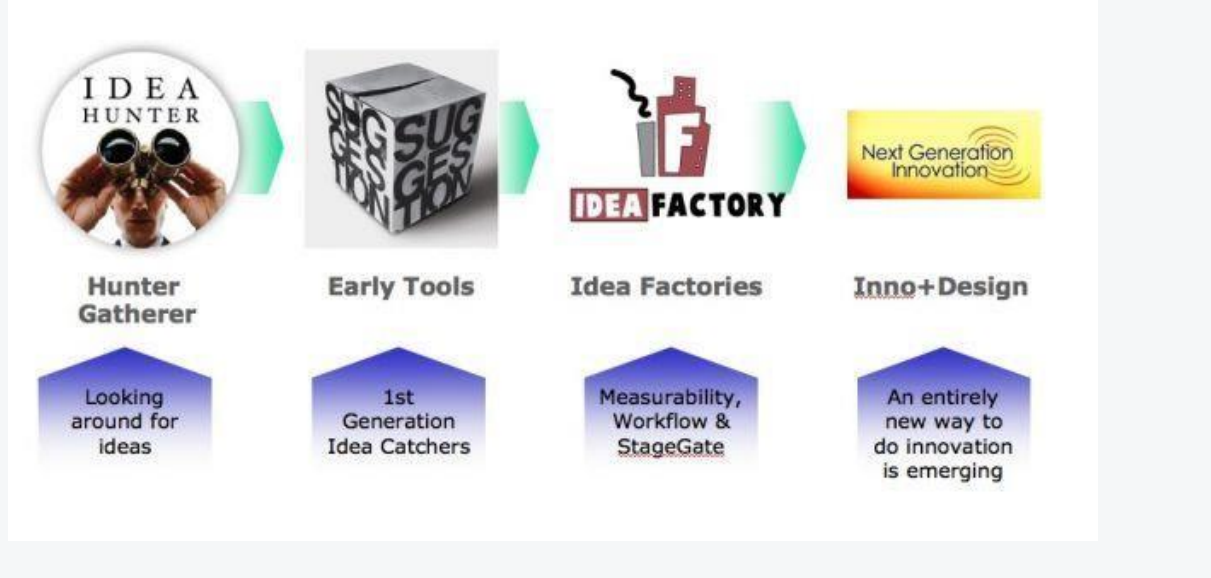
Similarly, the methods and tools of innovation have evolved in a similar fashion…


The processes and technologies that comprise the art and science of innovation have progressed in **three oddly similar phases**. In what I call the BC era, **"before computers**," innovators were equivalent to hunter gatherers of ideas.

But in the AD era, "**After Digital**," the invention of computers changed everything, in much the same way that hand tools changed cavemen. We are building brain tools now, not hand tools. **The first wave of innovation evolution came with the invention of early innovation tools – mind mappers** (A mind map is an easy way to brainstorm thoughts organically without worrying about order and structure. It allows you to visually structure your ideas to help with analysis and recall. A mind map is a diagram for representing tasks, words, concepts, or items linked to and arranged around a central concept or subject using a non-linear graphical layout that allows the user to build an intuitive framework around a central concept. A mind map can turn a long list of monotonous information into a colorful, memorable and highly organized diagram that works in line with your brain's natural way of doing things.), idea catchers, eventually we saw BBS forums(A **bulletin board system** or **BBS** (also called Computer Bulletin Board Service, *CBBS*) is a computer server running software that allows users to connect to the system using a terminal program. Once logged in, the user can perform functions such as uploading and downloading software and data, reading news and bulletins, and exchanging messages with other users through public message boards and sometimes via direct chatting.) That allowed discussions to be temporally distributed.

**The second wave of evolution** started with the deployment of innovation pipelines and stage gate technologies that allow the **production of ideas to be "industrialized" and automated. This was the era of the "idea factory,"**

At long last, a **third wave of innovation is now finally beginning**. Third wave innovation seeks not only to simplify and automate the production and processing of ideas, it aims to enable inventors to **create fundamentally better ideas**.




Every generation thinks they have the lock on innovation. However, **'innovate or die'** has been around at least since the time of the cave people (term for citizens who regularly oppose any changes in their community, organization or workplace). We should not be disturbed or upset by innovation – **just realize that every generation both creates disruptors and gets disrupted.**

**FOR EXAMPLE:**

Moving more toward our era, we can track over 100 years of innovation just looking at our family history. Our grandparents' generation was born into a time of outdoor plumbing. Our parents' generation grew up with the automobile. None of our grandparents learned to drive, too disruptive, although they purchased automobiles for their children to transport the family

Flipping over to computer technology for the baby boomer generation, we've seen the evolution from the mainframe through to the PC. In particular, the PC defined the difference between my parents and me like the automobile defined the difference between my parents and their parents. My parents never really used a PC, yet they had one in the house for us to use. In terms of what comes next, it's a bit hard to say

So the point is simply that it's been this way for millions of years. **Each generation innovates and disrupts over the previous.** Up-and-comers, have a little humility, you aren't the first. Veterans, be prepared, you're going to get disrupted, too.

## TYPOLOGY OF INNOVATION

| Type of innovation | Characteristic |
|---|---|
| Product or service innovation | A product innovation is the introduction of a product or service that is new or significantly improved with respect to its characteristics or intended uses. |
| Process innovation | A process innovation is the implementation of a new or significantly improved production or delivery method. Process innovations can be intended to decrease unit costs of production or delivery, to increase quality, or to produce or deliver new or significantly improved products. |
| Marketing innovation | A marketing innovation is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing. Marketing innovations are aimed at better addressing customer needs, opening up new markets, or newly positioning a firm's product on the market, with the objective of increasing the firm's sales. |
| Organizational innovation | Organizational innovations can be intended to increase a firm's performance by reducing **administrative costs or transaction costs**, improving **workplace satisfaction** (and thus |

| | |
|---|---|
| | labor productivity), gaining access to no tradable assets (such as non-codified external knowledge) or reducing costs of supplies. An organizational innovation is the implementation of a new organizational method in the firm's business practices, workplace organization or external relations. |

**1. Incremental innovation**

Incremental innovation seeks to improve the systems that already exist, making them better, faster cheaper.


**2. Process innovation**

Process innovation means the implementation of a new or significantly improved production or delivery method.

**3. Red ocean innovation**

Red Oceans refer to the known **market space**, i.e. all the industries in existence today. In red oceans, industry boundaries are defined and accepted, and the competitive rules of the game are known. Companies try to **outperform their rivals to grab a greater share of existing demand** usually through marginal changes in offering level and price. As the market space gets crowded, prospects for profits and growth are reduced. Products become commodities, and cutthroat competition turns the red ocean bloody.

**4. Service innovation**

Service Innovation can be defined as "a new or considerably changed service concept, client interaction channel, service delivery system or technological concept that individually, but

most likely in combination, leads to one or more renewed service functions that are new to the firm.

**5. Business model innovation**

Business Model Innovation (BMI) refers to the **creation, or reinvention, of a business itself.** Whereas innovation is more typically seen in the form of a new product or service offering, a business model innovation results in an **entirely different type of company** that competes not only on the value proposition of its offerings, but aligns its profit formula, resources and processes to enhance that value proposition, capture new market segments and alienate competitors.

**6. Sustainable innovation**

Eco-innovation is a term used to describe products and processes that contribute to sustainable development.

**7. Frugal innovation**

Frugal Innovation is **about doing more with less**. Entrepreneurs and innovators in emerging markets have to devise **low cost strategies** to either tap or circumvent institutional complexities and **resource limitations** to innovate, develop and deliver products and services to low income users with little purchasing power.

**8. Blue ocean innovation**

Blue Oceans represent the unknown market space, i.e. all the industries not in existence today. Blue oceans are defined by **untapped market space**, demand creation, and the opportunity for highly profitable growth. In blue oceans, **competition is irrelevant because the rules of the game are not set. Blue oceans can be created by expanding existing industry boundaries or by reconstructing industry boundaries.**

**10. Disruptive innovation**

A disruptive innovation is an innovation that helps **create a new market** and value network, and eventually goes on to disrupt an existing market and value network (over a few years or decades), displacing an earlier technology. **.** In a nutshell, disruptive innovation is that when the **basis of competition changes, because of technological shifts or other changes in the**

**marketplace,** companies can find they getting better and better at things people want less and less. When that happens, innovating your products won't help — you have to innovate your business model

**11. User led innovations**

The user is king. It's a phrase that's repeated over and over again as a mantra: Companies must become user-centric. But there's a problem: It doesn't work. Here's the truth: Great brands lead users, not the other way around.

**12. Supply chain innovation**

Supply chain innovation is about applying best practices and technological innovations to your own supply chain in order to **reduce such cycle and wait times and other waste** (to use a Lean term) in your in-house processes.

## INNOVATION PROCESS

### STEP: 1 IDEA GENERATION

This is the first step in an innovation process. It is where you decide on the concept that you want to develop and come up with reasons why you want to improve the idea. It is important for you to involve your employees and customers. Involving many knowledgeable people will enable you to get a better understanding of the market.

Besides, it will give you an opportunity to look at the idea in different angles. At this stage also, experts will also provide many viable ideas. There are five places where you can draw ideas for your innovation:

- ***CUSTOMER INNOVATION***

As you work on an innovation, remember that you should have your customer in mind. Your customers should be the inspiration for all innovations. Hence, consider the feedback that they give to come up with an innovative idea.

This is an important source because if you innovate something that does not meet the needs of the customer, then the innovation is likely to fall. You can get the feedback from the social

media platforms, customer feedback forms, and your employees can report to you what the customers say.

- ***EMPLOYEE INNOVATION***

Your employees relate with the customers so closely so they know their needs. Moreover, they also get first hand compliments, complains, and suggestions from the customers.

When a customer wants a service or a product, they explain to your employees so they can keep tabs on what customers want. Besides, they are in a position to identify products that are irrelevant to the customer.

When you innovate a product, your employees will be important so as to explain how a product is used to the customers. In contrast, if they do not feel as part of the innovation, they might disregard the product. As a result, they may never speak well of the product.

- ***PUBLIC INNOVATION***

Public innovation depends on information gathered from the public. The amount of feedback received through public innovation is a lot so you must have the required expertise and equipment to handle it. Public innovation produces helpful information but you have to be ready to sieve through the information to pick what is helpful.

As you consider this model, make sure you do not use it before the others: it could probably be the last model that you employ. If you have the capacity to digest the information, you could use public innovation.

- ***PARTNER/SUPPLIER INNOVATION***

You can share your thoughts and opinions with your partners and suppliers. Opening up to them helps them improve on the goods and services they supply.

A good example is wedding planners who outsource companies to provide flowers. The wedding company may have realized that the flowers wither after a short time and they look unattractive.

By sharing this information with the flower company, they can brainstorm on ways to keep the flowers looking fresh for a longer time. This innovation helps your supplier and your business. On your side, you are able to supply high quality and more improved good and services.

- ***COMPITITOR INNOVATION***

This is a very challenging but very efficient when it takes place. As a fact, competitors are very careful with the information they share but with a good strategy, you can learn a lot from your competitors.

This can only happen when you admit that there are other competent people outside your company.

However, it does not mean that your employees are not competent enough, they are competent, but listening from others can give you a different point of view concerning a matter.

STEP: 2 ADVOCACY AND SCREENING

Not every idea that is generated is worth implementing, for that reason; you must screen all the ideas presented. When screening, ensure you measure the benefits and risks of each idea to determine its viability.

Any idea that has a futuristic approach should be chosen for the next stage.

Moreover, participants in this stage develop the idea to enhance it. If an idea is not considered ideal, make sure you communicate the reasons to the person who had suggested the idea.

This is important especially if the person who shared the idea is an employee so that you encourage them to suggest more ideas even if it is in the future. For a company that wants to **instill an innovation culture**, you should take three steps at this stage;

- Ensure the evaluation and screening process takes place in a transparent way
- Create a number of avenues for employees to receive feedback and advocacy
- As an organization, you should understand that evaluating an innovative idea is a difficult assignment

**STEP: 3 EXPERIMENTATION**

At this stage, the idea is **tested using a pilot test**. The test takes place within a targeted market. As you test your product, remember you want to know if the customers will accept it, **if the**

**price is acceptable, and if they like the innovation.** The aim is to test if the idea is ideal and suitable for the company at a particular time.

Therefore, if an idea is **too complex** for the organization or it's a **premature idea**, then it should not be implemented. You should set aside premature ideas in your idea bank for a later date.

So, even if you realize that your idea has been accepted in the market and the price is affordable, you might want to hold back until you are sure the **time is right** to release it in the market. It is only through the experimentation stage that you can get this information. So, do not assume your idea is beyond reproach to the extent that the market cannot reject it.

However, note that experimentation can be a **continuous process or a one-time activity**. In some instances, the experimentation stage generates new ideas. You can generate new ideas from this stage by considering the feasibility of the original idea and by analyzing the information from the results.

Give the participating team enough time to experiment and analyze the results from the experimentation. It is at this stage where you apply for intellectual rights protection.

**STEP: 4 COMMERCIALISATION**

When you get to this stage, just know the product is ready for the market. The major work at this stage is to **persuade your target audience** that the innovation is good for them.

To do this, explain how the innovation will be of use to them, when it will be used, and demonstrate the benefits of the innovation using the prototypes. Be very specific about the idea in regards to any information that could attract customers to your idea.

**STEP: 5 DIFFUSION AND IMPLEMENTATION**

Diffusion and implementation are two different stages: diffusion is where the **company accepts the innovation and implementation is setting up everything that is needed to develop and utilize or produce the innovative idea.**

Knowledge brokers are used to diffuse the idea in an organization. The knowledge brokers communicate the specification about the idea and its usability. This information helps your

employees to understand the idea in a deeper way. After they understand it, then they implement the idea.

Diffusion and implementation requires access to production files, logistics, and market routes amongst others. For the idea to succeed, work in collaboration with industries and businesses, get into partnership and subcontract management to ensure the innovation is fully implemented. The feedback that you receive at this stage can be used to come up with future ideas.


## MACROECONOMIC VIEW OF INNOVATION

Innovation **drives economic growth**. This is one of the most consistent findings in macroeconomics, and it's been true for centuries. Economists have calculated that approximately **50% of U.S. annual GDP growth is attributed to increases in innovation.** The states and regions that lead the transformation to the knowledge- and technology-based economy currently have enormous advantages. **"Innovation driven enterprises**," which include a wider universe of entrepreneurial firms whose competitive advantage might be a **process, service, or business model**, are also an important piece of the puzzle for states wanting to foster a more innovative economy. **"Technology-based economic development**" is the approach employed by states to help create **a business climate and to enable an environment** where an economy based on innovation and technology can thrive. Innovation is about putting a new idea or approach into action. Innovation is commonly described as **'the commercially successful exploitation of ideas**

We can make a distinction between:

- Process innovation: This relates to improvements in production processes, the more **efficient use of scarce resources - leading to better productive efficiency and a rise in productivity**
- Product innovation: This is the emergence of new products which satisfy our needs and wants - **leading to improvements in the dynamic efficiency of markets**

Innovation is a stimulus **to long-run growth** because:

1. It is a catalyst(impulse) for investment which **helps to shift out the production possibility frontier (PPF)**
2. It is a spur to **productivity growth** because of its impact on technological progress
3. Innovation also creates a **demand for new products** from consumers for example in industries where existing products are nearing the end of their product life-cycle
4. Effective innovation can establish a **unique selling** proposition ("USP") for a product – something which the **customer is prepared to pay more** for. This helps businesses move up the value chain

The analysis suggests new approaches to innovations in open economies in many ways including the new monetary growth models. A specific focus is on the role of innovations **for output, employment and exchange rate developments**. Innovation driven technology-intensive businesses are viewed favorably for their potential and disproportionate impact on **competitiveness, future economic growth, and prosperity because they often**:

1. **create jobs** that command above-average salaries;
2. pay a **high percentage of their income to their employees**, rather than out-of-state capital equipment or out-of-state raw materials
3. can be located almost anywhere because of the **connective power of the Internet and improved transportation systems, particularly air travel;**
4. Create **additional quality jobs** that are not technology focused, both inside and outside the companies themselves; and serve markets that are outside the state, thereby bringing new wealth into the state.

Economic theories emphasize the critical importance of innovation in sustaining **long-run economic growth.** That the **innovation-intensive industries created highly skilled jobs,**

**had higher wages, were more productive, led exports and enhanced competitiveness** during the thick and thin of business cycles is now well established. The link between innovation and economic growth and the effect of innovation on productivity and income is examined. The raging debate on the impact of **automation** on employment is discussed. Finally, the seemingly waning influence of innovation is analyzed. Innovation is essential for **sustainable growth and economic development**. Several core conditions enable innovation and encourage economic growth. In the modern economy, innovation is crucial for **value creation, growth and employment and innovation processes take place at the enterprise, regional and national level**. Innovation will lead to **new businesses** as well as to the **increased competitiveness of existing enterprises**..

Innovation is an essential driver of economic progress that benefits **consumers, businesses and the economy as a whole.** How does it play that role, how does it contribute to economic growth and what can be done to promote it?

In economic terms, innovation describes **the development and application of ideas and technologies that improve goods and services or make their production more efficient.**

New ideas and technologies are developed and applied, **generating greater output with the same input.**

One of the major benefits of innovation is its contribution to economic growth. Simply put, innovation can lead to higher productivity, meaning that the same input generates a greater output. **As productivity rises, more goods and services are produced – in other words, the economy grows.**

Innovation usually **starts on a small scale**, e.g. when a new technology is first applied in the company where it has been developed. However, for the full benefits of innovation to be realized, it is necessary for it to spread across the economy and equally benefit companies in different sectors and of different sizes. Experts call this process the diffusion of innovation.

## APPROACHES TO INNOVATION

Innovation is the only activity that will **pull you out of the low-growth recovery** we are mired in at the moment. Existing product portfolios and markets can benefit from innovation, it says,

but the complexity of pushing the boundaries here makes the whole exercise potentially not worth the bother. The report divides innovators into four separate streams.

- Low innovators may put in the work to developing a place in the market, but they **don't go very far in peer group comparison.** They are limited in the extent to which they learn from other companies in their own industry.
- Medium innovators make **the effort and they are well-versed in their rivals' innovations**. However, they don't bother to look outside their sphere of activity. They don't look at innovative companies in other industries.
- Good innovators are **committed** to their own innovation processes, they constantly monitor innovation in their own industries and they are **starting to take leads** from other great innovators across all industries.
- Top innovators do their **innovation homework**, they keep tabs on what is going on in the rest of the industry, but they put **as much weight on innovation** across all industries, taking a holistic view of where they draw inspiration from.

Whatever level of innovation you think you are on, it's important that you identify your company's approach. The report breaks the activity out into three separate approaches to innovation **-- ideas, research and analysis-led**. These approaches have been embraced in different proportions within different vertical industries -- **consumer goods companies tend to prefer the ideas-led approach, whereas manufacturers appear to be the most reliant on analysis. Pharmaceutical companies are the most likely to use the research-driven approach.**

Just because your company is in a particular vertical market doesn't mean the most prevalent innovation approach is the best one. **It's possible to innovate in a way that rivals don't use**, but it may be more useful to **compare yourself to companies that are more likely to take a similar approach, even though they support a completely different market**.

So here's a breakdown of the three approaches, the processes that typify them and the industry's most likely to adopt them:

1. Ideas-driven innovation: This approach collects and generates a number of ideas which are filtered until **one is selected**. Once an idea is selected for development, it is seldom then discarded. The lead time for this process is **one to five years**. Organizations that adopt this

approach are often in volatile markets offering products with **short life-cycles**, such as fast moving consumer goods and telecoms services.

2. Research driven ideas: This approach collects a huge number **of ideas generated from research** which are **filtered even after a number of them is selected for development**. However, **many of these promising projects will be rejected at any stage of the development process,** up until completion. Research-driven innovators are the smallest group, as the development cycle for this approach takes **significantly longer -- up to 10 years**. Organizations that take this approach would do best to align themselves with industries such as **pharmaceuticals and oil and gas exploration.**

3. Analysis driven innovation: This approach draws **ideas in a systematic way from analysis of the market, competitors and the organization's internal capabilities**. There is a **set strategy** controlling which projects will be initiated and when. Once a project is selected for development, chances are, **it won't be discontinued**. This process typically **takes one to five years** and is favored by organizations that support shifting markets and offer products with long life-cycles, such as automotive manufacturers and **software producers**.

## ASSUMPTIONS AND BARRIERS TO INNOVATION

**The 4 Assumptions of Innovation are:**

1. Innovation as it is currently practiced is good enough.
2. Innovation is for executives.
3. Innovation is for practitioners.
4. "Innovation Planning" is an oxymoron.

### 1. Innovation as it is currently Practiced is good enough

Innovation as it is currently practiced is good enough, is a common assumption and the reality of the situation is that, "current innovation practices don't reliably deliver breakthroughs." I believe this has to do with the way companies approach the product development process. More often than not our current processes are designed to provide incremental features to existing products. Those processes break down when companies attempt to explore innovative solutions to undefined needs in rapidly changing marketplaces. Due to the ambiguous nature of

opportunities in emerging marketplaces; existing tools need to be evaluated based on the need that is trying to be fulfilled. In short, if the only tool you have in your tool belt is a hammer, everything looks like a nail.

**2. Innovation is for Executives**

Another assumption is that innovation is for executives. This assumption relates to the commonly held belief that executives **are primarily responsible for the strategy and direction a company takes therefore they must own innovation initiatives as well**. In truth, the people doing the day-to-day work that often develop innovative ideas with the products they are developing. However, they need structures and processes to help them plan and define innovation." When a team has made the decision to move forward on an innovative initiative, it must be defined with a well thought out plan on how to bring the product to the market place.

**3. Innovation is for Practitioners**

While the seed of innovative ideas often resides with the marketers, designers, researchers and engineers that develop the products for a company; **to be successful practitioners must work with executives**."The designers and technologist developing new offerings must **not only know how to innovate on a tactical level**, they must also comprehend the strategic objectives and wider implications of their work." For a product to be truly innovative in an emerging marketplace, practitioners and executives must both have an understanding of the strategic and tactical business decisions. They must work together to develop a plan.

**4. "Innovation Planning" is an Oxymoron (two words used together that have opposite meanings)**

Product development often involves documents detailing the business requirements, specifications and objectives outlining the scope, measures and criteria of success. The commonly held belief that innovative products are produced purely out of "**out-of-box** thinking" which leads to the final assumption of "innovation planning" is an oxymoron. **Very few companies can afford to invest large amounts of time and money without a measure of control. For companies to be innovative, they must develop new and structured approaches.**

**Innovation isn't magic, it's a discipline**. Asking a product team to be innovative without having the proper tools and processes in place will more than likely result in failure.

The lesson learned is that before you move forward on an innovative initiative have a plan or you may find yourself in the position of having to hire an expensive expert to clean up the mess. As the saying goes, **"If you fail to plan, you are planning to fail**."

# BARRIERS OF INNOVATION

KEY OBSTACLES TO INNOVATION

Obstacles that will need to be addressed if you expect to establish a sustainable culture of innovation:

1. Lack of a shared vision, purpose and/or strategy
2. Short-term thinking/focus
3. Lack of time, resources or staff
4. Lack of "spec time" to develop new ideas and opportunities
5. Innovation not articulated as a company-wide commitment
6. Lack of ownership by senior leaders
7. Leadership expects payoff sooner than is realistic
8. Lack of a systematic innovation process
9. Management incentives are not structured to reward innovation
10. No reward and recognition programs
11. Constantly shifting priorities
12. Belief that innovation is inherently risky
13. Internal process focus rather than external customer focus
14. Inadequate understanding of customers
15. Focus on successes of the past rather than the challenges of the future
16. Unwillingness to change in the absence of a burning platform
17. Unwillingness to acknowledge and learn from past "failures"
18. Politics – efforts to sustain the status quo to support entrenched interests
19. Rewarding crisis management rather than crisis prevention
20. Hierarchy – over-management and review of new ideas

21. Micromanagement
22. Under-funding of new ideas in the name of sustaining current efforts
23. Fear that criticizing current practices and commitments is a high-risk activity
24. Risk aversion
25. Addiction to left-brained, analytical thinking
26. Absence of user-friendly idea management processes
27. Innovation not part of the performance review process
28. Lack of skillful brainstorm facilitation
29. No creative thinking training

## SOURCES OF INNOVATION (SCIENCE AND R&D, TECHNOLOGY TRANSFER, PUSH AND PULL APPROACHES)

### A. SCIENCE & R&D

Our Nation's economic growth depends on our **capacity to educate, innovate, and build**. **Long-term national investments in basic and applied research and development (R&D) play an important role in the flow of market-based innovations** through a complex system that leverages the combined talents of scientists and engineers, entrepreneurs, business managers and industrialists. These **funds have led to everything from small entrepreneurial initiatives to growth in high technology industries** with the concomitant employment of millions of workers. The large impact on employment results from innovation impacts not only in high tech enterprises, but also other industries that benefit from increased capabilities and productivity. **Mutually reinforcing and complementary investments in R&D by both private and public sectors work in concert to support the development, production, and commercialization of new products and processes**.

Investment in R&D is not the only factor that affects the rate of and capacity for innovation. **Public policies**, including monetary policy, tax policy, standards, procurement, regulatory policy, the availability of a skilled technical workforce, and market access are also important in establishing an environment that fosters innovation. Given this critical time in our Nation's economic trajectory, careful consideration of our portfolio of innovation policies—including R&D investment practices and public policy—is needed to foster national prosperity and to increase national access to the global economy.

**How R&D and science fosters innovation?**

Innovation has long been recognized as an important driver of economic growth. Empirical research and surveys of business activities show that innovation leads to new and improved products and services, higher productivity, and lower prices. As a result, **economies that have consistently high levels of innovation also tend to have high levels of growth**.

**National investment in basic and applied research and development importantly contributes to the flow of market-based innovations in ways that can be characterized as an "innovation ecosystem**." Innovation is defined as the introduction of new or significantly improved products (goods or services), processes, organizational methods, and marketing methods in internal business practices or in the open marketplace. **R&D and other intangible investments such as investments in software, higher education, and worker training are key inputs driving innovation.** The term **"ecosystem" emphasizes complexity of the innovation process** – one that is **highly dynamic**, has many interdependencies, and is always evolving. **Transformative innovation is more likely when basic research leads to quantum steps in expanding knowledge** or through synergies when progress in **multiple areas of science or technology complement each other to provide new composite capabilities**. **These investments in basic research create the building blocks for innovation by creating a transformative knowledge base upon which the private sector can draw.**

The **relationship between R&D and innovation is highly complex**. Investment in R&D is not synonymous with innovation. Many firms introduce new products without R&D. However, it is possible to demonstrate the relationship between the amount of investment in R&D and product and process innovation for a broad cross-section of industries.

Businesses, operating in a competitive global market system, have numerous advantages in the creation and implementation of useful new ideas. **With the rise of a technology-based approach to the production of new goods and services, the organization of high-tech business has changed globally.**

Although pathways of innovation cannot be predicted, government policies have evolved that support diffusion of knowledge and deployment of new technologies as well as research and discovery. **These strategies include direct and indirect investments in basic and applied R&D and human capital development, and enacting policies that foster innovation by**

**facilitating government/academic/non-profit and industry collaborations, promoting technology transfer, and creating favorable tax, regulatory, and visa policies**.

## B. TECHNOLOGY TRANSFER

There are two significant components of innovation process**: knowledge and successful diffusion** of that knowledge resulting in new products or services being offered to customers or in other more common words – **invention and successful implementation**. Inventions are very often **made in universities and research institutes.** To turn those inventions into successful innovations they **must be transferred to organizations** with adequate marketing experience, global presence and real implementation power. This is the responsibility of technology transfer process.

In general the concept technology transfer covers not only the technology transfer from academia to industry. It is a **broad field that ranges from internal corporate technology transfer to international technology transfer.** Technology transfer can be defined as the process of sharing of or acquiring/providing/licensing **skills, knowledge, technologies, intellectual property, technology development personnel or entire teams, methods of manufacturing, samples of manufacturing and facilities among governments, companies, research institutions and other organizations to enable the accessibility of scientific and technological developments to a wider range of users who can then further develop and exploit the technology into new products, processes, applications, materials or services .**

**The ways of technology transfer** depend on **the involved parties and the reasons** behind technology transfer. They vary from acquisitions of companies through technology transfer in order to release a new product or service based on the technology acquired, to collaborations in technology transfer efforts among companies located in a cluster.

The innovation and technology transfer process tries to overcome these issues by introducing three roles that act in the field of innovation and technology transfer: **technology supplier**, **technology receiver**, and **technology transfer facilitator**. Organization can perform more than one role in innovation and technology transfer process as well as one role can be performed by more than one organization.

**1. Technology supplier**

Technology supplier organizations focus on **technology development**. Primary candidates for this role are **universities and research institutes**. The technology development process can be defined as a set of few steps: basic research, applied research and other.

**2. Technology receiver**

Technology receiver organizations are the ones that **take new technology and implement it** to improve their products, services, processes or work environment. This process is called innovation and can be defined as consisting of five activities: maintaining new technology awareness, selection of new technologies, preparation for infusion (the act of adding one thing to another to make it stronger or better), infusion of new technologies and innovation management.

**3. Technology transfer facilitator**

Technology transfer facilitator organizations are the ones **that enable** and in many cases **drive** technology transfer. These might be technology transfer **broker organizations,** technology transfer offices established in research institutions or collaborative university industry, **consulting companies** or any organizations that **facilitate and support technology transfer** process. The technology transfer support process can be defined as consisting of such activities as contacts development; **market needs identification, search for available technology, search for industrial application and contractual support.** Technology transfer broker organizations can be defined as **a bridge between technology supplier and technology receiver.** Technology transfer broker supports technology transfer process by **bringing together the ones that develop new technology and the ones that need it.**

## C. PUSH AND PULL APPROACHES

**Just what are "push" and "pull" marketing?**

Describing push marketing is easy (or at least it should be). Push marketing is the traditional marketing and advertising seen everywhere. Push marketing starts with the product or service, identifies the features or benefits that potential customers will find most compelling, and then

utilizes targeting and segmentation to "push" carefully crafted marketing messages out via a variety of advertising, sales, and social media channels to the most likely potential customers. Pull marketing is something else entirely (and should be in order to maximize your investment in marketing). While push marketing focuses on the most likely potential customers, pull marketing should be focused on a totally different group of people – **non-customers who are not yet ready to become customers at this time.**

An effective pull marketing strategy begins with **extensive research** into what makes a person **evolve from someone** who is disinterested and unaware of a solution area, to seeing how it might fit into their personal or professional lives and make it better.

This usually involves the creation of content that **will raise awareness, interest, inspiration, and understanding of the whole solution area, and the need for it, not just the features and benefits** of one company's particular product or service. Pull marketing strategies are very uncomfortable for most marketers, and as a result most companies have no pull to balance their push.

**So which is better for an organization – push marketing or pull marketing?**

Any organization that is interested in sustained revenue and profitability growth over time should invest in both, but most companies are seduced by the **immediate payback of push marketing and pursue only push marketing strategies**. Meanwhile, pull marketing helps grow **new potential customers** (or accelerates their purchase readiness timeline), so it is equally important in the long run. Smart companies, organizations that intend to succeed in the long run, need to invest **in both push and pull** marketing strategies in order to keep their sales pipeline full both for now AND for the future. Push or pull? The answer lies in… the balance.

**And what about for marketing an innovation – push or pull?**

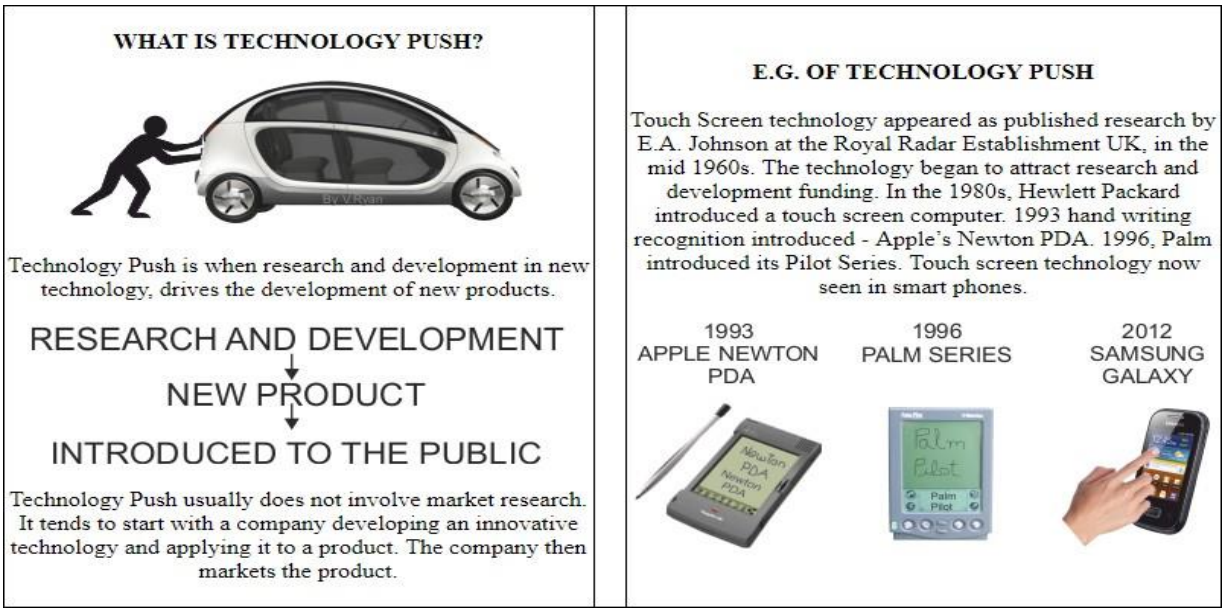
The more disruptive an innovation is likely to be, the more important it will be for you to craft and execute an effective pull marketing strategy. The main reason is that in every situation, despite the popular belief among inventors, a customer already has a solution. It may be the "do nothing" solution, but they have a solution.

**There are 2 processes of innovation:**

1. TECHNOLOGY PUSH INNOVATION

- Technology Push is where **the technology is available and the designers make a product to use it.**

- The best example of this is touch screen technology; this was first developed by the Royal Radar Establishment. In the 80s Hewlett Packard picked up on this technology and brought out a touch screen computer. Later as the technology became refined and could recognize hand writing, Apples PDA and the Palm Pilot.Over recent years the technology has become more and more advanced and is now found in the majority of mobile phones, laptops and computers. Other examples; cassettes, products with smaller components.




1. MARKET PULL INNOVATION

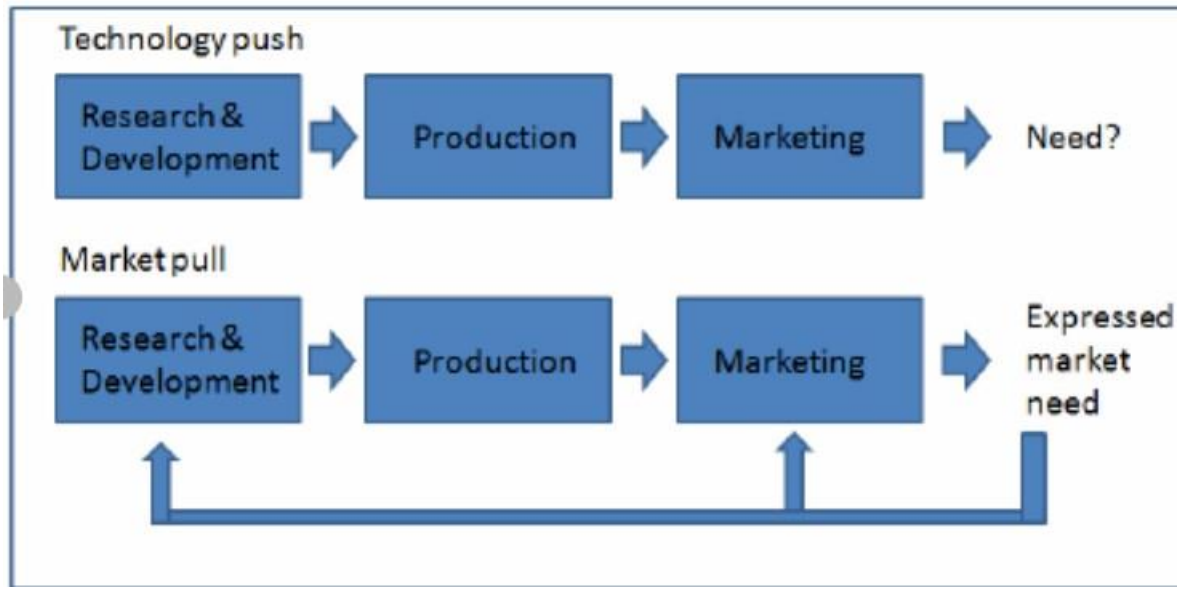
Market Pull is where the **market is need of a product**, so designers make a product to meet that need. The best example of this **is cameras**; they have evolved over the years to meet the changing needs of the user.The market needed to be able to take and store a large number of images and the size of the camera needed to be reduced. Due to this development in the design in cameras (making them lightweight, more compact, clearer resolution and so on) the editing software improved alongside. Over recent years they have developed to get even smaller, and have been put into mobile phones, then as people wants changed (people wanted to be able to take photos of themselves) the developed to be even smaller and then moved to the front of the phone. Other examples; hybrid cars, recyclable carrier bags, low light energy bulbs.

## WHAT IS MARKET PULL?


The term 'Market Pull', refers to the need/requirement for a new product or a solution to a problem, which comes from the market place. The need is identified by potential customers or market research. A product or a range of products are developed, to solve the original need. Market pull sometimes starts with potential customers asking for improvements to existing products. Focus groups are often central to this, when testing a concept design or an existing product.

## E.G. OF MARKET PULL


The digital camera. Twenty years ago, there was a 'market' requirement for a camera that could take endless photographs, that could be viewed almost immediately. Market pull (market need) eventually led to electronics companies developing digital cameras, once miniature digital storage, processing power and improved battery performance was available. Market pull ensured that photo editing software also developed, in parallel with the development of digital camera technology.




## ***Other Sources of innovation:***

1. **The Unexpected**

**The market place i**s the number one area to look for opportunities. A good manager should be constantly studying the market. Is a particular product or service in greater or lesser demand than anticipated? Why? Is there a way we can exploit this unexpected success? What has to happen if we want to convert this success into an opportunity?

2. **The Incongruity**

There is a discrepancy between **what is and what should be**. This is a key to developing wildly successful businesses but it's tricky. Face book is a company that nailed it. Prior to the social network's prolific rise MySpace was the dominant player, but it had its downfalls. Facebook wisely noted what MySpace was vs. what should be and built that platform. The end result? A company that just had an IPO versus. One that has fallen off considerably. One of the best places to look for incongruity is in your own customers. Their complaints and unmet wants are all the hints you need.

3. **Process Need**

Process need involves identifying your **company's process weak spots and correcting** or redesigning them. This is a task oriented solution meaning that the source of innovation comes from within your existing capabilities and ways of doing business – not the market. An example

might be a restaurant that identifies that people wait too long for their entrees and so decides to hire another chef to speed up creation times. Essentially your company will want to look for all weak links and eliminate them.

### 4. Industry and Market Structure Change

Your industry and the market are in continual flux. **Regulations change and some product lines expand while others shrink.** Firms should continually be on the watch for this. One example is deregulation. When a previously regulated industry becomes open there is historical precedence for companies that enter early to be very successful. Other things to watch out for are the convergence of multiple technologies and structural problems that occur from time to time (often immediately following an industry boom).

### 5. Demographics

We constantly see changes occur in populations, income levels, human capital (education) and age ranges. Smart firms are constantly paying attention to this. When it comes to the baby boomers businesses have been following them constantly as they got older. At present they are one of the largest as well as the most affluent demographic groups with high levels of disposable income. Combining demographic data with segmentation and targeting is a powerful method of accurately meeting a target market's desires.

### 6. Changes in Perception, Meaning, and Mood

Over time populations and people change. The way they view life changes, where they take their meaning from, and how they feel about things also is modified over time and smart companies must pay attention to this in order to capitalize (and avoid becoming forgotten, a relic of ages past). Here are two really good examples. First is a principle called "downaging" which refers to people who look at 50 as being 40. Industries have responded to this, most notably in the cosmetic and personal care industry which provides plenty of solutions to help these people look younger. Full industries are creeping up that make people feel younger. Have you spotted any lately? Religion is another example. Across the world we've seen Islam and atheism rise. Companies should adapt as overall meaning changes in culture.

**7. New Knowledge**

As the speed of technological revolution increases there will be an ever increasing number of opportunities that open up. The internet has been the most notable one in the last couple decades but there have been a plethora of other industries and opportunities pop up as a result of this technological revolution. New knowledge is about more than just technology though; **it's about finding better ways of doing things and improving processes.** Your company should look to this new knowledge for ways it can improve incrementally. Intel does this constantly and it's a major part of why they're the leading processor manufacturer today. Constantly paying attention to the latest in both academic research as well as investing heavily in their own R&D, the company has managed to find continual sources of innovation, driving its success.

## PROCESSES USED TO EXPLORE INNOVATIONS ALONG THE TECHNOLOGY

The study of technological innovation is a diverse and growing field. Terminology and theories describing the factors influencing the production and application of new technology differ among observers and researchers in the field and few studies specific to building technology have been made. In the most general terms, innovation is the introduction of a new idea (Mish, 1985). This introduction entails the production of new information and the diffusion of that information to people who can use it to solve problems, to see the world in a new way, or to enhance their efficiency, effectiveness, or living quality. In a more specific application, ***technological innovation*** **refers to the process in which a new idea is embodied in tools, devices, or procedures that are of practical value to society. Typically thought of as a new product, technological innovation may also be a new process of production; a substitution of a cheaper material, newly developed for a given task, in an essentially unaltered product; or the reorganization of production, internal functions, or distribution arrangements, leading to increased efficiency, better support for a given product, or lower costs.**

Technological innovations often **involve tools and procedures, products and processes, interacting in new ways.** Known drugs may be found to be successful in treating new illnesses, or changing the production line may yield improved rates of production. Many of the construction industry's technologies involve such combinations of hardware and software. Technological innovation can also be **an improvement in instruments or methods of making**

**or doing innovation.** New technology that is not used is not innovation. Paradoxically, even technology that is well known and widely used in some industries or nations may still be new and innovative in a different setting. Many years can sometimes be required for new ideas and information to diffuse from one place or application to another. Such technology is still **"new"** to the society that receives its benefits. Although many people have come to regard new technology solely as the result of increasingly revolutionary discoveries in science and in our understanding of how things work, adaptations and new applications of older knowledge may also lead to innovation.

Successful new technology and innovation tend to be inspired by the practical needs of individual people or enterprises, or the needs of many individuals expressed in market demand or social policy. Technological innovation may also be initiated by scientific invention—new discoveries and developments—but "market pull" is widely felt to be more influential than "technology push" as a force for innovation. The time between invention and innovation may be long.

**The technological innovation process consists of a series of phases necessary to implement improvements or develop a new production process, product or service.**

There are two ideas about the origin of technological innovations. One argues that the technological push comes from the scientific research and development sectors, with no commercial purpose and the other (Market Pull), more accepted today, affirms that it's market needs that instigate companies to develop new technologies that satisfy the demands of consumers and businesses.

Now, we'll analyze the technological innovation process focused on meeting market needs and how it applies in companies.

**The 8 stages of the technological innovation process**

1- Basic research

Basic research is that phase of the technological innovation process that only occurs in large companies, usually in the pharmaceutical, energy and information technology sectors, which keeps research and development departments continuously abreast of the state of the art technologies that most impact their organizations.

2- Applied research

When it detects **some specific market needs** that may represent an opportunity to develop a sustainable competitive advantage for the business, the company searches among the technologies that dominate the way to solve this problem.

At this point, you can integrate existing technologies creatively and innovatively or really develop something totally new.

3- Development

When reaching a solution to the market need, it's time to develop the product, service or process that will be marketed or employed.

For this, a prototype is developed that must be tested, preferably with the help of the public that will use it.

Two interesting approaches to this stage of the technological innovation process can be used:

- Design thinking, which takes into account how people interact with innovative products and services
- Scrum, which promotes small iterations, incremental advances in the prototype and the rest of the innovation process, always based on the needs of those who will use it.

4- Engineering

With the prototype set, you have to **turn it into a scalable product** or service that can be mass-produced or meet the specific needs of an industry.

Materials, suppliers, appropriate forms of storage and transportation are searched, such as connecting parts and benefiting inputs, defining which professionals will need to be hired and trained, among other measures.

5- Manufacture

This is one of the most important aspects of the technological innovation process.

It is time to define the best way to deliver the solution created to the final customer, with efficiency and quality.

6- Marketing

With the product or service ready to be released, it's time to do concept tests, market research and market testing to see if any adjustments are still required depending on how their acceptance and distribution is taking place in test markets.

7- Promotion

Once the market tests are done, the product or service is launched nationally or globally, depending on the markets the company serves.

8- Continuous improvement

Once launched, both the product or service and the process flows used to produce and deliver them to end customers are constantly measured and analyzed, with the aim of looking for ways to improve them even more, adding even more perceived value to the final customers.

## MARKET AND STRATEGY DIMENSION OF INNOVATION

## STRATEGIC DIMENSIONS OF INNOVATION

Strategy & Innovation is founded on the latest thinking and best practice**, bringing our strength and reputation in the fields of strategy and innovation to help executives navigate the long journey successfully and realize their strategic organizational and personal potential**.

It helps to:

- Identify and overcome the challenges that companies face when trying to innovate
- Develop new ventures within long- or newly-established organizations
- Adopt new strategic approaches to company direction and decision-making in order to build successful business models which exploit new opportunities
- Take new approaches to stakeholder management, governance and funding
- Develop robust but flexible plans for strategic execution.

**Innovation Strategy is the essential link between new product development efforts and your overall Business Strategy**. A company's Business **Strategy defines: key objectives, overall direction, priority initiatives, and the expected pace of growth**.

The Innovation Strategy is what enables companies that rely on innovative new products, technologies, and platforms to advance their Business Strategies to:

- create customer value
- grow market share
- enter new markets
- increase profitability
- Alter market and competitive landscapes.

The 6 Elements of an Effective Innovation Strategy

Top performing companies consistently approach the following 6 elements of an effective Innovation Strategy as the ideal flow, or thought process, to guide leadership teams in developing an insightful Innovation Strategy:

1. **Objectives and Role**
   Specify the **objectives of the new product development** effort and **the role product innovation will play in helping the company achieve its business objectives**.

2. **Arenas (place or scene of activity) and Strategic Thrust (push suddenly) Focus** is key to an effective Innovation Strategy. Specify **where you will and will not attack**. The concept of strategic arenas is at the heart of Innovation Strategy – **the markets, industry sectors, applications, product types, or technologies where your business will focus its efforts.** Specifying these arenas is fundamental to defining the strategic thrust of the new product development effort. It is the result of identifying and assessing new product innovation opportunities at the strategic level.
3. **Attack Strategy and Entry Strategy**
   How do you plan to attack each strategic arena? You may choose to be aggressive and be the industry innovator (first to market); or a fast follower, waiting and watching, and rapidly copying and improving upon competitive entries. Other strategies focus on being low-cost versus a differentiator versus a niche player. The global dimension is also part of the attack plan: whether to adopt a global, or regional strategic approach to product development.

4. **Deployment – Spending Commitments, Priorities and Strategic Buckets**
   Strategy becomes real when **you start spending money**! How much you spend on new product development and the emphasis you place on each strategic arena naturally leads to the next key decision to bucket resources for each arena. Assigning buckets **of resources** helps to ensure new product development is strategically aligned with your overall business goals.
5. **The Strategic Product Roadmap – Major Initiatives and Platform Developments**
   A strategic product roadmap is an effective way to communicate a series of major initiatives in your attack plan. Your **strategy should map out your planned major new product development initiatives (and their timing) required to succeed in a certain market or sector.** It may also specify platform developments required for these new products.
6. **Tactical Portfolio Management Decisions – Project Selection**
   using a method to monitor Innovation Strategy execution improves the odds that you will **successfully implement it.** However, due to the unique and risky nature of innovation, monitoring progress via a master project implementation schedule is simply not sufficient. **Not every project that is initiated will be worth completing**. As new ideas make their

way through the Stage-Gate process, their initial attractiveness can improve or wane as new information becomes available.

**Marketing Dimensions of innovation**

Storytelling plays a huge role in establishing disruptive technology as a market force. **Good storytelling** is important when introducing a complex and disruptive offering in the marketplace whose value is not well understood. But storytelling is only the beginning. It takes a village to launch and drive adoption.

Each year, new technology emerges and continues to change the way we live, work and play. Sometimes, it only provides incremental benefits, but on occasion, something new emerges that is truly innovative and shifts the existing paradigm. Examples of paradigm-shifting technologies include block chain, the Internet of Things (IoT) and artificial intelligence (AI).

Although **the primary focus** of any launch is the solution that solves a particular problem, the technology becomes the enabler -- the how and why of a problem that couldn't be solved for before. Some would argue that buyers don't need to understand the underlying technology; however, we strongly disagree. **Customers are buying into a longer-term vision and need to understand the viability of the new technology.**

Launching a solution with a technology that provides **incremental benefits** is significantly more straightforward than introducing a disruptive technology. For incremental technology, the context within the market already exists to help target audiences easily understand its value, whereas context needs to be created from scratch for anything that is paradigm-shifting.

So, exactly what do you need to campaign disruptive technology?

**1. Captivating Vision**

**Buyers need a roadmap to understand where the technology is today and where it will be in two years, in five years and in 10 years. The vision needs to be simple, relatable and futuristic.**

For example, in the mid-1990s, when the internet was still in the early-adopter phase, we had a client who was working on the leading edge of voice recognition technology. He would begin every briefing and speaking opportunity similar to this:

One day, you are going to be able to pick up the phone and just say, 'I want a pizza at 6 p.m.' At 6 p.m., your favorite pizza from your favorite restaurant will show up at the door, and it will already be paid for."

At the time, this statement was like something from *The Jetsons* -- no one had articulated a vision like it. It captivated the audience before he proceeded to talk about his innovation, which was the first step on the road map to achieving that vision. Twenty years later, with Alexa and Siri, his long-term vision is beginning to become a reality.

2. **Perseverance**

**Timing is everything. Introducing something new to the market and driving adoption takes a long time.** Technology needs to be stable enough, and the market needs to be ready to hear your message.

Given the previous example, it has taken more than 20 years for that vision to become a reality. This is not always the case; however, it is important to realize that campaigning a new technology can take years, not months.

3. **A Value Proposition That Makes Sense**

Disruptive technologies typically solve complex business problems or create new business opportunities that can be hard to understand. You need a value proposition **that is simple and clear, and focuses on outcomes and not on the complexities of how a particular solution works.**

4. **The Right Market Category**

Market categories provide context for what exists in a **market segment**. **Analysts -- industry and financial -- who publish market reports play a pivotal role in how your solution and technology will be viewed in the market.** They use market categories to group and report on solutions and technologies.

An incremental technology usually falls into an existing category, even if it is on the fringe or a subset of that category. For example, the cloud is a major category, whereas hybrid cloud and multi-cloud diversification are applications of the cloud and are categorized as subsets.

Developing a brand-new category for a disruptive technology takes time and money. You need to work closely with analysts to educate them and convince them that your disruptive technology is worth following and recommending.

5. **A Charismatic Spokesperson**

There is nothing worse than listening to someone drone on and on about something that nobody understands. You need a spokesperson who is an avid **storyteller** and who can captivate an audience.

6. **Involvement In The Ecosystem**

No technology stands on its own. It is critical that you demonstrate involvement in the industry. This can take the form of driving standards, joining an association, participating in industry events or collaborating with others in the ecosystem.

7. **Incremental Milestones To Drive Adoption**

Prospective customers are not going to make big investments or swap out a solution that is currently working for an unproven technology. However, they are often willing to make incremental investments as test projects -- as long as the risk is mitigated.

To drive adoption, your road map needs to have incremental milestones as opposed to quantum leaps.

8. **A Content Strategy That Drives The Conversation**

Don’t be afraid to create bold and somewhat controversial content. You will need primers, glossaries, e-books, case studies, solutions briefs, videos, social images and technology papers with strong and captivating visuals.

9. **Public Relations**

Creating an industry narrative for disruptive technology is difficult and often takes senior talent to be effective. Consider hiring a creative PR team or working with a contractor who understands technology and has experience with emerging tech. Professional PR efforts can get your technology into the current media conversation.

### 10. A Community Of Early Adopters

Stay in touch with early adopters so that you can learn more about what is working and what is not working. Bring them into your storytelling, and give them the platform so they can tell their stories as they relate to your solution.

You can do this by creating a customer council, co-speaking at industry events, developing joint-bylined articles or collaborating on content marketing.

# UNIT-2

# ORGANISATIONAL ASPECTS OF INNOVATION

## 2.1 What is Organizational Innovation

1. Implementation of a new organizational method in the firm's business practices, in the organization of its workplace or in its external relations, to improve the use of knowledge, workflows efficiency or quality of goods or services. Learn more in: Challenges for Innovation Due to Firm Size: The Case of Brazilian Industrial Firms

2. The implementation of a new organizational method in the firms business, workplace organization and external relations (Oslo Manual). Learn more in: Innovation Policies and Barriers to Innovation: An Analysis in Extremadura (Spain)

3. Organizational innovation is understood to encompass processes which lead to the establishment or adoption of new production and management models, not only for production but also for tangible and intangible resources. The organizational innovation concept is part of the concept of innovation and development, and accentuates new ideas and the propensity for change within organizations. This is also called process innovation and includes expenditures for innovation and development in the calculation of cost. Learn more in: Telework and Management in Public Organizations

4. The introduction of a new organizational method in business practices, in workplace organization or in the firm's organizational relationships. Learn more in: The Effect of R&D Cooperation on Organizational Innovation: An Empirical Study of Portuguese Enterprises

5. First use of a product, service, process or idea by an organization. Learn more in: Can an Innovation Oriented Vision Statement Really Trigger Innovation in Small and Medium Sized Enterprises?

6. The process of translating an idea or invention into a good or service that creates organizationalvalue. Learn more in: The Roles of Knowledge Management and Organizational Innovation in Global Business

7. The successful utilization of processes, programs, or products which are new and introduced as a result of decisions made within the organization Learn more in: Sustaining Organizational Innovation

8. Also known as non-technological innovation is the implementation of a new organizational method in the firm business practice, workspace organization or external

relations. Learn more in: Determinants of Organizational Innovation: The Case of Portuguese Firms

9. The process of translating an idea or invention into a good or service that creates organizationalvalue. Learn more in: The Roles of International Entrepreneurship and Organizational Innovation in SMEs

10. Is the implementation of a new organizational method in the firms business, workplace organization and external relations. Learn more in: Innovation in Extremadura: Opportunity for Companies or Obstacle for their Development?

11. It includes the production of knowledge, development and marketing, and the introduction of a new, redesigned or substantially improvement in the goods and services rendered to the society. Learn more in: The Mediating Effect of Organizational Culture, Size, and Structure on the Relationship Between Innovations and Resilience in Selected Nigerian Universities

12. First use of a product, service, process or idea by an organization. Learn more in: An Examination of the Relationship Between Vision Content and Amount of Innovation in SMEs: Findings From Turkey

13. Is the implementation of a new organizational method in the firm's business, workplace organization and external relations (Oslo Manual). Learn more in: Perceptions of Extremaduran Firms Towards Innovation: Manufacturing vs. KIBS Comparative Study

## 8 Ways to Bring Innovation Into Your Organisation

Innovation is essential for the growth of any company. But that's a very generic way of describing innovation. To successfully implement innovation, you need to know exactly what makes an innovative organization as well as how it contributes to its growth.For the majority of us, innovation is about seeking an approach to blue-sky thinking. But that's a far too clichéd definition to go by. What business people don't know is that creativity is challenging to achieve. It requires investment of resources to fulfill the needs of innovative management in an organization.

Truly innovative organizations spend hours developing an approach to imaginative thinking in their workers so that they can cultivate new ideas. In other words, the secret of their unprecedented success is associated with their ability to get the best out of the creative tanks of their employees.

But that requires an innovative culture where everyone is able to think independently. Business leaders perceive innovation as something that triggers progress and lacking it can stifle the growth of an organization. Unfortunately, the majority of the companies still lack a strategy to create an innovative culture.

For those ambitious business people out there, here are 8 ways to bring innovation into your organization and to pave the way for more creative ideas:

1. Give your workers a sense of freedom

Employers that impose rules tend to suffocate the creativity of their employees. This limits the freedom of your most valuable asset and they will feel reluctant to ever think outside the box.

The essence of an innovative organization lies in their employees' ability to contribute to the creative process of the organization. As a company, you need to give your workers the autonomy to practise their novel ideas.

It calls for a sense of freedom that can enable your workers to unshackle themselves from the clutches of hierarchical imposition so that they can focus on new ideas to execute their day-to-day tasks.

2. Provide your team with the resources to implement innovative ideas

Make it possible for your workers to convert their ideas into reality. Without the right resources, even the best ideas tend to fall flat.

The most innovative companies in the world invest in their R & D department to allow their creative team to execute the innovative concepts for future product development.

Samsung is one of the leading contenders in the list of the most innovative organizations having invested $12.6 billion in the last twelve months into its R & D department

3. Invest your time in the creative nourishment of your workers

The essence of innovation is achieved when you are able to demonstrate to your workers a path that leads to creativity. Don't just preach to your team the importance of creativity. Rather demonstrate the specific ways to find creativity so that they can implement innovation in their work.

For example, you can dedicate a day to motivate your workers to experiment with new ideas. Similarly, you can conduct weekly workshops to encourage your employees to brainstorm ideas for an upcoming project.

Google was among the first companies to create a business model based on innovation. The company allocates 20% of its time to nurture the innovative side of their employees.

4. Don't focus only on R&D

As an organization, you should not confine innovation to just the R&D department. To implement an effective innovative culture, it is important that each and every department of your company is included.

When you implement a holistic innovation strategy, you are able to foster a change in the mindset of every single member of the team.

5. Allow your employees a chance to fail

Failure is a part the learning process. If you penalize your employees for making mistakes, you inject in them a fear of failure. Such an approach drastically affects their ability to come up with creative ideas. Fear cannot cultivate creativity. When you give your employees the scope to make a mistake, you are allowing them to think independently without any constraints of fear. So they are able to think beyond the boundaries of their job.

6. Develop an accommodating leadership style

As the leader of a company, it is your responsibility to foster and nurture the attitudes of your individual team members. Being a leader, you cannot develop a culture of innovation if you fail to show them the way to innovation through your own attitude and behaviour.

Expecting your workers to give you more in less time is one such way you kill the desire of your workers to do something extraordinary. When you prefer short-term results over long-terms benefits of innovative ideas, you will kill their innovative spirit.

Rather than resorting to a 'do more' approach, you need to give your employees the room to experiment and learn so that they can improve,

Remember that innovation develops from trial and error and it demands an investment of time. But when you deprive your employees of time, you suffocate the urge of your employees to learn different perspectives to their work.

7. Don't look down on your subordinates

Intellectual arrogance is the biggest enemy of implementing innovation into any organization. When you disregard the ideas of your employees just because they are your subordinates, you hinder the process of creative thinking in them. Such an organization cannot possibly thrive on the creative ideas of their workers.

To promote a culture of innovation, you and your leadership team need to shut down any preconceived notions about your employees and rather allow them to speak their minds. You need to encourage them to share their opinion and be a part of every creative process in the business.

8. Acknowledge the contribution of your employees

Employees feel valued when you recognize their efforts. Similarly, if you want to promote a culture of innovation in your organization, you need to implement an incentive-based policy that rewards workers on the degree of innovation in their work.

Such a policy will make your employees feel appreciated for their innovative efforts and it will pave the way to a culture of innovation in your organization.

Innovation provides a culture of creative thinking that enables your workers to think beyond the regular hurdles of their work and come up with something new and unique.

However, innovation is not a temporary thing and rather it is a long-term strategy that demands an investment of your time and efforts. Therefore, if you want to ensure that your organization continues to benefit from the positive outcomes of innovation, you need to implement the above-mentioned strategies.

## Features of Organisational Aspects of Innovation

- It is a problem-solving process
- It is process occurring primarily within commercial firms
- Role of govt agencies or public lab's is to a certain extent secondary
- Interactive process involving relationships between firms with different actors
- Has both Formal and Informal relationships
- Helps in positioning firm within commercial networks
- It is diversified learning process
- Process involving the exchange of codified and tacit knowledge
- Involves the establishment of new methods of production, supply and distribution
- Includes the introduction of changes in management, work organisation, and the working conditions and skills of the workforce

## ELEMENTS OF ORGANISATIONAL ASPECTS

- Identify purpose
- Achievable dreams
- Build loyalty
- Set standards
- Inspire enthusiasm
- Encourage commitment
- Culture and Values
- Unique strength

Core values

# SOFT METHODS OF INNOVATION MANAGEMENT

 Soft methods are tools, which can help you transform a new idea into a commercial success.

It is also seen as a range of tools, techniques, and methodologies that help companies to adapt to circumstances and meet market challenges.

The focus is on improvements, which aim to distinguish a company from its competitors or to consolidate its presence in the market.

**FEATURES OF SOFT METHODS**

Ability to cope with co-operation and team work

Ability to take advantage or to be compatible with the internet

Degree of diffusion and generalization in its applicability

Whether copyrighted or patented

Whether designed to address a specific topic or a general concern

Existence of readily accessible information describing best practice

Phase of innovation cycle concerned

**ADVANTAGES OF INNOVATION MANAGEMENT**

 Promote co-operation and team work

 Encourage entrepreneurial initiative

 Strengthen the Knowledge management within a firm

 Integrate science, technology, and market in fluent systems

 Emphasize on global-oriented approach

 Accelerate and shorten the time-to-market in innovation projects

 Increase efficiency using more advanced information technologies

 Promote HRM as strategic area within the business.

# SOFT METHODS OF INNOVATION MANAGEMENT

**1. Knowledge Management Tools:** KM is a discipline that integrates management of people, Processes and technologies in order to generate, capture and use valuable knowledge in the organization. is the process of creating, sharing, using and managing the knowledge and information of an organization. It refers to a multidisciplinary approach to achieving organizational objectives by making the best use of knowledge.

KM includes courses taught in the fields of business administration, information systems, management, library, and information sciences. Other fields may contribute to KM research, including information and media, computer science, public health and public policy. Several universities offer dedicated master's degrees in knowledge management.

Knowledge management efforts typically focus on organizational objectives such as improved performance, competitive advantage, innovation, the sharing of lessons learned, integration and continuous improvement of the organization. These efforts overlap with organizational and may be distinguished from that by a greater focus on the management of knowledge as a strategic asset and on encouraging the sharing of knowledge. KM is an enabler of organizational learning.

**2. Knowledge Audits**

- Analysis of key documents and current information systems
- Interviews with representative staff
- Knowledge requirements questionnaires
- Analysis of information and knowledge flows
- Development of knowledge maps
- Writing of an action plan.
- A knowledge audit is an effort to understand where an organization stands in terms of knowledge management and its knowledge assets

**3. Knowledge Mapping**

Knowledge mapping is one of the most powerful knowledge management (KM) approaches. A knowledge map is a visual representation of the organization's intellectual capital. With it, stakeholders can pinpoint where critical knowledge is, how it flows, and any barriers or gaps.

 Knowledge Mapping techniques are part of Audit process and generates picture of the explicit information showing the importance of relationship between knowledge stores and dynamics.

 Knowledge Mapping is worthy practice consisting of survey, audit and synthesis and aims to track the acquisition and loss of information.

 Explores personal and group competencies and proficiencies.

**4. IPR Management** Are responsible for the management and protection of rights over products, corporate intellectual capital and commercialized results which are obtained out of a company's innovation activity.

**5. Technology Watch** Is technique to recognize the main technological advances as they appear on the market, in order to detect opportunities and threats in a timely fashion. Stages are:

 Identifying the internal clients

 Determining targets of the watch

 Determining the providers of information

 Organising the information collected

 Organising the use of information

 Assuring Co-ordination

**6. Patents Analysis** Enables the researches and business exectutives to access the competitive patent landscape prior to engaging in costly R&D, patent execution or M&A activities

**7. BIS** – Business Intelligence System

Integrates into a structures system all the needed mechanisms to capture, filter, analyse and distribute BI that is useful for an enterprise.

## CREATIVE APPROACHES

Fundamental concepts for all creativity development techniques are:

 The suspension of premature judgment and reducing the negative filtering of ideas.

 Use of the intermediate possible.

 Creation of analogies and metaphors through symbols, etc., by finding the similarities between the situations that we wish to understand and another situation which we already understand.

 Build imaginative and ideal situations(invent the ideal vision).

 Find ways to make ideal vision happen.

 Relate things or ideas which are previously unrelated.

 Generate multiple solutions to a problem

## CREATIVE THINKING TECHNIQUES

### 1. Lateral Thinking

- Lateral thinking is specifically concerned with the generation of new perceptions and new ideas.
- Lateral thinking involves changing perceptions and flexibility. There is an overlap with creativity since both are concerned with producing something new, but lateral thinking is a more precise definition of the process of changing perceptions: changing the way we look at things.
- Lateral thinking is also different from divergent thinking, though again there is some overlap. Divergent thinking is only part of the process of lateral thinking.
- Lateral thinking is not just concerned with generating alternatives but with changing patterns, with switching to new and better patterns.

**What Are Lateral Thinking Techniques?**

Lateral Thinking is a set of processes that provides a deliberate, systematic way of thinking creatively that results in innovative thinking in a repeatable manner. While critical thinking is primarily concerned with judging the true value of statements and seeking errors. Lateral thinking is more concerned with the "movement value" of statements and ideas. A person uses lateral thinking to move from one known idea to creating new ideas. I define four main catagories of Lateral thinking tools:

- **Idea-generating tools** which break free your current thinking patterns from their usual pathways.
- **Focus tools** that open your mind to new possibilities in the search for new ideas.
- **Harvest tools** that help maximize value is received from the idea generating output
- **Treatment tools** that ground the creativity process by making the wild ideas and make them fit the real world constraints, resources, and support.

**When To Use Lateral Thinking?**

- Problem Solving: Often when you are problem solving or designing something there may well be an obvious answer. If the matter is important it can be beneficial to a small amount of time to use lateral thinking to discover alternative ways of defining the problem and to start thinking about it in a broader sense. You can train your brain to be more naturally creative and discover better solutions to known problems.

- Finding new ways: It is possible that the way you do everything in your life or business is the best possible way of doing it, but not likely. Whether you have created a way of doing things yourself or have been told that 'this is the way to do this', there are likely other ways to do those things more effectively and efficiently. By using the techniques from Lateral Thinking to look for new ways to improve yourself and business you can achieve your goals.

- For Inventions & Innovation: Every Inventor or Creative will at times need to focus their creativity towards the process of Invention, whether it is a patentable invention or a mobile application it will some times be thinking from a 'blank page' state, not simply being about improving what is already there. Lateral Thinking help thinkers be more proactive and confident in their thinking. When solving a problem that is not yet known lateral thinking can help you choose your starting point.

**Here are some Creativity exercises to improve your lateral thinking skills**

1 – Use your 5 senses to inspire yourself with things from around you
Look for objects, analyse their shape, their color, where are they coming from. Use all your senses, try to listen to sounds in your environment, touch the objects your are looking at, what

are the odors in the room… Now try to link those elements to your brainstorming session, it will help you to generate new ideas.

2 – Use a dictionary, book or magazine for random ideation

Take a book, close your eyes, open the book and pick a word that you relate to your issue. If this word is not giving you a new idea start again.

3 – Analogies and metaphors

Compare your problem to a known natural phenomenon (storm, eco-system, river…), to a mineral, vegetal or animal. You can also compare your problem with a symbol, legend or story.

4 – Make a list of the top 5 words related to your issue

Now start your brainstorm but you cannot use those words anymore.

5 –Define your Customer journey or product/service life cycle

Divide your issue in small steps. Here is an example: in the morning I take my bike, I cycle to work, stop for a breakfast, take my bike, cross the park, get into the office … an other exemple: Customer take his car for shopping, step into the shop, look for a PC, ask for advise, buy the PC, put it in his car, go back to home, open the PC box…This approach is very useful to collect new insight and elements related to your goal.

6 – Random search on the internet

go on YouTube and click on video titles that you would normally not click on. Do that for 10 minutes. It always gives fresh and new ideas.

7 – Write a 6 word story of you problem

Make it simple avoid jargon. Your story should include images that will appeal the imagination.

8 – Brain writing

You should practice this in a group of minimum 5 people. Write your idea or goal on a paper and you give it to the person sitting on your right. This person should write a solution on your paper and give it to the person sitting on his/her right and so on.

9 – Create a Mind Map

This is a useful tool to sketch out a lot of ideas. It works like a hierarchical tree but here you start off with your problem in the center. After that you draw the major topics, continue with sub-topics…

10 – Start writing, don’t stop until you’ve hit 500 words

This is a free flow exercise. Don’t think just write.

11 – Rolestorming

What would you do if you were someone else? Think like

- Buddha
- Barack Obama
- Steve Jobs
- The opposite gender.
- Your father or mother.
- Your girlfriend / wife or boyfriend / husband.
- A customer.
- A colleague.
- Your enemy.
- …

12 – Reverse Thinking

Think about what everyone will typically do, then do the opposite.

13 – Meet people you don't know

This is a special exercise. Go outside, in the street, and ask people for solutions to your problem.

14 – Six hats of Edward de Bono

Adopt successively various attitudes (roles), through 6 hat colors.

- White hat: neutrality. Your share facts
- Red hat: emotions. Your information tinged with emotions, feelings, intuitions and premonitions.
- Black hat: negative criticism. You don't agree, state dangers and risks. It 's the devil's advocate.
- Yellow hat: positive criticism. You acknowledge crazy dreams and ideas.
- Green hat: creativity. Your are very creative lots of crazy dreams and ideas
- Blue hat: organisation. You focus on the processes, the actions and the planning

# 2. What is TRIZ?

TRIZ is the Russian acronym for the "Theory of Inventive Problem Solving," an international system of creativity developed in the U.S.S.R. between 1946 and 1985, by engineer and scientist Genrich S. Altshuller and his colleagues.

According to TRIZ, universal principles of creativity form the basis of innovation. TRIZ identifies and codifies these principles, and uses them to make the creative process more predictable.

TRIZ is most useful in roles such as product development, design engineering, and process management. For example, Six Sigma quality improvement processes often make use of TRIZ.

**What does Triz mean?**

In the 1980s the Russian engineer Genrich Altshuller developed the **TRIZ theory** which is an acronym for **Teorya Resheniya Izobreatatelskikh Zadatch**. The literal translation is: *"theory of inventive problem solving"*. The most important result of the research was, that the evolution of technological progress follows a number of predictable patterns. It is an innovative way of looking at problems and solutions.

**Universally applicable**

TRIZ starts from a number of principles and processes of innovation that are universally applicable. Large multinationals such as Hewlett-Packard, Boeing and Samsung have used the TRIZ method to develop new products, optimize processes and gaining a better understanding of developments and trends in the market for decades. TRIZ has become an umbrella that covers a host of inventive concepts, tools and processes that are often used to solve difficult problems.

**TRIZ basic principles**

To arrive at improvement, TRIZ uses 5 basic principles and 40 inventive principles. TRIZ forces us to look at problems differently.

1. The ideal end result

Thinking out of the box is a good principle to achieve an ideal end result. TRIZ encourages people not to be satisfied too quickly with the solutions to a problem, but to be always open to even better ideas.

2. Less is more

There is not always a need to invest a lot of money to arrive at the best idea. Innovation can be realized with existing materials and sometimes the solution is close at hand.

3. Solutions already exist

TRIZ helps people define problems in terms of frequently used and general principles, which enables searching for solutions outside their primary field of expertise.

4. Search for fundamental contradictions

Innovating equals problem solving, which mostly exist of contradictions. When these contradictions are defined, the solution is often imminent.

5. Lines of evolution

Systems do not evolve randomly. There are fixed patterns that make the evolution of technology predictable.

# 3. SCAMPER

**SCAMPER** was first introduced by Bob Eberle to address targeted questions that help solve problems or ignite creativity during brainstorming meetings. The name SCAMPER is acronym for seven techniques; (S) substitute, (C) combine, (A) adapt, (M) modify, (P) put to another use, (E) eliminate and (R) reverse. These keywords represent the necessary questions addressed during the creative thinking meeting.

**How do SCAMPER technique work?**

During the need for critical thinking either alone or inside a group, forcing the mind to think in a specific flow can help emerging innovative ideas that won't be possible to reach using a regular thinking flow. The SCAMPER technique aims to provide seven different thinking approaches to find innovative ideas and solutions.
There are two main concepts to keep in mind before starting the brainstorming using the SCAMPER technique; yet there is no sequential flow to follow while moving from each of the

seven thinking techniques. Unlike Disney's creative strategy method, SCAMPER facilitators can move between different techniques without restricted to a specific flow. Secondly, the principle of force fitting should be adapted during the thinking sessions. For example, any response to the SCAMPER technique is welcomed no matter how non-logical is it. The seven SCAMPER techniques include the following:

**1. Substitute**

The substitute technique focuses on the parts in the product, service or solution that can be replaced with another. During this part of the discussion the meeting attendees focus on making decisions to substitute part of the process with another. Questions asked during this part are:

- What part of the process can be substituted without affecting the whole project?
- Who or what can be substituted without affecting the process?
- What part in the process can be replaced with better alternatives?
- Can the project time or place be replaced?
- What will happen when we replace part of the project with another?
- Where else could you sell the product?
- Could we use another alternative of X?
- Can we substitute the current device with another better one?
- Can we replace the process with simpler one?

The substitute technique tends to provide alternative solutions for decision makers to evaluate different solutions in order to reach the final action.

**2. Combine**

The combine technique tends to analyze the possibility of merging two ideas, stages of the process or product in one single more efficient output. In some cases, combining two innovative ideas can lead to a new product or technology which leads to market strength. For example, merging phone technology with digital camera produced a new revolutionary product in the telecommunications industry. The combine technique discussion can include the following questions:

- Can we merge two steps of the process?
- Can we apply two processes at the same time?
- Can our company combine resources with another partner in the market?
- Can we mix two or more components together?
- Can we combine X and Y technologies?

**3. Adapt**

Adapt refers to a brainstorming discussion that aims to adjust or tweak product or service for a better output. This adjustment can range between minor changes to radical changes in the whole project. Adaption is one of the efficient techniques to solve problems through enhancing the existing system. The adapt technique brainstorming session can include the following questions:

- What would we need to change to reach better results?
- What else could be done in this specific task?
- How can we improve the existing process?
- How can we adjust the existing product?
- How can we make the process more flexible?

**4. Modify, minify or magnify**

The modify technique refers to changing the process in a way that unleashes more innovative capabilities or solves problems. This change is more that just adjustment as it focuses on the overall process. For example, it can target reducing the project's process or change our perspective of how to look at the problem. The questions asked under this rubric include:

- How will modifying the process improve results?
- What if we had a double consumer base?
- If the market was different, what would the process look like?
- Can we change the process to work more efficiently?
- What if the product is double the current size?

**5. Put to another use**

This technique concerns how to put the current product or process in another purpose or how to use the existing product to solve problems. For example, this technique can be used to learn how to shift an existing product to another market segment or user type. The questions in this technique can include the following:

- What other parts in the company can use the product?
- What are the benefits for the product if used elsewhere?
- What if we target another market segmentation for the current product?
- Can we add a specific step into the process to replace another?
- What are other ways can we use it?
- Can we recycle the waste for another use?

**6. Eliminate or elaborate**

As the name implies, this technique aims to identify the parts of the process that can be eliminated to improve the process product or service. It also helps to explore the unnecessary parts of the project. Questions related to this part includes:

- What would happened if we removed this part?
- How can we achieve the same output without specific part of the project?
- Do we need this specific part?
- What would we do if we had to work with half the resources?

In some situations, the unnecessary resources or steps in the process provide extra load for the project to achieve innovation and creativity. Eliminating these resources extends the ability to innovate and allocate more resources for creativity within the organizations.

**7. Reverse**

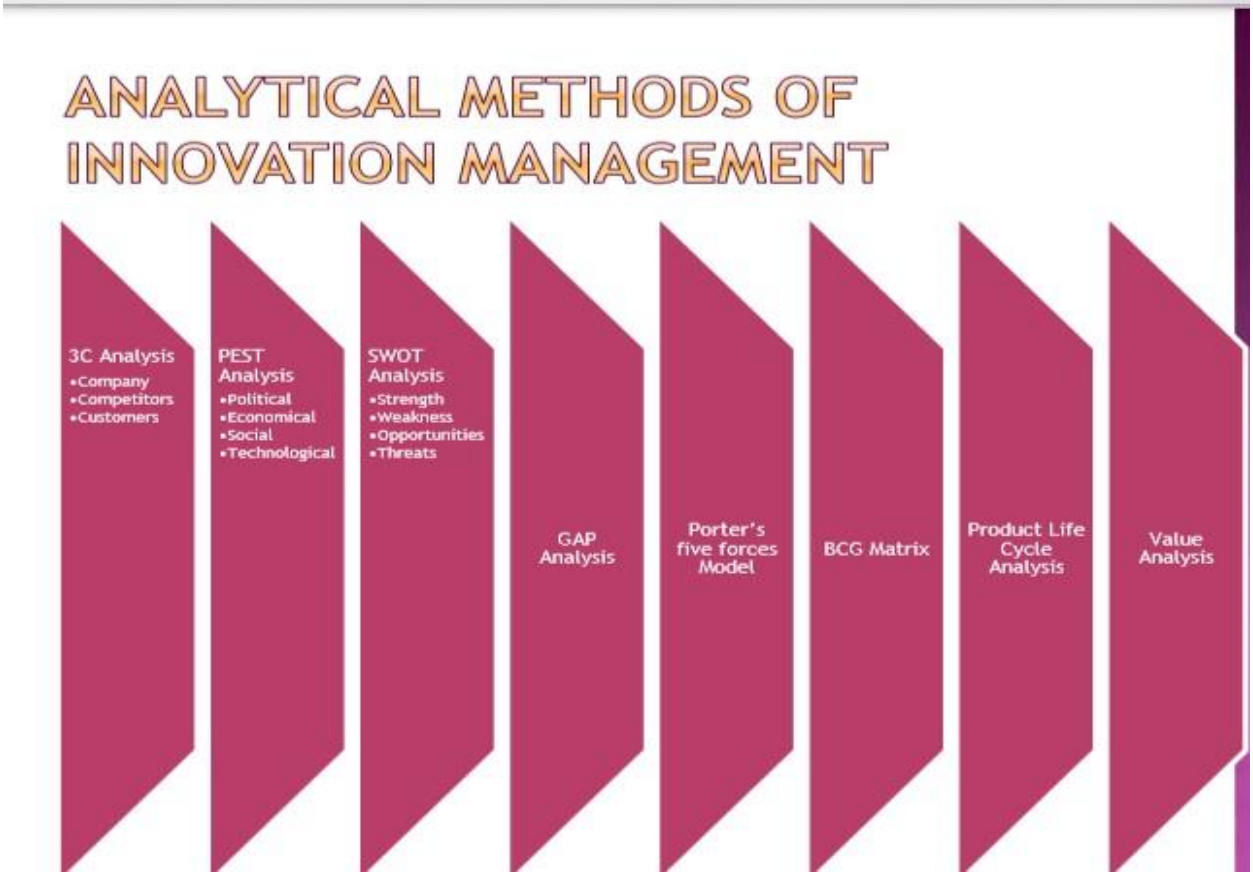
Finally, the reverse or rearrange technique aims to explore the innovative potential when changing the order of the process in the production line. Reversing the process or part of it can help solving problems or produce more innovative output. The questions in this part include:

- What would happened if we reverse the process?
- How can we rearrange the current status for better output?
- What if we consider it backwards?
- Can we interchange elements?

# Conclusion

The SCAMPER technique is one of the easiest and direct methods for creative thinking and problem-solving through a number of techniques or question types; (S) substitute, (C) combine, (A) adapt, (M) modify, (P) put to another use, (E) eliminate and (R) reverse. These types can be used to explore problems from seven perspectives. This holistic technique of study helps reaching the best decision which fuels innovation and creativity.

## SYSTEMATIC AND ANALYTICAL METHODS AND TECHNIQUES OF INNOVATION




**1. 3C Analysis**

The 3 C's of marketing, a strategic marketing concept, is a very popular concept for marketers. This concept takes into consideration 3 variables to explain a complete marketing strategy. These 3 variables are dynamic in nature and fully depend on each other. In case of any variable changes, it affects the other variables as well.

The 3 C's of marketing strategy are

- The Customer
- The Company
- The Competitors

The **strategic 3 C's of Marketing is a strategic triangle** when integrated, a sustainable competitive advantage can be achieved. Customers have different wants and needs. The company find out these wants and offer products and services. To fulfill their customer wants and needs the company offers low cost and differentiated products from their competitors. Similarly, competitors also try to offer a differentiated product to have a competitive advantage.

his concept of marketing strategy focuses on the dynamic and interrelated relationship of 3 Cs Here I will explain these 3 variables with examples.

- **The Customers**

Customers are the important part of any business. If your company customers are loyal it will be difficult for your competitors to penetrate. In case you don't have loyal customers, it will be difficult for you to penetrate. When do a customer analysis keeping the mind the following question?

- Who are your customers? what are their demographics? They are men or women, what is their disposable income?
- Why do they buy? Are they looking for value, economy or prestige?
- How many customers do we have in present and future?
- They are satisfied customers and are looking for improvements
- What is their decision-making process?
- What are the different segments in the market?
- Who are the most valuable customers for our brand?

Use detailed interviews and questionnaires to collect the relevant data. We can create charts, diagrams variety for reports using the Business Analytical Data. By this way, you can reach to the most appropriate customers and sever them for a longer time.

- **The Competitors**

Customer has always a choice to buy from your company or your competitors. you should always create a unique value proposition than your competitors' UPS, for example, Lululemon, Nike and Under Armour.

Ask the questions when conducting a competitors' analysis.

- Do the customers buy for us or from competitors as well.
- Who are those competitors?
- What value proposition the offer we don't?
- What are the competitor goals and accomplishments?
- What are the strengths and weaknesses in terms of competitive advantages?

You can collect competitor analysis data by conducting research, gather competitive information then analyze competitive information and determine what is your own competitive

position. You can use their website, newsletters and annual reports and utilize your sales force to access competitive information.

- **The Company**

You can stand out of crowd and reach your target customer if you have a completive advantage. Your company can achieve it by cost leadership strategies and product differentiation strategies.

- How is the market where the company competes? Do products are commodities or can they be differentiated?
- Estimate the full product cost. This cost gives you a lower bound for pricing.
- Estimate the value of the product to the potential buyers. This value gives you an upper bound for pricing.
- Investigate your competitors' pricing strategies. How do their products and prices compare to your company?
- Set prices and take into account all these inputs.

The 3 C's of marketing strategy is focused on certain grounds i.e. if you are unable to capture the audience, someone else will capture it. According to 3 Cs model, strategists should focus on customers, competitors and company or corporation for a competitive edge.

**2. PEST analysis**

Closely linked to the SWOT approach (Strengths, Weaknesses, Opportunities and Threats) this is a simple way of developing a map of the factors and forces in the environment which affect the strategic challenges and opportunities facing an organization. The idea is to consider these elements under four headings:

- Political – changes in legislation, regulation, popular opinion, etc. which might have an effect on the rate and direction of innovation

- Economic – shifts in the economic landscape – for example the rapid growth of emerging markets in the Far East, Latin America and Africa represent opportunities whereas the current slowdown in Europe poses challenges.

- Social – trends and patterns in the underlying social structure and behaviour. For example the ageing population, the rise of social networking and the growing concern for the environment would all be relevant social trends

- Technological – emergence of new technologies, changes in the rate and direction of progress along existing trajectories, competence enhancing and destroying technologies, etc.

PEST analysis is used as part of a wider review of strategy and the main aim is to stimulate discussion and exploration. The results can be simply listed or arranged into a matrix or sometimes represented as a rich picture.

## 3. SWOT ANALYSIS

The organization can form the strategy based on the different factors as following:

- **Strength-Opportunity (S-O)** – strategies target the opportunities that fit well with the innovative product strength.
- **Weakness-Opportunities (W-O)** – strategies targets overcoming the weakness to build opportunities for the new product or service.
- **Strength-Threats (S-T)** – strategies aim to identify the methods to use the product's strengths to reduce the threats and market risk.
- **Weakness-Threads (W-T)** – strategies which builds a plan that prevent the product's weakness from being influenced by external threats.

**Using the SWOT Analysis tool**

The SWOT analysis tool can be used on two different approaches. The first approach is an icebreaker tool used during strategic planning meetings. The second approach is as a tool for building strategy or exploring innovation.

The SWOT analysis depends on asking questions and finding answers related to each factor; strengths, weakness, opportunity and threats.

**Strengths**

- What are the advantages of the new product or service?
- What are the product advantages over similar competitors in market?
- What strength points do people see in the product or service?
- What are the product's unique selling factors?

**Weakness**

- What weakness could be improved in the design?
- What issues should be avoided?
- What are the factors that reduce your sales?
- Does the production process have limited resources?

**Opportunities**

- What are the opportunities for the new product?
- What are the trends to take advantage of?
- How can we turn strengths into opportunities?
- Are there any changes in the market or government which can lead to opportunities?

**Threats**

- Who are the existing or potential competitors?
- What are the factors that can put business into risk?
- What issues can threaten the product on the market?
- Will there be any shifts in consumer behavior, government or market that can affect the product success?

SWOT Analysis Example

As mentioned earlier the SWOT analysis is initially used to evaluate and build organizational structure. But it can be applied in evaluating the success of new innovative products. In order to understand how to use the SWOT analysis tool, below is an example that shows the SWOT analysis for a new product development.

A company is specialized in designing mobile applications and would like to evaluate the idea of creating a new mobile application called Y App. The application is designed to create a social network for over-weight people to help them to succeed in their diet and build a challenging environment between them to help achieve their goals.

In order to evaluate the project idea, the company used a SWOT analysis template as in the following. You can download the SWOT Analysis template at the end of this article:

**Strengths:**

- Knowledge and experience: Our team has the skills and experience to build a professional application at responsible cost and high quality.
- Creativity and innovation: We have a talented design team that can create an eye-catching user interface (UI)

- Reputation: Along with our experience in the market, we have built a good reputation in the mobile app development business

**Weakness:**

- Experience: although we have experience with the mobile app business, we did not build a similar project before
- Brand: The new application needs to compete with powerful brands in the same niche of the market
- Budget: Since this is a new application, the budget allocations are very limited

**Opportunities:**

- The project idea is unique and innovative which can lead the market
- There is an increasing number of people who seek this type of application
- The government is encouraging people to do more activities, which can be an opportunity to increase sales

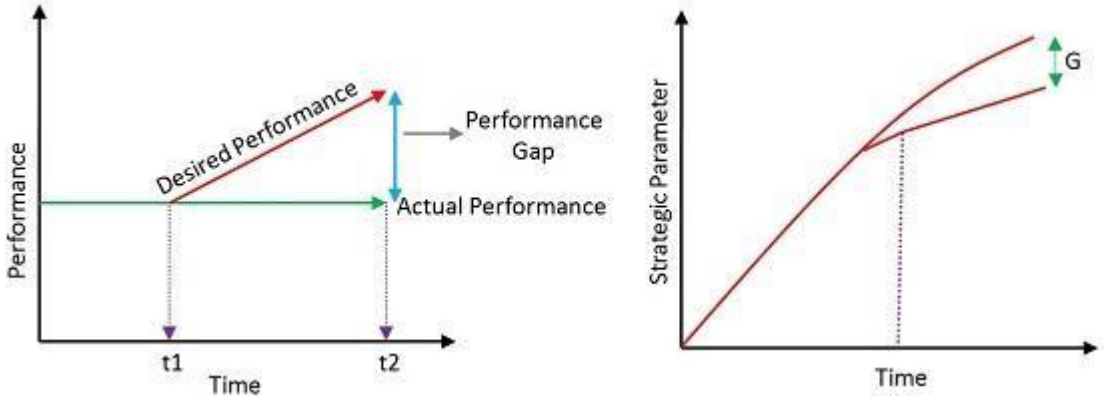
**Threats:**

- Many competitors are presenting their application at a very low price due to their long standing in the market
- Many people think that all diet mobile application are the same, which may be challenge the application to stand out in the crowd of competition

Based on the above SWOT analysis, the team has a clearer observation of the strengths, weakness, opportunities and threats that can face the new product development (NPD). The company may try to overcome the weakness and threats in order to turn the project into a successful product.

## 4. Gap Analysis

It can be understood as a strategic tool used for analyzing the gap between the target and anticipated results, by assessing the extent of the task and the ways, in which gap might be bridged. It involves making a comparison of the present performance level of the entity or business unit with that of standard established previously.




- ***Gap Analysis***

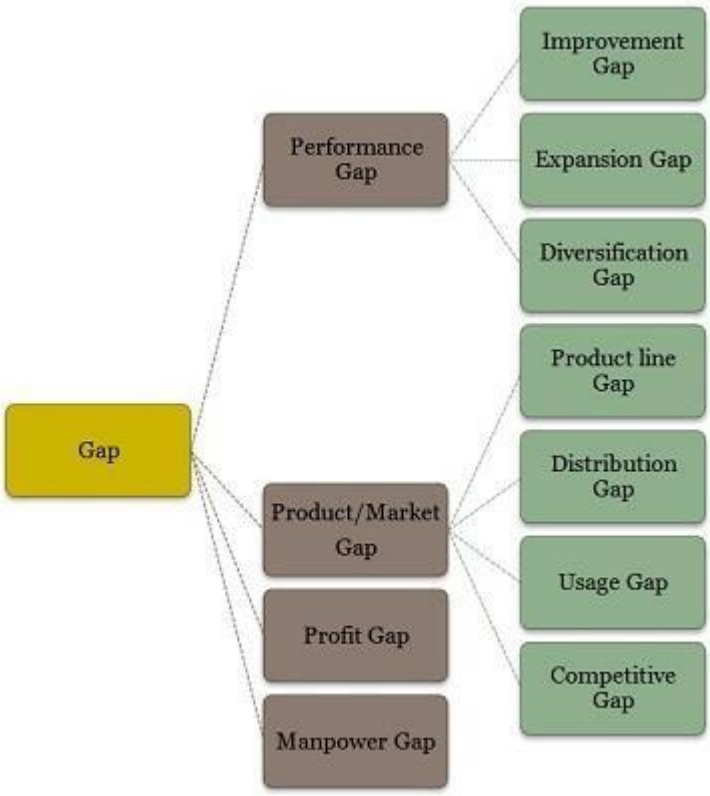
Gap Analysis is a process of diagnosing the gap between optimized distribution and integration of resources and the current level of allocation. In this, the firm's strengths, weakness, opportunities, and threats are analyzed, and possible moves are examined. Alternative strategies are selected on the basis of:

- Width of the gap
- Importance
- Chances of reduction

If the gap is narrow, stability strategy is the best alternative. However, when the gap is wide, and the reason is environment opportunities, expansion strategy is appropriate, and if it is due to the past and proposed bad performance, retrenchment strategies are the perfect option.

- **Types of Gap**

The term 'strategy gap' implies the variance between actual performance and the desired one, as mentioned in the company's mission, objectives, and strategy for reaching them. It is a threat to the firm's future performance, growth, and survival, which is likely to influence the efficiency and effectiveness of the company. There are four types of Gap:




1. **Performance Gap**: The difference between expected performance and the actual performance.
2. **Product/Market Gap**: The gap between budgeted sales and actual sales is termed as product/market gap.
3. **Profit Gap**: The variance between a targeted and actual profit of the company.
4. **Manpower Gap**: When there is a lag between required number and quality of workforce and actual strength in the organization, it is known as manpower gap.

For different types of gaps, various types of strategies are opted by the firm to get over it.

- **Alternative Courses of Action**

In case, gaps are discovered the company's management has three alternatives:


- **Redefine the objectives**: If there is any difference between objectives and forecast, first and foremost the company's top executives need to check whether the objectives are realistic and achievable or not. If the objectives are intentionally set at a high level, the company should redefine them.
- **Do nothing**: This is the least employed action, but it can be considered.
- **Change the strategy**: Lastly, to bridge the gap between the company's objectives and forecast, the entity can go for changing strategy, if the other two alternatives are considered and rejected.

Before making any change in the strategy, one must consider that the gap exists between the present and proposed state of affairs. It is too wide to be noticed, and the organization is encouraged to reduce it. The company's management is of the opinion that something can be done to reduce it.

- **Stages in Gap Analysis**

1. **Ascertain the present strategy**: On what assumptions the existing strategy is based?
2. **Predict the future environment**: Is there any discrepancy in the assumption?
3. **Determine the importance of gap between current and future environment**: Are changes in objectives or strategy required?

Whether it is anticipated sales, profit, capacity or overall performance, they are always based on the past, and present figures and some amount of guess are also involved in it. So, the occurrence of the gap is quite natural, but if the gap is large, then it is a point to ponder because it might have an adverse affect on the company's future.

## 5. PORTER FIVE FORCES EVALUATION

Five external industry forces affecting an organization.

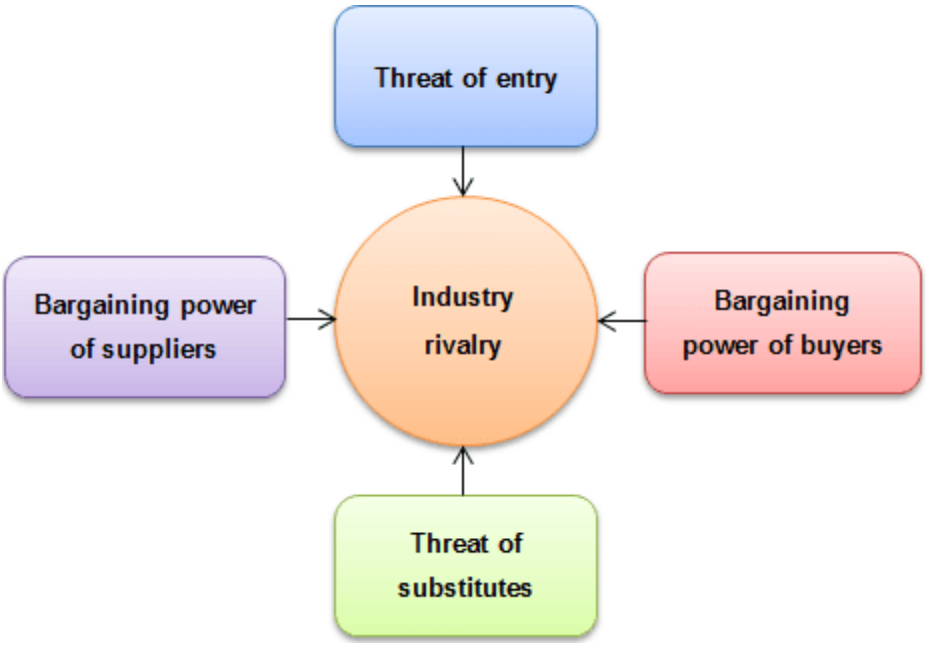
**Definition**

**Porter's five forces model**

is an analysis tool that uses five industry forces to determine the intensity of competition in an industry and its profitability level.

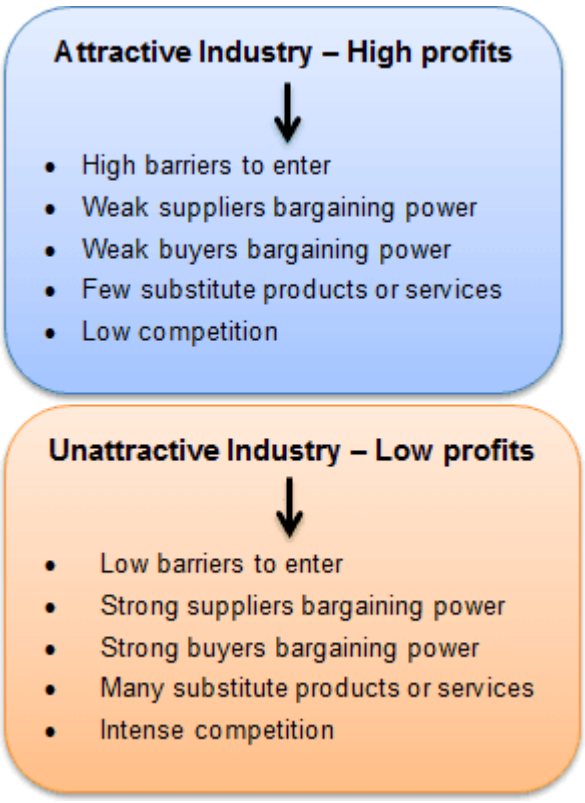
**Understanding the tool**

Five forces model was created by M. Porter in 1979 to understand how five key competitive forces are affecting an industry. The five forces identified are:




These forces determine an industry structure and the level of competition in that industry. The stronger competitive forces in the industry are the less profitable it is. An industry with low

barriers to enter, having few buyers and suppliers but many substitute products and competitors will be seen as very competitive and thus, not so attractive due to its low profitability.




It is every strategist's job to evaluate company's competitive position in the industry and to identify what strengths or weakness can be exploited to strengthen that position. The tool is very useful in formulating firm's strategy as it reveals how powerful each of the five key forces is in a particular industry.

**Threat of new entrants.** This force determines how easy (or not) it is to enter a particular industry. If an industry is profitable and there are few barriers to enter, rivalry soon intensifies. When more organizations compete for the same market share, profits start to fall. It is essential for existing organizations to create high barriers to enter to deter new entrants. Threat of new entrants is high when:

- Low amount of capital is required to enter a market;
- Existing companies can do little to retaliate;
- Existing firms do not possess patents, trademarks or do not have established brand reputation;
- There is no government regulation;

- Customer switching costs are low (it doesn't cost a lot of money for a firm to switch to other industries);
- There is low customer loyalty;
- Products are nearly identical;
- Economies of scale can be easily achieved.

**Bargaining power of suppliers.** Strong bargaining power allows suppliers to sell higher priced or low quality raw materials to their buyers. This directly affects the buying firms' profits because it has to pay more for materials. Suppliers have strong bargaining power when:

- There are few suppliers but many buyers;
- Suppliers are large and threaten to forward integrate;
- Few substitute raw materials exist;
- Suppliers hold scarce resources;
- Cost of switching raw materials is especially high.

**Bargaining power of buyers.** Buyers have the power to demand lower price or higher product quality from industry producers when their bargaining power is strong. Lower price means lower revenues for the producer, while higher quality products usually raise production costs. Both scenarios result in lower profits for producers. Buyers exert strong bargaining power when:

- Buying in large quantities or control many access points to the final customer;
- Only few buyers exist;
- Switching costs to other supplier are low;
- They threaten to backward integrate;
- There are many substitutes;
- Buyers are price sensitive.

**Threat of substitutes.** This force is especially threatening when buyers can easily find substitute products with attractive prices or better quality and when buyers can switch from one product or service to another with little cost. For example, to switch from coffee to tea doesn't cost anything, unlike switching from car to bicycle.

**Rivalry among existing competitors.** This force is the major determinant on how competitive and profitable an industry is. In competitive industry, firms have to compete aggressively for a market share, which results in low profits. Rivalry among competitors is intense when:

- There are many competitors;
- Exit barriers are high;
- Industry of growth is slow or negative;
- Products are not differentiated and can be easily substituted;
- Competitors are of equal size;
- Low customer loyalty.

Although, Porter originally introduced five forces affecting an industry, scholars have suggested including the sixth force: **complements**. Complements increase the demand of the primary product with which they are used, thus, increasing firm's and industry's profit potential. For example, iTunes was created to complement iPod and added value for both products. As a result, both iTunes and iPod sales increased, increasing Apple's profits.

Using the tool

We now understand that Porter's five forces framework is used to analyze industry's competitive forces and to shape organization's strategy according to the results of the analysis. But how to use this tool? We have identified the following steps:

- Step 1. Gather the information on each of the five forces
- Step 2. Analyze the results and display them on a diagram
- Step 3. Formulate strategies based on the conclusions

**Step 1. Gather the information on each of the five forces.** What managers should do during this step is to gather information about their industry and to check it against each of the factors (such as "number of competitors in the industry") influencing the force. We have already identified the most important factors in the table below.

| |
|---|
| Porter's Five Forces Factors |
| Threat of new entry |
| Amount of capital required<br>Retaliation by existing companies<br>Legal barriers (patents, copyrights, etc.)<br>Brand reputation<br>Product differentiation<br>Access to suppliers and distributors<br>Economies of scale<br>Sunk costs<br>Government regulation |
| Supplier power |
| Number of suppliers<br>Suppliers' size<br>Ability to find substitute materials<br>Materials scarcity<br>Cost of switching to alternative materials<br>Threat of integrating forward |
| Buyer power |
| Number of buyers<br>Size of buyers<br>Size of each order |

| |
|---|
| Buyers' cost of switching suppliers<br>There are many substitutes<br>Price sensitivity<br>Threat of integrating backward |
| Threat of substitutes |
| Number of substitutes<br>Performance of substitutes<br>Cost of changing |
| Rivalry among existing competitors |
| Number of competitors<br>Cost of leaving an industry<br>Industry growth rate and size<br>Product differentiation<br>Competitors' size<br>Customer loyalty<br>Threat of horizontal integration<br>Level of advertising expense |

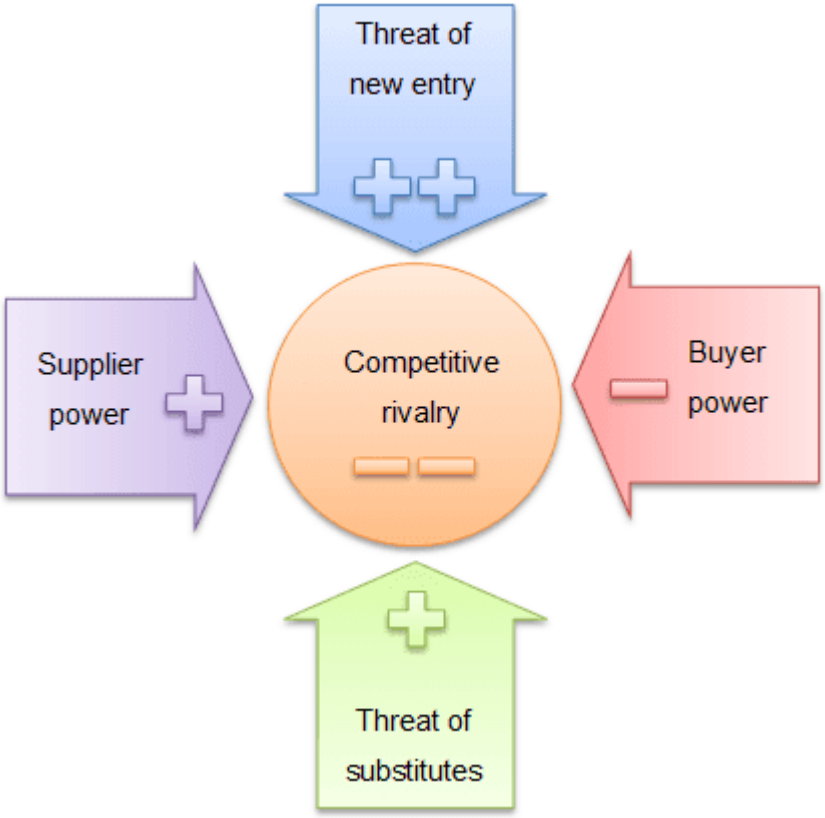
**Step 2. Analyze the results and display them on a diagram.** After gathering all the information, you should analyze it and determine how each force is affecting an industry. For example, if there are many companies of equal size operating in the slow growth industry, it means that rivalry between existing companies is strong. Remember that five forces affect different industries differently so don't use the same results of analysis for even similar industries!

**Step 3. Formulate strategies based on the conclusions.** At this stage, managers should formulate firm's strategies using the results of the analysis For example, if it is hard to achieve economies of scale in the market, the company should pursue cost leadership strategy. Product development strategy should be used if the current market growth is slow and the market is saturated.

Although, Porter's five forces is a great tool to analyze industry's structure and use the results to formulate firm's strategy, it has its limitations and requires further analysis to be done, such as SWOT, PEST or Value Chain analysis.

# Example

This is Porter's five forces analysis example for an automotive industry.




| Porter's Five Forces Evaluation |
| --- |
| Threat of new entry (very weak) |
| Large amount of capital required<br>High retaliation possible from existing companies, if new entrants would bring innovative products and ideas to the industry<br>Few legal barriers protect existing companies from new entrants |

All automotive companies have established brand image and reputation
Products are mainly differentiated by design and engineering quality
New entrant could easily access suppliers and distributors
A firm has to produce at least 5 million (by some estimations) vehicles to be cost competitive, therefore it is very hard to achieve economies of scale
Governments often protect their home markets by introducing high import taxes

## Supplier power (weak)

Large number of suppliers
Some suppliers are large but the most of them are pretty small
Companies use another type of material (use one metal instead of another) but only to some extent (plastic instead of metal)
Materials widely accessible
Suppliers do not pose any threat of forward integration

## Buyer power (strong)

There are many buyers
Most of the buyers are individuals that buy one car, but corporates or governments usually buy large fleets and can bargain for lower prices
It doesn't cost much for buyers to switch to another brand of vehicle or to start using other type of transportation
Buyers can easily choose alternative car brand
Buyers are price sensitive and their decision is often based on how much does a vehicle cost
Buyers do not threaten backward integration

## Threat of substitutes (weak)

There are many alternative types of transportation, such as bicycles, motorcycles, trains, buses or planes
Substitutes can rarely offer the same convenience
Alternative types of transportation almost always cost less and sometimes are more environment friendly

## Competitive rivalry (very strong)

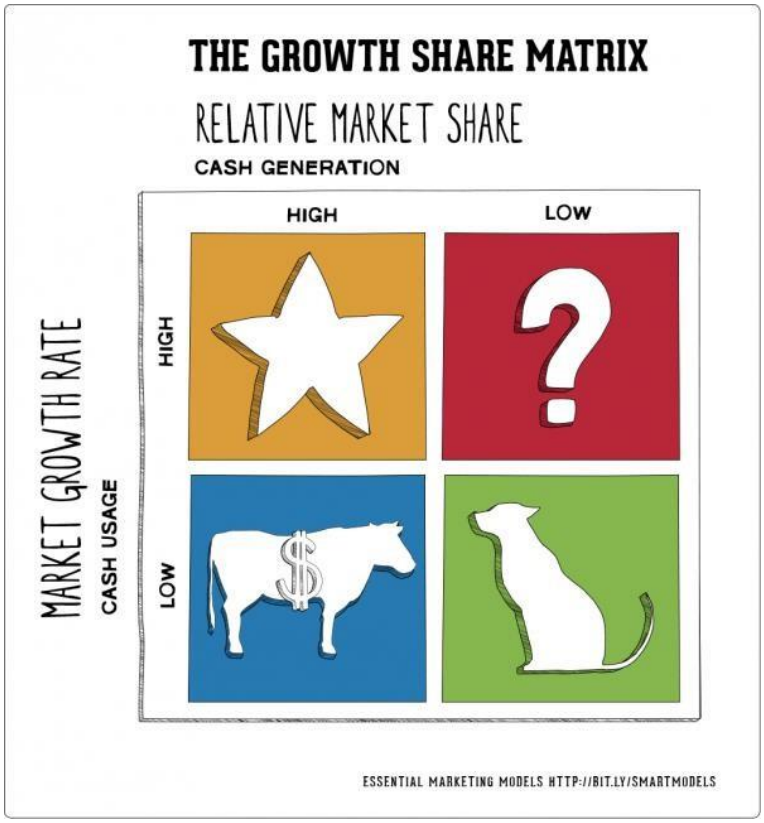
Moderate number of competitors
If a firm would decide to leave an industry it would incur huge losses, so most of the time it either bankrupts or stays in automotive industry for the lifetime
Industry is very large but matured
Size of competing firm's vary but they usually compete for different consumer segments
Customers are loyal to their brands

There is moderate threat of being acquired by a competitor

## 6. What is the BCG Matrix?

The Boston Consulting group's product portfolio matrix (BCG matrix) is designed to help with long-term strategic planning, to help a business consider growth opportunities by reviewing its portfolio of products to decide where to invest, to discontinue or develop products. It's also known as the Growth/Share Matrix.

The Matrix is divided into 4 quadrants based on an analysis of market growth and relative market share, as shown in the diagram below.




- **1. Dogs:** These are products with low growth or market share.
- **2. Question marks or Problem Child:** Products in high growth markets with low market share.

- **3. Stars:** Products in high growth markets with high market share.

- **4. Cash cows:** Products in low growth markets with high market share

Members can use our guide exploring classical marketing models to learn more about how to apply them to real-world challenges. We also have a free guide for more recent digital marketing models including our Smart Insights RACE digital marketing planning framework.

**How to use the BCG Matrix?**

To apply the BCG Matrix you can think of it as showing a portfolio of products or services, so it tends to be more relevant to larger businesses with multiple services and markets. However, marketers in smaller businesses can use similar portfolio thinking to their products or services to boost leads and sales as we'll show at the end of this article.

Considering each of these quadrants, here are some recommendations on actions for each:

- **Dog products:** The usual marketing advice here is to aim to remove any dogs from your product portfolio as they are a drain on resources. *However, this can be an over-simplification since it's possible to generate ongoing revenue with little cost.*

  For example, in the automotive sector, when a car line ends, there is still a need for spare parts. As SAAB ceased trading and producing new cars, a whole business emerged providing SAAB parts.

- **Question mark products:** As the name suggests, it’s not known if they will become a star or drop into the dog quadrant. These products often require significant investment to push them into the star quadrant. The challenge is that a lot of investment may be required to get a return. For example, Rovio, creators of the very successful Angry Birds game has developed many other games you may not have heard of. Computer games companies often develop hundreds of games before gaining one successful game. It’s not always easy to spot the future star and this can result in potentially wasted funds.

- **Star products:** Can be the market leader though require ongoing investment to sustain. They generate more ROI than other product categories.

- **Cash cow products**: The simple rule here is to '*Milk these products as much as possible without killing the cow*! Often mature, well-established products. The company Procter & Gamble which manufactures Pampers nappies to Lynx deodorants has often been described as a 'cash cow company'.

*Use the model as an overview of your products, rather than detailed analysis. If market share is small, use the 'relevant market share' axis is based on your competitors rather than entire market.*

**BCG Matrix Example: How it can be applied to digital marketing strategies?**

The BCG Model is based on products rather than services, however, it does apply to both. You could use this if reviewing a range of products, especially before starting to develop new products.

Looking at the British retailer, Marks & Spencer, they have a wide range of products and many different lines. We can identify every element of the BCG matrix across their ranges:

- **Stars**

Example: **Lingerie**. M&S was known as the place for ladies underwear at a time when choice was limited. In a multi-channel environment, M&S lingerie is still the UK's market leader with high growth and high market share.

- **Question Marks/Problem Child**

Example: **Food**. For years M&S refused to consider food and today has over 400 Simply Food stores across the UK. Whilst not a major supermarket, M&S Simply Food has a following which demonstrates high growth and low market share.

- **Cash Cows**

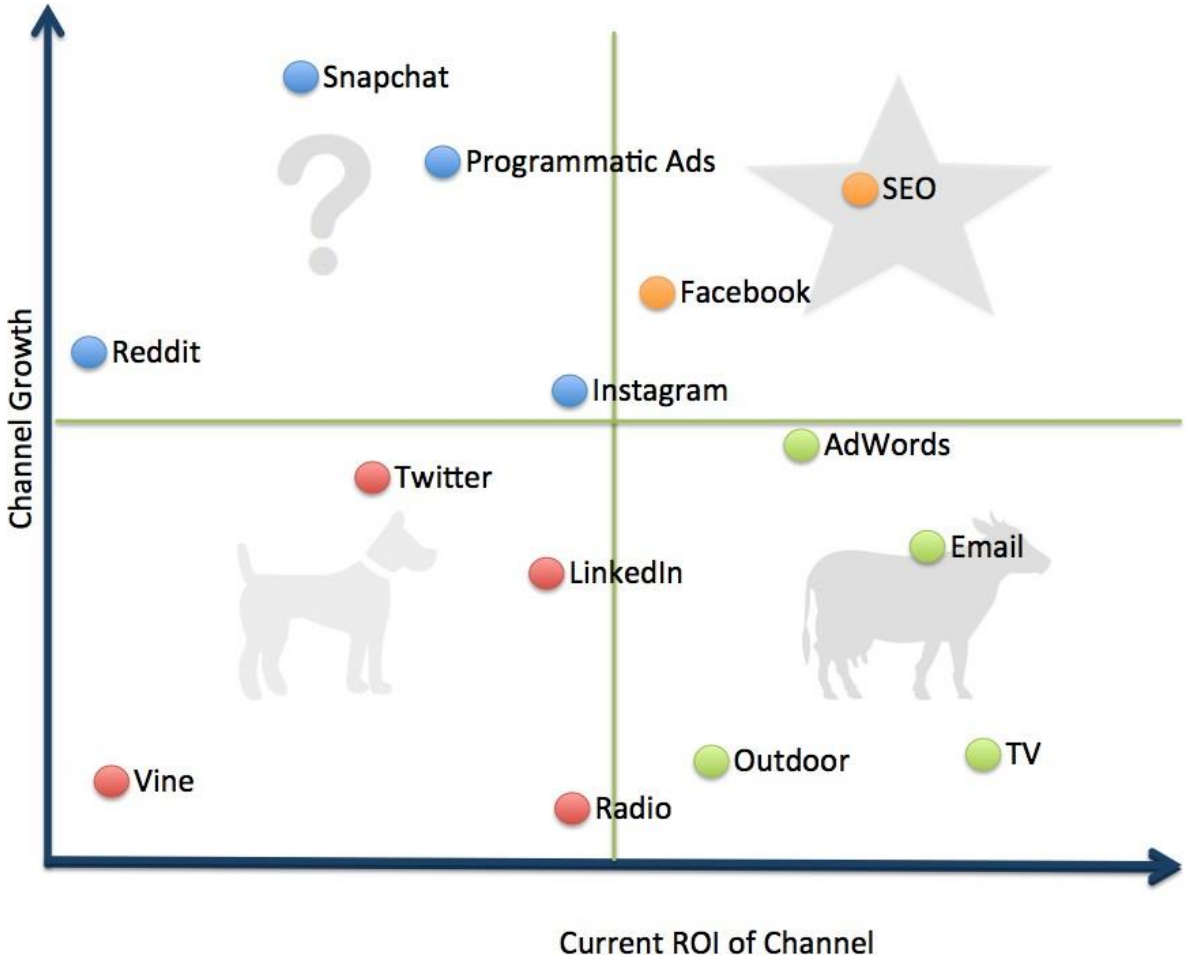
Example: **Classic range**. Low growth and high market share, the M&S Classic range has strong supporters.

- **Dogs**

Example: **Autograph range**. A premium-priced range of men's and women's clothing, with low market share and low growth. Although placed in the dog category, the premium pricing means that it makes a financial contribution to the company.

You can also apply the BCG model to areas other than your product strategy.

For example, we developed this matrix as an example of how a brand might evaluate its investment in various marketing channels. The medium is different, but the strategy remains the same- milk the cows, don't waste money on the dogs, invest in the stars and give the question marks some experimental funds to see if they can become stars.



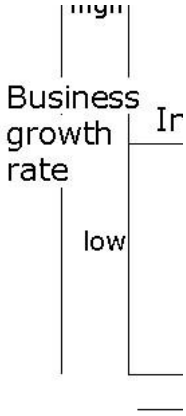

Other more tactical uses of matrixes to support your digital marketing strategy development include the Smart Insights :

- Content marketing matrix - Use to review your portfolio of content assets against competitors

- Content optimization matrix - Assess the value of your webs pages in generating leads and sales

- Content distribution matrix - Review your options for building traffic for a website using different channels - similar to the chart above

Placing products in the BCG matrix results in 4 categories in a portfolio of a company:
**1. Stars** (=high growth, high market share)
- use large amounts of cash and are leaders in the business so they should also generate large amounts of cash.
- frequently roughly in balance on net cash flow. However if needed any attempt should be made to hold share, because the rewards will be a cash cow if market share is kept.
**2. Cash Cows** (=low growth, high market share)
- profits and cash generation should be high , and because of the low growth, investments needed should be low. Keep profits high
- Foundation of a company
**3. Dogs** (=low growth, low market share)
- avoid and minimize the number of dogs in a company.
- beware of expensive 'turn around plans'.
- deliver cash, otherwise liquidate
**4. Question Marks** (= high growth, low market share)
- have the worst cash characteristics of all, because high demands and low returns due to low market share
- if nothing is done to change the market share, question marks will simply absorb great amounts of cash and later, as the growth stops, a dog.
- either invest heavily or sell off or invest nothing and generate whatever cash it can. Increase market share or deliver cash




**Using the BCG matrix to strategize**

Now that you know where each business unit or product stands, you can evaluate them objectively. **Build.** Increase investment in a product to increase its market share. For example, you can push a question mark into a star and, finally, a cash cow.

1. **Hold.** If you can't invest more into a product, hold it in the same quadrant and leave it be.
2. **Harvest.** Reduce your investment and try to take out the maximum cash flow from the product, which increases its overall profitability (best for cash cows).
3. **Divest.** Release the amount of money already stuck in the business (best for dogs).

You need products in every quadrant in order to keep a healthy cash flow and have products that can secure your future.

# 7. PRODUCT LIFE CYCLE ANALYSIS


As consumers, we buy millions of products every year. And just like us, these products have a life cycle. Older, long-established products eventually become less popular, while in contrast, the demand for new, more modern goods usually increases quite rapidly after they are launched.

Because most companies understand the different product life cycle stages, and that the products they sell all have a limited lifespan, the majority of them will invest heavily in new product development in order to make sure that their businesses continue to grow.

**Product Life Cycle Stages Explained**

The product life cycle has 4 very clearly defined stages, each with its own characteristics that mean different things for business that are trying to manage the life cycle of their particular products.

**Introduction Stage** – This stage of the cycle could be the most expensive for a company launching a new product. The size of the market for the product is small, which means sales are low, although they will be increasing. On the other hand, the cost of things like research and development, consumer testing, and the marketing needed to launch the product can be very high, especially if it's a competitive sector.

**Growth Stage** – The growth stage is typically characterized by a strong growth in sales and profits, and because the company can start to benefit from economies of scale in production, the profit margins, as well as the overall amount of profit, will increase. This makes it possible for businesses to invest more money in the promotional activity to maximize the potential of this growth stage.

**Maturity Stage** – During the maturity stage, the product is established and the aim for the manufacturer is now to maintain the market share they have built up. This is probably the most competitive time for most products and businesses need to invest wisely in any marketing they undertake. They also need to consider any product modifications or improvements to the production process which might give them a competitive advantage.

**Decline Stage** – Eventually, the market for a product will start to shrink, and this is what's known as the decline stage. This shrinkage could be due to the market becoming saturated (i.e. all the customers who will buy the product have already purchased it), or because the consumers are switching to a different type of product. While this decline may be inevitable, it may still be possible for companies to make some profit by switching to less-expensive production methods and cheaper markets.

| Industry features | Introduction | Growth | Maturity | Decline |
|---|---|---|---|---|
| **Competition** | Few players | Many new entrants and mergers/ takeovers. Fight for market share. | Shake-out leaves only a few large players | Heavy discounting and price wars |
| **Demand** | Usually higher-income buyers | Increasing market penetration | Growth rate falls, most purchases now replacement or repeat buying. Well informed, demanding buyers | Falling demand |

| Industry features | Introduction | Growth | Maturity | Decline |
|---|---|---|---|---|
| **Technology** | Non-standard | Narrowing in the range of technologies applied | Knowledge is well understood by all players in the market | Becomes obsolete and superseded |
| **Product characteristics** | Differences in choice, inconsistent quality | Improvement in the design and quality | Standardisation of products with only small differentiations | Less emphasis on product differentiation |
| **Production processes** | Short production runs with specialised distributors | Mass production | Overcapacity begins to develop; long production runs | High incidence of overcapacity |
| **Critical success factors** | Innovative product | Products are able to be mass produced | Efficiency in operations to keep costs low | Brand loyalty<br>Low overheads |

# 8. Value Analysis:

1. **Meaning of Value Analysis**
2. **Types of Value Analysis**
3. **Procedure**
4. **Advantages.**

*Meaning of Value Analysis:*

- Value analysis is one of the newer scientific aids to managerial decision-making. It comprises a group of techniques aimed at the systematic identification of unnecessary costs in a product or service and efficiently eliminating them without impairing its quality and efficiency.

- It can also be defined as a systematic analysis and evaluation of techniques and functions in the various areas of a concern with a view to exploring channels of performance improvement so that the value attached to a particular product or service may be improved.

- It endeavors to achieve the maximum possible value for a given cost by a continuous process of planned action and aims at cost reduction from the point of view of value.

- Although initially the group of techniques, aimed at the systematic identification of unnecessary costs and exploring channels of performance improvement, was used mostly in the engineering field which gave it the name of value engineering, it is now used in the various areas of a concern such as marketing, purchasing, financing etc.

- Keeping in view the wide applicability of this technique, value analysis is now used instead of value engineering.

- Value analysis involves a creative approach for finding out unnecessary costs. Such costs are those costs which though incurred on a product or service, are unnecessary and do not improve its quality or efficiency, give it a better appearance, prolong its life, nor provide any additional satisfaction to the customer.

- By eliminating these costs; the cost of the product or service can be reduced, and the sales and the resulting profit proportionately increased.

- Value analysis is an effective tool for cost reduction. Cost reduction may be achieved by economizing expenditure and increasing productivity whereas value analysis probes into the economic attributes of value. In value analysis it is possible to improve performance, increase the value of a product and thus reduce costs by a continuous process of planned action.

- Value analysis lays emphasis on searching out new ideas while cost reduction is usually confined to already known facts. Hence, value analysis is not a substitution for cost reduction methods but it is a completely different procedure for accomplishment of greater results leading to the elimination of unnecessary costs and value improvement of a product or service.

- Value analysis is sometimes taken as value engineering. There is no doubt that value engineering is an important aspect of value analysis and is concerned with production technology, product designing, fabrication and quality control.

- Broadly speaking value engineering is mainly concerned with production while value analysis goes up to the marketing stage for the systematic identification of unnecessary costs and efficiently eliminating them. The scope of value analysis thus is broad and extends to all operations of an organisation where cost is incurred.

## *Types of Value Analysis:*

The term, value is used in a broader sense and it has different meanings for different persons. For example, for a designer, value means quality of the product designed and efficiency of the product produced; for a salesman, it would be the price of the product at which it can be sold in the market; and for the management, value would be the return on capital employed.

**An industrial product may have the following types of value:**

**a. Use Value:**

There are certain characteristics of a product which make it useful for certain purposes. For example, a book of Cost Accountancy if written for ICWA—Inter students, has a use value provided it serves the purpose of such category of students. It measures the quality of performance of a product. Use value may be primary use value, secondary use value and auxiliary use value.

Primary use value indicates the attributes of a product which are essential for its performance as engine, steering wheel and axle in a motor car without which car cannot run. Secondary use value refers to such devices as bonnet or the mudguard or the windscreen without which motor car can be driven but these are necessary for the protection of engine and other parts.

Auxiliary use value is essential for better control and operation as speed meter, electric horn etc in motor car.

**b. Esteem Value:**

Certain properties of a product do not increase its utility or performance but they make it esteemable which would induce customers to purchase the product. For example, a watch with gold cover has esteem value. A rich customer may prefer a watch with gold cover although a watch with a steel cover may serve the same purpose of keeping time.

Some products may have both use as well as esteem value and yet both may be important. For example, a fountain pen with a gold plated body will have both use and esteem value as it will not only look better but will also last longer.

**c. Cost Value:**

This value is measured in terms of cost involved. In case of a manufacturing concern it refers to the cost of production of the product produced and if some part of the product is purchased from outside, it means cost of purchase of that part.

**d. Exchange Value:**

Certain characteristics of a product facilitate its exchange for something else and what we get is the exchange value of that product. It is equivalent to its sale value. All these values play an important part in our personal lives, but in value analysis, we are mainly concerned with use value and to some extent to the esteem value.

All other valued should be subordinated to use value in varying degrees. Value of a product manufactured for sale is the least amount spent in manufacturing it to create appropriate use and esteem values. Thus, value analysis seeks to provide the different values required in a product or service at the least cost without impairing its quality, efficiency and attractiveness.

## *Procedure of Value Analysis:*

**Following points should be considered for putting a scheme of value analysis in operation:**

a. Identification and definition of the problem, i.e. ascertaining whether the customer is being given the full use value and esteem value for the product he purchases and if not, what is required to be done. In case of raw materials and components performance, satisfaction in subsequent production or processes is to be seen.

b. The feasibility of the alternatives and exploring the best method of performing the work at the minimum cost. For this purpose all relevant facts like drawing and design, material specifications, material, labour, overhead and other costs, market competition etc. are considered before proceeding farther with the job of value analysis.

c. The investment, if any, required for the alternative.

d. Percentage of the return on new investment. This return should be equal to or more than the expected return on investment.

e. Costs resulting indirectly out of a decision to change to alternative like costs of items becoming obsolete cost of training, etc.

f. The benefits from the alternative like reduction in costs and increased revenue.

g. Recommendation of the final proposal for implementation after considering the above points which will increase use value and or esteem value.

Value analysis requires a broad organisational framework, active involvement of various departments and a combination of initiative, creative approach, knowledge and mature personality in the person heading the value analysis team which generally includes a design engineer, a production engineer, cost accountant, system expert, market analyst and experts from other functional areas.

## *Advantages of Value Analysis:*

**Following are the main advantages of value analysis:**

a. It is a powerful tool for cost reduction because its basic objective is the identification of unnecessary costs in a product or service and efficiently eliminating them without impairing its quality and efficiency. Reduction in cost will make available more profit to a firm.

b. It is a scientific tool for increasing the productivity of a concern because it aims at exploring various alternatives for efficient use of all types of resources in employment and making available goods and services of the kind and quality most wanted by customers at lower and lower costs.

In this way, the manufacture of most suitable production is facilitated because value analysis aims at giving highest use value and esteem value to customers.

c. It helps to keep management abreast of the latest technology and other developments because value analysis aims at examining new methods and techniques of doing things with a view to reducing the cost and increasing the value of the items.

d. It ensures the fullest possible use of resources because it aims at eliminating all unnecessary costs.

e. It promotes innovation and creativity. It induces the creative ability of the staff because it involves a creative approach for finding out unnecessary costs. Creativity develops new ideas which, in turn, make available the least expensive alternative to do the same function.

f. It creates proper atmosphere for increased efficiency because it aims at a continuing search for improvement in efficiency.

g. It is helpful in any drive for import substitution because it explores new methods and techniques of manufacturing indigenous goods which may serve the same purpose which imported goods serve. Thus, it is helpful in saving precious foreign exchange.

h. It can be applied at all stages from the initial design stage of an item right up to the final stage of its packing and despatch because it aims at identifying unnecessary costs at all levels with a view to eliminating them systematically.

i. Customers' needs are best served with the help of value analysis because it aims at production of the most suitable products.

j. Value analysis helps in the implementation of the marketing concept because it lays emphasis on the constant linking of production function with the marketing function.

k. Management effectiveness can be measured with the help of value analysis because any saving in cost is treated as increased efficiency.

# Financing Innovation

**Why is finance important for innovation?**

Finance plays a critical role in innovation as it allows organizations to conduct research, adopt technologies necessary for inventions as well as develop and commercialize innovations. Accessing external finance for innovation is an important challenge for firms . Firms can fund innovation activities using a variety of funding instruments provided by different types of financial intermediaries and investors. Access to external sources of finance is often particularly challenging at the seed and early stages of business development as at this stage companies face high barriers for accessing finance notably as they lack a track record.

**What is the role of finance for innovation?**

Both funding needs and funding availability are closely related to the stage of development of the firm and its innovation projects.

- In the initial phase when inventions are developed and research conducted, there is still much uncertainty about what innovations will emerge, if any. This makes it very difficult to obtain funding. These financial constraints are one of the reasons why policy typically plays an important role at funding the early stages of technological development.

- At more advanced stages, with the development of prototypes and the commercialisation of inventions, specialized investors who are skilled in assessing new technologies and can handle risk, such as venture capitalists and business angels, become more willing to provide funding.

- In the final stages, at the level of technology diffusion and adoption, once both technological and market uncertainty have all but disappeared, more traditional suppliers can provide the required funding to scale up operations as well as to finance purchasers interested in adopting new innovations.

It is worth noting that even if the innovation process may involve the same stages in small start-up and a large multinational, the sources of finance that they have available vary significantly. Large firms can more easily finance their R&D activities, whether using internal resources, getting a loan from a bank (using their tangible assets as collateral if required), issuing bonds, or raising equity finance in the stock markets. Start-ups do not have as many assets to use as collateral and their innovation investment is less diversified, and may also represent a much larger share of their activities for really innovative firms. As a result, their funding options are much more limited, and often need to rely on friends and family before being able to access other sources of capital.

**What are the sources of finance for innovation?**

Firms can use either internal or external sources of finance to fund their innovation activities.

- The main internal source of finance is retained earnings, the profits accumulated over time which have not been returned to shareholders. Firms typically prefer to use internal financing rather than external financing as the latter can be very costly. As a result, there are projects that firms would choose to undertake if they had sufficient internal resources

available, but which will not be taken forward if firms need to access external finance to develop them. In many cases firms do not have the option to access external financing.

- In contrast, external sources of financing includes debt and equity (as well as some hybrid forms), which can be provided by individual investors (such as business angels), venture capital funds, banks and capital markets (among others). Conditional on having to resort to external funds, debt is generally preferred to equity, since if available debt is typically a cheaper source of finance (even if still more expensive than internal funds).

**What is the framework for financing innovation?**

Markets require a set of well-functioning institutions in order to work, so institutional failures can severely damage access to finance for innovators. This includes the following conditions:

- Intellectual property rights can facilitate access to finance for innovative firms, since they turn knowledge into a commodity that, among others, can be used as collateral to obtain funding, and also as an asset that can be salvaged by equity investors if the firm fails (see Intellectual Property Rights - FI).

- The design of the bankruptcy code has an important influence on financiers' decisions to provide the funds to make it happen (see Bankruptcy regulation).

- Developed financial institutions (see Financial market development) are crucial for firms that need external funding to invest in innovation. Financial market regulation (see Financial market regulation) can shape how financial intermediaries evolve, and the resulting structure of financial institutions in a country, which in turn may impact on the types and sources of innovation activity.

**External sources for financing innovation**

External sources of finance are critical for firms' innovation as firms typically lack internal sources (e.g. retained earnings and profits) for financing their innovation projects. They critically depend on how financial markets operate and on the rewards they provide to innovators (see Markets and rewards for innovation).

External sources for financing innovation include:

- Debt financing, which refers to opportunities for firms to secure public and private credit to start and develop their businesses (i.e. loans from banks and public institutions), is used as one of the most common tools for access to finance.

- Stock market financing, which refers to raising capital by issuing shares or common stock in stock markets can also be used to obtain financing. Yet, it may be of limited relevance for financing innovation whose outcome is uncertain and for innovative new venture, which often have, at least initially, negative cash flows, untried business models and uncertain prospects of success.

- Business angels: wealthy individual investors, typically with business experience, who act as a source of equity and provide start-up capital (as well as expertise and access to networks) to smaller firms in exchange for either convertible debt or equity. In recent times, business angels are establishing networks in order to better link firms with investors. Business angels attempt to identify firms which seem promising but lack the necessary funds to implement innovative strategies. As a result, angel investors play a key role in providing finance to younger firms.

- Venture capital: venture capital funds can be defined as pool of capital which is managed professionally and is invested in private ventures using preferred stock or similar instruments. Venture capital funds have developed significant expertise on how to undertake due diligence for high-risk innovative firms as well as how to structure the contracts and stage the funding provided in order to reduce the impact of informational asymmetries.

- Other types of finance, such as subsidies and grants from governments and international organizations can also be critical given innovative businesses' limited access to financial markets.

**Internal sources for financing innovation**

Internal sources of finance are critical for firms' innovation activities. This includes notably retained earnings, the profits accumulated over time which have not been returned to shareholders. Firms often use internal financing rather than external financing.

Several factors shape firms' decisions to allocate their own resources to financing innovation:

- Sources as diverse as money and capital provided by family and friends to start a business as well as entrepreneurs' personal financial resources can be important resources for innovative entrepreneurs (see Private sources of funding). Private sources of funding are often essential for start-ups since information asymmetries often render access to finance on markets difficult. They can help entrepreneurs obtain debt financing, along with funding from venture capital and business angels. Public policy can play a role by establishing bankruptcy regulations so that innovative entrepreneurs will be more willing to invest in innovative businesses.

- Large firms with multiple divisions can fund their innovation investments in one division, even if a new one, with retained earnings from other divisions. In this case, corporate headquarters allocate scarce funding across different divisions in an internal capital market, using a variety of mechanisms to select what competing projects to fund. The importance given to innovation activities will be particularly critical in this context (see Resource allocation mechanisms within firms).

- The separation of ownership and control can also lead firms to display short-terminist behaviour. This is a concern in particular for companies that are listed in the stock market and have a diversified shareholder base. For a variety of reasons stock market prices may fail to accurately reflect firms' investments in innovation (among others) and the returns that they are expected to generate in the long term. As a result, myopic behaviour by financial intermediaries can sometimes punish management teams that heavily invest in innovation activities, since investors observe lower profits today but fail to appreciate the higher long-term profitability that is expected. There is an on-going debate on whether private equity is a good alternative to focus managers' attention on long-term profitability. While it might insulate managers from having to satisfy market expectations, it might lead to prioritize medium-term profitability (see Long-term and short-term profit objectives).

- Moreover, the competitive environment can impact how many internal resources are available for innovation. Firms can recoup the fixed cost of investing in innovation by

selling the resulting product at a price that is higher than the marginal cost of producing it. Firms use a variety of strategies to sustain this mark-up, such as using intellectual property (e.g., patent the invention), first-mover advantage (e.g., build a large consumer base) or secrecy. However, these strategies are not always successful in practice, so if markets are very competitive it can be difficult to sustain a mark-up to cover the costs of the innovation process. This is why there is some research suggesting that there is an inverse-U-shaped relationship between competition and innovation. Without competition there is very little pressure to innovate, but with too much competition investors may be reluctant to fund innovative activity if they fear that even if successful it will be difficult to capture the benefits of this success (see Competitive environment and resources for innovation).

Finally, while having access to internal resources facilitates investment in innovation by avoiding many of the challenges that arise for firms as they seek external sources of finance, it also makes it easier to undertake potentially unproductive investments. Not being required to convince external providers of finance gives managers the freedom to use their firms' retained earning with high discretionality. This can be good if it leads to profitable investment that would not happen otherwise, but bad if CEOs spend these funds on activities that are beneficial to them rather than to maximize long-term shareholder value.

**UNIT-3**

**Innovation marketing**

**It** essentially comes from two important business terms which are innovation and marketing. In order to understand innovation marketing it is essential to understand the meaning of the two words:

- **Innovation –** This is the process of coming up with new ideas that will be able to bring positive impact to the business such as new products or services.
- **Marketing –** In a nutshell, this is the process where the producers communicate to the consumers about their products and services. Marketing is essential for informing the customers and prospective customers about the product, its features and why they should buy it.

A combination of both terms yields innovation marketing which is simply the implementation of a new marketing method which has not been used earlier and normally involves a big change in the product design, pricing, promotion and even packaging.

Other ways of innovation marketing may be such as launching the product in unconventional places, pricing the product uniquely or promoting the product in a unique way.

**Why Innovation Marketing is used?**

The main purpose of innovation marketing is to open up new markets and ultimately lead to an increase in the business' sales. Innovation marketing also aims at newly positioning the business' products as well as addressing the customers' needs. As the dynamics of business keep changing on a daily basis, so are the marketing strategies.

However, the old conventional marketing strategies are no longer effective due advancement of the business world more so propelled by advancement in technology.

One of the main features that distinguishes innovation marketing is the fact that it signifies the company's or business departure from the old marketing strategies. Thus, innovation marketing should be able to highlight the progress in business by using new marketing methods that have not been used before.

These new methods can be adopted from other businesses, basically by learning the market trends and adapting to change, or, it can be a totally new marketing idea brought in by the business. These new marketing methods can also be implemented on both new and existing products and services.

Differences between traditional approaches to strategy and Strategic Innovation are:

| Traditional approaches | Strategic Innovation approach |
|---|---|
| • Adopt a "present to future" orientation – takes today as the starting point | • "Starts with the end in mind" – identifies long-term opportunities and then "bridges back to the present" |
| • Assume a rule-maker/taker (defensive/follower) posture | • Assumes a rule-breaker (revolutionary) posture |
| • Accept established business boundaries/ product categories | • Seeks to create new competitive space/ playing fields |
| • Focus on incremental innovation | • Seeks breakthrough, disruptive innovation – while continuing to build the core |
| • Follow traditional, linear business planning models | • Marries process discipline with creative inspiration |
| • Seek input from obvious, traditional sources | • Seeks inspiration from unconventional sources |
| • Seek articulated consumer needs | • Seeks unarticulated consumer needs |
| • Are technology-driven (seek consumer satisfaction) | • Is consumer-inspired (seeks consumer delight) |
| • May have a "one-size-fits-all" organizational model | • May experiment with entrepreneurial "new venture" or other organizational structures |

Examples of Innovative Marketing strategies used by big businesses

In this digital era, competition in business has been taken a notch higher. Below are examples of some of the innovation marketing strategies used by some world renowned companies to great success.

- **Virgin America** – This is an American airline that has been operation since 2007. The air travel industry is considered one of the most challenging and demanding industries in business. One important aspect that keeps airlines going is customer service and brand loyalty. However, this is not enough anymore and that is why Virgin America went ahead and introduced a focus group program comprising of 30 frequent flyers and customers who give feedbacks and generate ideas on how the airline can improve its services. The focus group is in turn given discounts and rewards. One direct impact of the customers' feedback was the development of an in-flight social network which enables customers to connect during flights. The company

again went ahead and released a six-hour video detailing an in-flight experience. This video won the award for being the longest ad but it surely had an impact in propelling the name of the company.

- **L'Oréal –** This is a French cosmetics company with a strong foothold in the cosmetics industry all over the world. One way in which cosmetic companies market their products is by having exhibitions where people get to sample makeup as well as other cosmetics for free. In order to reach a wider customer base in this digital world, L'Oréal developed an App called the L'Oréal makeup genius. This app allowed users to do a digital makeover and by doing so they were able to sample the best makeups that suited their skin tones. The app was a huge success, being downloaded more than seven millions times.

- **Netflix –** Currently Netflix is a household name. Within a very short period of time Netflix has transformed to one of the largest companies in the world. It is no longer a video streaming channel only as they have been able to produce some of the best movies in the recent past. Before growing and becoming one of the most influential companies in the entertainment industry, Netflix embarked on a strategy they called "reverse engineering Hollywood." This involved collecting a large stockpile of data on the emerging trends and marketing directly to satisfy customer needs as well as building a brand of their own.

**Strategic considerations on innovation**

Innovating corporate strategies could include the following considerations: what services or products need to be reinvented or developed; what markets to compete in; what business models to develop; how to optimize business processes; how to expand the customer base; how to position the company's brand in relation to target customers; how to make the supply chain and value chain more efficient; and go-to-market strategy. Strategic innovation is an organization's process of reinventing or redesigning its corporate strategy to drive business growth, generate value for the company and its customers, and create competitive advantage. This type of innovation is essential for organizations to adapt to the speed of technology change.

Companies employing strategic innovation do not necessarily need to make changes to the goods and services they sell to their customers, nor to the technologies that support these products, to be successful. Strategic innovation often refers to innovation projects that occur at the executive level.

Strategic Innovation is the creation of growth strategies, new product categories, services or business models

that change the game and generate significant new value for consumers, customers and the corporation.

Strategic innovation takes the road less travelled- it challenges an organization to look beyond its established business boundaries and mental models and to participate in an open-minded, creative exploration of the realm of the possibilities.

Strategic innovation calls for a holistic approach that operates on multiple levels. First, it blends on non-traditional and traditional approaches to business strategy, deploying the practice of "Industry Foresight", "Consumer/customer Insight" and "Strategic Alignment" as a foundation, and supplementing them with more conventional approaches and models.

Second, it combines two seemingly paradoxical mindsets: expensive, visionary thinking that imaginatively explores long term possibilities; and pragmatic, down-to-earth implementation activities that lead to short-term, measurable business impact.

## The Seven Dimensions of StrategicInnovation

The Strategic Innovation framework weaves together seven dimensions to produce a portfolio of outcomes that drive growth. These dimensions are:

**AManagedInnovationProcess**–CombiningNon-TraditionalandTraditional Approaches to BusinessStrategy

**Strategic Alignment** – BuildingSupport

**Industry Foresight** – Understanding EmergingTrends

**Consumer/CustomerInsight**–UnderstandingArticulatedandUnarticulated Needs

**CoreTechnologiesandCompetencies**–LeveragingandExtendingCorporate Assets

**Organizational Readiness** – The Ability to TakeAction

**DisciplinedImplementation**–ManagingthePathFromInspirationToBusiness Impact

A **Managed Innovation Process** lies at the creative core of the approach. By facilitating the interplay between external perspectives and an organization's internal capabilities/practices – and by looking

beyond the obvious – it is possible to inspire the corporate imagination to explore a diverse array of newpossibilities.

The process is designed and managed to create **Strategic Alignment** – the enthusiastic internal support among key stakeholders required to galvanize an organization around shared visions, goals and actions.

**IndustryForesight**providesa"top-down"perspectivethatseekstounderstandthe complex forces driving change, including emerging and converging trends, new technologies, competitive dynamics, potential dislocations and alternativescenarios.

**Consumer/CustomerInsight**providesa"bottom-up"perspective,adeepunderstandingof both the articulated (explicitly stated) and unarticulated (latent or unrecognized) needs of existing and potential consumers/customers.

**Core Technologies and Competencies** is the set of internal capabilities, organizational competencies and assets that could potentially be leveraged to deliver value to customers, including technologies, intellectual property, brand equity and strategic relationships.

A company's **Organizational Readiness** may drive or inhibit its ability to act upon and implement new ideas and strategies, and to successfully manage the operational, political, cultural and financial demands that will follow.

Lastly, success will be enabled or limited by an organization's capacity for effective.

## INNOVATION PLATFORM THAT INCORPORATE NEW PRODUCT DEVELOPMENT

The future of your company is dependent upon it staying relevant. In this day and age, that means that new, innovative products must keep pace with the marketplace. Product development lifecycle times are becoming shorter and shorter to keep up with customer's expectations and needs. While perhaps daunting, a short lifecycle can optimize your company's strengths by tightening processes and cutting out extra steps.

### WHAT IS NEW PRODUCT DEVELOPMENT?

New Product Development (NPD) is the total process that takes a service or a product from conception to market. New or rebranded products and services are meant to fill a consumer demand or an opportunity in the marketplace. The steps in product development include drafting the concept, creating the design, developing

the product or service, and defining the marketing.

A new product opens a whole new market: It can completely replace a current product, take over an existing product, or simply broaden the market for something that already exists. Sometimes existing products are introduced to new markets, repackaged, or marketed differently. New products can improve the use of a company's resources, launch a company into a new market or segment of the market, improve the relationship a company has with its distributors, or increase or defend a company's market share.

**What is 'platform innovation'?**

Platform innovation is like a spring board. Once you have found and established your platform, you can use it to propel new business concept to market easier, cheaper and faster, entering new markets and increasing the frequency of sales transactions.

Take Amazon for example. From the innovative distribution of books, now, the question is not what they can sell, but what they don't yet sell. Recently Amazon added the super successful online shoe retailer, Zappo's to their stable. Books, shoes… why not anything that can be packaged and delivered to the endless "matrix" of customers who know and trust the "platform's" capabilities?

***Platform Innovation*** is about taking a set of two to three strongest elements of your Competitive Advantage and making it one, stand-alone, salable market offer – building the Brand as soon as the foundations emerge to prevent early competition. NOTE that, just like with product innovation, to succeed, platform-based business needs to lead with marketing excellence. Without marketing, the best product or concept will not reach the market fast or consistently enough.

**What makes them "platforms"?**

**Amazon**: the mother of all modern day platforms. It found a niche that could be filled with technology and logistics' innovation. Add marketing and voila – a platform that can accommodate trains going in many directions.

**EBay**: Like Amazon, it is capable of distributing almost any product or service. The difference is Product creation and Distribution model on the Platform. Unlike Amazon, who sources and sells the products on its platform (one-to-many), EBay has created platform for multiple users to create their own 'shops', fill them with products and do their own 'marketing' (many-to-many). The strength of EBay, now supported by the global Brand recognition, is in having a large network of users who depend on and therefor support the

platform. In this way it is very much like Facebook, which has inseparably tied 'lives' of millions of users to its platform.

**Microsoft**: Although there are now other alternatives and a lot of alienation towards this sometimes 'unfriendly' product, businesses are tied to it through sheer cost and convenience of change.

**Dior / Chanel**: Both brands can be described as an oldie but a goodie! The platform the Brand Name associated with a specific market segment (world-wide) for personal luxury. This unwavering focus enables them to consistently 'spring-board' into adjacencies: in both, the range of product categories and in new market segments (age and geography) within the personal luxury market.

**InfusionSoft**: It's one of the fastest growing CRM systems for Small-Medium business. There are dozens of CRM systems out there, so why do I think InfusionSoft is a platform? Apart from a very good product initially offered to SMEs – a fully integrated sales and marketing solution for building a sales pipeline – the company is truly marketing-led. It managed to create an ecosystem of satellite businesses that derive their livelihood from assisting InfusionSoft's customers with using this great but complex software. These businesses became the Brand's evangelists, ensuring that customers would stick to the platform.

**Jim's Mowing**: The ultimate franchise specialist. The platform here is a system that allows them to "Jim" every mobile residential consumer service.

**Teespring**: Watch this space. Already showing signs of great commercial success and the leaders are fully conscious of the platform they have created. Even the name says it all – presumably playing on words referring to a winning movement.

## Definitions of Innovation Platform

An innovation platform is a space for learning and change. It is a group of individuals (who often represent organizations) with different backgrounds and interests: farmers, traders, food processors, researchers, government officials etc. The members come together to diagnose problems, identify opportunities and find ways to achieve their goals. They may design and implement activities as a platform, or coordinate activities by individual members.

**Who uses innovation platforms?**

Various types of organizations use innovation platforms:

• Agricultural research organizations use innovation platforms to help make their research more relevant and to facilitate the adaptation and dissemination of findings. They force researchers to look beyond their own disciplinary or commodity boundaries and consider the whole picture

• Development agencies and NGOs find them useful to identify areas for interventions, to ensure that the interventions are appropriate for particular situations, and to enable stakeholders to influence policy making and development activities

• Local and national governments use them to improve policy making, links with clients, and their outreach services for citizens

• Donors regard innovation platforms as a way to improve the targeting and effectiveness of development interventions. While they may sponsor innovation platforms, they are not normally members themselves.

Some stakeholders are crucial members of innovation platforms:

• Farmers and other rural people use innovation groups to express their interests and guide activities that are intended to benefit them.

• The private sector, including traders, input suppliers, service providers, processors, wholesalers and retailers, can benefit from innovation platforms that aim to boost economic activities and make value chains more profitable.

- **How innovation platforms work**

Innovation platforms generally follow several steps.

• Initiate. Any stakeholder group can initiate innovation platforms, but it is usually a research or development organization, a government agency or an NGO that does so. This organization identifies the broad focus area of the innovation platform, identifies the various stakeholders, brings them together, and convenes the first few meetings. It identifies someone to facilitate the innovation platform: perhaps one of its own staff, or someone else from outside.

• Decide on focus. The platform members discuss the focus area and identify bottlenecks, problems and opportunities. They may refine the focus further, expand it, or shift it to a different set of issues. They gather information from various sources, including research findings, current practices, local knowledge and policy guidelines.

• Identify options. The platform members decide what they want to do to solve the problems or take

advantage of the opportunities that they have identified. The range of options may be wide. For example, they may decide to test new varieties of a crop, explore ways to improve supplies of inputs, promote the marketing of a product, or press for a change in government policy

- Test and refine solutions. Solutions must be tested and adapted to make sure they work. Farmers may test new farming methods; traders may try offering more for higher grades of produce; an input supplier may market-test a new type of product. The innovation may be a new technology (a new type of seed or farming technique), or an institutional change (a policy adjustment or a new way to manage marketing). The innovation platform coordinates these experiments and monitors whether they are successful

• Develop capacity. In most cases, it is necessary to develop the capacity of different actors in order for the solutions to succeed. Farmers may need training in a new technique; cooperatives may need help with organization and bookkeeping; new ways may be needed to multiply and distribute seed or to manage the marketing of produce. The innovation platform identifies these needs and finds ways to develop the capacity required.

• Implement and scale up. If the innovation is successful, the innovation platform works with its member groups to get it adopted widely. That may mean documenting and publicizing the innovation, arranging training and study visits, persuading other groups to adopt it etc.

**Benefits of innovation platforms**

Strengths of innovation platforms include:

• They facilitate dialogue and understanding among stakeholders and provide a space for them to create a common vision and mutual trust. They offer a neutral space to air disagreements and conflicts, and for members to state their needs and requirements.

• They enable partners to identify the bottlenecks hindering innovation, and develop solutions beyond what individual actors can achieve alone, for example, in infrastructure, institutional change and policy development.

• They create motivation and a feeling of ownership of the solutions that they develop: People readily buy into solutions they have been involved in developing.

• They facilitate upward communication. They enable weaker actors (such as small-scale farmers) to express

their views on an equal basiswith powerful actors (such as processors or the government). They empower communities to demand and negotiate for services from the government and support organizations.

• They lead to better-informed decisions. Innovation platforms enable joint learning and cooperation among diverse actors to solve problems and reduce uncertainties. Farmers can learn how to sell their products; policymakers gain evidence to use in creating a more enabling environment where innovations can happen.

• They contribute to capacity development. By improving communication, learning and exposure to new people and ideas, innovation platforms help members to clarify their roles, organize themselves, and adapt to unforeseen changes and new opportunities

• They make innovative research possible. Innovation platforms create opportunities for research to be demand-driven, to find critical issues for investigation, and to disseminate research outputs. Platform members are involved in the research process, and are more likely to be convinced by the findings.

• They enhance impact. Farmers can improve their agricultural productivity and profitability and improve how they manage natural resources. Value chain actors can engage more effectively in the market. Policy making can be more participatory and appropriate for solving issues on the ground.

**Idea Generation**

The first stage of the New Product Development is the idea generation. Ideas come from everywhere, can be of any form, and can be numerous. This stage involves creating a large pool of ideas from various sources, which include

- **Internal sources** – many companies give incentives to their employees to come up with workable ideas.
- **SWOT analysis** – Company may review its strength, weakness, opportunities and threats and come up with a good feasible idea.
- **Market research** – Companies constantly reviews the changing needs, wants, and trends in the market.
- **Customers** – Sometimes reviews and feedbacks from the customers or even their ideas can help companies generate new product ideas.

- **Competition** – Competitors SWOT analysis can help the company generate ideas.

**Idea Screening**

Ideas can be many, but good ideas are few. This second step of new product development involves finding those good and feasible ideas and discarding those which aren't. Many factors play a part here, these include –

- Company's strength,
- Company's weakness,
- Customer needs,
- Ongoing trends,
- Expected ROI,
- Affordability, etc.

**Concept Development & Testing**

The third step of the new product development includes concept development and testing. A concept is a detailed strategy or blueprint version of the idea. Basically, when an idea is developed in every aspect so as to make it presentable, it is called a concept.
All the ideas that pass the screening stage are turned into concepts for testing purpose. You wouldn't want to launch a product without its concept being tested.

The concept is now brought to the target market. Some selected customers from the target group are chosen to test the concept. Information is provided to them to help them visualize the product. It is followed by questions from both sides. Business tries to know what the customer feels about the concept. Does the product fulfil customer's need or want? Will they buy it when it's actually launched?
Their feedback helps the business to develop the concept further.

**Business Strategy Analysis & Development**

The testing results help the business in coming up with the final concept to be developed into a product.

Now that the business has a finalized concept, it's time for it to analyse and decide the marketing, branding, and other business strategies that will be used. Estimated product profitability, marketing mix, and other product strategies are decided for the product.

Other important analytics includes

- Competition of the product
- Costs involved
- Pricing strategies
- Breakeven point, etc.

**Product Development**

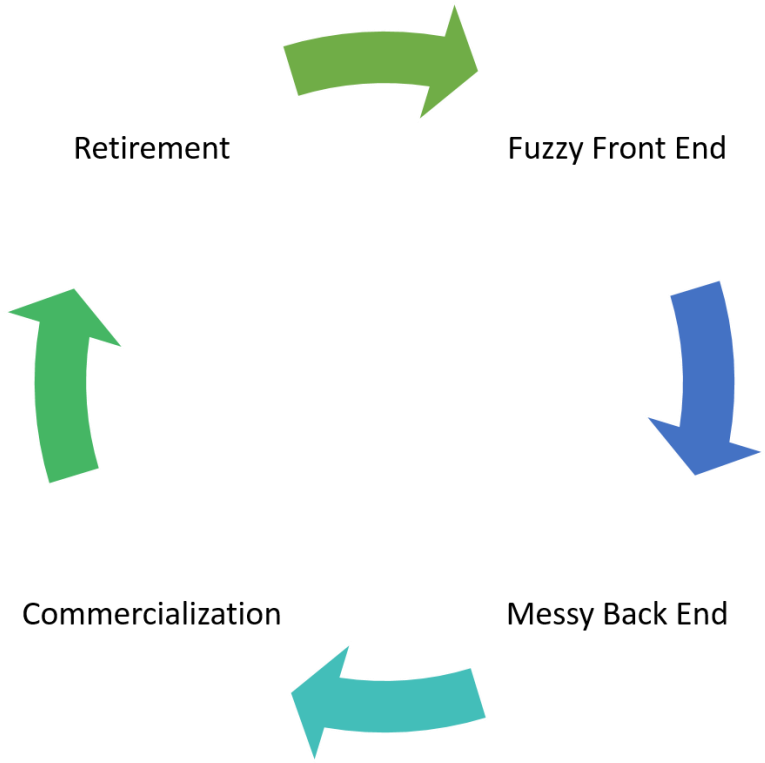
Once all the strategies are approved, the product concept is transformed into an actual tangible product. This development stage of new product development results in building up of a prototype or a limited production model. All the branding and other strategies decided previously are tested and applied in this stage.

## WHAT IS THE PRODUCT DEVELOPMENT LIFECYCLE?

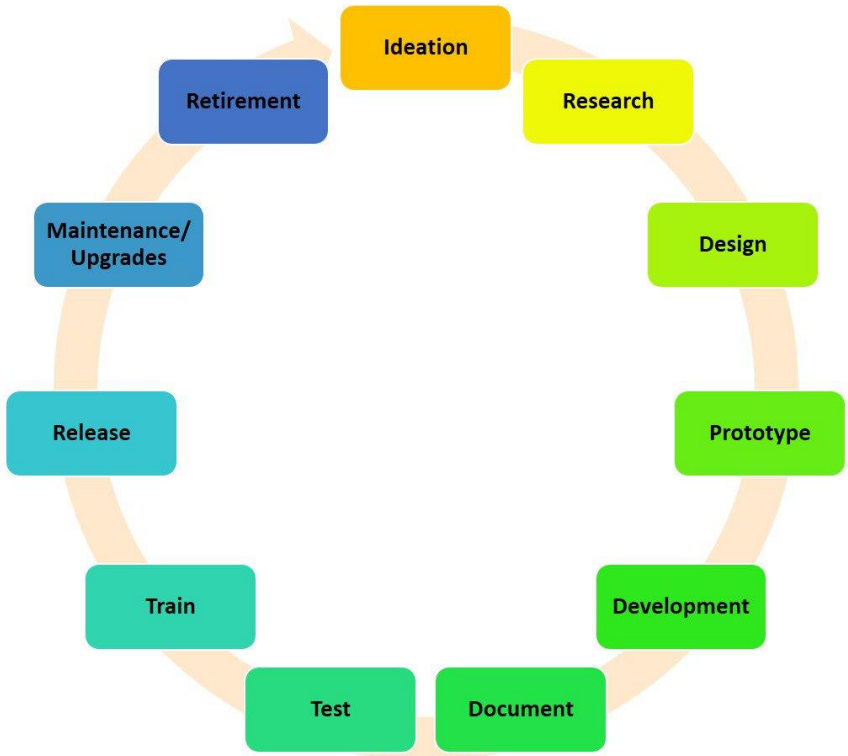
All of the previous processes outlined had aspects of new product development in them. However, the Product Development Lifecycle (PDLC) encompasses every phase of a product, from the idea to retirement. You should approach product planning with an organized, thoughtful process, so that you don't have poorly implemented products that are either unnecessary, unwanted, or overly expensive.

Many different PDLCs have been produced for product and service development, including separate ones for new software development. However, experts recommend that your cycle reflects your company's unique processes and needs. Some example follow.

You can view PDLC at a high-level, including the four stages of the fuzzy front end, messy back end, commercialization, and retirement.




You can also look at PDLC in a quite detailed way, such as the following cycle:




There are many methodologies that have been incorporated into product development. Many of these are familiar to business professionals, as they have roots in Business Process Management concepts. These include:

- **Lean Product Development (LPD):** Lean product development uses the lean principles of innovation, shortening development time, and redevelopment cycles, and employs low development costs, low production cycles, and low production costs to develop new products. Allen Ward, who wrote *Lean Product and Process Development* states that Lean principles increase innovation by a factor of ten, and increase the introduction of new products by 400 to 500 percent. Lean divides new product development into what customers wish for, want, and need.
- **Design for Six Sigma (DFSS):** DFSS is a process management technique that is related to the traditional Six Sigma (SS) methodology. However, it differs from the traditional methodology in that DFSS does not focus on improvement of an existing process or processes, but on preventing process problems at the beginning. DFSS, like SS, focuses on measurement. Implement DFSS by performing these steps: define, measure, analyze, design, verify (DMADV). By contrast, the steps in SS are define, measure, analyze, improve, control (DMAIC).

- **Flexible Product Development**: This methodology for product development is counter to many popular development methodologies such as LPD and DFSS. This method encourages the company to continually make changes, even late into development, by remaining agile. The techniques used to produce this agility (which keeps the cost of change low) include modular architectures, experimentation and using an iterative approach to design, set-based design, and allowing new processes to develop as the product develops. In *Flexible Product Development: Building Agility for Changing Markets*, Preston Smith says that innovation only declines when using processes like Six Sigma and Lean because they are much too rigid for breakthroughs to happen.
- **Quality Function Deployment (QFD):** This methodology is a concurrent engineering approach where quality is designed into products, not discovered as missing or present later. Quality is defined as when a product meets the needs of the customer while providing value. QFD pays special attention to the "voice of the customer" through interviews, surveys, focus groups, reports, and observation. This data is then put into a matrix for product planning and designed from their inputs. QFD includes the whole company in product development, including departments such as marketing, quality, engineering, and finance, which makes the approach more balanced and realistic.
- **User-Centered Design (UCD):** Also known as user-driven development (UDD), this methodology places usability at the core of each design step. You must validate each usability assumption in real world testing. The biggest difference between UCD and everything else is that UCD optimizes how people already do things. There is no movement toward changing their experience.
- **Design for Manufacturing (DFM) and Design for Assembly (DFA):** The manufacturing industry uses both DFM and DFA, and are examples of concurrent engineering design. DFM designs with the idea that manufacturing is easier to achieve, while DFA designs intentionally for the ease of assembly. Both have specified rules to accomplish them.

## WHAT IS PRODUCT DEVELOPMENT IN MARKETING?

Your product development marketing strategy helps you generate interest around your new or revamped product. Your product marketing strategy incorporates your new product introduction process (NPI), which comes into effect after completing the design and testing. This is the stage where manufacturing takes over. In other words, this is where the prototype goes to full production and into a sale. NPI takes over where NPD leaves off.

A product marketing strategy should include your customer analysis, product development, pricing, branding, and sales and distribution plan. The following are a list of things you should do to be effective in your product marketing:

- **Get Your Strategy Ready Early:** Your customers should be able to understand what your product does, how it compares to the competition, and what distinguishes it. You should be working on your marketing plan before your product leaves the FFE, and firm it up through development.
- **Use Social Media:** Your should build your product's landing page as soon as it is out of development and vetted by your consumer test groups. Use your site's available features to collect even more consumer information for your launch. Continue to keep your product momentum going by building a Facebook page and opening a Twitter account for your product.
- **Get Internal Buy-in:** Everyone in your company should be a cheerleader for the newest product. Further, anyone in your company can have an idea about its promotion, so listen to all of them - gems can turn up in the most unexpected places.
- **Designate Your Goals and Budget:** As your product is making its way, you will want to designate a team responsible for its launch. Your team can put together a comprehensive marketing project and budget.
- **Develop Your Marketing Materials**: It's time to put together your product marketing support with content, and your advertisement package. Internally, you will need to determine the product needs for customer support, warranty, and repairs.

## "Process innovation"

- It means the implementation of a new or significantly improved production or delivery method (including significant changes in techniques, equipment and/or software). Minor changes or improvements, an increase in production or service capabilities through the addition of manufacturing or logistical systems which are very similar to those already in use, ceasing to use a process, simple capital replacement or extension, changes resulting purely from changes in factor prices, customisation, regular seasonal and other cyclical changes, trading of new or significantly improved products are not considered innovations."
- Process innovation is the application or introduction of a new technology or method for doing something that helps an organization remain competitive and meet customer demands.
- Process innovation happens when an organization solves an existing problem or performs an existing business process in a radically different way that generates something highly beneficial to those who perform the process, those who rely on the process or both. For example, the introduction of

a completely new sequence to an existing production process that speeds production by 100%, thereby saving the organization money and time, could be considered a process innovation.

- Organizations today often bring in new information technology systems or find ways to use older in new ways at the forefront of their process innovation efforts.
- Process innovation is different from incremental innovation in both scope and size. Whereas incremental or continuous improvements generate limited value, innovation generates improvements that increase value by upward of 50%, 100% or even more. Some describe process innovation as creating radical or game-changing shifts. In addition to the introduction of a radically new approach or technology, process innovation generally requires a longer planning time and support from high-level management. It's also riskier than incremental improvements and requires a higher level of cultural and structural change. Process innovation also typically impacts a broader portion of an organization than do incremental improvements.
- Process innovation can generate value to either internal customers, including employees or the actual organization itself, or it can create value to external customers, including business partners, end users or actual consumers. Values stemming from process innovation include reducing the time it takes to produce a product or perform a service; increasing the number of products produced or services provided within a time frame; and reducing the costs per product produced or service provided.
- Additionally, process innovation can generate significant gains in product quality and service levels. Overall, an individual organization needs to see a significant increase in some of its key performance indicators (KPIs) to be a true process innovation.

**What process innovation is not**

Process innovation should not be confused with process excellence or process improvement, both of which refer to using the existing processes to achieve high performance. Here, continuous or incremental innovations do not count as process innovation involves almost always a total change.

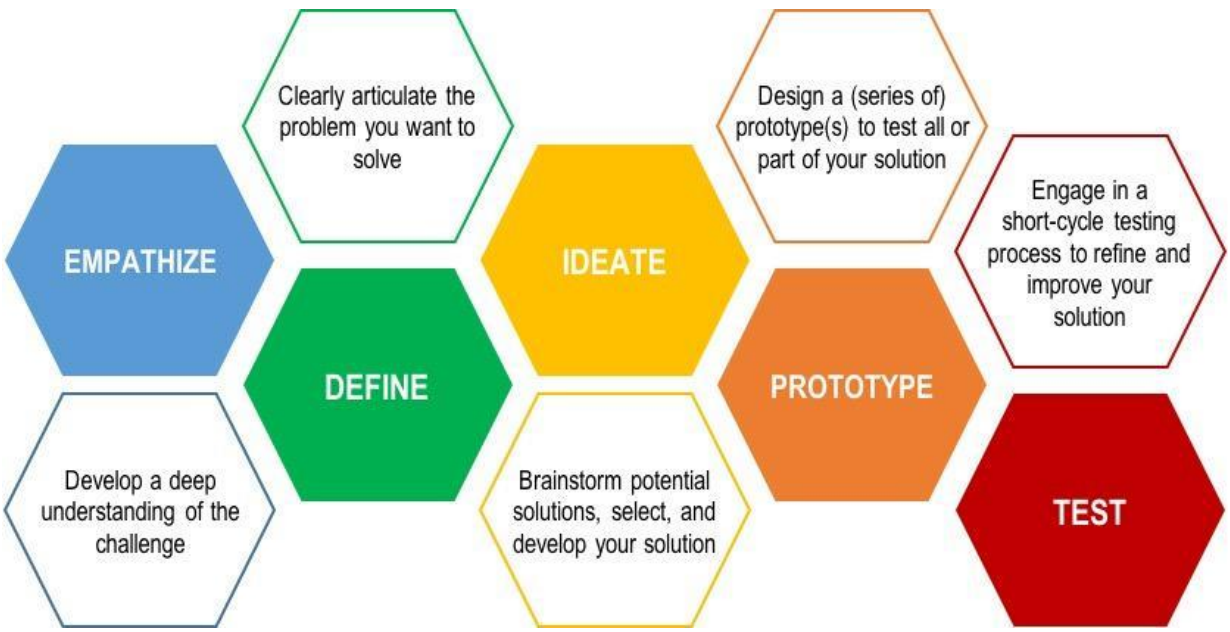
- Customization
- Minor improvements or changes in existing processes

- A rise in service or production capabilities by adding logistical or manufacturing systems that are similar to the ones in use
- Simple capital extension or replacement
- Changes that result only from the changes in factor prices, regular seasonal changes, or other recurring changes
- Trading of new or considerably enhanced products
- Terminating the use of an existing process

**Stages of process innovation**

What you see below is a methodology for process innovation/ improvement efforts. These are the basic steps for any kind of process innovation across sectors and geographies. The steps include deciding the focus area of innovations and the use of tech tools, creating a multifunctional team, doing a pilot run, addressing feedback, and rolling out the innovation for commercial use.

There are different stages of process innovation. While identifying and understanding opportunities, exchanging and selecting ideas, and developing innovation are the usual steps, these are often restrictive when it comes to process innovation. The most effective approaches to implement process innovation in your business are using disruptive methodologies and design thinking.



Source: Oceanit

**Design thinking for process innovation**

There are four stages of design thinking for making process innovation:

There are four stages of design thinking for making process innovation:

1. **Inventing the future**

This involves analyzing the situation in your industry and finding a solution based on what people really need but don't have yet. The focus of the process innovation for your organization can be either on your internal customers or external customers.

2. **Developing a prototype**

Create a sample of the product or service idea you've come up with to test the waters.

3. **Testing**

Put your prototype to use and collect feedback from your end users to adapt your product or service to their actual needs.

4. **Implementing**

Once you've defined the attributes of the new process, replicate it in your organization to bring about real change.

**Disruptive methodologies for innovating processes**

It is hard to differentiate between these two methodologies as they have quite a lot in common. How you can create disruptive innovation in your organization's processes is by asking what tasks your customers need you, or anyone for that matter, to do for them—something that currently no one's doing. The approach to finding the answer to this question is similar to the steps in design thinking.

**A few examples of process innovation**

Simplify, automate, and eliminate was the mantra before the digital revolution. But now, organizations

world over "rethink the way work gets done," says Chris Brahm, who leads Bain's global Advanced Analytics practice. Think new digital technologies and what companies such as Uber or Amazon Web Services offer.

For example, KLM Catering Services Schiphol employs the LEAN manufacturing approach. The Dutch company even identifies the drink requirements to reduce waste and weight, which in turn results in savings and sustainable production. At Genpact, a global professional services firm that drives digital-led innovation and digitally-enabled intelligent operations for clients, process innovation initiatives are of three kinds: generation of innovative insights, driving disruptive process improvements, and creation of new analytical solutions. The company follows a structure idea management life cycle and nurtures an ecosystem of partners, collaboration networks, innovation labs, and industry associations as enablers of innovation. For instance, in one of its process innovation projects, Genpact's innovation lab used advanced analytics and domain expertise to help one of its client minimize loss from credit card collection by USD175 million annually on a portfolio of 25 billion dollars. LEGO, a company that continues to be one of the most innovative in the world, improved its core production processes with four pilot projects—the LEGO Ideas project (remember Mindstorms?) would be considered a successful outcome by anyone!

**Conclusion**

Along with product and business model innovation, process innovation is the foundation for superior performance in any industry. Digitization throws new challenges at many organizations today. The only way to react to those challenges and solve them effectively and efficiently is by implementing new changes and quickly reinventing processes across verticals and geographies. New customer needs and new technologies ensure that innovation is an everyday activity.

**Relevant reads:**

https://www.e-education.psu.edu/ba850/node/719

Service innovation

It means changing the way you serve your customers to create greater value for them and deliver more revenue for your organization. Service Innovation is about providing better customer service, enhanced products and customer experiences that are better than the previous. Delivering superior customer interactions without compromising on financial gain and profits – is the kind of innovation that is important for business success. Getting better at what you do, also leads to cutting down on the time spent on doing it and creating a

culture of constant improvement.

To truly understand and anticipate the customer's needs, a progressive outlook is necessary. Business success cannot be guaranteed only by solving the problems at hand. Serving old wine in new bottles does not always work either – customers can see through it. Understanding and keeping updated on customer needs and trends should be the starting point to ultimately lead you to innovate. Innovation involves taking risks, doing what's not been done before, a willingness to fail and continuously try to get you to business success.

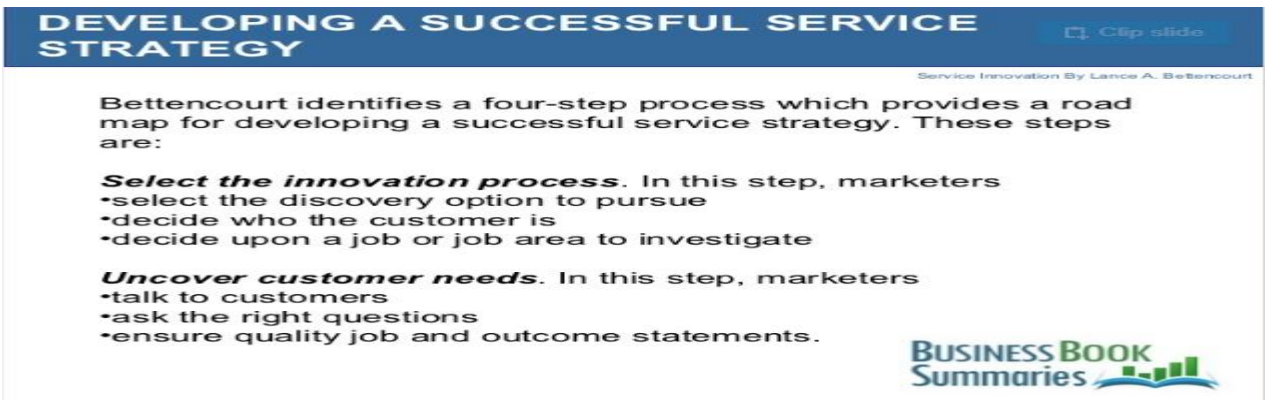
Service Innovation is a tougher prospect than those aimed at improving a product. Customer Service is complex and subjective – what is good service for one customer is probably the worst experience for another. Service Innovation must be focused on bringing about positive changes for the maximum number of customers in your customer base. The arduousness being felt to bring about service innovation is because hitherto service organizations have lasted with little or no innovation. So effectively there is innovation benchmark or history to fall back on. With customers now becoming increasingly aware of their rights and also the fact that competition is cut throat, even customer service now is expected to be innovative. For example, banks earlier knew they had complete control over the procedures and processes and faced little or no risk from customers having an impact on their business. However, now with easier rules and the vast number of players within this industry alone, customers will not think twice before taking their money elsewhere. Innovative products, increased number of branches, better trained and more competent staff and round the clock customer service centres are some of the innovations now seen in this industry. Service Innovation is now priority and is important for business success.

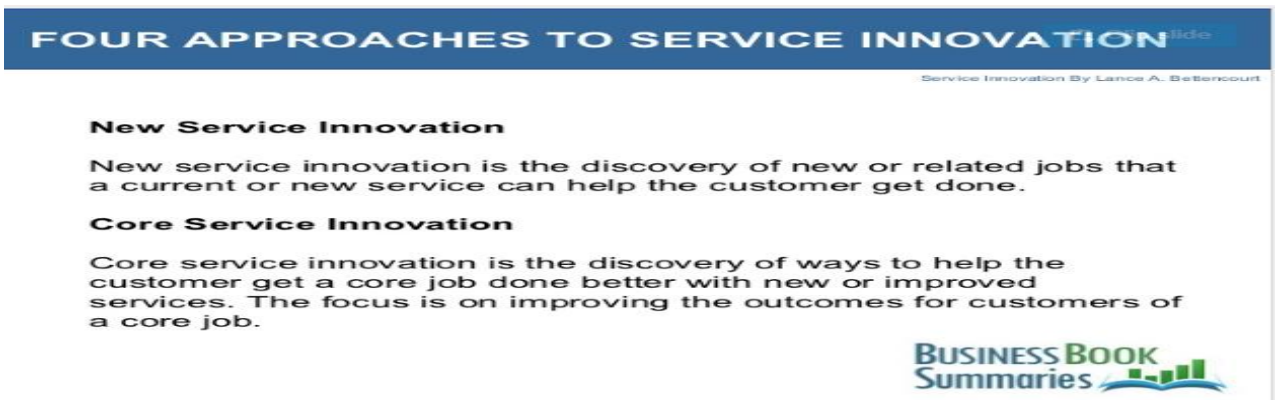
As discussed, customer expectations and increased awareness is the raison d'etre for this crazy scramble towards service innovation. Companies now realize that unless they push the envelope on efficiency and effectiveness of customer service they will be unable to survive. It would be almost impossible to survive if they don't keep working towards lowering costs and improving efficiency both in service and offerings. Innovating in all areas ensures that they get better results since the margin for error will reduce and they will be able to service their customers better in the first interaction. Customers can now clearly see that they are the driving force behind any company and that companies are bending backwards to please them. The innovation drive will therefore continue unabated since customers will not settle for anything less than the best. They are investing in you and so will not stop expecting you to service them innovatively so that their

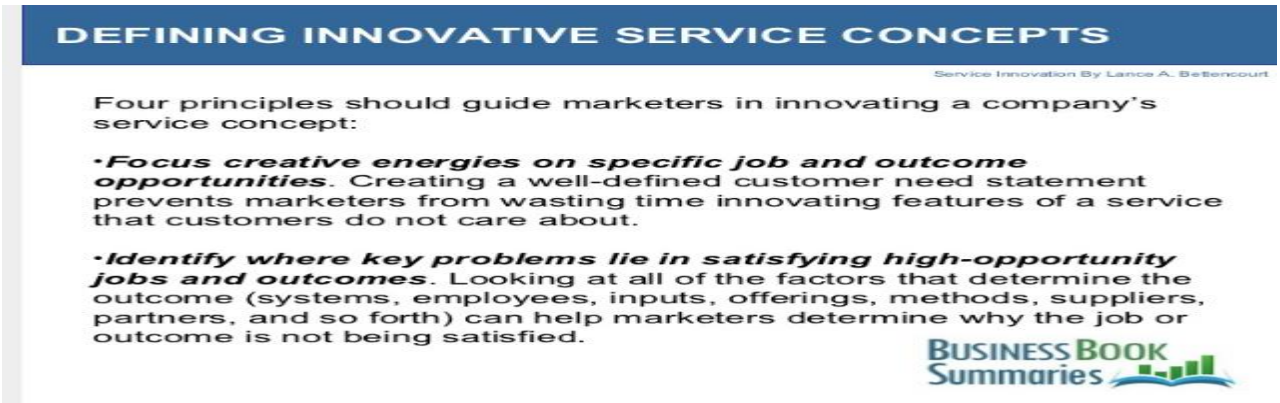
lives are simpler and they get the best value for their money. They are shunning inferior quality service like the plague and know they have many others they can go to. Tough call eh!?

Innovating in a service business works best if the innovations are: 1) aligned with your core purpose, 2) meet a future consumer need and 3) can be executed by your organization.

https://www.forbes.com/sites/georgebradt/2013/02/20/three-imperatives-for-service-innovation/#7d0ab08d3471





What is service innovation?

A new service idea is an innovation if it:

• Is an intentional change in the service provided

• Provides a new or substantially improved benefit to the customer

• Significantly improves the service firm's profitability

• Can be duplicated from customer to customer Service firms innovate in three ways:

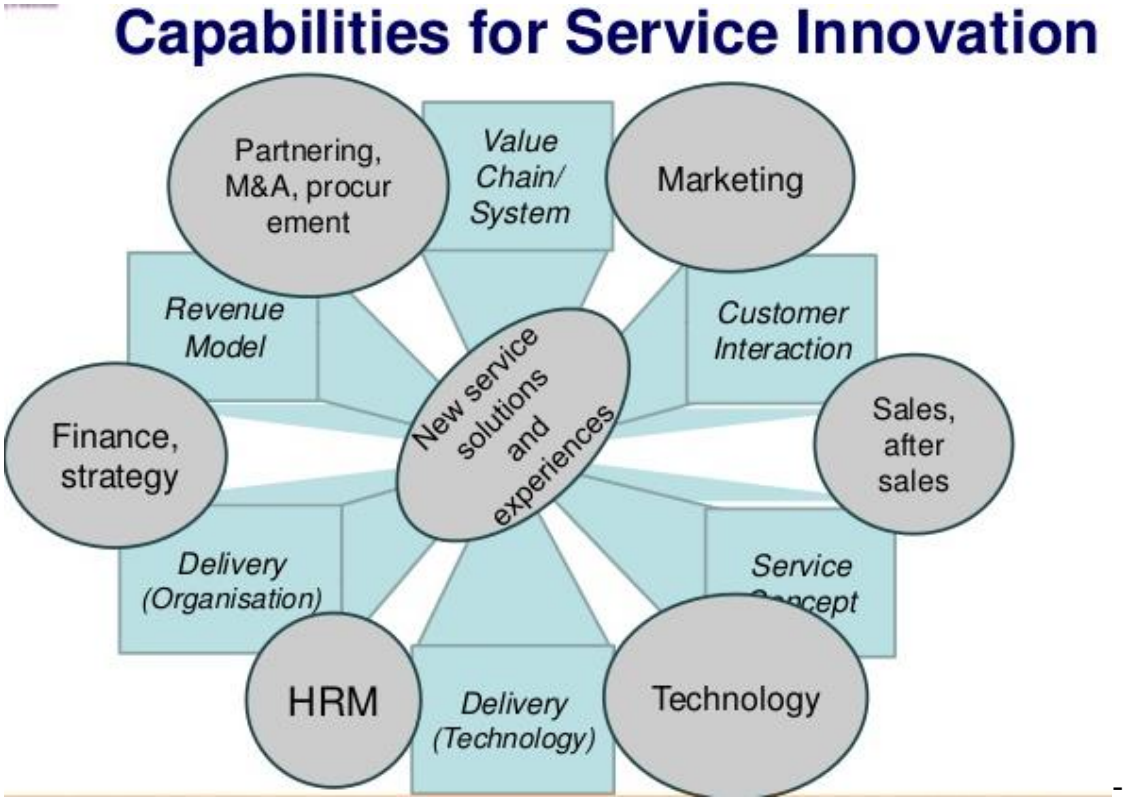
a) Changes to the service itself, or what is being offered. Innovative services are ones that did not exist before, or that have been substantially redesigned to meet customers' needs more effectively. These innovations are the most obvious to your customer.

b) Changes to the service delivery process, or how the service is being provided. Innovative service processes include new or improved production, delivery, or distribution methods often involving the incorporation of new information technologies. The process innovation may involve significant changes in the roles of staff, strategic partners, and/or customers. The most typical forms of innovation include increased accessibility and changes in the degree of self-service.

c) Changes to the organisational and managerial structure, or how service provision is supported. Organisational innovations include new or improved managerial techniques (e.g., total quality management, quality assurance system), significantly revised organisational structures, and/or the implementation of new or substantially changed corporate strategies. These innovations are the least obviousobvious to your customer.


Practice
Development
Technology
Design
Strategy
Customer
Change
Management
SERVICE INNOVATION
Improvement
Quality
Efficiency
Operation
Function
Interface


EFFICIENCY
TECHNOLOGY
CLIENT
SOLUTION
SERVICE INNOVATION
CUSTOMER
RELIABILITY
PRACTICE
IMPROVEMENT




**SERVICE DESIGN INNOVATION**

# History of Service Design

The term “service design” was coined by Lynn Shostack in 1982. Shostack proposed that organizations develop an understanding of how behind-the-scenes processes interact with each other because “leaving services to individual talent and managing the pieces rather than the whole make a company more vulnerable and creates a service that reacts slowly to market needs and opportunities.”

This is still true today, but the responsibility does not fall on only operations and management, as it did twenty years ago. Practicing service design is the responsibility of the organization as a whole

Service Design Innovation is based on the idea that an effective service is built by gaining a deep understanding of the interaction between service providers and the end user, including their wants, needs and potential for co-creation. Students use a specific set of methods and processes based on design thinking. In particular this course will require you to develop the ability to design user research, to facilitate stakeholder workshops, and to project manage a service design process.

## Definition of service design

Service design is the practical and creative application of design tools and methods with the goal to develop or improve services. It is the activity of orchestrating people, infrastructure, communication and material components of a service in order to create value for all stakeholders involved, build a distinctive brand experience and maximize business potential.

As the definition already states, service design is applied to develop or improve services. Service designers have a service-oriented view of the world, where all interactions between a brand and a user are regarded as services. E.g. looking at a drill: people don't want a drill, they want the service of making a hole in the wall, or even more: they want to keep the memory of their grandmother alive by hanging a frame to the wall. The drill is just a material component to deliver the service.

# Components of 'Service Design'

In user experience design multiple components must be designed: visuals, features and commands, copywriting, information architecture, and more. Not only should each component must be designed correctly, but they also be integrated to create a total user experience. Service design follows the same basic idea. There are several components, each one should be designed correctly, and all of them should be integrated.

The three main components of service design are:

**People.** This component includes anyone who creates or uses the service, as well as individuals who may be indirectly affected by the service.

*Examples include:*

- Employees
- Customers
- Fellow customers encountered throughout the service
- Partners

**Props.** This component refers to the physical or digital artifacts (including products) that are needed to perform the service successfully.

*Examples include:*

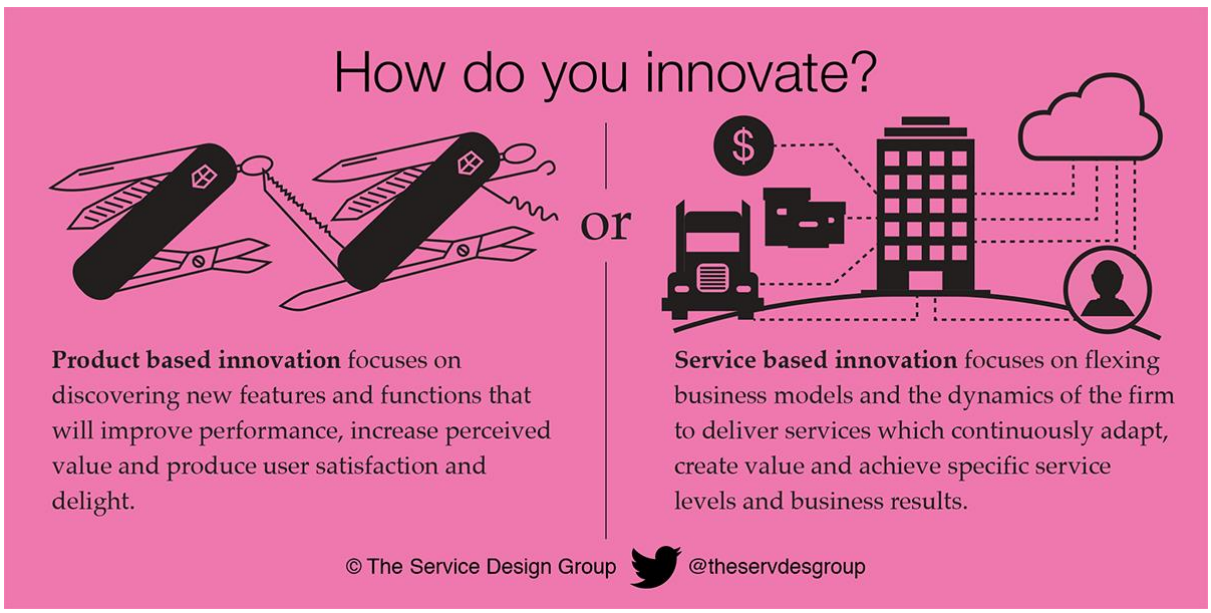
- Physical space: storefront, teller window, conference room
- Digital environment through which the service is delivered
  - Webpages
  - Blogs
  - Social Media
- Objects and collateral
  - Digital files
  - Physical products

**Processes.** These are any workflows, procedures, or rituals performed by either the employee or the user throughout a service.

*Examples include:*

- Withdrawing money from an ATM
- Getting an issue resolved over support
- Interviewing a new employee
- Sharing a file

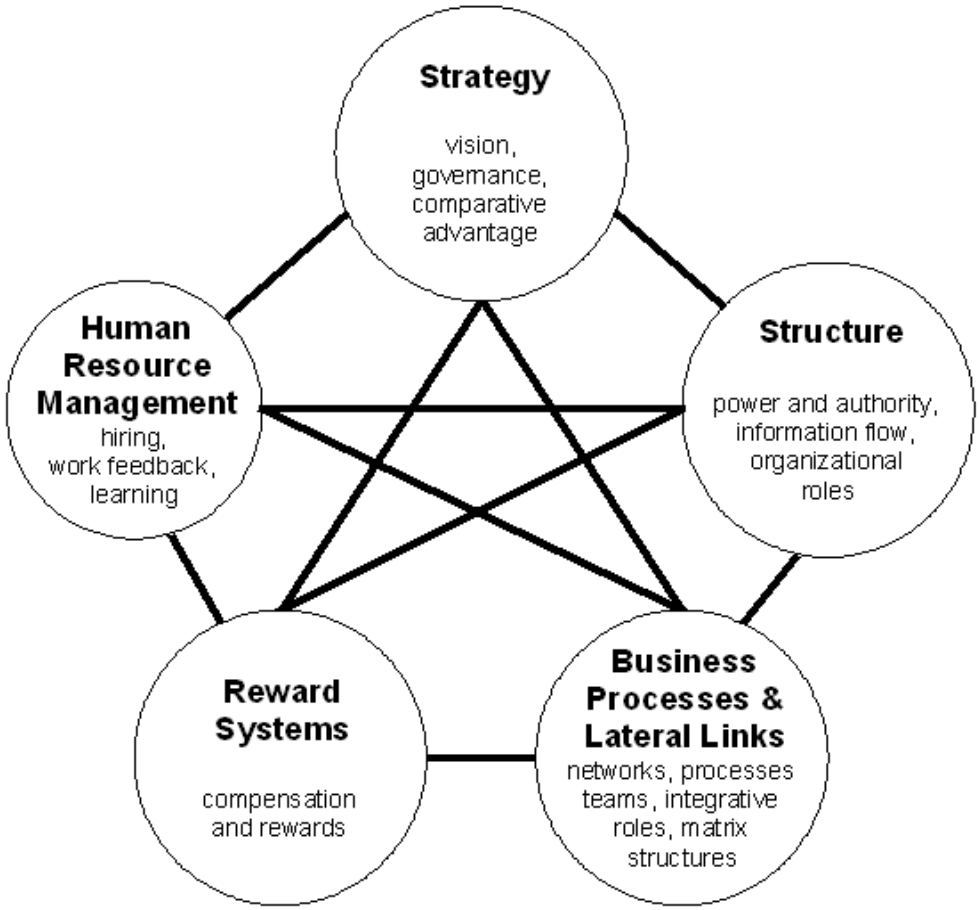
Returning to the restaurant example, people would be farmers growing the produce, restaurant managers, chefs, hosts, and servers. Props would include (amongst others): the kitchen, ingredients, POS software, and uniforms. Processes would include: employees clocking in, servers entering orders, cleaning dishes, and storing food.




## Organizational Design Principles for Service Design

People are the key to service delivery and some basic principles for organizations can help them realize their full potential:

- Work groups are to be organized so that they match the processes and the competencies required
- Individual workers will be given sufficient autonomy to make useful decisions.
- Work will take place in a location where it is done with the most efficiency.




**General Principles of Service Design**

The general principles of service design are to focus the designer's attention on generic requirements of all services. They are complemented by principles that relate to process design, organizational design, information design and technology design – we will come to these complementary principles in a few moments.

The general principles of service design are:

- Services should be designed based on a genuine comprehension of the purpose of the service, the demand for the service and the ability of the service provider to deliver that service.
- Services should be designed based on customer needs rather than the internal needs of the business.

- Services should be designed to deliver a unified and efficient system rather than component-by-component which can lead to poor overall service performance.
- Services should be designed based on creating value for users and customers and to be as efficient as possible.
- Services should be designed on the understanding that special events (those that cause variation in general processes) will be treated as common events (and processes designed to accommodate them)
- Services should always be designed with input from the users of the service
- Services can and should be prototyped before being developed in full
- Services must be designed in conjunction with a clear business case and model
- Services should be developed as a minimum viable service (MVS) and then deployed. They can then be iterated and improved to add additional value based on user/customer feedback.
- Services should be designed and delivered in collaboration with all relevant stakeholders (both external and internal)

**EVALUATION OF INNOVATION**

How to Evaluate Ideas

Many organizations make mistakes in their idea review processes that result in rejecting the most potentially innovative ideas in favor of less innovative ones, warns Jeffrey Baumgartner. Here are some ways to avoid this unfortunate fate.

Organizational innovation is not just about generating creative business ideas. It is also about reviewing ideas in order to identify those which are most likely to become successful innovations. Unfortunately, many organizations make mistakes in their idea review processes that result in rejecting the most potentially innovative ideas in favor of less innovative ones. In some instances, the idea review process is a simple matter of a manager reading through a batch of ideas and selecting those she believes will work best for her firm. This is most often the case in smaller firms run by a single owner and manager. In most medium to large businesses, however, a structured evaluation process is necessary in order to:

- Identify the ideas that are most likely to succeed as innovations for the company.
- Ensure that complex ideas are reviewed by people with the appropriate expertise necessary to understand what would be necessary to implement the idea – and what might go wrong.
- Enable a middle manager to defend the idea to senior management, stakeholders, and financial officers who may need to grant budgetary approval of the idea.
- Make it possible to review a large number of ideas in a resource efficient manner.
- Improve the idea by identifying potential implementation problems and preparing suitable actions to overcome those problems. Sadly, this last aspect is often lost in formal idea review procedures.

Methods

There are all kinds of idea review methods. We will look at three methods that we use, pass-fail evaluation, evaluation matrices and SWOT analysis.

Pass-fail evaluation

If there are a large number of ideas that need to be reviewed — for instance, you have run a company-wide ideas campaign on a popular issue and have generated hundreds of ideas – a simple pass-fail evaluation is often essential to bring the idea pool down to manageable levels. It is best to start with a simple criterion for determining whether an idea will go on to a more in-depth evaluation. This criterion might be related to budget, time-frames, fit with company culture or just practical viability. Whatever the criterion, it should be made clear. If a colleague later asks what happened to her idea, you can explain why it did not pass this initial stage. Knowing that her idea did not get implemented for a pragmatic reason – such as being too expensive to implement – is more reassuring than having the idea rejected for no apparent reason. It is also important to be careful that you are not too quick to reject ideas which, with modification, might meet the pass-fail criterion. For example: a very creative idea that does not meet your budget criterion ought nevertheless to pass. You may be able to determine a means of implementing the idea at lower cost. If there are few ideas, the pass-fail evaluation is often not necessary. It is easier to move on to the more sophisticated evaluation matrix.

Evaluation matrix

The evaluation matrix is a simple array in which experts compare an idea with a set of criteria. In our experience, five criteria is best as it allows for a rounded review without bogging the evaluators down in unnecessary detail. The evaluator ranks how well the idea meets each criterion (we use a scale of 0-5 points for each criterion). Evaluators are also encouraged to provide comments elaborating on their ratings and, in particular, suggesting how the idea might be improved to overcome weaknesses. The evaluation matrix provides a criterion by criterion score as well as an overall score for each idea. Assuming several ideas, focusing on a particular problem or business issue, are being evaluated at the same time, these scores can be compared and the highest scoring ideas can be selected for further review. However, it is important to look at the evaluators' comments. An idea with a low score might be vastly improved following minor changes. We favor the evaluation matrix as the primary idea review approach because it is simple to set up, requires a minimum amount of time for review enables comparative idea review and makes it easy to identify the most promising ideas in a large collection of ideas. That said, the evaluation matrix in itself is not usually sufficient

for making a final decision on an idea that may cost millions of Euro to implement. But it helps you select ideas for more detailed review, thus making the review process more efficient.

SWOT analysis

An analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT) is an old marketing stand-by and as such is a useful follow up to an evaluation matrix. In the unlikely event you are unfamiliar with SWOT analysis; it is a simple form in which reviewers indicate the potential strengths, weaknesses, opportunities and threats of an idea. Because the SWOT analysis looks at an idea from different perspectives, it provides a more rounded review of an idea than some methods. Our SWOT analysis approach includes a scoring system in which reviewers give 0 to 5 points each for strengths and opportunities and takes away 0 to 5 points each for weaknesses and threats. This provides a SWOT metric which can be handy for comparing large numbers of ideas. We also ask evaluators to suggest methods to overcome weaknesses and threats.

Idea development

Once an idea passes these initial hurdles, it may be ready for implementation or it may require more detailed testing. We call this phase of idea review: "idea development" as it is no longer a process of evaluating an idea so much as a method to develop it for implementation. Idea development may include business case preparation, prototype development, project management initiation or test marketing. There is not room enough in this issue of Report 103 to go into idea development in detail – so we'll save it for another issue. Moreover, how a firm develops an idea depends on the nature of the idea, the nature of the firm and existing processes for implementing ideas.

Criticism versus improvement

Over the years, I have noticed that business analysts tend to be overly critical of new ideas. This is understandable; they are tasked with managing and minimizing risk. And creative ideas tend to be the riskiest. As a result, many evaluators stress weaknesses and threats. On one hand, this is understandable. Your company should not be implementing ideas that will prove to be costly failures. But, many weaknesses can

readily be improved. An idea that would be very expensive to implement May, with minor changes, is implemented at far lower cost. And by improving a creative idea's weaknesses, you may be turning a costly failure into a profitable success!

Evaluation teams

Evaluations should be performed by a team of people with relevant expertise. Ideally, that expertise should be varied. For instance, if you are evaluating new product ideas for an electronic gadget, your experts might include engineers, marketing people, retailers (who would sell the product) and one or more people representative of the consumers expected to buy the new products.

Evaluator agendas and prejudices

A particular benefit to having teams review ideas is that while individual evaluators are prejudiced, a varied team is likely to cancel such prejudices out. For example: an engineer trained in an older technology may well be reluctant to give a high evaluation score to an idea that uses a new technology with which she is not familiar. The success of such an idea might well threaten her job! A jealous manager might not like the fact that her subordinates are more creative than her and so might give poor evaluation scores to creative ideas. At the other end of the spectrum, creativity and innovation people like you and I are often too enthusiastic about the most creative ideas and so give overly high scores for creativity. Sometimes, a less creative idea might prove to be the more innovative (in terms of being profitable). *By Jeffrey Baumgartner*

People every day, whether in business or not, have bright ideas and make initial discoveries about new or improved products, services or processes. Generating ideas and being innovative are important contributors to success in business.

Any original concept, new or improved device, product, material, business model, process or service can be considered an innovation. The true test of whether an innovation can become a business success is when:

- a new device, product or service becomes accepted by the marketplace
- a new business model or process improvement delivers cost savings, efficiency gains or productivity improvement that translates into a competitive advantage.

Very few innovations end up making money for their creators. Many factors can contribute to this low success rate, such as:

- the innovation is not technically feasible
- there is little demand for it
- its development has been poorly planned
- it cannot be produced at competitive prices
- inadequate knowledge of the marketplace and competitors
- inadequate management skill to commercialize the innovation.

Before you invest scarce and valuable resources as well as time and energy in the quest to have your innovation reach the marketplace, you can take some important steps to determine whether the innovation is, or can become, commercially feasible.

This is also the least costly aspect of taking a new innovation to market. Evaluating your innovation's potential can save you that second mortgage on the family home, or give you the confidence to pursue further development.

This guide explains the steps that will help you to evaluate your innovation and determine its viability in the market and your next steps.

Is your innovation new?

The ability to fully exploit the potential of your new idea will depend on the intellectual property (IP) underpinning the innovation (i.e. are you the first to conceptualize this new innovation?). A common

starting point is to find out if anyone else has already created the idea and protected it through IP registration, like patents, designs and trademark registrations.

You can search free online databases containing millions of registered IP records (e.g. patent databases, design and trademark registers). Start with Australian databases, then progress through various international databases in countries where you think your innovation would be successful.

If your search reveals that someone else has already created the innovation and has protected it, this may be the end for your idea, unless you can cleverly differentiate or distinguish your innovation from the one you have found. Beware: If you press ahead with the innovation and someone else has already protected it through IP registration, you carry the real risk of infringing another's IP rights. This carries financial and civil penalties. Seeking professional advice from an IP attorney is critical at this point.

If you find no prior innovation, then you have a good chance of taking your innovation further by seeking formal registration.

Keeping records

To support your application, it will be useful to clearly prove ownership and/or commercialization rights of the IP, such as laboratory notes/working papers and employment contracts that show when and how the IP was developed, or an assignment agreement, licensing agreement etc.

Assess the commercial feasibility

The real test for whether your innovation will succeed is assessing its commercial feasibility. This will help you decide whether your idea should be developed further. You should consider the factors and elements commonly required for a business to profitably sell the innovation to a group of customers over a reasonable timeframe to justify the venture. If a business can’t achieve sustainable profit from the new idea, or from selling the innovation to customers, then it is generally unlikely to be commercially feasible.

Assessing commercial feasibility needs to be distinguished from evaluating technical feasibility. A new idea or innovation may be considered fit for its intended purpose, but that does not automatically mean it will be a commercial success. Evaluating the commercial feasibility of your idea should be completed very early.

Demonstrate technical viability

Consumers buy products for the benefits they provide, not for the technology underlying the product. You probably have a mental picture of your idea or innovation expressed as a product or process of some kind. You have in mind how that final product or process looks, feels, provides benefit and, ultimately, will be used. The end point of this feasibility exercise is to determine how you will make a sustainable profit from your idea.

If you can show that your idea has commercial feasibility, the next step is to explore how to turn it into a product or process. Ask yourself whether you have:

- developed a working model of the product or process
- evaluated the safety factors of the model
- evaluated the environmental factors
- evaluated the feasibility of producing the product or implementing the process
- measured how the product or process will perform
- developed a design for the product or process
- developed a design for the production process.

Prove that your idea works

How do you convert an idea into a product, or process, which:

- functions the way you intend

- is reproducible in sufficient quantities
- is effectively delivered to the end user by the method you planned
- has the expected or intended benefits for the customer?

Before you consider mass product development or manufacturing activities based on a raw idea or concept which hasn't been tested or validated, you should evaluate the technical feasibility.

This step will confirm whether the product will perform, and ensure there are no production barriers and the final prepared product is of practical benefit. You have to prove that your idea and its product or service actually works.

Undertake a proof of concept process

By undertaking a proof of concept (POC) process you are gathering sufficient evidence of the technical viability of your product or service. Some commercial feasibility assumptions or conclusions may need to be adjusted as new knowledge of the product emerges.

The POC stage generates knowledge about the product's design, performance, production requirements, and preliminary production costs. The end result is a working model known as a prototype.

Ideas are turned into operational form (not necessarily the final form). The core functionality of the idea is tested, basic prototypes may be developed and IP registration can be established. It is essential that the results of a POC are reproducible, and, if relevant, the quality expectations of the relevant regulatory community are satisfied. The table below provides further clarification and detail of the typical activities that could be involved in a POC. Some activities will involve:

- initial production of a new product prototype and testing that it can actually be used as planned
- running a new process for the first time and testing that it performs the desired transformation of inputs to outputs

- Delivering a service for the first time, testing that the expected benefits to recipients are realized and that the delivery method is effective.

Typical activities involved before, during and after POC activities for certain product classes:

| | Biotechnology | Engineering and manufacturing | Information technology and telecommunications |
|---|---|---|---|
| **Research and development** | • Research solutions<br>• Identification of lead compound for trials<br>• Develop pre-clinical solutions<br>• Toxicity testing<br>• Optimisation | • Research solutions<br>• Research components<br>• Establish specifications<br>• Process flow diagram<br>• Process and instrumentation diagram<br>• Modelling<br>• Simulation<br>• Develop solutions for core innovations | • Research solutions<br>• Requirements analysis<br>• System design<br>• Functional specification<br>• Software requirements documentation<br>• Modelling<br>• Build of first prototype (core innovation) |
| **Proof of concept** | • Animal testing<br>• Clinical trials (phases I, II & | • Build and test full prototype<br>• Integrate | • Build first version of product<br>• Alpha, pilot testing |

| | Biotechnology | Engineering and manufacturing | Information technology and telecommunications |
|---|---|---|---|
| | III)<br>• Purification<br>• Small-scale field or greenhouse testing<br>• Build and test full prototype | components<br>• Laboratory tests<br>• Optimization<br>• Refine design<br>• Integration | • System, load, interoperability testing<br>• Platform support<br>• Integration<br>• Optimization<br>• Implementation and Quality Assurance documentation |
| **Early stage commercialisation** | • Some (but not all) clinical trials phase IV<br>• Field trials<br>• Test procedures documentation | • Field trials<br>• Design production process<br>• Tool-up for trial production<br>• Trial production<br>• Test procedures documentation | • Beta testing<br>• Field trials<br>• Test procedures documentation |

Some essential, yet generic, activities in the POC:

- examine the operational requirements of the product or process
- identify potential safety and environmental hazards

- conduct a preliminary production assessment
- conduct a preliminary manufacturing assessment
- estimate engineering prototype costs.

**Idea assessment worksheet**

It's not all about how wonderful your new product or service is.

What matters is - will customers buy it?

This worksheet will help you to assess the practicality of turning your idea into a product or service which customers will buy. The questions below cover important topics you should think about. You will not know all the answers now but you should use these questions as a guide. When you have worked through them all, you should have a good understanding of:

- your market
- your competitive advantage
- the laws, regulations and constraints relevant to your product or service
- your business model
- an intellectual property protection strategy
- your marketing strategy
- the business financial and investment requirements.

Assess your idea by typing your responses into this idea assessment chart.

**Your idea and your target market**

1. Briefly describe your idea or invention.

2. Can you prove that your idea works? For example, have you built a working prototype?

3. Describe your target market (the sorts of customers who would buy your invention). How would your product or service help them in their daily lives? For example, would it make doing a particular task quicker and easier (like online shopping), or more convenient (like online banking)?

**Your competitive advantage**

4. What products or services do you think are your key competitors?

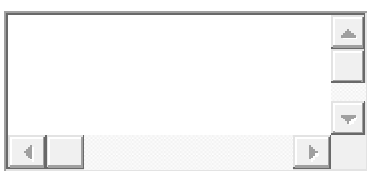
5. What is your competitive advantage?

6. What makes your product or service much better value to the customer than what they already use or do?

**Laws and regulations and constraints**

7. What Australian or international regulations or laws apply to your idea? For example, regulations on product safety or industry standards.

8. What other constraints apply to your idea? For example, regulations size, weight, packaging or power source?



**Your business model**

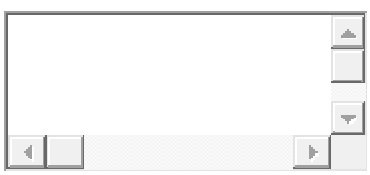
9. What is your business model? How will your idea generate revenue?

10. What would the supply chain for this product or service look like? Where would you fit in?

11. Have you developed relationships with the people or companies you need to work with to take your idea to your customers?

**Your intellectual property protection strategy**

12. Have you protected your idea by obtaining a trademark, design right, patent, domain name for your website, or other formal process?



13. Have you identified what would stop a competitor from producing something similar to your idea? For example, you may have specialized equipment, a strong brand reputation, or access to particular suppliers.

14. Have you checked that you are not accidentally copying another person's idea or invention? If their idea is legally protected (e.g. by a patent), you might be at risk of infringing their intellectual property.

**Your marketing strategy**

15. How are you going to find your customers?

16. How will they find out about your product or service?

17. What are some of the features or benefits of your product or service? How would you describe these to potential customers?

**Your business financial and investment requirements**

18. How much sales revenue will you need for your idea to be profitable after costs?

19. How much capital do you require from investors and how will you use it?

20. How much return on investment will your investors make? What's in it for them?

EFFECTIVENESS EVALUATION OF INNOVATION

1. How do you measure innovation results and outcomes and motivate the organization to deliver

across all stages of the process?

Innovation is a process that is best managed with a long term perspective, not necessarily measured in long time increments (e.g., months, years) but rather in completion of targeted goals. This requires separating the innovation process into three implementable stages: 1) identification of goals and exploration activities, 2) short term deliverables and 3) near term development.

The first stage, identification of goals and exploration activities, defines the course of action and establishes the motivational inspiration for the entire innovation process. Setting forth a vision for the innovation goal and providing opportunities to explore various solutions enables innovator buy-in to the goal. Once the goal has been identified, the steps that need to be accomplished for success can be prioritized, assigned to stage 2 or stage 3, and executed accordingly. It is important to realize that stage 2 and stage 3 are not static, and should be routinely reviewed and updated. As goals in stage 2 are completed, some of those in stage 3 move into stage 2 to provide the basis for a new set of measurable results and outcomes. It is management's responsibility to assess performance to goals in each stage and to determine when a goal has been completed or moved into a different stage.

By splitting the execution phase into 2 stages, the innovation process is positioned to yield a continuous flow of near term successes, which maintains innovator motivation. Furthermore, if corrections to the initial strategy need to be implemented, they can be done in a timely fashion and at relatively low cost.

– Marc Chason, Motorola Labs

It is important to understand that a clear definition of what constitutes innovation is critical to the success of measurement. If we define innovation as "people creating new value and capturing value in a new way ," there are basically three focal points to measure it:

- Past / current innovation performance
- The demonstrated ability to create and capture sustainable and profitable value from innovation

- Future/expected innovation potential
- Effective/efficient innovation capacity
- The activated capacity to realize the firm's full growth and innovation potential

Critical also to have a balanced group of metrics around all innovation management dimensions — innovation strategy , innovation partnerships, innovation platforms, innovation portfolios, innovation process and systems, innovation and entrepreneurship culture.

– Victor Fernandes, Natura

There are many key performance indicators (KPIs) that are talked about for measuring innovation performance. One that is used by many companies is the "Innovation Sales Rate" (ISR). The ISR can be variously defined, but usually is a measure of the percentage of sales that is sales of "new" products. No doubt, this leaves room for a variety of interpretations, but still is a good measure.

Often, the average margin rates of new products are measured as a key innovation metric. The challenge in large diversified companies comes from having an enterprise-wide description that is consistent and fair. Some business units within a large corporation may be in a mature phase, while others may be like startups. Different expectations have to be applied to these businesses. For motivation, the incentives have to be skewed towards new product and innovative product sales and margin performance. I advocate well designed, persistent incentives, such as based on sales results that are measured over a period of time, like moving averages, so that employees reap long term benefits for longer term planning and performance. This also deflects focus from the next quarter and rewards intrapreneurs for the longevity of their contributions.

– Dr. Makarand "Chips" Chipalkotti, Osram Sylvania

This is a particularly challenging question. Inherent in innovation is exploring the unknown and that brings with it a higher rate of failure than many are accustomed to. Accordingly, it's important to measure things as a whole, with a portfolio mentality. Each individual effort cannot and should not be measured at the innovation

state. To do so will stifle innovation. Portfolio thinking comes in two flavors: across many projects during a single period, and over time. So the performance of an individual or group can be measured, but only by looking at their portfolio. If you're evaluating a manager with many projects, that's straightforward. For individual contributors working on one project at a time, you need to look at their efforts over a period of time across many projects.

– David Silverstein, Breakthrough Management Group

**a. How to measure innovation?**

In Japan, innovation and creativity are not exclusive to a select group of design engineers. Innovation and creativity can come from any employee. At Toyota during the 1980's, the average employee gave 70 implemented ideas and just a year ago Subaru was getting 108 written implemented ideas per employee and saving over $4,000 per year per employee. Sure, most of the ideas were very small, not like the new spectacular new iPhone, but it was the accumulation of these small ideas from all employees that represented the real success of Japanese companies. And one of these small ideas might become the next "Post-it-Notes," or "Q-Tip."

So, one important key measure of innovation and creativity is how many ideas per month are you're getting from all of your employees. According to a recent article in the New Yorker magazine the average Japanese company receives 100 times more written ideas then the average American company.

**b. How to motivate the organization to deliver across all stages of the process?**

Simply evaluate every supervisor and manager on the number of written implemented ideas that they are receiving from their employees. You reverse the process. When a worker comes up with an idea, it is the job of the manager to listen and help the worker implement it. Case in point: one worker in one of my recent classes said, "When I move the windows along the factory floor, I have to go over bumps on the floor and sometimes the windows crack. I go to my supervisor and tell him her about the problem and he only tells me to be more careful." The supervisor won't tell his manager about the problem because his manager will only tell him to tell the worker to be more careful.

Now, if you recognize that the worker has the ability to solve the problem on his or her own, when the worker comes to you with a problem, you say to the worker, "What can you do to solve the problem?" The worker says, "We need to re-cement the floor. I don't know how to do it." The boss, then says, "Learn how to do it. Go ask Mike to teach you how to do it." You simply reverse the process. It is called "bottom up" management. You ask the worker. You continually ask the worker; you don't tell them how to do it. You just ask. Then watch the innovation and creativity work. Look, if the Japanese can does it so can we.

– Norman Bodek, PCS Inc.

In my experience, the most important thing is to keep the measures simple and focused on what is important to measure — not what is easy to measure. We did a major survey with Rice and Stanford several years ago, and the major finding was that companies were measuring what was easy to measure instead of what was important, and most were measuring far too many things.

The next most important thing is to link these measures and metrics with reward and recognition systems — both are equally important. In that spirit I would recommend that the following three types of measures be incorporated into a balanced innovation scorecard and linked to performance evaluation and reward and recognition systems.

**a. Leading Innovation Measures:**

- Richness and robustness of growth and innovation platforms and clusters of ideas or opportunities selected and developed

- Strength of strategic and leadership commitment to growth through innovation as expressed in strategic initiatives, targets and leadership metrics

**b. In-process Innovation Measures:**

- The risk-adjusted net present value of the innovation pipeline and the return on investment in that pipeline Innovation capacity and capability building (including partnerships and networks) relative to targets and competition

**c. Lagging Innovation Measures:**

- Amount of earnings or revenue growth achieved through innovation relative to targets and industry competitors and overall competitive position

- Success of individual innovation projects (from concept to customer) and overall platform or new business development programs

I also believe it is important to track a company's progress in capturing key innovation outcomes or premiums relative to the rest of their industry:

- Shareholder value premiums in terms of superior shareholder returns, company value and price-to-earnings ratios that reflect growth prospects

- Customer and market premiums in terms of market share, brand equity and customer loyalty

- Value chain premiums in terms of partnership preferences, networks, and positioning

- Workplace premiums in terms of employee retention, attraction and motivation.

– Ron Jonash, Monitor Group

The "Type A" answer is that the best measure of innovation results is ultimate financial success in the marketplace. While that is definitely a reasonable expectation, I'm hopeful that results are also measured by the learning gained throughout the discovery and commercialization process of innovation. Financial success is ultimately imperative to feed the innovation engine, but hopefully, there is enough patience and "lifeline" allowed for products and/or projects to fail along the way. It may sound trite, but you'll learn more through the difficult times than you will through smooth-sailing success. In fact, there's a high probability that the successes are built on the backs of many failures. So I'd measure the results of innovation in terms of learning gained, patience developed and wisdom refined as much as eventual financial success. If you keep these

measures at the forefront of your innovation practice, you'll have no difficulty managing the motivation level of the organization throughout the process.

– Troy Geesaman, brandimage

Our Analysis

Innovation results are difficult to measure because they include results from (a) completion of ideas and projects in the innovation pipeline and (b) the expansion of innovation capacity at the firm. Dr. Chips Chipalkatti leans towards the latter by using the Innovation Sales Rate (percentage of sales of new products) as a measure, while Normon Bodek focuses on capacity expansion by using the measure of number of ideas per person. Troy Geesaman and others would like to include both including measurements for learning through failures.

David Silverstein reminds us that innovation projects across a portfolio and innovation projects executed in series by any individual will inherently have higher than average failure rate than other types of projects. Marc Chason provides further insight by writing that innovation should be managed with long-term perspectives with short-term deliverables and goals. The long-term perspective allows for experimentation and learning while the short-term deliverables communicate quick wins and momentum to carry through the long term.

Victor Fernandes has a more holistic view of innovation results and provides a broader list of elements to measure. Ronald Jonash organizes this list and links it to a reward-recognition system through an "Innovation Balanced Scorecard" (I-BSC). The I-BSC organizes the key measures into leading, in-process and lagging indicators. It measures the (a) risk adjusted value and size, shape and speed of innovation projects pipeline, (b) investment in new platforms, partners, and competences, (c) new earnings and revenue contributed by the pipeline.

It is clear that innovation results are not easy to measure. Far too many companies measure what is easy to measure but not what is important to measure and get it wrong. Innovation management is a system and the innovation breakthroughs require the whole organization to work as a team. Innovation measures should be similarly encompass the organization. Senior leaders should be rewarded for harvesting a pipeline (real sales) and for building a pipeline (future sales). Their scorecards should be designed to milking the pipeline and also replenishing it, even during a financial crisis or a focus on Six Sigma.

– Chuck Frey/Hitendra Patel

2. What are the best metrics for measuring innovation performance?

There is no best metric, since single measurement processes can sometimes negatively impact the innovation processes they are attempting to measure. Preferably, a suite of metrics should be used to measure the innovation process. In order to mitigate this negative impact and increase the value of the innovation measurement process, management should use these reviews as "teachable moments" to reward, correct or guide innovator performance appropriately. To this end, there are objective and subjective metrics.

Objective metrics might include:

- Deliverables to goals (e.g., preapproved innovator performance targets, meeting corporate initiatives, etc.)
- Completing activities that enhance the brand image (e.g., publications, conference presentations, interviews, etc.)
- Production of intellectual property (e.g., patents, trade secrets, etc.)

Subjective metrics include attaining reach-out goals and roadmap targets. For example, a goal such as "Develop two new processes that increase office productivity" enables the innovator(s) to identify bottom-up opportunities with significant opportunities for self-motivation.

– Marc Chason, Motorola Labs

Most companies produce products or services; if they want to compete, they need new products or services. Since many companies I have dealt with tend to "metric" themselves into a paralysis, there are two measurements that I think are simple.

1. Speed to market

2. Number of new product (services) launches.

Speed to market is valuable because it ties in all of a company's operations. Everyone understands the need to get something out before the competitor launches a competing product.

I like the "number of new products" metric as because it leaves open the possibility that some of the new products may fail. That is what innovation is about. Sometimes you flop. The fast food industry is great with this metric. This industry has new offerings all the time, as well as some offerings that fade away. Wendy's had a buffet style salad bar (gone), but it just launched a whole line of new Frosty products. McDonald's had the McLean (gone) but also launched the snack wraps. Pizza Hut reinvents pizza every few months.

The other reason I like these metrics that it takes away the "find a way to do it cheaper" mantra. Some believe that finding a way to do something for lower cost is innovative and needs to be captured on an innovation scorecard.

Frequently, though, the reason for doing something cheaper is to free up resources to develop new products and services or bring them to market faster. Therefore, metrics indicating lowering operation costs are subordinate to speed to market and new products.

– Jonathan Rowe, Gene Express

In the end, one must examine the theory of why innovation is so important. Competitive differentiation, market leadership and higher profitability and sales are the key drivers. When looking at metrics, there are two groups to consider: The innovation creators and managers, and the executors. The interface between these two groups is typically a troubled one. The success of the enterprise relies heavily on a successful hand-off at the interface. So while metrics for ideation and idea management are important for one group, and sales and margin performance for the latter, I believe the most critical metric is one that measures the hand-off between the two groups.

– Dr. Makarand "Chips" Chipalkotti, Osram Sylvania

There are a lot of new metrics being used today. Most are garbage. Things that need to be looked at include overall portfolio performance and the "funnel." The top of the funnel — new ideas — should be getting bigger. The quality of what comes out of the funnel should be improving. And most importantly, companies need to get much better at learning to kill projects when it's clear they're not going to deliver value. All too often we only measure the final result. In innovation, the intermediate steps must be measured, too.

– David Silverstein, Breakthrough Management Group

At the front door of Stu Leonard's, one the of the largest grocery stores in America is a large rock with the words:

"Our Policy:

Rule 1 – The customer is always right!
Rule 2 – If the customer is ever wrong reread rule 1."

The best metrics is to reread my first few paragraphs and get everyone implementing their small ideas. And I recommend you just get up from your desk and learn about Quick and Easy Kaizen and do it. Yes, be brave and do it! Stop looking for excuses not to do. "Just do it!"

– Norman Bodek, PCS Inc.

Metrics: a necessary evil? Well, maybe not quite evil, but metrics can seem like a sterile, incompetent way to measure some of the beneficial, intangible measures of innovation. Yes, financial, volume and time metrics are critical to the discipline of innovation. If you're part of a successful enterprise, they will naturally be embedded into the process. What's often missing, however, is a means of capturing, measuring and highly valuing the intangibles of learning gained, patience developed and wisdom refined. How to measure and document these intangibles should be totally contextual to the corporate environment and existing reporting systems. What should be absolute is the inclusion of these measures in personal and project performance, and not just measure innovation performance on financial, volume and time metrics alone.

– Troy Geesaman, brandimage

Our Analysis

Our experts are quick to point out that there is no one best metric for measuring innovation. However, they all had their own favorite metric that they felt should be included. We have compiled this list below:

- Increase in value of ideas at top of funnel
- Number of new ideas implemented
- Risk adjusted net present value of pipeline
- Number of projects killed
- Number of successful handoffs
- Speed to market
- Number of new offerings launched

- Lessons learned from failures (and successes)

David Silverstein believes a focus on bigger ideas should deliver bigger innovation results. Norm Bodek advocates that ultimately it is the implementation of new ideas that drives overall innovation.

Ronald Jonash is an advocate on the Risk Adjusted Net Present Value (RANPV) of the pipeline and using this process to provide guidance for adding new projects, slowing or speeding projects or killing bad projects. David's focus on killing bad projects supports that since it removes negative value projects out of the portfolio and increases the RANPV of the pipeline. Similarly, Jonathan Rowe's emphasis on speed makes sense as it increases the net present value of the project and creates a competitive advantage in the market.

Jonathan explains in detail about the benefit of having a metric that measures number of new offerings versus successful offerings. He embeds the notion of failures and learning in this metric and its importance for future innovations. Troy Geesaman requires that organizations should require formal mechanisms for capturing these learning.

The above list could be a good starting point for many companies wanting to start their innovation journey and metrics. Innovation is a system and requires more than one metric. Measure what is important and not what is easy.

– Chuck Frey/Hitendra Patel

**INTEGRATION OF RISKS**

Now it is time to look on the other side of innovation. Yes, there are not only benefits; in the case that your organization starts to focus on innovation you should have in mind to face some disadvantages. You can also refer them as risks when entering an unknown field (of business). I won't argue that you should not use innovation. But it will helpful to anticipate and to understand these risks in order to prepare you.
Innovations always involve particular risks for the organization. A company that searches for new ways,

processes and types of organization is confronted frequently with the risk to land in a dead end. Another disadvantages of a "we are innovators"-approach is the need to review strategy more often; hence structural adaptations which are linked to strategy can take place more often, too. An organization has to consider further five typical disadvantages:

It is possible that a new business model (in order to add value) does not create a competitive advantage (e.g. due to bad timing). Eventually the new business model has to be abandoned after the testing phase.

An economically strong follower copies the innovation and turns it into the industry standard. Therefore the innovation become the "standard solution" for every company within the industry and loses its innovation status. This will destroy the competitive advantage for the innovator. (Note: It is also possible that a competitor has another innovation and transfers it to the industry standard. Example for this is the format war between Blu-ray and HD-DVD, that was won by Sony)

A follower is able to learn more quickly (e.g. to fix starting errors) and to achieve the readiness for marketing quicker than the innovator.

The innovator overestimates his innovation power and his organizational capabilities (e.g. change management, financial resources) to bring an innovation to the market place.

Misinterpretation of the market. The new product is excellent in terms of technical specifications. Despite these features no customer is willing to pay for them, since their costs are higher than their expected benefits (e.g. over engineered product). Another option is that customers have a minor different behavior then expected (e.g. do not accept your pricing policy, are less loyal).

All these risks represent the thread of a loss of resources for the innovator. In addition half-baked products can cause reputation damages.

In the next couple of weeks we will present a paper that summarizes different aspects of innovations and their links to strategic planning. Within this paper we will highlight three case studies, one of them represents a good examples for innovation risks and the way how the organization did address these risks.

Risk management—coupled with program and project management—is a critical element of the innovation life cycle and helps address ambiguity and uncertainty. Ambiguity refers to the likelihood that the objectives of an initiative will change over time. Uncertainty refers to the inability to predict outcomes, based on the objectives of the initiative. Thiry, in Program Management (2010, p. 16), describes ambiguity and uncertainty on a continuum from:

- Ambiguity—pre-existing (low, typical operational change) to developing (medium, typical of business solutions) to emergent (high, typical of organizational or societal change)
- Uncertainty—known (low, typical of operations) to knowable (medium, typical of projects) and unknown (high, typical of breakthrough research or [author's note] breakthrough innovation)

Project management can address uncertainty, to some degree, through effective risk management but is less effective at addressing ambiguity; the objectives of a project typically must be well-understood before it is undertaken. Program management is especially useful in addressing both ambiguity and uncertainty, a hallmark of innovation initiatives. As Thiry (2010, p. 17) states:

"Program management has emerged as a methodology that enables organizations to deal with increased ambiguity and complexity and is well suited to reduce ambiguity, an essential preliminary course of action for project management to be effective."

Thiry explains that in high ambiguity, high uncertainty situations, decisions must be based more on experience and intuition than data, which "requires a process where results of decisions are continually measured and objectives are adjusted accordingly" (2010, p 60). The experience and intuition required are gained through a learning process, applying the knowledge, skills, and competencies of the program team, as well as the lessons learned during the innovation process.

During the innovation process, a number of decisions have to be made, some based on intuition and some based on hard evidence. Risk management principles can be applied at both the program and component project levels to reduce the uncertainty. Hillson (2004, p 6) provides an important distinction between uncertainty and risk to illustrate this concept:

"Risk is measureable uncertainty; uncertainty is immeasurable risk."

From this statement we can see the importance of consistently identifying and analyzing risk events (both threats and opportunities) in an attempt to reduce uncertainty. Structuring the innovation initiative as a program provides the benefit of risk management on several fronts: at the component project and activity levels and at the program level, which includes both program-level risks and the component project-level risks that, in aggregate, may impact the overall program; project-level risks (both threats and opportunities) in aggregate can become program-level risks. Despite our best efforts we will never completely eliminate uncertainty, which further emphasizes the need for a learning process.

We have acknowledged that there are several dimensions and categories of innovation (on which there is no universal agreement). It must also be acknowledged that innovation can occur at any time during the execution of a program or project; innovation does not explicitly require an "innovation" initiative. This type of innovation is more closely associated with the positive side of risk management, the continuous identification and exploitation of opportunities. The proactive identification of opportunities, managed with the same rigor and attention as potential threats, often results in process efficiencies, shortened project life cycles, an improved solution, and/or enhanced benefits.

Hillson, in Effective Opportunity Management for Projects: Exploiting Positive Risk (2004), recommends that threat-based project risk management be extended to include opportunities and provides a framework to do so. The opportunity side of risk management, which is so commonly ignored, is critical to innovation initiatives and the "discovery" process that is so often required. Effective risk management can also help answer the most critical question: What if we don't pursue this innovation initiative?

We have identified three pillars of innovation risk management:

1. Innovation Risk Appetite

Risk managers should work with senior management to codify an explicit statement of risk appetite in relation to innovation. This should address the important questions: Which risks are negotiable and where do we need to draw red lines? Where are we a first mover in our industry and where a follower? Where we do take on risk,

what forms of payback are acceptable, and how are these tracked? Is the cost of risk management for a particular product reflected in its business case?

Some answers are clear: Financial crime should be on the other side of the red line against which no pay-back is acceptable. But in many other areas risks have to be weighed against potential returns. Where firms create a new market for a poorly served segment (think payroll services for the gig economy as a recent example), would a certain level of fraud be acceptable initially, while the market is being developed?

In other cases, firms might need to follow the competition just to defend an existing customer base. Many banks at first held off introducing mobile wallets such as Apple Pay, as the additional risk seemed to outweigh the likely benefits. But they launched them after a critical number of competitors moved ahead, demonstrating a differentiated if maybe not explicit approach to weighing risks and benefits.

2. New Controls For New Risks

Digital propositions will fundamentally change the risk profile of a firm. Technology-related risks, from resilience to cyber risks, may increase as heavy reliance is placed on technical infrastructure and previous manual alternatives are disbanded. Fraud may increase if not carefully controlled, as has been observed in the initial stages of many digital propositions. At the same time, less human interaction – both internally and with customers – may reduce risks related to poor behavior, such as embezzlement or miss-selling. Some risks may morph into new forms. To address the risk of a customer ending up with an unsuitable product, their journey needs to be assessed in its entirety, including exit gates for when there is no suitable product for a particular customer. This forms part of the emerging discipline of digital conduct.

3. Continuous engagement

Risk managers should contribute to innovative development through risk identification, analysis, and control recommendations. To ensure that risk controls are fully integrated into the resulting propositions, They should engage at the stages of development, testing, independent validation, and implementation, as well as regular review.

There are several drivers which make continuous engagement a necessity:

Today's innovation labs and technology start-ups operate through cycles of design sprints. For risk management to be effective, it needs to be deeply embedded in the design throughout the development process, ideally right from the start.

As business processes are digitized, manual intervention becomes less desirable and risk controls increasingly must become an integral part of product design.

Regulators and law-makers are increasingly echoing these demands. The European Union's General Data Protection Regulation (GDPR), for example, enshrines Privacy by Design as one of its foundational principles.

Once digital propositions have been launched, there will likely remain exceptions to the usual corporate standards. For instance, a start-up firm supplying customer analytics may not have the required cyber-risk certifications. The role of risk management will need to extend beyond the approval stage to ensure that exceptions are eventually closed out to protect the firm's critical infrastructure and its customers' data. Firms must be able to rapidly launch propositions without ultimately sacrificing the corporate standards that are the foundations of their customers' trust.

**FACTORS INFLUENCING ECONOMIC EFFECTIVENESS**

**POST IMPLEMENTATION ANALYSIS OF INNOVATION PROJECTS**

In short, a post-implementation review is a process to evaluate whether the objectives of the project were met. You can also use it to see how effective the project was managed. This helps to avoid making similar mistakes with future projects and learning how to run the project better.

Post-implementation review is the last step in your project cycle and usually involves an independent party, which can act more objectively in making their determinations about how the project was run. This provides the stakeholders of the project the confidence to know that the objectives of the project were met successfully.

## What Is Post-Implementation Review?

What are you going to do when the project's over? Have a little celebration and move on to the next one, right? The project might be over, but the process continues.

That means that if you delivered a product or a service, the project might be completed, but you still need to check on the viability of the product or service. You might have achieved the goals you set out for the project, but what about the business needs that product or service was responding to?

Think of it as an ongoing step in your project closure process. It's a post-project review or post-implementation review, which is part of your project management responsibilities. It's also a great way to identify project successes, deliverables, achievements and learn lessons from those parts of the project that didn't work out as planned.

How do you practically apply a post-implementation review? How can you be sure that the project solved the problems it was created to address? Are there more benefits that can be unpacked from the project? What are the lessoned learned? To answer those and more questions, you need to follow a process.

## What Is the Post-Implementation Review Process?

To get the most out of your project, you want to employ a post-implementation review process. While this can start at any time after the initial project has been complete, starting it sooner than later makes sure that the project details are still fresh in the team's mind.

While go get the most from the process, you'll want to wait a while, after the project's product or service has had time to exist in the real world. But at least start the process by beginning to list ideas and observations. You don't want to wait until the participants are distracted by other projects.

## How to Conduct a Post-Implementation Review

After the project's deliverables have gone through at least one successful business cycle, you can get started on the review. There are project closure checklists that help frame the process. Here are some of the best practices for conducting the review include the following.

- **Trust.** To get the information you need, you want honesty from your participants. Therefore, tell them you want openness, without fear of retribution. The more critical and truthful their observations about the project are, the more successful the review.
- **Objectivity.** While you want honesty, you don't want sour grapes or interpersonal issues clouding observations with bad feelings or to settle old scores. Seek objectivity, or as close to an impartial critique as can be expected.
- **Documentation.** Like all project management, you want to create a paper trail that illustrates how you went from Point A to Point B. By documenting the practices and procedures that created the successes in the project, you'll be able to follow them again in future projects.
- **Hindsight.** As you develop a narrative as to what worked and what didn't, what surprises arose during the project and how you dealt with them, understand that this hindsight vision can also help as you look forward towards new projects.
- **Improvement.** The point of this review process is not to blame individuals or teams for mistakes, but to learn from experience and then apply that knowledge to future projects. Stay focused on what's next, rather than looking back as a means of applying guilt.

## Post-Implementation Review Methods

There are many ways to gather the information you want to determine what worked and what didn't in your project. Here are some examples.

- **Gap Analysis.** This method of assessing how a plan differed from the actual application is always a powerful tool to see what benchmarks you met, and which you didn't. You can start with your project charter and see how closely you adhered to your objectives. Look at your deliverables. Are they at a quality level you expected? When there are gaps discovered, figure out how they can be closed.
- **Project Goals.** Simply put, did you achieve the goals of your project? Are your deliverables functioning as planned? What was the error rate of the project? Can the deliverables adjust to changes in the market? How well-trained and supported are end-users? What controls and systems are in place and are they working? Are problems being addressed? Did you planned goal align with your result?
- **Stakeholders.** How satisfied are your stakeholders? Were users needs met? What effect did the project have on them? If there is dissatisfaction, why is that and what can you do to resolve it?
- **Cost.** How much did the project end up costing? What are the costs involved in operating the project's result? Are the costs aligned to the benefits of the project? If this isn't the case, how can you improve the cost next time?
- **Benefits.** Did the project achieve the benefits projected, and if not why and how can that be improved? What opportunities are there to further the results? Are there other changes you could apply to help maximize the project's results?
- **Lessons.** Did the project's deliverable, schedule and budget all meet expectations, and if not why? What were some of the issues that arose during the running of the project and how could they be avoided for the next project? What went well, and what can you learn from that experience?
- **Report.** Document what you learned from the review, whether there is actions needed to get the beneficial results you want and list the lessons you've learned, noting how the project can impact future projects, so you can build on success and avoid problems.

**Final Thoughts on Post-Implementation Review**

There are many ways to close a project, but too often the post-implementation review is neglected. It's understandable, as a critical review can open some old wounds.

When you're dealing with a lot of people and asking them for criticism of the project, there's the potential to step on someone's toes and create hurt feelings that can creates some unpleasant political issues within your team or organization. Therefore, be clear that what you're interested in is not a personal attack, but a systemic overview of process and how everyone together can work towards improving it. That's why it often helps to hire an independent party to collect the post-project data.

Don't forget to review all the project documentation. It'll help you better assess what worked and what didn't, and provide you with an overview of the project and where there might have been unforeseen holes that you can then fill in with upcoming projects.

When you're done with the review is completely transparent. Share your findings in a report and make sure everyone has access to these documents. If you want to, it can help if you present the information to the organization. Your goal is to create better projects, and that information isn't proprietary. Everyone has a need to know.

*When you're conducting a post-implementation review, you're working with a lot of data. That information touches all aspects of the project. If you've been managing that project with project management software,*

*the data you need is already collected, and the review process can be aided by the communications and connections that the tool has already established*

**Innovation and Intellectual Property**

**Innovation means doing something new that improves a product, process or service. Many innovations can be protected through intellectual property (IP) rights. Innovation is generally understood as the process of bringing valuable new products (and services) to market, and has been highlighted as one of the key factors that determine the future success of an organization. Intellectual property (IP) and the management of the IP throughout the new product development process is a critical factor in successfully commercializing products and services, for example by providing a monopoly to the IP owner, and barriers to entry for competition. The purpose of this article is to briefly outline what forms of IP protection may be required at each stage of the product development process, and how overall management of the IP may lead to overall improved revenues and profitability.**

**Inventions and patents**

**Inventions are the bedrock of innovation. An invention is a** new solution to a technical problem **and can be protected through patents. Patents protect the interests of inventors whose technologies are truly groundbreaking and commercially successful, by** ensuring that an inventor can control the commercial use of their invention**.**

An individual or company that holds a patent has the right to prevent others from making, selling, retailing, or importing that technology. This creates opportunities for inventors to sell, trade or license their patented technologies with others who may want to use them.

The criteria that need to be satisfied to obtain a patent are set out in national IP laws and may differ from one country to another. But generally, to obtain a patent an inventor needs to demonstrate that their technology is **new** (novel), **useful** and **not obvious** to someone working in the related field. To do this, they are required to describe how their technology works and what it can do.

A patent can last up to 20 years, but the patent holder usually has to pay certain fees periodically throughout that 20-year period for the patent to remain valid. In practice, this means that if a technology has limited commercial value, the patent holder may decide to abandon the patent, at which point the technology falls into the public domain and may be freely used.

## Patent information

In addition to recognizing and rewarding inventors for their commercially successful technologies, patents also tell the world about inventions. In order to gain patent protection for their invention, the inventor must provide a detailed explanation of how it works. In fact, every time a patent is granted, the amount of technological information that is freely available to the general public expands (see Using and Exploiting Patent Information tutorial).

WIPO is making this and other IP-related information freely available to the public through its global databases. The largest of these – it is also one of the largest in the world – is PATENTSCOPE. It contains over 50 million patent applications that can be searched free of charge. The aim in making this information widely available is to spark new ideas and promote more innovation, and also to help narrow the knowledge gap which exists in developing and least developed countries.

## PCT – The International Patent System

A patent is a private right that is granted by a government authority. It only has a legal effect in the country (or region) in which it is granted. So inventors or companies that want to protect their technology in foreign markets need to seek patent protection for their new technologies in those countries.

WIPO's Patent Cooperation Treaty (PCT) is designed to make the process of obtaining patent protection in up to 152 different countries easier and less costly.

Within a year of filing for patent protection in their own country, inventors can set in motion the process of obtaining patent protection in each of the markets in which they wish to sell their technology by filing a **single international application** via the PCT. This offers many potential advantages:

- Any rights granted using the PCT flow from the initial filing date of the national patent application.
- Users benefit from a common set of rules and regulations which have been agreed upon and are followed by all 152 members of the Treaty. This means there is a high level of legal certainty and **no nasty surprises**.
- The **full cost** of obtaining patents in multiple countries – which can be quite high – are **deferred** by up to 18 months. This means that applicants have an opportunity to test the market or to attract new business partners.
- Users of the PCT automatically benefit from an **assessment** which gives informal (non-binding) feedback on the patentability of their technology. This can be very helpful in shaping a company's patenting strategy.

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**How patents can support inventors and improve lives**

1. Patents **recognize and reward inventors** for their commercially-successful inventions. As such they serve as an incentive for inventors to invent. With a patent, an inventor or small business knows there is a good chance that they will get a return on the time, effort and money they invested in developing a technology. In sum, it means they can earn a living from their work.
2. When a **new technology comes onto the market**, **society as a whole stands to benefit** – both directly, because it may enable us to do something that was previously not possible, and indirectly in terms of the economic opportunities (business development and employment) that can flow from it.
3. The revenues generated from commercially successful patent-protected technologies make it possible to **finance further technological research and development** (R&D), thereby improving the chances of even better technology becoming available in the future.
4. A patent effectively **turns an inventor's know-how into a commercially tradable asset**, opening up opportunities for business growth and job creation through licensing and joint ventures, for example.

5. Holding a patent also **makes a small business more attractive to investors** who play a key role in enabling the commercialization of a technology.
6. The technical information and business intelligence generated by the patenting process can **spark new ideas and promote new inventions** from which we can all benefit and which may, in turn, qualify for patent protection.
7. Patent information can be mapped, offering policy makers useful **insights about where technology R&D is taking place and by whom**. This information can be useful in shaping policy and regulatory environment that allows innovation to thrive.
8. A patent can help **stop** unscrupulous third parties from **free riding** on the efforts of the inventor.

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**Other intellectual property rights**

Other IP rights can also be used to protect a new technology, product or service. For example:

**Copyright** protects artistic expressions like music, films, plays, photos, artwork, works of architecture and other creative works. The term "creative works" is defined very broadly for copyright purposes, such that copyright may be used to protect functional texts such as user guides and product packaging as well as works of art.

**Design rights** protect the shape and form of a product, i.e., what it looks like (whereas the *functionality* of a product – how it works – is protected by a patent). Companies invest a great deal of time and money in coming up with new and attractive designs that seduce consumers into buying their products. Design is now widely recognized as a key determinant of commercial success.

**Trademarks** are signs that are capable of distinguishing the goods or services of one enterprise from those of others. Trademarks are indispensable tools in today's business world. They help companies expand their market share and they help consumers identify the products they want to buy in a crowded market place.

**Trade secrets** can be used to protect the "know-how" of a business. Essentially, laws relating to trade secrets mean that some people (e.g., a company's employees) may have a legal duty to keep certain information confidential.

An invention can be protected as a trade secret or through a patent. Many businesses use trade secrets to protect their know-how, but there are downsides in doing this. From the company's point of view it may be risky because once information is disclosed legitimately (e.g., if someone else works out how an invention works), it will no longer be protected. And from a public interest viewpoint, trade secrets are less beneficial than patents because they do not involve any sharing of technical information.

## LEGAL ASPECTS OF INNOVATION

### The Legal Aspects of Protecting Ideas and Creativity

Creativity is the emotional lifeblood of entrepreneurship. Without creativity, thousands of companies would not have been launched. However, it is an element of entrepreneurial life that isn't easy to safeguard under the law.

As a general rule, a mere idea or creative concept does not qualify for patent, copyright, trade secret, or trademark protection. The right to the exclusive use of an idea is lost by voluntary disclosure unless the following three elements are present: the idea is in a concrete form; the idea is original and useful; and the idea is disclosed in a situation in which compensation is contemplated. If this test is satisfied, the idea may qualify as a "property right" and may be protected under theories of implied contract, unjust enrichment, misappropriation, breach of a fiduciary relationship, or passing off. Recovery under these circumstances usually depends upon the relationship between the submitter and the receiver of the idea, as well as the facts surrounding the disclosure.

However, as a general rule, the law of intellectual property seeks to protect and reward the creative firm, innovator, or entrepreneur for effort by prohibiting misappropriation or infringement by competitors. It is crucial, therefore, that the legal considerations to protect these "crown jewels" are incorporated into the strategic marketing plan of any emerging business. If proper steps are not taken to protect new products, services, and operational techniques, then it will be extremely difficult to maintain and expand the company's share of the market because others will be free to copy these ideas as if they were their own.

### The Role of Show-How and Know-How

The proper protection and, where possible, registration of intellectual property is essential to building and sustaining a company's growth. The procedures and expenses necessary to protect these valuable *intangible assets* are crucial to the continued well-being of an entrepreneurial company and its ability to continue to survive in a competitive marketplace.

Certain types of intellectual property are treated as such primarily because a third party is willing to buy or license it from a company or individual that possesses a particular expertise. In such cases, *show-how* consists of training, technical support and related educational services, whereas *know-how* usually takes the form of information that has been reduced to written rather than spoken form. Know-how and show-how often arise in the context of a licensing agreement where the licensee is requesting support services in addition to the tangible technology or patent which is the central subject matter of the agreement. To the extent that the know-how or show-how is confidential and proprietary, the law of trade secrets will generally govern it, unless otherwise covered by a patent. To the extent that the know-how or show-how is non-proprietary and constitutes common knowledge, it will be governed by the term and conditions of an agreement between the parties.

## Trade Secrets as a Protective Device

The best way to protect creative ideas and concepts is for them to be developed into a trade secret. Under the law, a trade secret consists of any type of information, including a formula, pattern, compilation, program, device, method, technique, or process that derives independent economic value from not being generally known to other persons who can obtain economic value from its disclosure or use. The information does not need to be unique or even invented by its owner to be protected, as long as the data is kept confidential and provides value to the company. A company uses its trade secrets to provide it with an advantage over competitors. Therefore, the corporate owner must treat the trade secret as confidential and proprietary. The scope of protection available for trade secrets may be defined by a particular contract or fiduciary relationship, as well as by state statutes and court decisions. Unlike other forms of intellectual property protection, there are no federal civil statutes providing for the registration of trade secrets. State law typically protects trade secrets.

Many entrepreneurs owe their success in part to the competitive advantage they enjoy by virtue of some confidential formula, method, design or other type of proprietary know-how, and generally understand the importance of protecting trade secrets against unauthorized disclosure or use by a current or former employee, licensee, supplier, or competitor. Disclosure can cause severe and irreparable damage, especially to a smaller company where trade secrets may be the company's single most valuable asset.

## Qualifying as a Trade Secret

Courts have generally set forth three requirements for information to qualify for trade secret protection: the information must have some commercial value; the information must not be generally known or readily ascertainable by others; and the owner of the information must take all reasonable steps under the circumstances to maintain its confidentiality and secrecy. Examples of trade secrets include business and strategic plans, research and testing data, customer lists, manufacturing processes, pricing methods, and marketing and distribution techniques. In order to maintain the status as a trade secret, a company must follow a reasonable and consistent program for ensuring that the confidentiality of the information is maintained.

However, in addition to those discussed above, the courts have considered many other factors when deciding the extent to which protection should be afforded for trade secrets. Among the most often cited factors are the following:

- The extent to which the information is known by others outside the company, including the efforts by the company to keep the information guarded from disclosure.
- The value of the information, including the resources expended to develop the information and whether the information truly provides a competitive advantage.
- The amount of effort that would be required by others to duplicate the effort or to reverse-engineer the technology.
- The nature of the relationship between an alleged infringer and the owner of the trade secret.

Unlike many large corporations, smaller companies cannot generally afford a complicated security system to protect their trade secrets. With the mobile nature of today's work force, turnover caused by promotion within, and the chaotic nature of most growing businesses, it is practically impossible to prevent a determined employee from gaining relatively easy access to the company's proprietary information. Unfortunately, it is therefore easier to simply ignore the problem and do nothing at all about it. However, there are some fundamental, affordable and practical measures that the company can readily adopt to protect the data that is the core of its competitive advantage. The entrepreneurial company is urged to review all such options thoroughly with its legal counsel in an effort to safeguard the critical intangible called creativity.

# UNIT-4

# INTELLECTUAL PROPERTY RIGHTS & Legal Aspects of Innovation

**Intellectual property (IP)** is a term referring to creation of the intellect (the term used in studies of the human mind) for which a monopoly (from greek word monos means single polein to sell) is assigned to designated owners by law. Some common types of intellectual property rights (IPR), in some foreign countries intellectual property rights is referred to as ***industrial property***, copyright, patent and trademarks, trade secrets all these cover music, literature and other artistic works, discoveries and inventions and words, phrases, symbols and designs. Intellectual Property Rights are themselves a form of property called intangible property.

Although many of the legal principles governing IP and IPR have evolved over centuries, it was not until the 19$^{th}$ century that the term *intellectual property* began to be used and not until the late 20$^{th}$ century that it became commonplace in the majority of the world.

IP is divided into two categories for ease of understanding:

1. Industrial Property
2. Copyright

**Industrial property,** which includes inventions (patents), trademarks, industrial designs, and geographic indications of source; and

**Copyright**, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and those of broadcasters in their radio and television programs.

### *Intellectual property shall include the right relating to:*

i. Literary, artistic and scientific works;
ii. Performance of performing artists;
iii. Inventions in all fields of human endeavour;
iv. Scientific discoveries;
v. Industrial designs;
vi. Trademarks, service marks and etc;
vii. Protection against unfair competition.

### *What is a property?*

Property designates those things that are commonly recognized as being the possessions of An individual or a group. A right of ownership is associated with property that establishes the good as being "one's own thing" in relation to other individuals or groups, assuring the owner the right to dispense with the property in a manner he or she deems fit, whether to use or not use, exclude others from using, or to transfer ownership.

Properties are of two types - tangible property and intangible property i.e. one that is physically present and the other which is not in any physical form. Building, land, house, cash, jewellery are few examples of tangible properties which can be seen and felt physically.

On the other hand there is a kind of valuable property that cannot be felt physically as it does not have a physical form. Intellectual property is one of the forms of intangible property which commands a material value which can also be higher than the value of a tangible asset or property

Rights protected under Intellectual Property

The different types of Intellectual Property Rights are:

i. Patents
ii. Copyrights
iii. Trademarks
iv. Industrial designs
v. Protection of Integrated Circuits layout design
vi. Geographical indications of goods
vii. Biological diversity
viii. Plant varieties and farmers rights
ix. Undisclosed information

### *a. Intellectual Property*

1. Inventions
2. Trademarks
3. Industrial design
4. Geographical indications

### *b. Copyright*

1. Writings
2. Paintings
3. Musical works
4. Dramatics works
5. Audiovisual works
6. Sound recordings
7. Photographic works
8. Broadcast
9. Sculpture
10. Drawings
11. Architectural works etc.

The term intellectual property is usually thought of as comprising four separate legal fields:

1. Trademarks
2. Copyrights
3. Patents
4. Trade secrets

**1. Trademarks and Service Marks:** A trademark or service mark is a word, name, symbol, or device used to indicate the source, quality and ownership of a product or service. A trademark is used in the marketing is recognizable sign, design or expression which identifies products or service of a particular source from those of others. The trademark owner can be an individual, business organization, or any legal entity. A trademark may be located on a package, a label, a voucher or on the product itself. For the sake of corporate identity trademarks are also being.

***General Logos:***

**The Trademark Registration Logo**



In addition to words, trademarks can also consist of slogans, design, or sounds. Trademark provides guarantee of quality and consistency of the product or service they identify. Companies expend a great deal of time, effort and money/ in establishing consumer recognition of and confidence in their marks.

## Federal Registration of trademarks:

Interstate use of trademarks is governed by federal law, namely, the United States Trademark Act (also called the Lanham Act), found at 15 U.S.C 1051et seq. In the United States, trademarks are generally protected from their date of first public use. Registration of a mark is not required to secure protection for a mark, although it offers numerous advantages, such as allowing the registrant to bring an action in federal court for infringement of the mark.

Applications for federal registration of trademarks are made with the PTO. Registration is a fairly lengthy process, generally taking anywhere from twelve to twenty-four months or even longer. The filing fee is $335 per mark (Present $225 per class) per class of goods or services covered by the mark.

A trademark registration is valid for 10 years and may be renewed for additional ten year periods thereafter as long as the mark is in used in interstate commerce. To maintain a mark the registrant is required to file an affidavit with the PTO between the fifth and sixth year after registration and every ten years to verify the mark is in continued use. Marks not in use are then available to others.

A properly selected, registered and protected mark can be of great value to a company or individual desiring to establish and expand market share and better way to maintain a strong position in the marketplace.

**2 Copyrights:** Copyright is a form of protection provided by U.S. law (17 U.S.C 101 et seq) to the authors of "original works of authorship" fixed in any tangible medium of expression. The manner and medium of fixation are virtually unlimited. Creative expression may be captured in words, numbers, notes, sounds, pictures, or any other graphic or symbolic media. The subject matter of copyright is extremely broad, including literary, dramatic, musical, artistic, audiovisual, and architectural works. Copyright protection is available to both published and unpublished works.

Copyright protection is available for more than merely serious works of fiction or art. Marketing materials, advertising copy and cartoons are also protectable. Copyright is available for original working protectable by copyright,

such as titles, names, short phrases, or lists of ingredients. Similarly, ideas methods and processes are not protectable by copyright, although the expression of those ideas is.

Copyright protection exists automatically from the time a work is created in fixed form. The owner of a copyright has the right to reproduce the work, prepare derivative works based on the original work (such as a sequel to the original), distribute copies of the work, and to perform and display the work. Violations of such rights are protectable by infringement actions. Nevertheless, some uses of copyrighted works are considered "fair use" and do not constitute infringement, such as use of an insignificant portion of a work for noncommercial purposes or parody of a copyrighted work.

## Definition:

General Definition of copyright "Copyright owner", with respect to any one of the exclusive rights comprised in a copyright, refers to the owner of that particular right.

**Federal Registration of Copyrights:** The works are protected under federal copyright law from the time of their creation in a fixed form. Registration, however, is inexpensive, requiring only a $30 (present $85) filing fee, and the process is expeditious. In most cases, the Copyright Office processes applications within four to five months.

Copyrighted works are automatically protected from the moment of their creation for a term generally enduring for the author's life plus an additional seventy years after the author's death. The policy underlying the long period of copyright protection is that it may take several year for a painting, book, or opera to achieve its true value, and thus, authors should receive a length of protection that will enable the work to appreciate to its greatest extent.

**3. Patents:** A patent for an invention is the grant of a property right to the inventor, issued by the United States Patent and Trademark Office. Generally, the term of a new patent is 20 years from the date on which the application for the patent was filed in the United States or, in special cases, from the date an earlier related application was filed, subject to the payment of maintenance fees. U.S. patent grants are effective only within the United States, U.S. territories, and U.S. possessions. Under certain circumstances, patent term extensions or adjustments

may be available.The right conferred by the patent grant is, in the language of the statute and of the grant itself, "the right to exclude others from making, using, offering for sale, or selling" the invention in the United States or Importing the invention into the United States. What is granted is not the right to make, use,offer,forsale, sell or import, but the right to exclude others from making, using, offering for sale, selling or importing the invention. Once a patent is issued, the patentee must enforce the patent without aid of the USPTO.

## There are three types of patents:

**Utility patents** may be granted to anyone who invents or discovers any new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof;

**Design patents** may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture; and

**Plant patents** may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.

**Federal Registration of Copyrights:** Patents are governed exclusively by federal law (35 U.S.C100 et seq). To obtain a patent, an inventor must file an application with the PTO (the same agency that issues trademark registration) that fully describes the invention. Patent prosecution is expensive, time consuming and complex. Costs can run into the thousands of dollars, and it generally takes over two year for the PTO to issue a patent.

Patent protection exists for twenty years from the date of filing of an application for utility and patents and fourteen years from the date of grant for design patents. After this period of time, the invention fall into the public domain and may be used by any person without permission.

The inventor is granted an exclusive but limited period of time within which to exploit the invention. After the patent expires, any member of the public is free to use, manufacture, or sell the invention. Thus, patent law strikes a balance between the need to protect inventors and the need to allow public access to important discoveries.

**4. Trade Secrets:** A trade secret consists of any valuable business information. The business secrets are not to be known by the competitor. There is no limit to the type of information that can be protected as trade secrets; **For Example:** *Recipes, Marketing plans, financial projections, and methods of conducting business can all constitute trade secrets.* There is no requirement that a trade secret be unique or complex; thus, even something as simple and nontechnical as a list of customers can qualify as a trade secret as long as it affords its owner a competitive advantage and is not common knowledge.

If trade secrets were not protectable, companies would no incentive to invest time, money and effort in research and development that ultimately benefits the public. Trade secret law thus promotes the development of new methods and processes for doing business in the marketplace.

**Protection of Trade Secrets:** Although trademarks, copyrights and patents are all subject to extensive statuory scheme for their protection, application and registration, there is no federal law relating to trade secrets and no formalities are required to obtain rights to trade secrets. Trade secrets are protectable under various state statutes and cases and by contractual agreements between parties. **For Example:** *Employers often require employees to sign confidentiality agreements in which employees agree not to disclose proprietary information owned by the employer.*

If properly protected, trade secrets may last forever. On the other hand, if companies fail to take reasonable measures to maintain the secrecy of the information, trade secret protection may be lost. Thus, disclosure of the information should be limited to those with a "need to know" it so as to perform their duties, confidential information should be kept in secure or restricted areas, and employees with access to proprietary information should sign nondisclosure agreements. If such measures are taken, a trade secret can be protected in perpetuity.

Another method by which companies protect valuable information is by requiring employee to sign agreements promising not to compete with the employer after leaving the job. Such covenants are strictly scrutinized by courts, but generally, if they are reasonable in regard to time, scope and subject matter, they are enforceable.

# AGENCIES RESPONSIBLEFOR INTELLECTUAL PROPERTY REGISTRATION

## United States Patents and Trademark Office:

The agency charged with granting patents and registering trademarks is the United States Patent and Trademark Office (PTO), one of fourteen bureaus within the U.S. Department of Commerce. The PTO, founded more than two hundred years ago, employs nearly 700 (present 1000 employs) are working. At present it is located in 18 building in Arlington, Virginia. Its official mailing address is Commissioner of Patents and Trademarks, Washington, DC 20231.

The PTO is physically located at 2900 Crystal Drive in Arlington, Virginia. Its web site is http://www.uspto.gov and offers a wealth of information, including basic information about trademarks and patents, fee schedules, forms, and the ability to search for trademarks and patents. Since 1991, under the Omnibus Budget Reconciliation Act, the PTO has operated in much the same way as a private business, providing valued products and services to customers in exchange for fees that are used to fully fund PTO operations.

It uses no taxpayer funds. The PTO plans to move all of its operations to Alexandria, Virginia, by mid-2005. The PTO is one of the busiest of all government agencies, and as individuals and companies begin to understand the value of intellectual property, greater demands are being made on the PTO.

Legislation passed in 1997 established the PTO as a performance-based organization that is managed by professionals, resulting in the creation of a new political position, deputy secretary of commerce for intellectual property. In brief, the PTO operates more like a business with greater autonomy over its budget, hiring, and procurement. U.S patents issued its first patent in 1790. Since 1976 the text and images of more than three million are pending for registration. The PTO is continuing its transition filing for both trademarks and from paper to electronic filing for both trademarks and patents.

The PTO is led by the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office (the

"Director"), who is appointed by the President. The Secretary of Commerce

appoints a Commissioner for Patents and a Commissioner for Trademarks. Citations to many cases in this text will be to "U.S.P.Q"., a reference to United States Patent Quarterly, a reporter of cases decided by the Trademark Trial and Appeal Board (TTAB) as well as patent and copyright cases.

# INTERNATIONAL ORGANIZATIONS, AGENCIES AND TREATIES

There are a number of International organizations and agencies that promote the use and protection of intellectual property. Although these organizations are discussed in more detail in the chapters to follow, a brief introduction may be helpful:

**International Trademark Association (INTA)** is a not-for-profit international association composed chiefly of trademark owners and practitioners. It is a global association. Trademark owners and professionals dedicated in supporting trademarks and related IP in order to protect consumers and to promote fair and effective commerce. More than 4000 (***Present 6500 member***) companies and law firms more than 150 (***Present 190 countries***) countries belong to INTA, together with others interested in promoting trademarks. INTA offers a wide variety of educational seminars and publications, including many worthwhile materials available at no cost on the Internet (see INTA's home page at http://www.inta.org). INTA members have collectively contributes almost US $ 12 trillion to global GDP annually. INTA undertakes advocacy [active support] work throughout the world to advance trademarks and offers educational programs and informational and legal resources of global interest.
Its head quarter in New York City, INTA also has offices in Brussels, Shanghai and Washington DC and representative in Geneva and Mumbai. This association was founded in 1878 by 17 merchants and manufacturers who saw a need for an organization. The INTA is formed to protect and promote the rights of trademark owners, to secure useful legislation (the process of making laws), and to give aid and encouragement to all efforts for the advancement and observance of trademark rights.

**World Intellectual Property Organization (WIPO)** was founded in 1883 and is specialized agency of the United Nations whose purposes are to promote intellectual property throughout the world and to administer 23 treaties

(Present 26 treaties) dealing with intellectual property. WIPO is one of the 17 specialized agencies of the United Nations. It was created in 1967, to encourage creative activity, to promote the protection of Intellectual Property throughout the world. More than 175 (***Present 188***) nations are members of WIPO. Its headquarters in Geneva, Switzerland, current Director General of WIPO is ***Francis Gurry*** took charge on October 1, 2008. The predecessor to WIPO was the BIRPI [Bureaux for the Protection of Intellectual Property] it was established in 1893. WIPO was formally created by the convention (meeting) establishing the world intellectual Property organization which entered into force on April261970.

**Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention)** An International copyright treaty called the convention for the protection of Literary and Artistic works signed at Berne, Switzerland in 1886 under the leadership of ***Victor Hugo*** to protect literary and artistic works. It has more than 145 member nations. The United States became a party to the Berne Convention in 1989. The Berne Convention is administered by WIPO and is based on the precept that each member nation must treat nation must treat nationals of other member countries like its own nationals for purposes of copyright (the principle of "nation treatment"). In addition to establishing a system of equal treatment that internationalized copyright amongst signatories, the agreement also required member states to provide strong minimum standards for copyrights law. It was influenced by the French "right of the author".

**Madrid Protocol** It is a legal basis is the multilateral treaties Madrid (it is a city situated in Spain) Agreement concerning the International Registration of Marks of 1891, as well as the protocol relating to the Madrid Agreement 1989. The Madrid system provides a centrally administered system of obtaining a bundle of trademark registration in separate jurisdiction. The protocol is a filing treaties and not substantive harmonization treaty. It provides a cost-effective and efficient way for trademark holder. It came into existence in 1996. It allows trademark protection for more than sixty countries, including all 25 countries of the European Union.

**Paris Convention** The Paris convention for the protection of Industrial Property, signed in Paris, France, on 20th March 1883, was one of the first

Intellectual Property treaties, after a diplomatic conference in Paris, France, on 20 March 1883 by Eleven (11) countries. According to Articles 2 and 3 of this treaty, juristic (one who has through knowledge and experience of law) and natural persons who are either national of or domiciled in a state party to the convention. The convention is currently still force. The substantive provisions of the convention fall into ***three main categories***: National Treatment, Priority right and Common Rules.

An applicant for a trademark has six months after filing an application in any of the more than 160 member nations to file a corresponding application in any of the other member countries of the Paris Convention and obtain the benefits of the first filing date. Similar priority is afforded for utility patent applications, although the priority period is one year rather than six months. The Paris Convention is administered by WIPO.

**North American Free Trade Agreement (NAFTA)** came into effect on January 1, 1994, and is adhered to by the United States, Canada, and Mexico. The NAFTA resulted in some changes to U.S. trademark law, primarily with regard to marks that include geographical terms. The NAFTA was built on the success of the Canada-U.S Free Trade Agreement and provided a compliment to Canada's efforts through the WTO agreements by making deeper commitments in some key areas. This agreement has brought economic growth and rising standards of living for people in all three countries.

**General Agreement on Tariffs and Trade (GATT)** was concluded in 1994 and is adhered to by most of the major industrialized nations in the world. The most significant changes to U.S intellectual property law GATT are that nonuse of a trademark for three years creates a presumption the mark has been abandoned and that the duration of utility patent is now twenty years from the filing date of the application (rather than seventeen years from the date the patent issued, as was previously the case).

## THE INCREASING IMPORTANCE OF INTELLECTAL PROPERTY RIGHTS

a. Protecting Intellectual Property Rights
b. Technology has led to increase awareness about the IP

c. Some individuals and companies offer only knowledge. Thus, computer consultant, advertising agencies, Internet companies, and software implementers sell only brainpower.
d. Domain names and moving images are also be protected
e. More than fifty percent of U.S. exports now depend on some form of intellectual property protection.
f. The rapidity with which information can be communicated through the Internet has led to increasing challenges in the field of intellectual property.
g. The most valuable assets a company owns are its Intellectual property assets
h. Companies must act aggressively to protect these valuable assets from infringement (breaching, violation of law) or misuse by others
i. The field of intellectual property law aims to protect the value of such investments

## HISTORY OF IPR IN INDIA

George Alfred DePenning is supposed to have made the first application for a patent in India in the year 1856. On February 28, 1856, the Government of India promulgated legislation to grant what was then termed as "exclusive privileges for the encouragement of inventions of new manufactures" i.e the Patents Act. On March 3, 1856, a civil engineer, George Alfred DePenning of 7, Grant's Lane, Calcutta petitioned the Government of India for grant of exclusive privileges for his invention - "An Efficient Punkah Pulling Machine". On September 2, DePenning, submitted the Specifications for his invention along with drawings to illustrate its working. These were accepted and the invention was granted the first ever Intellectual Property protection in India.

## Intellectual property legislations in India

India is a member of almost all international conventions. The obligation of the member state arising out of the conventions can be enforced on the basis of reciprocity only. No right or obligation is enforceable unilaterally. Therefore to pass own laws on Intellectual property is in the interest of every country. In 1999, a considerate passage of major legislations with regard to protection of

Intellectual property rights in harmony with international practices and in compliance with India's obligations under TRIPS. These include,

1. The Patents (Amendment) Act, 1999 to amend the patents act of 1970 that provides for establishment of a mailbox system to file patents and accords exclusive marketing rights for five years.
2. The Trade marks Act, 1999 which repealed the Trade and Merchandise Act, 1958
3. The Copyrights (Amendment) Act, 1999.
4. A sui generis legislation for the protection of geographical indications called the Geographical Indications of Goods (Registration and protection) Act, 1999.
5. The Industrial Designs Act, 2000 which replaced the Designs act, 1911.
6. The patents (Second Amendment), 1999 further to amend the Patents Act, 1970.

This was a beginning of a new era in the field of Intellectual property. To streamline and strengthen the Intellectual property administration system in the country the government has taken several measures. Projects relating to the modernization of patent information services and trademarks registry have been implemented with the help from WIPO/UNDP. The government has implemented projects for upgrading of patent office's incorporating several components such as human resource development, recruiting additional examiners, infrastructure support and strengthening by the way of computerization and re-engineering work practices and eliminating backlog of patent applications, an amendment to the patent rules also was notified to simplify the procedural aspects. The first Indian patent laws were first promulgated in 1856. From time to time these were modified. New patent laws Indian Patent Act 1970 were made after the independence. The Act has now been radically amended to become fully compliant with the provisions of TRIPS. The most recent amendment was made in 2005 which were preceded by the amendments in 2000 and 2003.

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