

2.11: Innovation, Intellectual Property and Entrepreneurship

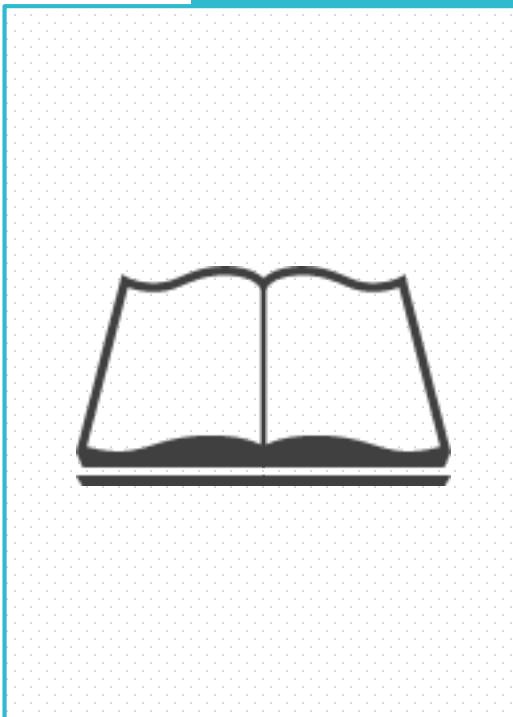
Authors:

Gopal Menon | G Hari Kishore | K Subodh Kumar | Parthapratim Indra
Santosh Mohanty | Shekhar Guha | Tara Prasad

Editor:

Himanshu Mehta

Release 01; Release Date: December 27th, 2019



Introduction to 2.11 Course

Total Contact Hours: 28 Hours

Course Outline and Lessons: Designed and Prepared by Tata Consultancy Services Ltd.

Course Outline

- **Degree Course:** B.E. / B. Tech. in Computer Science & Business Systems
- **Course Scheduled for:** Year 2, Semester 4
- **Course ID:** 2.11
- **Course Title:** Introduction to Innovation, IP Management and Entrepreneurship
- **Course Objective:** The course intends to introduce students to the fundamentals of technology innovation, intellectual property rights and entrepreneurship. The successful completion of this course will help students to gain knowledge on
 - How to identify and discover market needs?
 - How to manage an innovation program?
 - How to create, protect, assetize and commercialize intellectual property?
 - Opportunities and challenges for entrepreneurs

The course will motivate students in developing mindsets to pursue entrepreneurship.

- **Pre-requisite:** Good knowledge of Basic Management Principles covered through a course prior to this semester
- **Teaching Scheme:** 3 hours for week
 - Lecture: 2 hours; Tutorial: 1 hour, Practical: 0 hour
- **Course Credit:** 3 Units
 - Theory: 2 units; Project Work: 1 unit
- **Course Evaluation:** Exam 1 (20%); Exam 2 (40%); Case Study or Business Case preparation/presentation (40%)

Schedule Overview

Week No.	Lesson	Hours	Focus
Week 1 – 4	Lecture	10	Introduction to Innovation and Intellectual Property (IP)
Week 5	Tutorial	3	* <u>Case Study</u> / <u>Business Case</u> Planning (Team Formation; Allocating <u>Case Study</u> / <u>Business Case</u> to Team; Team Briefing)
Week 6 – 7	Lecture	6	Introduction to Technology Entrepreneurship
	Exam-1	1	Mid-Term Examination (Proctored, In-Class)
Week 8	Tutorial	3	Team Presentation (Preliminary Round)
Week 9 – 12	Lecture	12	Innovation, IP Management and Entrepreneurship: Practicing Principles
Week 13 – 15	Tutorial	8	Team Presentation (Pre-final Round), Review, and Team Presentation (Final Round)
	Exam-2	2	Final Examination (Proctored, In-Class)
Total		45	(28 Hours of Lecture + 14 Hours of Tutorial + 3 Hours of Exam)

- Students are encouraged to bring either '**Case Study**' on Startup (or new product business of an enterprise) for discussion or prepare '**Business Case**' to setup a new technology-led business as a Startup (or new product business of an enterprise).
- Each 'Team' will have **4-5** students

Lesson Plan

Lesson	Type	Hours	Topics	Reference List of Technology areas for Project Work
1	Lecture	3	A Primer on Innovation, IP Rights and Entrepreneurship	
2	Lecture	1	Types of Innovation (incremental, disruptive, etc.)	
3	Lecture	1	Lifecycle of Innovation (idea, literature survey, PoT, PoC, etc.)	
4	Lecture	1	Challenges in Innovation (time, cost, data, infrastructure, etc.)	
5	Lecture	1	Types of IPR (patents, copyrights, trademarks, GI, etc.)	
6	Lecture	1	Lifecycle of IP (creation, protection, assetization, commercialization)	
7	Lecture	2	Balancing IP Risks and Rewards (Right Access and Right Use of Open Source and 3 rd party products, technology transfer and licensing)	
8	Lecture	1	Opportunity Identification in Technology Entrepreneurship (customer pain points, competitive context)	
9	Lecture	1	Market Research, Segmentation and Sizing	
10	Lecture	2	Product Positioning, Pricing, and Go-To-Market Strategy	
11	Lecture	1	Innovation Assessment (examples, patentability analysis)	
12	Lecture	1	IP Valuation (methods, examples, limitations)	
	Exam-1	1	Mid-Term Examination (Proctored, In-Class)	
13	Lecture	3	Startup Business Models (fund raising, market segments, channels, etc.)	
14	Lecture	2	Co-innovation and Open Innovation (academia, startups, corporates)	
15	Lecture	2	Technology Innovation: Two Case Studies	
16	Lecture	1	Innovation, Incubation and Entrepreneurship in Corporate Context	
17	Lecture	1	Technology-driven Social Innovation and Entrepreneurship	
18	Lecture	3	Manage Innovation, IP and Entrepreneurship Programs – Processes, Governance and Tools	
	Exam-2	2	Final Examination (Proctored, In-Class)	

Reference List of Technology areas for Project Work

- 3D Printing
- 5G telecommunication
- Artificial Intelligence
- Augmented/Virtual Reality
- Autonomous Vehicle
- Battery-less Energy Harvesting
- Blockchain
- Brain-computer Interface
- Cognitive Software
- Connected Homes
- Crypto-currency
- Cyber-physical System
- Cyber-security
- Data Privacy
- Digital Twins
- Domain Technology (Financial, Healthcare, Retail, etc.)
- Exoskeletons
- Industrial Internet of Things
- Quantum Computing
- Smart Cities
- Smart Fabrics

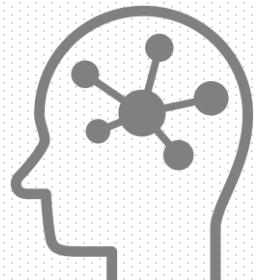
(Students may choose any other technology area that is not listed here with approval from faculty)



Lesson Plan: Page Index

Lesson	Type	Hours	Topics	Slide Nos.
1	Lecture	3	A Primer on Innovation, IP Rights and Entrepreneurship	7 – 19
2	Lecture	1	Types of Innovation (incremental, disruptive, etc.)	20 – 33
3	Lecture	1	Lifecycle of Innovation (idea, literature survey, PoT, PoC, etc.)	34 – 46
4	Lecture	1	Challenges in Innovation (time, cost, data, infrastructure, etc.)	47 – 55
5	Lecture	1	Types of IPR (patents, copyrights, trademarks, GI, etc.)	56 – 70
6	Lecture	1	Lifecycle of IP (creation, protection, assetization, commercialization)	71 – 83
7	Lecture	2	Balancing IP Risks and Rewards (Right Access and Right Use of Open Source and 3 rd party products, technology transfer and licensing)	84 – 97
8	Lecture	1	Opportunity Identification in Technology Entrepreneurship (customer pain points, competitive context)	98 – 112
9	Lecture	1	Market Research, Segmentation and Sizing	113 – 124
10	Lecture	2	Product Positioning, Pricing, and Go-To-Market Strategy	125 – 142
11	Lecture	1	Innovation Assessment (examples, patentability analysis)	143 – 151
12	Lecture	1	IP Valuation (methods, examples, limitations)	152 – 163
Exam-1	Mid-Term Examination (Proctored, In-Class)	1		
13	Lecture	3	Startup Business Models (fund raising, market segments, channels, etc.)	164 – 189
14	Lecture	2	Co-innovation and Open Innovation (academia, startups, corporates)	190 – 204
15	Lecture	2	Technology Innovation: Two Case Studies	205 – 216
16	Lecture	1	Innovation, Incubation and Entrepreneurship in Corporate Context	217 – 228
17	Lecture	1	Technology-driven Social Innovation & Entrepreneurship	229 - 240
18	Lecture	3	Manage Innovation, IP and Entrepreneurship Programs – Processes, Governance and Tools	241 – 251
Exam-2	Final Examination (Proctored, In-Class)	2		
A	Appendix		Abbreviations	252 – 253
B	Appendix		Glossary	254 – 268
C	Appendix		Master Reference List	269 - 274

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:
A Primer on Innovation, IP Rights and Entrepreneurship

Contact Hours: 3 Hours

Lesson Number: 1

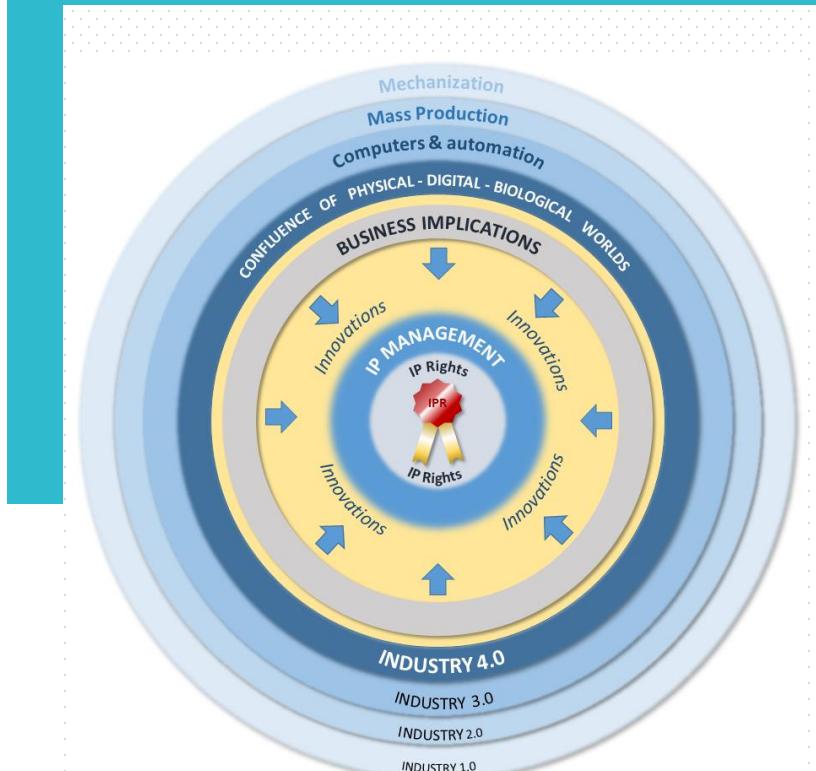
Author Name: Shekhar Guha

Objectives of the Lesson

- Establish the nature and primary goals of Entrepreneurship, Innovation and IP Rights and how they are related to each other.
- Draw the distinctions and links between these aspects and articulate how these work together towards a common goal of serving the society through meeting human needs and sowing the seeds for overall progress and development of the community, and global ecosystem towards economic development.
- Elaborate 'why' entrepreneurship need innovations to stand out in a crowd of similar ventures. Where innovative ideas, methods, products or services can be legally protected by IP rights they provide a right to trade and prevent copying without compensation, by other similar ventures.
- Establish the importance of innovation. When an entrepreneurship has nothing innovative or different to offer, its return on investments would be very low to the point where an entrepreneur may have to review its worthiness in the long term.
- Establish the importance of IP rights. In the case where innovative offerings are generated by the entrepreneurship, but they are not protected by IP rights, there is no way the idea behind such offerings can be owned by the idea creator and may be copied without compensation by others. More importantly, if they get protected by others then it prevents the entrepreneurship to position any offerings based on those protected ideas.

◆ Fourth Industrial Revolution

- Smart automation, robotics, internet-of-things, big data, wireless networks & connectivity, cloud computing
- Disruption in technology, business, human interactions, innovation
- Proliferation of innovation and intellectual property
- Proliferation of entrepreneurship opportunities
- Digital economy is unbundling profitable product and service offerings
- New IP Protection challenges



Entrepreneurship

- Capacity and willingness to develop, organize and manage a business venture along with any of its risks in order to make a profit
- Needs business model, capital coupled with vision, enterprise and industry
- Is an integral aspect of any community, society, and nation to succeed in an ever-changing competitive global marketplace.
- Must spot opportunities, manage risks & face challenges
- Needs to take accountability and responsibility for success or failure

Who is an entrepreneur:

- Is visionary
- Is an investor (monetary & human capital)
- Is a risk taker (& risk manager)
- Is an innovator
- Is an enterprise creator
- Is future-oriented

Qualities of an entrepreneur:

- Have motivation, conviction & passion
- Have leadership abilities (people & organization management skills)
- Have the ability to build connections & networking
- Be an opportunity grabber

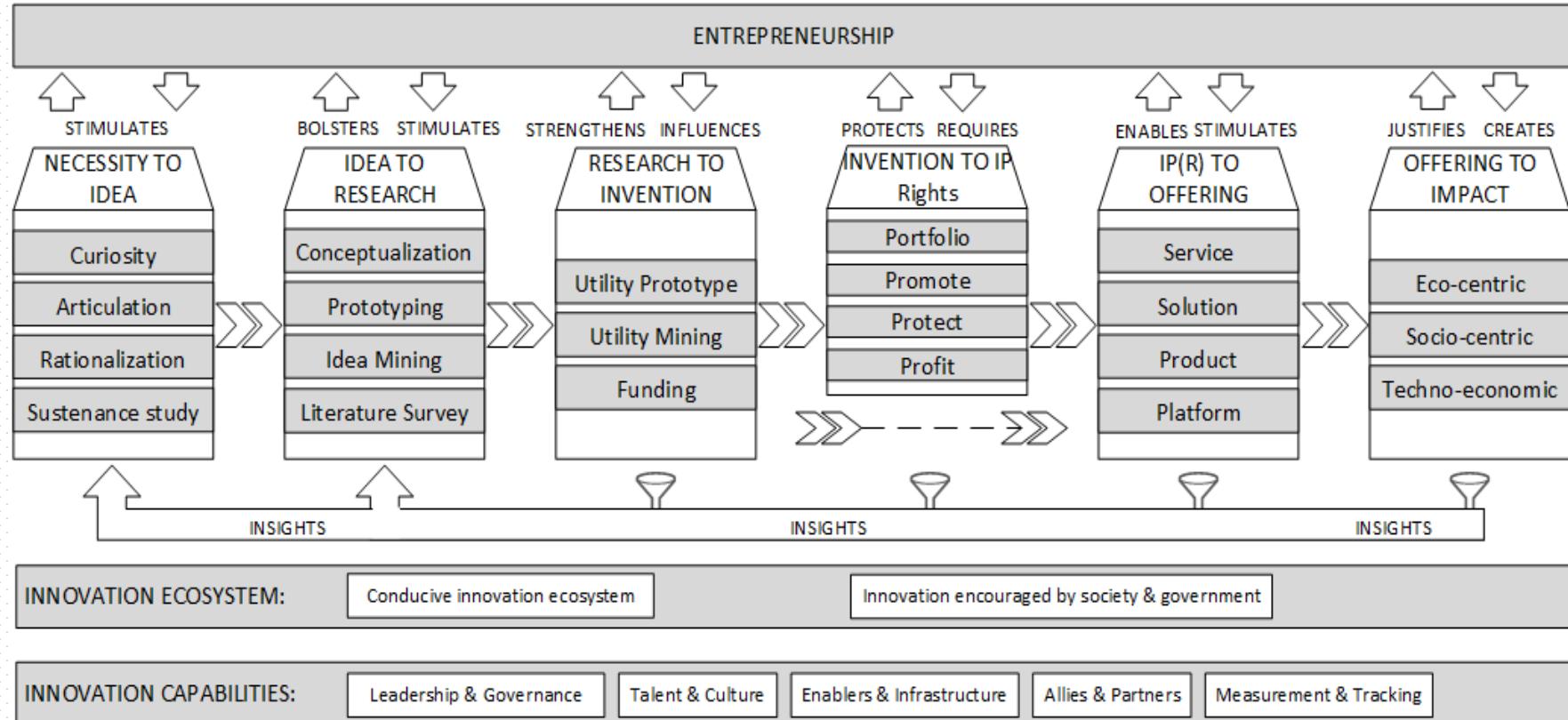
- Advance new ideas
- Take innovative products & services to the market
- Market innovative products & services to the ecosystem and reach out potential customers
- Tell and Sell the idea, product, service, and the value it brings
- Motivate human capital to work for an innovative cause

For types of innovation please refer to lesson 2 in this course.

Advantages of Embracing Innovation in Entrepreneurship

- Innovative offerings increases perceived value
- More competitive offerings
- Improved efficiency and productivity of workforce
- Optimized costs
- Enhanced brand image & brand value
- Improved profitability

Innovation Lifecycle



- Entrepreneurship influences and is influenced by all stages of innovation lifecycle:
 - Ideas stimulate and are stimulated by entrepreneurship
 - Research bolsters and is stimulated by entrepreneurship
 - Inventions strengthen and are influenced by entrepreneurship
 - IPR (IP Rights) protect and is required by entrepreneurship
 - Offerings enable and are stimulated by entrepreneurship
 - Impacts justify and are created by entrepreneurship

Key Characteristics:

- Stay curious in understanding and anticipating problem and solution
- Innovative solution backed by research
- Focus on protecting IP and creating market-making offerings
- Understanding and measuring the impact of market-making offerings

- Establish novelty of offering
- Secure rights of usage and trade
- Ensure others' right are not trampled
- Motivate research and innovative thinking
- Achieve non-linear growth (exploit intellectual capital rather than manpower for monetary benefit)

IP Rights – Why and What

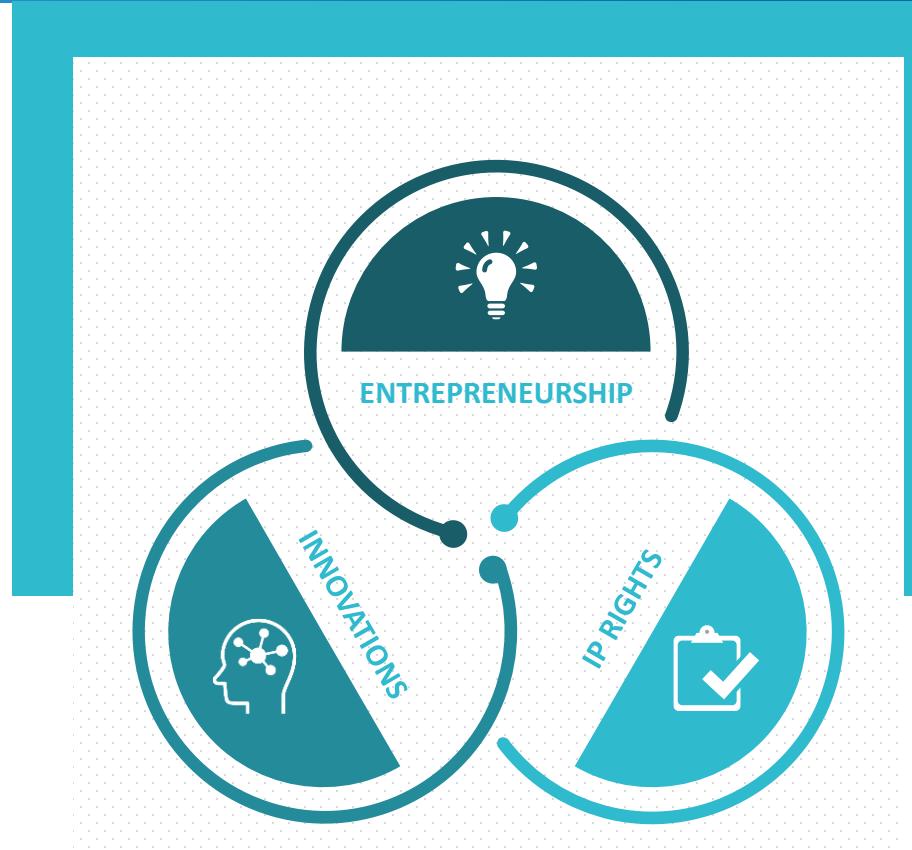
◆ Need for IP Protection and associated rights

- Law of the land recognizes and secures intellectual creation as own and prevents other from practicing it without explicit agreement
- Allows entrepreneurs to reap the benefits of the intellectual creations
- Protects business ventures from unjustified infringement claims from other entities
- Provides non-linear revenue growth momentum



How it All Ties in

- Entrepreneurship, Innovation and IP Rights (IPR) can create sustained impact in the ecosystem
- Entrepreneurs need to be innovative in their ventures
- Entrepreneurs need to be smart enough to secure the relevant IP rights to reap the fruits of those very innovations



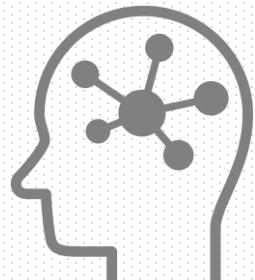
Summary

- Entrepreneurs need to be diligent in assessing the right opportunities to invest in
- Entrepreneurs need to be innovative in their ventures & secure IP rights, build the right IP portfolio and IP assets to further their business venture
- Be alert of IP theft, be vigilant and take precautionary measures
- Be alert of all IP challenges, and proceed for IP protection as per ROI assessment
- Indulge in smart IP management

References

- <http://www.businessdictionary.com/definition/entrepreneurship.html>
- <https://www.iam-media.com/patents/intellectual-property-40>
- <https://www.infoentrepreneurs.org/en/guides/use-innovation-to-grow-your-business/>
- <https://www.managementstudyguide.com/what-is-entrepreneurship.htm>
- <https://www.wipo.int>

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:
Types of Innovation (incremental, disruptive, etc.)

Contact Hours: 1 Hour

Lesson Number: 2

Author Name: Tara Prasad

Objectives of the Lesson

The aim of this lesson is to discuss what is innovation, why is it important and different types of innovation. After the successful completion of this lesson you will be able to understand:

- What is innovation
- Why is innovation important
- Understanding the different types of innovation
- Examples of each type of innovation
- Changes that does not qualify innovation
- Examples of Organizations that failed to innovate
- Summary

What is Innovation

An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)

- Innovation is not an invention
 - An invention is an idea, a concept or design for a new or enhanced product, system or process
 - An innovation can be an implementation of the invention and thereby making the ideas useful
 - Innovation involves selecting, connecting, combining ideas into a marketable product or service
- Innovation is transformation of an idea into reality
- Innovation relates to adding value or making a change in the existing product or process
- Innovation happens when the need is felt for improvement in existing product/process/service or need for a new product/process/service that adds up value to the customer

Importance of Innovation in an Organization

Innovation helps to:

- Build competitive advantage
- Improve productivity, reduces cost
- Penetrate in new markets, find new opportunities
- Build enhanced products and services to the customers
- Increase market share/profitability
- Motivate employees to work, improved employee retention
- Enhance brand value

Types of Innovation (1 of 2)

Organisation for Economic Cooperation and Development (OECD) highlights two different types of innovation:

- innovations that change the firm's products (product innovations)
- innovations that change the firm's business processes (business process innovations).

Product Innovation is a new or improved good or service that differs significantly from the firm's previous goods or services and that has been introduced on the market

- Additions of new functional features or improvements to existing functional features leading to improved quality, durability, reliability, economic efficiency during use, affordability, usability and user friendliness (for example, introduction of a new product line that uses less expensive materials and is consequently offered at lower cost automatic payment of a taxi ride after the ride has taken place)

Process Innovation is a new or improved business process for one or more business functions that differs significantly from the firm's previous business processes and that has been brought into use by the firm

- Core business function of producing goods and services and supporting functions such as distribution, logistics, marketing, sales; information and communication technology (ICT) services to the firm, administrative and management functions (for example, application of data mining analysis to large databases to identify potential market development opportunities)

Types of Innovation (2 of 2)

A business process innovation can significantly improve the quality of a product, resulting in a joint business process and product innovation

The minimum requirement for an innovation is that the product or business process must have one or more features that were not made available in the products or business processes in the previously offered by or used by the firm. The enhanced features must be relevant to the organization or to external users.

- For example, the organization may expect the new or improved characteristics of a product (or business process) to increase usefulness for users or to enhance its own competitive position in the market

Innovation activities vary greatly in their nature across various organizations

- Some are involved in well-defined innovation projects, such as the development and introduction of a new product.
- Some make continuous improvements to their products, processes and operations. These fall under category of incremental innovation

Categories of Innovation (1 of 2)

The types of innovation (product and business process) are categorized by novelty or economic impacts. For example, introducing a new flat screen television is a major change to the older established television market. However just enhancing the resolution of the screen is a minor change. The three categories are Incremental, Radical and Disruptive.

Incremental innovation is about continuous improvement making small changes to products, processes or services. It increases value to the customer (features, design changes, etc.) or creates possibility of making small changes to revenue or efficiency or both. The risk of introducing incremental innovation is low.

Radical innovation is about making major changes in using revolutionary technology and new business model. It has potential positive impact on enterprise's performance such as revenue or efficiency. It inherits high level of risk, high cost of failure and focuses on long-term impact. It may displace current products.

Disruptive innovation make product and services more accessible, affordable, and available to a larger users. Disruptive innovations originate in **low-end footholds** or **new-market footholds**.

Categories of Innovation (2 of 2)

Disruptive Innovation: Explained

- To be disruptive, a disrupter must first gain acceptance in the low end of the market. This sector is generally not given importance by the enterprises who are established in the market and holds profitable high-end customers.
 - For example, with the advent streaming technology over internet, Netflix was able to offer on-demand movies and TV to a large customer base at cost-effective price and thus able to grow the business exponentially. It was the initial focusing on the low-end of the market that made Netflix disruptive. Gaining a low-end foothold and with a completely different business model allowed Netflix to move upmarket and in due course attract Blockbuster's core customers

Low-end footholds

- Incumbents provide attention to their most profitable and demanding customers with enhanced products and services and give low priority to less-demanding customers.
- Disrupter may target those **low-end customers** by providing with a “good enough” product and later move up across customer profile as the product acceptance improves

New-market footholds

- Disrupter creates a market where none existed
- Disrupter finds a way to turn non consumers into consumers.

Examples of Different Categories of Innovations

- Incremental
 - Gillette started with a single blade razor, but their product has evolved, adding different features and more blades as the company has sought to better meet customer need
 - Intel's regular launch of more-powerful microprocessors
 - Microsoft Windows, Apple iPhone new versions of product
 - Self ordering kiosks in restaurants
- Radical
 - iPhone,
 - Personal computer
 - Internet
- Disruptive
 - Netflix's offering on demand movies
 - Amazon experimenting with drones for deliver goods,
 - Google's self driving car

Changes that are not Innovations

- Routine changes or updates
 - software updates that only detect and remove coding errors
 - seasonal changes in retail store in arranging the commodities
- Simple server replacement or upgrade is not an innovation
 - minor extensions and updates to existing server, system or device
- Product introductions that only involves minor aesthetic changes
 - such as a change in color or a minor change in shape
- Minor changes in a business process which is already implemented in an other divisions of the firm

Other Type of Innovation: Jugaad Innovation

'Jugaad Innovation' means improvised solution using limited resources (The word 'Jugaad' originates from Hindi). Jugaad Innovation has the following three core aspects:

- **Faster:** They don't use pre-planned, detailed R&D processes. But rely majorly on rapid prototyping techniques. They collaborate closely with customers and use their constant feedback to develop relevant product features
 - e.g. Jane Chen and Rahul Panicker, founders of Embrace social enterprise specializing in infant healthcare, designed portable infant warmer by interacting with village pediatricians, midwives, nurses, and parents
- **Cheaper:** They are very frugal. Rather than reinventing the wheel or spending huge money on R&D projects, they develop new solutions by reusing existing infrastructure and assets
 - e.g. YES Bank, one of India's leading private banks, has deployed mobile banking application that enables users to transfer money via mobile phone without the need for a bank account. This solution takes advantage of India's existing mobile telephony infrastructure that extends to the remote villages in India
- **Better:** They develop solutions that are affordable and deliver superior quality catering to consumers who are low earners
 - e.g. SELCO, an Indian renewable energy firm, developed solar lanterns to rural customers that are affordable

Lack of Focus on Innovation Leading to Closure of Business

- **Kodak** led the photography industry for years with focusing on improvements to traditional film. With the advent of digital imaging(disruptive innovation) which revolutionized the way people captured, stored and used images – made Kodak obsolete. Kodak held on to analog cameras instead of moving quickly to digital to remain as industry leader
- **Nokia** kept focusing on hardware innovation and underestimated the importance of software apps that run on smartphones, which was equally important aspect of user experience
- **Blockbuster**, the video-rental company was at its peak in 2004. Unable to transition towards a digital model, Blockbuster filed for bankruptcy in 2010
- **Yahoo** – Undervalued the importance of search and focused more on online advertising market

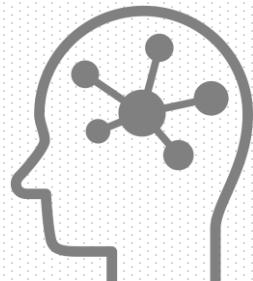
Summary

- Invention and innovation are not one and the same. While invention attributes to idea, innovation refers to implementation of the idea
- Not every innovation has to be a radical or disruptive. While they are important to business, most profits are generated through incremental innovations
- Different kinds of innovation can complement each other
- For business to stay relevant and grow, one needs to foster a culture of innovation
- Jugaad innovation is a frugal and flexible approach to innovation

References

- **Jugaad Innovation:** Think Frugal, Be Flexible, Generate Breakthrough Growth [Navi Radjou, Jaideep Prabhu, Simone Ahuja](#), John Wiley & Sons
- **Oslo Manual 2018,** *Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition* - https://www.oecd-ilibrary.org/science-and-technology/oslo-manual-2018_9789264304604-en
- **Use Jugaad to Innovate Faster, Cheaper, Better** <https://hbr.org/2011/12/think-like-an-indian-entrepreneur>
- <https://www.forbes.com/sites/gregsatell/2014/09/05/a-look-back-at-why-blockbuster-really-failed-and-why-it-didnt-have-to/#4c416aed1d64>

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title: **Lifecycle Of Innovation (as an Offering)**

Contact Hours: 1 Hour

Lesson Number: 3

Author Name: Gopal Menon

Objectives of the Lesson

- Recap: What is an innovation (Lessons 1 & 2)
- An ‘Idea’ is only useful if it is translated into an innovative ‘Product’ or ‘Service’ (Offering) that creates ‘Value’
- In a business, an idea leads to an innovation if customers are ready to pay for the created value
- Entrepreneurs focus on taking an innovation to the market as an offering (product)
- Objective of this lesson is to get a brief understanding of the various stages of how an innovation lives out its life as an ‘Offering’ in the ‘Market’ – from being just an idea to how it takes shape, grows and then eventually fades away

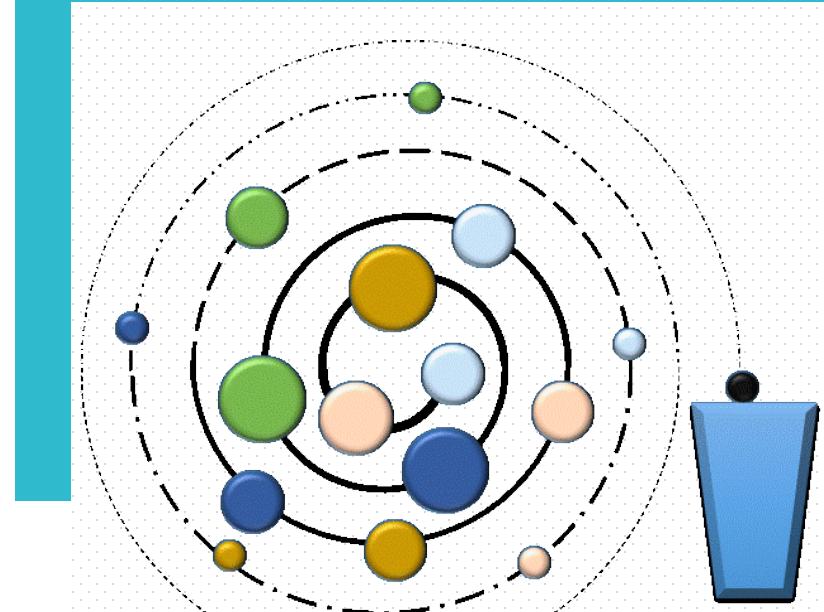
Lifecycle of Innovation (as an Offering)

- ◇ In Lesson 1, the lifecycle of an innovation was introduced. It depicted the following phases

Necessity to Idea; Idea to Research;
Research to Invention; Invention to IPR;
IPR to Offering; Offering to Impact

- ◇ When an innovation takes life as an 'Offering' that is taken to the market, we can map it to the following stages.

- i. Ideation (from 'necessity' to 'solution concept')
- ii. Research (Deep study of 'necessity' and 'solution')
- iii. Offering (Inventions, Protection, IPR, Productization)
- iv. Commercialization (Creating an impact)
- v. Growth (Sustaining)
- vi. Retirement (End of Life)



- ◆ An idea can be a THOUGHT about a
 - A potential solution or offering to a Customer's need or a Market problem – an identified necessity
 - A new technical solution or offering can
 - Be a new product or new service
 - open a possible new market

- ◆ How does one get an Idea?
 - Curiosity, Learning & Observing, Rationalization
 - By identifying or recognizing the existence of a problem
 - Getting a deeper understanding of the problem – gather information, understand expectations
 - Targeted search – creativity workshops, idea contests
 - Random findings – Chancing on a new discovery, suggestions or feedback

- ◆ Focused research is needed to give a form to the idea
 - Reframing the problem, setting expectations
 - Conceptualization, Idea Mining
 - Extensive analysis & derivation of concepts for the solution, implementation & marketing
 - **Market & Customer requirement:** What are the needs, unfulfilled or unconscious problems, importance, surveys
 - **Market Potential:** Size & Attractiveness – business canvas, commercial viability of the product
 - **Growth Potential:** Differentiators, scaling opportunities
 - **Risks & feasibility:** Technical, Entry Barriers, Laws, Regulations, Standards, Patents

◆ Proof Of Concept (PoC)

- Establish feasibility of an idea, provides evidence that an developing a solution is practical
- May require some investment – time, technology
- Identifies the need to revisit the thought processes
- Develop Prototypes

◆ To develop an Offering (Product)

- Ensure availability of resources (funding, people, infrastructure, test beds...)
- Proof of technology exercises (multiple attempts may be needed)
- Define scope of the solution (one product may not be able to solve the problem for all)
- Develop the initial roadmap – Minimum Viable Product (MVP), Release Version 1, Release Version 2....
- Identify potential anchor customers as early adopters of the product
- Scope out and develop MVP – incubate with anchor customers, analyze and incorporate feedback
- Product enters continuous release iteration loop
 - *New product version ready for release to market*
 - *Roadmap regularly updated as per feedback*

◆ Inventions & IP

- For an offering to succeed in the market there needs to be one or more novelty attributed to it
- This gives rise to potential inventions and hence IP that needs protection (IPR). An IP may have a lifecycle of its own. This is discussed later in the course

◆ Setting up the Business Plan*

- Sales Strategy
- Marketing Strategy
- Contracting & Licensing Management (Terms & Conditions, Scoping)
- Product Management & Engineering (Packaging & Delivery)
- Implementation & Support (Post sales)

**For details on Business Plan: Refer to Lesson 10*

◆ An offering's business plan is a living artifact – which is continuously monitoring its market performance and re-strategizing the sales and marketing approach

It also provides course guidance to the Product Management and other Support teams

Lifecycle of Innovation - Growth

◆ Ensuring staying ahead in the market

- Continuous Market study (Key Players, Competition Strategies, New Technologies, Characteristics of the need)
- Evolving Product Roadmap (Continuous market understanding, continuous innovation and IP creation, Release plan)
- Building and amplifying differentiation, increasing customer acceptance and complying to regulatory requirements
- Continue to be economically viable – IPs can help command premium value
- Continuously ensure credibility gain through customer testimonials and analyst recognitions

◆ Business growth is driven by Innovation Management with Engineering, Marketing & Sales continuously working in tandem throughout

◆ End of Life

The Ideas, Impact of the ideas and Growth starts getting to be insignificant – impacting the interest of the organization, customer and investors to continue with the product. The potential attributable reasons:

- Economic viability goes down
- Loss of relevance as a solution
- Technology substitution
- Loss of market space, demand
- No more leading the solution space

Planning a graceful exit is important to ensure credibility in the market space

◆ An important aspect that needs to be tracked and recorded though an offering's life is the impacts it has created that leads to learning and insight to create more ventures

- **Economic** – How did it impact the market, how was it impacted by the market, How was the organization impacted
- **Social** – What was the social impact (e.g., Pollution reduction, improvement in sanitation)
- **Technology** – Did it spawn new technologies, new technical processes

Fostering Innovation – Case Study #1 – TATAs

TATA, one of the Leading Corporate Groups in India is a leader in fostering Innovation. It runs the flagship program **Tata Innovista** across the group companies.

- Tata InnoVista is a unique 'One Tata' platform for recognizing and celebrating innovations of the companies at the group level
- Participating in the group-wide initiative encourages and motivates the teams and promotes a culture of collaborative innovation, learning and sharing
- Tata InnoVista demonstrates the ability of teams to solve real business problems with innovative solutions, their focus on creating visible impact and the intrapreneur culture

Tata Innovista recognizes innovations in multiple categories

Implemented Innovations

Aimed at recognizing innovations implemented successfully

Dare To Try

Aimed at recognizing teams who did not initially achieve the desired results but are raring to go again

Piloted Technologies

Aimed at recognizing technologies that have been developed and tested/piloted successfully

Design Honour

Aimed at recognizing design innovations that have been implemented successfully with demonstrated results.

Most Innovative Partner

Aimed at recognizing who have proactively delivered innovative solutions with a significant impact

Fostering Innovation – Case Study #2 – Invest Ottawa

Invest Ottawa is the lead economic development agency for knowledge-based industries in Canada's Capital, facilitating economic growth and job creation in the City of Ottawa

- Guided by a vision to help realize Ottawa's full potential as a globally-recognized, innovative and future-ready city, and the best place to learn, work, live, and play, Invest Ottawa delivers venture development and global expansion programs and services that catalyze the growth and success of entrepreneurs and firms
- These include small business training; mentorship; acceleration for technology firms; foreign business and investment attraction; local business retention and expansion in targeted sectors; commercialization; and marketing Ottawa's diversified economy and high quality of life

Invest Ottawa is facilitating The IBM Innovation Incubation Project under 4 streams

- Customer Demonstration Program aimed to demonstrate the value of a smart computing product/service
- TalentEdge Data Analytics Internships aimed to build skills in advanced analytics & smart computing
- SOSCIP Research Consortium provides post-doctoral fellowship
- IBM Innovation Hubs where SMEs can get support services to access and work in advanced technology platform

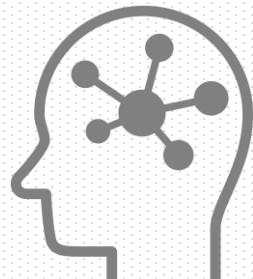
Summary

- Every innovation starts with an Idea which is a potential solution to a Market Need
- Research & Conceptualization helps determining the effectiveness of the solution and feasibility of developing the product
- The decision to Develop the Product by an organization requires investments, understanding the expectations of the market
- A proper business plan to take the product to the market helps the product become a commercial success for the organization
- Planning towards sustained longevity of the product through continuous incremental innovation ensures staying ahead of any competition and thereby Growth
- The demand for any Product will eventually die down due to loss of relevance, better innovations in the market
- The insights gained during the lifecycle can be leveraged for more & better successful innovations

References

- <http://sourcesofinsight.com/innovation-life-cycle/>
- <https://www.investottawa.ca/>
- <https://www.Lead-innovation.com>
- <https://www.msi.org>
- <https://www.tatainnovista.com/>

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title: **Challenges In Innovation**

Contact Hours: 1 Hour

Lesson Number: 4

Author Name: Gopal Menon

Objectives of the Lesson

- To ensure long term success in business, organizations
 - Need to regularly take innovative offerings to customer and be an impact player in the market
 - Can survive only if they encourage and invest in a continuous innovation culture
 - Must sustain a flow of innovative ideas that can help them retain their market share
- It is important to understand the challenges and be aware of it, so that,
one does not get trapped in the sentiments, processes and policies
that will prevent the culture of innovation from taking place
- This lesson focuses on the challenges in the context of an Enterprise or Business. But most of the points are also relevant for startup and small business.

How does Innovation happen in an Organization

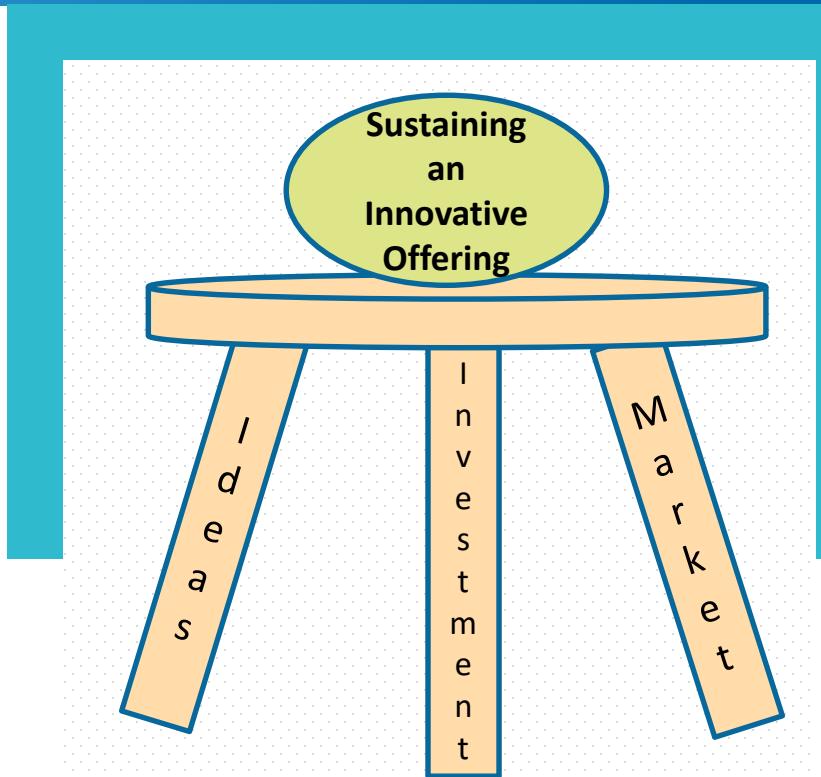
◇ In an ideal scenario:

- An employee (or a team) has an idea – and that is a very good idea
- The idea or its concept gets taken up in an appropriate organizational forum and gets accepted
- The organization decides that it is an investment worth betting on (through market studies, surveys)
- Organization helps manage the necessary funding, IP protection, infrastructure and logistics to take the concept to a solution level
- Organization sets up and empowers the team to develop the offering
- Organizations invests into marketing & sales efforts
- Organization reaps the benefit of the innovation – through market revenue (sales, royalties), goodwill, brand image
- Organization rewards the stakeholders behind the innovation's success
- Organization encourages more innovations

In an organization, Innovation can take seed at any level – Employees, leadership team and other stakeholders that include partners, customers, admirers, followers, shareholders, analysts, experts...

Challenges in Innovation

- ◆ Sustaining an Innovative Offering requires a delicate balance of Ideas, Investment and Market strategies.
Maintaining the balance is the challenge that
- ◆ exists across the lifecycle of an innovation and can be broadly defined as challenges during the:
 - Ideation, Research stages (Ideas);
 - Offering, Commercialization stages (Investment);
 - Growth, Retirement stages (Market)



Challenges in Innovation: During Ideation and Research Stages

◆ No Ideas originating from the organization

▪ Reasons

- Don't feel empowered to innovate: Lack of support of the leadership
- Not motivated to innovate: No incentives for employees and stakeholders
- No innovation strategy: Lack of shared vision or purpose, no organizational commitment to innovation.
- Centralized groups: Feeling that innovation is restricted to the R&D or Technology teams
- No diversity: Teams with similar thoughts, cultures may have limited outlook and ideas
- Fear of failure: People are afraid of looking foolish or being laughed at
- Work Stress: No time to think creatively, difficult to think collectively, reduced quality of mental processes
- Following Rules and Assumptions: Confirming to accepted patterns of beliefs, culture, thoughts, rules and processes. Restricted thinking due to flawed assumptions
- Too much logical thinking: Neglecting intuition, suppressing imagination
- Lack of attentive listening: Not listening to external stakeholders such as markets, analysts, technologists, customers...

Organization should define a strategy that dictates the direction of innovation and its implementation process

An organization's employees are one of its most important source for Ideas

Challenges in Innovation: During Offering Development and Commercialization

- ◇ Ideas and concepts do not find the light of the day – **No investment, No Protection**
 - Reasons
 - **No collaboration culture** in the organization:
 - **Internal Collaboration** – within various departments – Management, Finance, Engineering, Marketing, Sales
 - **External Collaboration** – Industry partners, Customers, Competition
 - **Complacency**: Organization tend to rely on their existing successful products. Would not want reduce investments on them for fear of losing resources of customer attention
 - **Procrastination or Delayed decisions**: Investment decisions need to be made fast or else the relevance of the idea to the market needs is lost. Finding a sponsor and funding needs to be done at priority
 - **Management expectations & support**: Lack of Senior Exec ownership. Early Pay-Off expectations. Constantly shifting priorities. No risk-taking appetite. Resistance to change. Organizational politics and hierarchy. Micromanagement
 - **No focus on protection**: All inventions and IP developed during the exercise needs adequate protection to maintain the novelty of the offering

An organization needs to be receptive to ideas, be ready to invest, take risks and support its employees

Challenges in Innovation: During Growth and Retirement

- ◇ Managing the market leadership and credibility is a major challenge – **No Market**
 - Reasons
 - **Loss of Market connection:** Understanding of changing customer needs and innovating to keep abreast of futuristic trends
 - **Wrong measurement of success of offering:** Continuous reliance on sales and profits as a measure of success without focusing on number of ideas being generated, investments (funding, time) on innovation-related initiatives, customer satisfaction, market share
 - **Not ensuring graceful retirement:** Ensuring brand image of the organization is not impacted by abrupt closure of the offering. Important to ensure customers interests are properly managed

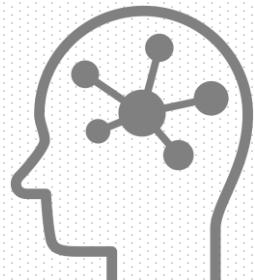
An organization needs to keep track of changing market trends, ensure continuous innovation and incase of retiring the product do it gracefully with proper communication with customers

Summary

- Any innovation requires taking risks and trying new ideas
- Employees are the most important source for Ideas
- Employees need to be encouraged to ideate and communicate the ideas
- An organization needs to be receptive to ideas, be ready to invest, take risks and support its employees
- An organization needs to keep track of changing market trends
- Understanding of the potential challenges can help organizations overcome the risks of neglecting innovation

References

- http://fun4biz.com/coach/coach/creativity_6barriers_ja.html
- <https://scottberkun.com/2007/the-8-challenges-innovations-face/>
- <https://trainingindustry.com/articles/strategy-alignment-and-planning/cause-and-effect-barriers-to-creativity-and-innovation/>
- <https://www.innovation-asset.com/blog/9-challenges-hindering-innovation-in-your-organization>
- <https://www.torbenrick.eu/blog/strategy/30-key-obstacles-to-innovation/>



Lesson Title:
Types of Intellectual Property Rights

Contact Hours: 1 Hours

Lesson Number: 5

Author Name: K Subodh Kumar

Objectives of the Lesson

- To impart fundamental concepts on Intellectual Property Rights (IPRs) and the various forms of IPRs.
- To introduce the importance of IPRs for the protection of various types of Intellectual Property (IP) created in the Society.
- Basic definitions supported by examples are intended to develop basic understanding on Patents, Copyrights, Trademarks, Designs, Integrated Circuits, Geographical Indications and Protection of Confidential Information.

Introduction

Intellectual Property Rights (IPRs)

Industrial Property Rights

Copyrights & Related Rights

- Patents
- Designs
- Trademarks
- Geographical Indications
- Integrated Circuits

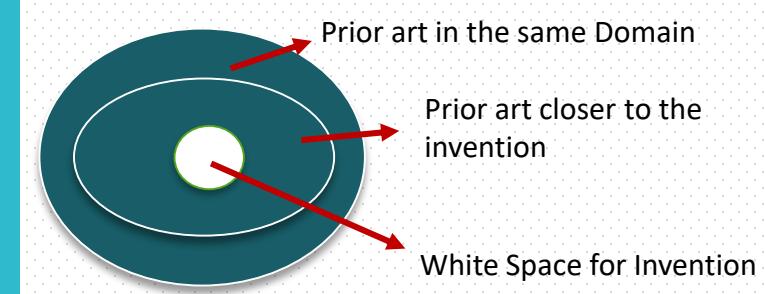
Intellectual property (IP) is the product of mind, and as such, it is distinct from usual notions of property. An intellectual creation, until it is presented in a tangible form, cannot be sensed by someone other than the creator, and it has value only to the creator. Under intellectual property law, owners are granted certain exclusive rights to a variety of assets. These assets could be - Inventions, Design, Literary & Artistic works, and Symbols, Names & Images used in Commerce. (*Source : World Intellectual Property Organization, Geneva*)

- Under intellectual property law, owners are granted certain exclusive rights (IPRs) to a variety of assets. These assets could be - Inventions, Design, Literary & Artistic works, and Symbols, Names & Images used in Commerce.
- These exclusive rights (IPRs) provide legal Ownership to the right holders for further commercial exploitation of their Intellectual Property (IP).
- Without IP Protection, incentive for Research and development (R&D) will be significantly less and third parties would be free to exploit the developments.
- Patent protection facilitates and encourages disclosure of innovations into the public domain for the common good which would otherwise remain as a secret.
- Public availability of Patents helps technology advancement by encouraging further improvement by other inventors.
- Copyright Protection facilitates protection of Creative and artistic work and the distribution of the same in the public domain. This prevents illegal exploitation and promotes Right Use and Right access of Copyrighted works. It prevents unauthorized users from selling copies in the market.

- Is an **exclusive right** granted for an **invention**, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem.
- Patentee can **exclude** ('Negative rights') others from making, using, selling, offering to sale or importing the patented invention in the **geography** for the **term of the patent** i.e. 20 years from the date of filing.
- A patent is granted by a national and regional patent offices such as **Indian Patent office, United States Patent and Trademark office, European Patent Office** and the **African Regional Intellectual Property Organization**.
- The **WIPO** - administered Patent Cooperation Treaty (PCT) provides for the filing of a single international patent application which has the same effect as national applications filed in the designated countries.

Patentability Criteria:

- Is it Novel?
- Is there an inventive step?
- Does it have an Industrial applicability ?

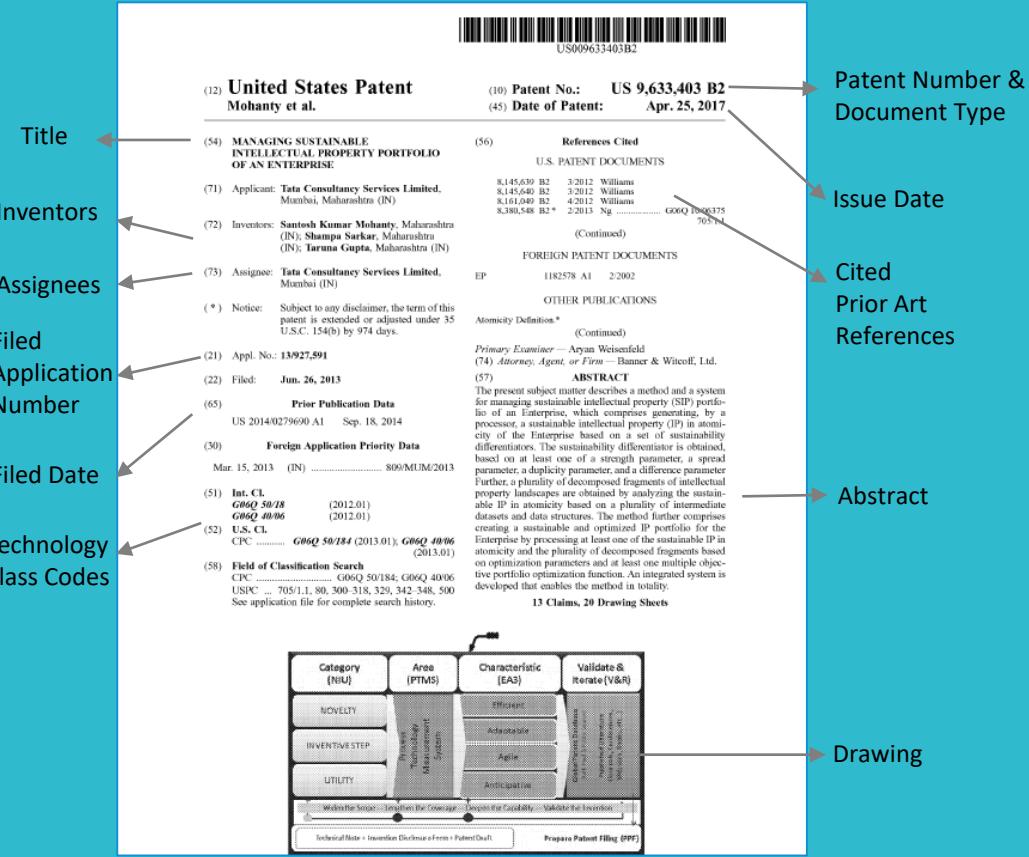


All the above criteria is relative to the **Prior Art** existing at the time of filing of the invention. Patent databases and non patent literature existing in the public domain is accessed to ascertain the Prior Art knowledge existing at the time of filing of patent application.

Interesting Patent Examples

#	Title	Invention Details	What is the societal need the Invention addresses?
1	Self-creation of comic strips in social networks and other communications. US Patent no : 8,621,366	Google Patents allows users to create a comic strip of their daily activities.	Social Media has become more visual than textual. The need for the social media users drifting to visual based social based platform like Snapchat and Instagram.
2	Active Screen Protection for electronic Device US Patent no : 20150301565	Apple has filed a Patent for protecting its Unique screen saving technology that protects the screen of the device during a fall. The use of sensors to transmit and sense a fall of the device and enabling a protective cover for protection. The proposed design also includes shock absorbers and modular protectors that could easily fold in and out of the device.	Major issue with Mobile users that they carelessly drop phones that result in breaking of display screens.
3	Autonomous vehicle with reconfigurable seats US Patent no : 9,340,126	Ford' patent is a futuristic autonomous self driven cars which allows the seat position to move from front to rear position and allows the passenger to enjoy the drive.	Self driven cars are futuristic and capturing the imagination of consumers across the world. These developments have cascading effect in the development of futuristic automobiles in smart cities.

Structure of a Patent



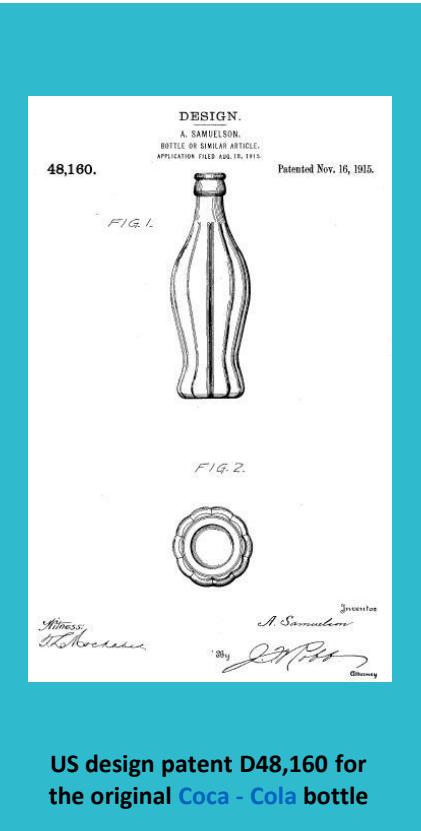
Claims

The specification must conclude with a claim or claims particularly pointing out and distinctly claiming the subject matter of the invention. This is an important part of the patent as it define the scope of the legal protection afforded by the patent and around which questions of infringement are judged by the courts

Important Steps before a Patent is granted

- Filing of the Patent specifications at the relevant patent office
- Publication of the Patent application
- Examination of the Patent application
- Opposition (if any)
- Grant of the Patent application

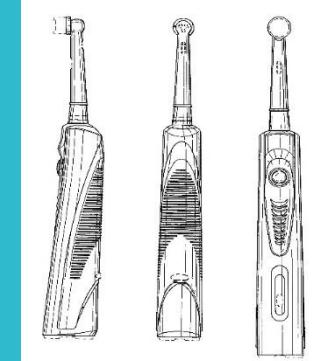
IPR – Industrial Design



US design patent D48,160 for the original Coca-Cola bottle

“Design’ means only the **features of shape, configuration, pattern or ornament or composition of lines or colour or combination thereof** applied to any article whether two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged **solely by the eye**.

It does not include any **mode or principle or construction** or any thing which is in substance a mere mechanical device, and does not include any trademark



Application Number
D/205601; Filing Date
05/18/2004 The ornamental
design for an electric toothbrush

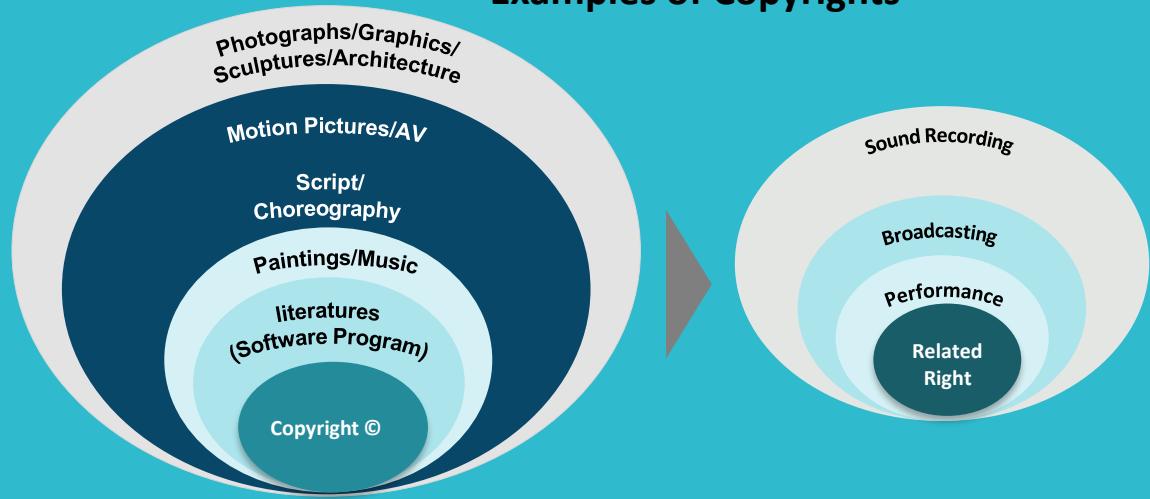
Copyrighted Work

- Literary works
- Musical works
- Dramatic works
- Pictorial, graphical and sculptural works
- Motion pictures
- Architectural works
- Sound recordings

Derivative Work

- Translation
- Musical arrangement
- Dramatization, etc. of Copyrighted work

Examples of Copyrights



- Work must be **fixed** in a **Tangible form of Expression**
- Must be an **original** work of authorship
- Copyright protection extends only to Expressions, and not to ideas, procedures, methods of operation or mathematical concepts. Duration (validity) - (Lifetime + 60 yrs.)

- Trademark is a distinctive sign that identifies certain goods or services produced or provided by an Individual or a company.
 - A distinctive combination of words, letters and numerals.
 - Symbols, three-dimensional signs which are distinctive
 - Distinctive shape and packaging of goods.
 - Non-Visible Signs :Sound, Smell or Taste
 - Collective Marks, Certification Marks
- Trade Trademark protection ensures that
 - the owners of marks have the exclusive right to use them to identify goods or services, or to authorize others to use them.
- Duration of Trademark (10 Yrs, needs to be renewed)

Sound mark

Protection granted for expressing a distinct sound in musical notations. **Ex - Intel**

Three Dimensional Marks

Three Dimensional Marks - Distinct 3 - D shapes can be registered. **Ex - Mercedes star**

Smell mark

"The smell of fresh cut grass" for tennis balls (**EU R 156/1998 - 2**)

Word Mark

Famous brand names like Tata, Xerox, Intel etc.

TM – Unregistered; ® - Registered

“Trade secret” means information including a formula, pattern, compilation, program device, method, technique, or process, that:

- derives independent economic value, actual or potential, from not being generally known to, and
- not being readily ascertainable by proper means by other persons who can obtain economic value from its disclosure or use, and
- is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Examples of undisclosed information, which are kept as Trade Secrets by organizations:

- Manufacturing Secrets:
 - Proprietary Technical/ Research and Development Information:
 - Proprietary information about Production/ Process
 - Quality Control Information:
- Commercial Secrets:
 - Employee/Customer/Vendor/Partner Information
 - Infrastructure, administrative and organization information
 - Proprietary internal financial Information
 - Proprietary Sales and Marketing Information

Other forms of Intellectual Property

Integrated Circuits

- A layout - design of an integrated circuit is the three - dimensional disposition of the elements of an integrated circuit and some or all the interconnections of the integrated circuit or such three - dimensional disposition prepared for an integrated circuit intended for manufacture.
- A layout - design is eligible for protection automatically upon fulfillment of the following conditions
 - It is original, i.e. the result of its creator's own intellectual effort and not commonplace among creators and manufacturers of integrated circuit
 - It has been fixed in a material form or incorporated into an integrated circuit
- Integrated Circuit Layouts in Semiconductor Industry can be protected through this form of IP.

Geographical Indications

Geographical Indications (GI) are one form of Industrial Property Rights. They are signs used on products which have distinctive quality and reputation attributable to the geographical origin of the product. These signs can be used only if there is evidence of linkage of quality and reputation of the product to a specific geographic origin.

- Pochampally Ikat: The famous tie and dye saree with characteristic motifs is a registered GI in India. The Saree is traditionally woven in Pochampally Village, Nalgonda District of Andhra Pradesh.
- Darjeeling Tea: It is the first GI granted in India, the famous tea with unique flavor originating from Darjeeling, West Bengal.

Standard Essential Patents (SEPs)

- A set of common technical specifications for a design of a product or process is a **Standard**. For e.g.: A4 Size sheet of Paper, Mobile chargers etc. The objective of standards is promoting interoperability between different products and Processes.
- **Standard essential Patents (SEPs)** protect the Inventions, which are required to comply to the standards.
- **Standard Setting Organizations (SSO)** are the organizations, which are set up with an objective of promoting establishment of standards, administration and governance to establish a seamless coordination amongst its members.
- SSO facilitate adoption of standards and mandate the members to oblige Licensing of Standards Essential Patents (SEPs) on **Fair, reasonable and Non-Discriminatory (FRAND)** terms. This the core foundation for standard setting and facilitates licensing of SEPs on FRAND terms to facilitate commercialization.

Micromax vs Ericsson Case

Micromax was selling mobile phones using 2G or 3G technology which was covered by Patents of Ericsson. Ericsson claimed that Micromax was infringing upon its SEPs and demanded monetary compensation and royalties of 1.25 -2.5% on each phone sold. Ericsson filed infringement suit and sought injunction which prevented Micromax from importing and manufacturing mobile phones in India. This leads Micromax to file a complaint with the Competition Commission of India (CCI) against Ericsson for monopolizing and abuse of dominant position using Patent rights. These counter challenges prolonged the battle. However, The Delhi High Court finally recognized the jurisdiction of the CCI in this matter. Meanwhile Ericsson and Micromax agreed for an “out of court” settlement. They agreed on a Patent License agreement that put an end to a long-drawn dispute.

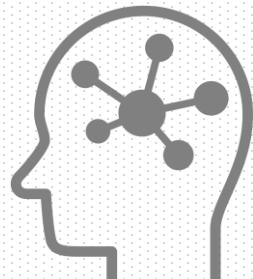
Summary

- There are various forms of Intellectual Property Rights. It is important to identify the Intellectual Property and protect through the right forms of IPRs. Patents are important for the protection of Inventions which are useful to the Society. Trademarks protect distinctive signs used to identify goods and services produced by Individual or a Company. Designs are used to protect features of shape, configuration, pattern applied to any article. Copyrights are used to protect artistic and literary works. There are other forms of IPRs such as Geographical Indications, Integrated Circuits, which have been briefly discussed.
- Intellectual Property Rights provide legal rights to the right holders and helps in protection these rights in various jurisdictions. The rights are exclusionary in nature and prevents any unauthorized use of the legal rights.
- IPRs are granted by National IP offices which are established in various jurisdictions.
- A Standard essential Patents (SEP) protect the Inventions which are required to comply to the standards. Standard Setting Organizations (SSO) facilitate adoption of standards and mandate the members to oblige Licensing of Standards Essential Patents (SEPs) on Fair, reasonable and Non-Discriminatory (FRAND) terms.

References

- Discussion Paper on Standard Essential Patents and their availability on FRAND terms, March 2016, Department for promotion of Industry and Internal Trade, Govt. of India.
- ISO/IEC Guide 2:2004 Standardization and related activities - General vocabulary,
- Shapiro, Carl, —Navigating the patent thicket: cross licenses, patent pools, and standard-setting, forthcoming innovation policy and the economy, Volume I, MIT PRESS, 2001 available at <HTTP://FACULTY.HAAS.BERKELEY.EDU/SHAPIRO/THICKET.PDF>
- WIPO (2019). WIPO Technology Trends 2019: Artificial Intelligence. Geneva: World Intellectual Property Organization.
- WIPO Publication No. 450(E) ISBN 978-92-805-1555-0: What is Intellectual Property?

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:

Lifecycle of IP (creation, protection, assetization, commercialization)



Contact Hours: 1 Hour



Lesson Number: 6



Author Name: Tara Prasad

Objectives of the Lesson

The aim of this lesson is to provide an understanding of lifecycle of Intellectual Property and what are the key activities to be carried out in each of these phases right from IP creation, protection, assetization and commercialization

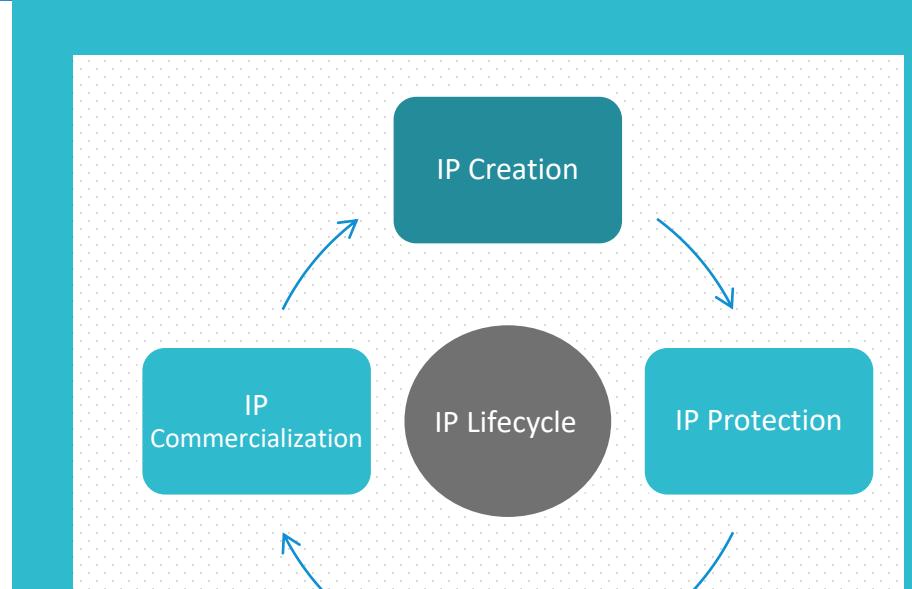
- Importance of Intellectual Property (IP)
- IP Creation
- IP Protection
- IP Assetization
- IP Commercialization

Importance of Intellectual Property

- There is a steep increase in the value of intellectual property (intangible) assets to any business. According to a 2017 report from the World Intellectual Property Organization (WIPO), the income share from intangible capital is twice the income share coming from tangible capital¹
- Intellectual property considerations need to be made at every stage of an asset lifecycle to ensure strong protection. IP may include :
 - Novel Features
 - Unique logos/symbols
 - Creative designs
 - Training/Business methods
 - Know How
- Intellectual property rights (e.g., patents, trademarks, copyrights and trade secrets) plays a key role in the successful launch new products/services in market and to remain ahead of competitors

Lifecycle of IP

- ◆ Protecting IP assets at the right time will maximize value for business
 - **IP Creation** - enables innovators and inventors to identify potential IP
 - **IP Protection** - enables getting ownership rights and control of the IP
 - **IP Assetization** - facilitates development of IP based products
 - **IP Commercialization** - enables business to commercialize the IP

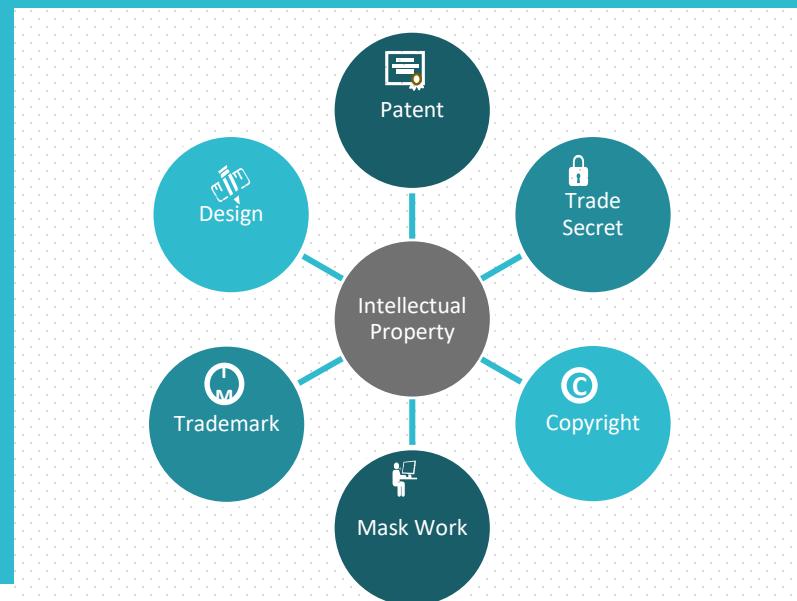


This phase focusses on identification of areas of innovation and creating ideas based on the enterprise business strategy

- Some of the key aspects to consider in this phase are
 - Where are the new and emerging technologies being developed ?
 - Who are the key players in the market segment and what are they working on?
- Some of the tools which can be used for idea creation are
 - **Brainstorming** – unstructured method for generating ideas
 - **Nominal group technique** – structured method of brainstorming that encourages idea creation from everyone. Each member of the group writes down his or her ideas which are then discussed and prioritized one by one by the group
 - **Affinity diagram**- different but related ideas are grouped (on cards or sheets of paper) into meaningful categories called affinity sets. These categories tie different concepts together with one underlying theme and provide a structure for a systematic search for one or more solutions
 - Focused ideation/business challenge workshops
- Idea evaluation
 - A cross-functional team consisting of the technical and domain experts can be utilized for evaluating the ideas
 - Shortlist ideas based on business, technology and market focus
- Avoid publication or public disclosure of any new ideas till it is filed for protection

IP Protection (1 of 2)

- ◆ Shortlisted ideas need to be secured by one or more of below IP protection based on enterprise's business strategy
 - **Patent** is a set of exclusive rights granted by the law of a country to an inventor or assignee for a limited period in exchange for detailed public disclosure of an invention e.g. New and useful processes, device etc.
 - **Design** is a form of legal protection granted to the ornamental design of a functional item e.g., user interfaces, ornamental design of manufactured product
 - **Trademark** is a recognizable sign, design, or expression which identifies products or services of a specific source from those of others e.g. TATA, experience certainty
 - **Copyright** is a legal right that grants the creator of an original work exclusive rights for its use and distribution- code, marketing brochures, architecture document etc.
 - **Trade secret** is a formula, process, design, commercial method, or compilation of information which is not generally known by others, and by which a business can obtain an economic advantage over competitors or customers
 - **Mask work** – Layout designs or topographies of integrated circuits



Protecting IPRs through the filing of the suitable IP applications with relevant Intellectual Property Offices provides considerable benefits. Registered rights assist in enforcing than non-registered rights.

IP Protection (2 of 2)

- Some of the key questions that guides the type of protection to be sought for:
 - Any requirements of branding the products/services for commercialization?
 - Any contents that requires protection?
 - Any confidential information that needs protection?
 - Are there any new/unique technology/designs that needs to be secured ?
- Prioritize IP protection needs based on
 - Available resources and budget
 - Jurisdiction where protection is needed
 - Potential sales or revenue in particular jurisdiction
 - Any risks for non-protection of IP e.g. competitor's ability to copy, counterfeit
 - Projected return on investment - in terms licensing or franchising of IP
 - The cost of IP protection e.g. Patent protection requires maintenance fees to be paid by the applicant
- Some of the key aspects to consider as part of IP protection
 - Ensure that IPR are filed before any public disclosure are made, else there is risk of losing IP to someone else
 - Get a Non-Disclosure Agreement (NDA) executed in case of any disclosures to be made before IP protection
 - Ensure to procure IP rights in various jurisdictions based on the business potential

In this phase one looks at how the IP created and protected are utilized to develop product, platform, solution or services based on the business strategy

- Some of the key aspects which needs to be taken care as part of development
 - Analyze market fitment by conducting a detailed landscape analysis
 - Identify the current IP portfolio and check if any further IP needs to be filed
 - Check if there are any IP assets owned by external entity which are of relevance to be included
 - Ensure proper execution Non-Disclosure Agreements (NDA) by the external party
 - Conduct Freedom to Operate (FTO) search to identify any risks of infringement of third-party rights
- Mix of IP strategy must be adopted
 - Defensive: Gain competitive advantage by anticipating the market needs and filing IP with a portfolio approach
 - Offensive: Protect competitive advantage by asserting organisation's IP rights through business and legal means
 - Value Derivation: Position IP assets to address customers' need in an innovative way and price IP assets during sales that supports the sustenance of innovation life cycle.
- Ensure to secure IP rights for the new products or processes to gain competitive advantage

IP Assetization (2 of 2)

- Enterprise needs to utilize IP rights based on their business strategy
 - **Increasing market value** - In case of a merger or acquisition, the value of IP assets are higher than the value of the physical assets
 - **Commercializing innovative products or services** - patent gives exclusivity over the commercialization of an innovative product or service and it provides opportunity for commercialization to other firms through licensing
 - **Marketing and product differentiation** - Trademarks and designs help in marketing a product
 - **Need to protect IP in countries where the products or services are offered** - IP protection will provide the opportunity for licensing, franchising or establishing joint ventures with foreign companies
 - **Raising finances** - IP assets especially patent will assist in obtaining financial resources from investors for the development of new products or services
- Assess vulnerability of IP asset before entering new market
 - Conduct Freedom to Operate (FTO) analysis can help determine whether patents have been filed or granted in a particular jurisdiction
 - Trademark availability searches can help avoid the unintentional infringement of someone else's mark and avoid marketing a brand that cannot be protected
 - Verify potential enforcement issues

- Exploiting IP assets with a commercial model in alignment with enterprise's business strategy is realized in this phase
- As part of IP commercialization, IP valuation is important that aims at determining the monetary value of an IP asset or portfolio of IP assets
- Following are the ways to commercialize IP:
 - Sell or Assign IP
 - License IP
 - Joint Ventures

Sell or Assign IP

- Once IP has been assigned to someone else, IP owner will have no further rights to use that IP without the exclusive permission of new assignee.

License IP

- Licensing enables the owner of the IP to grant permission to another entity to use the IP on agreed terms and conditions over a period of license
- Licensing In - Use third party IP to develop one's own business
- Licensing Out - Grant rights to a 3rd party to use the IP
- Cross licensing - Two or more entities license each other's IP

Joint Ventures

- Need to clearly identify and agree at the beginning of the project
- Background IP brought by each party
- Ownership of IP generated within the project

IP Commercialization - Types of Licensing

- Types of Licenses
 - Non-exclusive license
 - Exclusive license
 - Sole license
- Franchising is another a form of licence
 - Franchisee is allowed by the Franchisor in return for a fee to use a business model and is licensed a bundle of IP rights (e.g., trademarks)
 - Business model is replicable at other locations, along with its IP rights and know-how
- Type of license should be defined according to
 - Enterprise business strategy
 - The products or services to be licensed

Non-exclusive license

- Licensor retains rights to use and grant licenses to other parties

Exclusive license

- Only the licensee who is granted the license has the right to use and commercialize the IP
- Licensor cannot use IP

Sole license

- Licensee granted rights
- Licensor retains rights to exploit but not grant other licenses

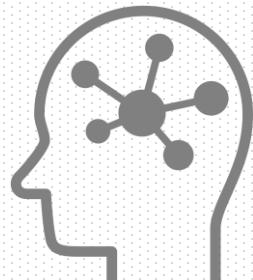
Summary

- Intellectual property considerations need to be made at every stage of an asset lifecycle to ensure strong protection. IP assets may include:
 - Novel features
 - Unique logos/symbols
 - Creative designs
 - Training/Business methods
 - Know How
- Some of key aspects to be considered during IP creation and protection are :
 - Where are the new and emerging technologies being developed?
 - Who are the key players in the market segment and what are they working on?
- IP can be commercialized through multiple means
- Successful management of IP assets are essential to gain competitive advantage. IP assets are exploited using various commercial model

References

- WIPO Report 2017: Intangible Capital in Global Value Chains, 2017

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:

Balancing IP risks & rewards (Right Access and Right Use of Open Source and 3rd party products, technology transfer & licensing)



Contact Hours: 2 Hours



Lesson Number: 7



Author Name: Shekhar Guha

Objective of the Lesson

Objective

To understand IP related risks and their treatment so that businesses can effectively deal with inevitable risky situations. This enables making of informed and judicious decision on any venture to reap the benefits and expected business outcomes, with minimum impacts.

Assessing Reward vs. Risk

Certain risks need to be “taken” instead of avoiding them. The rewards that may be obtained by going ahead with an action where a risk event is a likelihood, is an omnipresent phenomenon for any enterprise, and is unavoidable due to the innumerable variables in the real business world. Shying away from taking risks is not an option and is a recipe for failure. The entrepreneur who takes calculated risks with a well-planned risk management framework and approach is very likely to succeed compared to one who with takes risks without the required planning or does not take the risks at all.

Effective & Efficient management of IP Risk is a key ingredient of business venture successes

Managing IP Risk: Key Questions

- **Looking Inward:** How prepared are we?
 - *Are we aware about IP Risk & its impacts?*
 - *What are the potential damages or adverse effects? Can we assess the impact of IP Risk?*
 - *Are we taking adequate measures to prevent IP theft & IP infringement?*
 - *How do we measure IP Risk?*
 - *Are our investments to mitigate IP Risk justified and adequate?*
- **Looking Outward:** How are we balancing IP risks vs. rewards?
 - *Can IP Risk management help in IP led business/revenue?*
 - *Can IP Risk management help improve stakeholder (customer/partner/supplier) experience?*
- **Looking Ahead:** How can we foresee IP risk?
 - *Can we predict IP Risk events?*
 - *Can we devise an IP Risk management framework to accommodate new events & mitigation techniques?*

IP Risks: Some Simple Questions

- What is IP Threat? What Is IP Vulnerability?
- What is IP Risk?
- What are some examples of IP related threats?
- Where do IP related risks originate?
- Are all IP related risks generally the same?
- What is Risk Appetite & Risk Tolerance?

What is Intellectual Property Risk Management?

- Process of identifying, analyzing and responding to risk factors related to IP throughout the life of an IP rights.
- IP risk management is the process of analyzing exposure to IP risk and determining how best to then handle such exposure.
- Proper IP risk management implies control of possible future events and is proactive rather than reactive.

Why Intellectual Property Risk Management is needed?

- The shift to knowledge-based economy places increasing emphasis on organization's intangible & intellectual assets. Organizations which are continuously harnessing intellectual property for competitive advantage & market share are also exposed to significant IP risks emanating from within the organization as well as from its ecosystem.
- The IP risk impediments may lead to litigations, damage in reputation, destabilize business operation & huge financial loss.

Understanding the Impact and Implications of IP Risk

Impact of IP: At least 45 million U.S. jobs and more than \$6 trillion or 38.2% of U.S. GDP are supported by IP-intensive (*U.S. Department of Commerce report, Sep 2016*) industries

Impact of IP Theft: The annual cost to the U.S. economy of several categories of IP theft exceeds \$225 billion, with the unknown cost of other types of IP theft almost certainly exceeding that amount and possibly being as high as \$600 billion annually. (*Report of the Commission on the Theft of American Intellectual Property (also known as the IP Commission Report – update 2017)*)

Measuring the Impact: Financial impact of IP Theft & IP infringement is difficult to measure because the illicit nature of piracy, the ease of using pirated software, the intellectual prowess used in such piracy, and lack of adequate reporting of such theft.

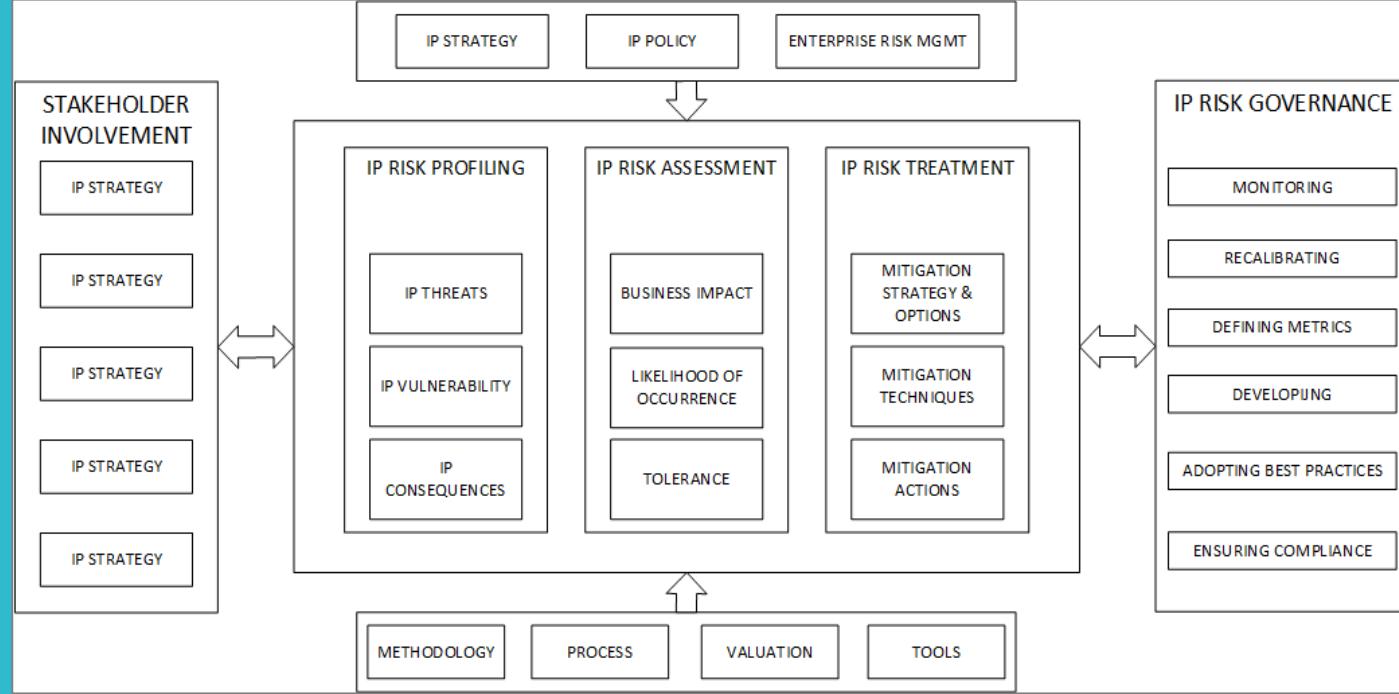
Countering IP Theft: Even if the theft is analyzed & source of theft is discovered but recovering the damage through litigation is expensive and can be a drain on management resources. Also it has impairing effect on reputation & business operation.

Managing the Risk of IP Theft & IP Infringement: Strategic as well as pragmatic approach towards managing Risk due to IP Theft & IP Infringement is the only way to protect IP & drive IP led business. At the same time implementing an effective IP Risk Management within an organization is always challenging since it involves multiple functions & stakeholders.

IP Valuation: Attaching specific monetary value to each piece of IP (or portfolio of IP) provides clarity of the significance of the asset to the organization and aids in allocating resources for capability building, opportunity management and risk management.



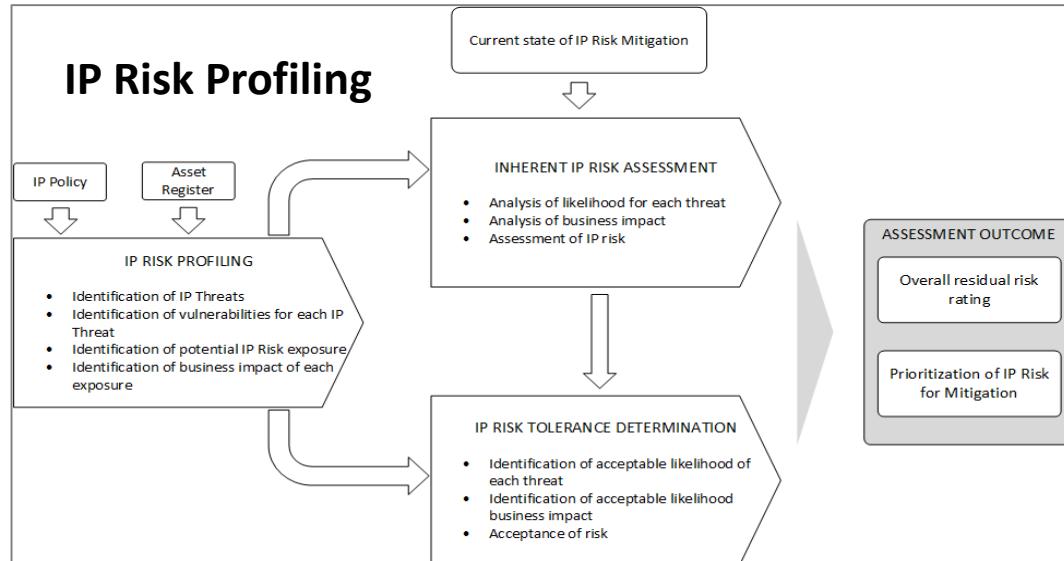
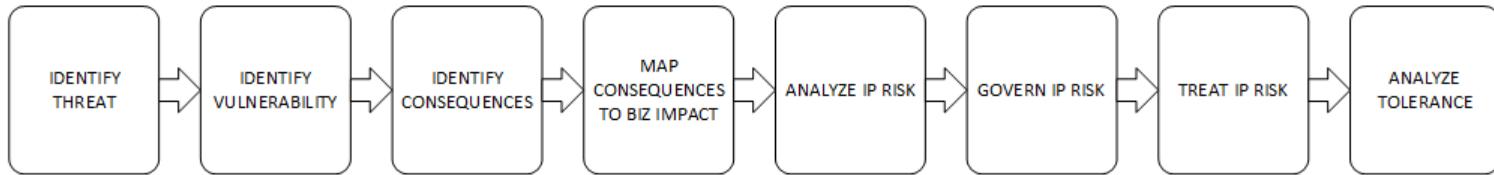
IP Risk Management Framework



IP Risks cannot be managed in isolation by only focussing on the IP Threats and corresponding mitigation actions. Enterprise level IP Risk Management requires a comprehensive approach encompassing the various perspectives and stakeholders of IP life-cycle as well as it must be in alignment with enterprise level risk management strategy and framework.

IP Risk Management Methodology and IP Risk Profiling

METHODOLOGY: Managing IP risk effectively, requires a clearly articulated methodology



The purpose of IP risk profiling and assessment is to qualify the IP risks to be considered for further treatment and prioritize the mitigation plan for the same with appropriate resource mobilization.

IP Risk Assessment

		Likelihood of risk event occurring				
		Unlikely	Rare	Possible	Probable	Almost certain
Severity of Business Impact	Insignificant	Minute	Minute	Low	Medium	Medium
	Small	Minute	Low	Medium	Medium	Medium
	Moderate	Low	Medium	Medium	Medium	High
	Large	Medium	Medium	Medium	High	Extreme
	Severe	Medium	Medium	High	Extreme	Extreme

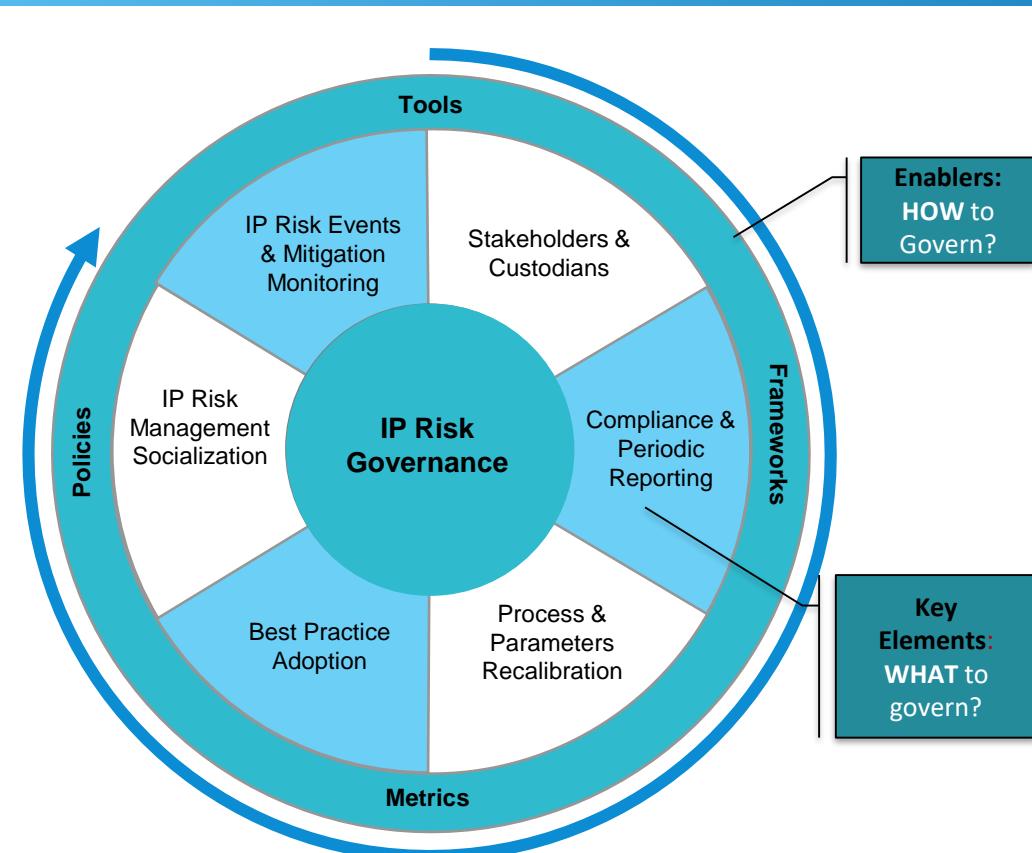
Post IP Risk profiling, strengths and weaknesses of existing mitigation techniques are identified. Knowing existing controls and their effectiveness, helps in identifying whether any further action is needed or not. Once mitigation techniques are identified and their effectiveness analysed, an assessment is made of the likelihood of the threat occurring and the impact if that would occur. This produces an accurate, albeit qualitative, assessment of the level of inherent risk - or risk rating.

IP Risk Mitigation Strategy



After IP Risk assessment is complete, and candidate IP Threats are identified for treatment with different risk-levels, appropriate mitigation strategy needs to be adopted to minimize the frequency and severity of the identified IP Threats. One of the five different mitigation options (defined in the table below) can be adopted to mitigate a specific IP Threat considering its risk level: Accept, Avoid, Control, Transfer and Contingency.

IP Risk Governance: Model



IP risk governance needs to be part of the business plan and needs to be accounted in the regular management audit of the business. Without an IP risk governance defined, the IP risk management framework will remain just that, a framework on paper which will not be operationalized into the culture of the business.

Effective IP risk governance addresses in managing following aspects of IP Risk efficiently:

- Balance between risk impact & probability of occurrence considering the point-in-time business priority & accordingly decide mitigation strategy
- Trade off between cost-of-mitigation & cost-of-risk
- Conflict resolution among stakeholders on classification, assessment, mitigation for a specific IP Threat/ Risk
- Decision management for appropriate risk treatment
- Revisiting Risk-decision in the light of new knowledge
- Stakeholder specific socialization

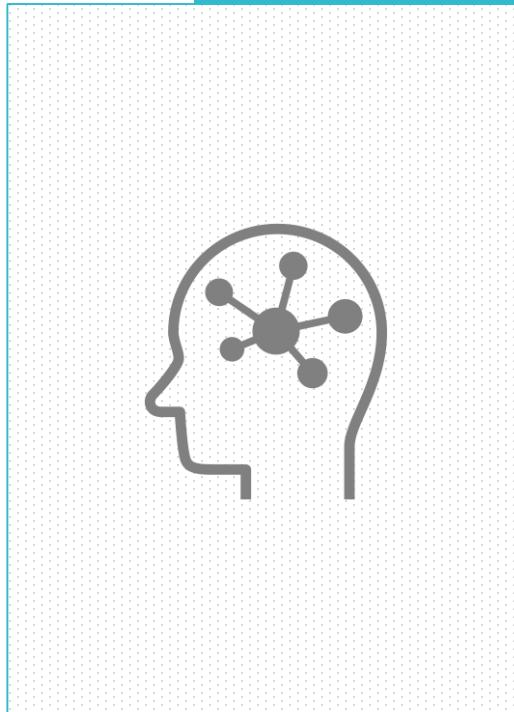
- **IP Contamination:** Contamination of own IP by knowledge and information brought in from similar competing IP elsewhere.
- **Loss of IP:** Inadvertent divulgence to outside parties, creation of IP on other parties' infrastructure
- **IP Theft:** Trade secrets or unprotected IP being taken by confidants or partners and practiced separately without consent.
- **Patent Infringement:** Being unaware that own product or service infringes upon 3rd party protected IP and practicing them in the market.
- **Copyright Violation:** Usage of other copyrighted material without consent
- **OSS License Violation:** Usage of Open Source Software without being aware of license conditions

Summary

- Business risks, when they are related to IP, become more sensitive in nature since it relates innovation and creativity, and impact on finances, human capital, and brand image can be of a substantial degree.
- Business needs to be aware of IP related risks not only to know how to avoid them but also to mitigate them if they occur, and also to measure their impacts with relation to any business venture they may be a consequence of so that calculated and judicious actions may be made to proceed with potentially rewarding initiatives.
- This lesson details how to understand IP related risks and effectively manage them and enable business-beneficial ventures towards fruition and be adequately equipped to handle any consequential risks.

- <https://www.iam-media.com/copyright/building-ip-risk-management-framework-innovation-leaders>

2.11: Innovation, IP Management and Entrepreneurship



“Don’t let the noise of other’s opinions drown out your own inner voice. And most importantly, have the courage to follow your heart and intuition. They somehow already know what you truly want to become. Everything else is secondary.”

*Steve Jobs (1955–2011)
Co-founder of Apple and Pixar*

Lesson Title: **Opportunity Identification in Technology Entrepreneurship**

Contact Hours: 1 Hour

Lesson Number: 8

Author Name: Parthapratim Indra

Objectives of the Lesson

Technology entrepreneurship is a vehicle that facilitates prosperity in individuals, firms, regions, and nations. A critical first step in the entrepreneurial process is Opportunity Identification. In this lesson we will learn various facets of Opportunity Identification focusing towards technology entrepreneurship.

The objectives of this lesson are to:

- Provide an understanding to identify a viable business opportunity leveraging emerging technologies by identifying, observing and analysing relevant variables and trends
- Provide students with knowledge and skills in analysing and identifying potential opportunities for technology led business through opportunity feasibility assessment

At the end of this lesson, students should be able to develop generic skills in identifying and capturing opportunities in their entrepreneurial venture

What is an Opportunity

- In broad terms, an ‘opportunity’ may be a chance to meet a market need (or interest or want) through a creative combination of resources to deliver superior value. In its most elementary form, what may later be called an ‘opportunity’, it may appear as an ‘imprecisely-defined’ market need, or an ‘under-valued’ resources or capabilities.
- From an economic perspective, opportunity is defined as perceived means of generating economic value (i.e. profit) that has not been exploited and are not currently being exploited by others.
- An opportunity may be:
 - A new or improved product
 - A new service
 - A new means of production
 - A new way of distributing the product or service
 - An improved service
 - New combinations
 - Or a hybrid of the above

Recognizing an Opportunity

- Opportunities are not like raindrops – they do not fall at our feet.
- Well, not usually! From time to time something might just happen which allows an entrepreneur to move forward.
- However, if we wait for an opportunity to turn up, we will probably never succeed.
- As creative business people, we seek or develop opportunities.

So...

- Do Ideas become Opportunities?
- Do Problems become Opportunities?

In Reality - An Idea turns to be an opportunity when it:

- It Solves a Problem
- Adds Value to Consumer
- It Can Make Some Money (Communicate Some Value to Other Stakeholders)
- It is a Good 'Fit' with the Entrepreneurial Team

How Opportunity is different from Idea

An idea is a concept that can be used to create opportunity. Usually it centres around product or service that may lead to creation of an opportunity in business. An idea is the first milestone in the process of founding a business. Every successful business started as someone's idea.

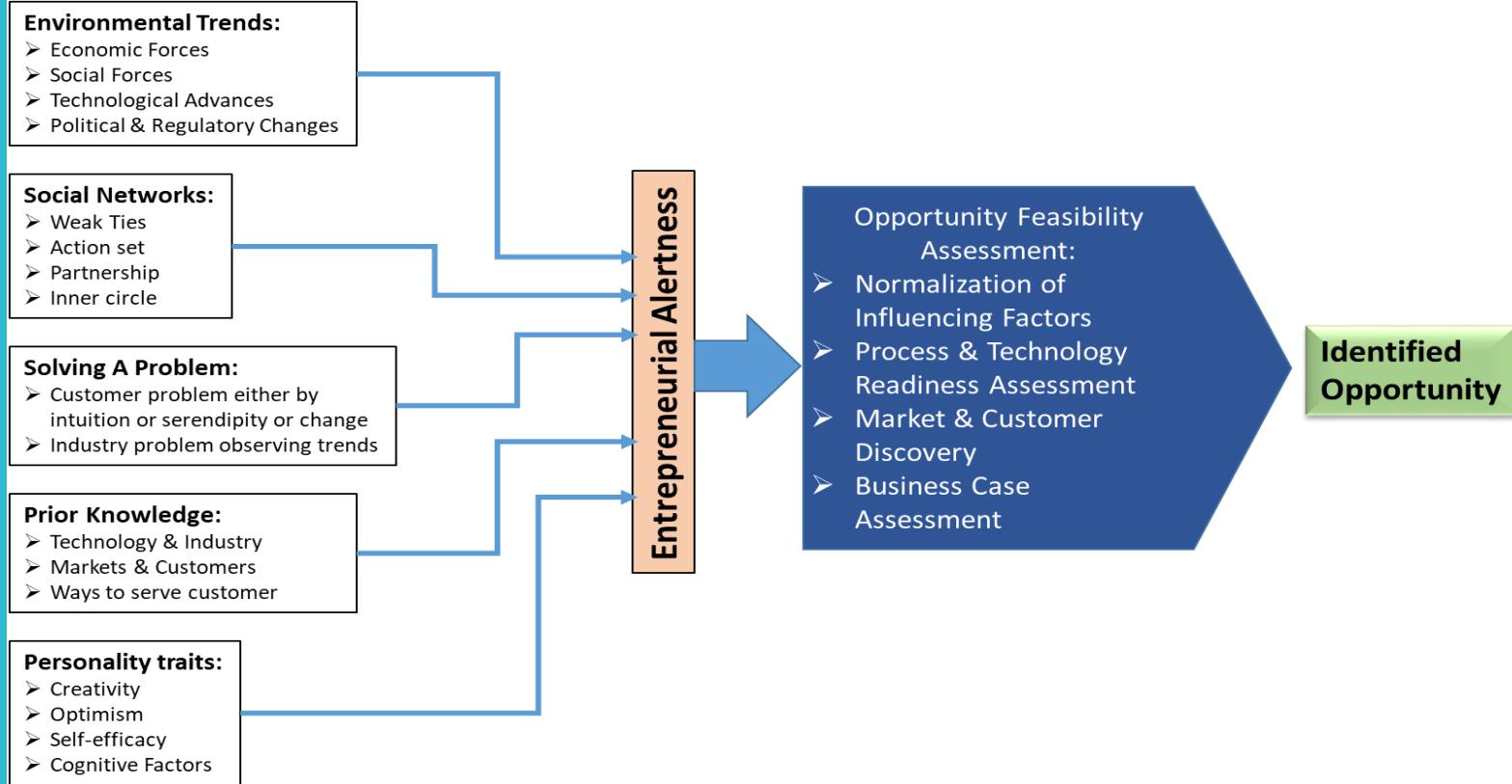
- An idea's acceptability in the market and to check its innovative content and feasibility, you need to conduct a plausibility check. A promising business idea must have the following characteristics:
 - Relevance (must fulfill customers' needs or solve their problems)
 - Innovative
 - Unique
 - Clarity in focus
 - Profitable in the long run
 - A passionate team
- An opportunity on the other hand is a proven concept that may generate business. In other words, a business opportunity is a business idea that has been researched upon, refined and packaged into a promising venture. An opportunity is regarded as one after it has been passed through a feasibility study to check specific aspects such as
 - Potential to reach break-even cash flow within a stipulated time
 - Potential to keep on improving with time
 - Low level of liability risk

Major Influencing Factors to Identify an Opportunity

Identifying and selecting the right opportunities for new businesses are among the most important abilities of a successful entrepreneur. Major factors that influence this core process of opportunity identification and recognition are:

- Environmental trends
- Social networks
- Solving a problem
- Prior knowledge
- Personality traits
- Entrepreneurial alertness

Opportunity Identification Approach



Opportunity Identification Approach: Environmental Trends

Environmental Trends analysis helps in identifying business or product gaps vis-à-vis market/customer expectations.

- Trends create opportunities for entrepreneurs to pursue
- The most important trends are:
 - Economic forces
 - Social forces
 - Technological advances
 - Political action and regulatory change
- Environmental Trends Suggesting Business or Product Opportunity Gaps
 - Difference between what's available and what's possible

Opportunity Identification Approach: Social Networks

Entrepreneur's social networks are one of the source of idea generation & subsequently or even directly opportunity identification.

- The extent and depth of an individual's social network affects opportunity recognition
- People who build a substantial network of social and professional contacts will be exposed to more opportunities and ideas than people with sparse networks
- It was hypothesized that the quality of network contacts can affect other characteristics, such as alertness and creativity

Opportunity Identification Approach: Solving a Problem

- Sometimes identifying opportunities simply involves noticing a problem and finding a way to solve it.
- These problems can be pinpointed through observing trends and through more simple means, such as intuition, serendipity, or chance.

Opportunity Identification Approach: Prior Knowledge

At times entrepreneurs discover opportunities because of prior knowledge – it triggers recognition of the value of the new information.

Three major dimensions of prior knowledge are important for opportunity identification:

- Technology & Industry
- Markets & Customers
- Ways to serve customer

Opportunity Identification Approach: Personality Traits

Characteristics that tend to make some people better at identifying opportunities than others. Some of the critical characteristics that influence successful entrepreneurs are:

- Creativity
 - Creativity is the process of generating a novel or useful idea.
 - Opportunity recognition may be, at least in part, a creative process.
 - For an individual, the creative process can be broken down into five stages
 - Ideation, Incubation, Insight, Evaluation, Elaboration
- Optimism
 - Entrepreneurs' optimism was an 'inside view' of the potential success of the venture, largely based on the entrepreneurs' evaluations of their abilities and knowledge
- Self-efficacy
 - Perceived self-efficacy leads to optimism and a higher propensity to see opportunities rather than threats in any given situation
- Cognitive Factors/distinction-making capability
 - Distinction making enables a person to identify innovative usage of new technology & market opportunity of such usage
 - It helps a person to identify opportunity across the boundaries

Opportunity Identification Approach: Feasibility Assessment

- The assessment begins with SWOT analysis considering each of the influencing factors
- The level of entrepreneurial alertness is likely to be heightened when there is a coincidence of several factors: certain personality traits, relevant prior knowledge and experience, and social networks
- Opportunity feasibility analysis follows through process and technology readiness assessment, market and customer discovery and finally business case assessment to arrive at the 'Identified Opportunity' and proceed for 'Opportunity Development'.
 - Process & technology readiness assessment: To realize the opportunity in a specific industry domain or across industry domains in a specific market, new business process or modification of existing business process needs to be assessed to understand changes/impact in the process ecosystem. Technological readiness is required to be assessed in terms of infrastructure, competency and cost.
 - Market and Customer Discovery (MCD) assessment helps to understand market requirements related to customer pain-points, regulatory requirements, technology-led new opportunities, competitive landscape, analysts' viewpoints on industry trends etc. and the acquired knowledge is being utilized to shape up opportunity characteristics to develop a business case for opportunity-development.
 - Business case assessment: Finally a business case needs to be developed considering all the quantifiable and non-quantifiable factors supporting an investment decision to carry out the development of the identified opportunity.

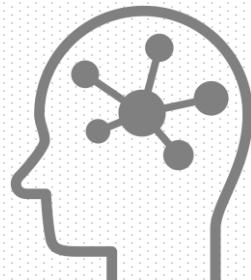
Summary

- In broad terms, an opportunity may be the chance to meet a market need (or interest or want) through a creative combination of resources to deliver superior value. However 'opportunities' describe a range of phenomena that begin unformed and become more developed through time.
- While all entrepreneurs must have identified an opportunity in order to be categorized as such, not all people who identify opportunities become entrepreneurs.
- Opportunity identification is not unique to entrepreneurs. Executives, managers, and other members of established organizations also rely on opportunity identification as a key source of growth and competitiveness.
- An idea is a concept that can be used to create an opportunity.
- Major influencing factors for opportunity identification:
 - Environmental Trends
 - Social networks
 - Solving A Problem
 - Prior Knowledge
 - Personality traits
 - Entrepreneurial Alertness
- Finally, Opportunity Feasibility Assessment needs to be carried out by way of normalization of all influencing factors, followed by process and technology readiness assessment, market and customer discovery and business case assessment to arrive at the Identified Opportunity and subsequently proceed for Opportunity Development.

References

- New Venture Creation: Entrepreneurship for 21st Century, Jeffry Timmons and Stephen Spinelli
- Bringing Opportunity Oversight Onto the Board's Agenda, Frank Leonard and Larry Bennigson
- Finding Fertile Ground: Identifying Extraordinary Opportunities for New Ventures, Scott Shane
- Identifying Entrepreneurial Opportunities: Cognition and Categorization in Nascent Entrepreneurs, Matthew J. Karlesky
- Open Innovation: New Product Development Essentials from the PDMA, Abbie Griffin, Charles Noble, and Serdar Durmusoglu
- Sandler Enterprise Selling: Winning, Growing, and Retaining Major Accounts, Brian Sullivan et al
- The Opportunity Paradox, Kathleen M. Eisenhardt, Nathan R. Furr and Christopher B. Bingham

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:
Market Research, Segmentation and Sizing

-
- ⌚ Contact Hours: 1 Hours
 - 📋 Lesson Number: 9
 - 👤 Author Name: Hari Kishore Gudipudi

To learn and understand following topics

- Market Research
- Market Segmentation
- Market Sizing

What is Market Research

Market research is a process of understand a given market to explore if there is viable market for a given product created by a producer. This is a fundamental step every producer will need to do before investing on building a product. The research activity is an ongoing process as market continuously changes.

Market research provides the data on:

- Current market performance and customer purchasing behavior
- Future needs and changes to the product
- Data and information on economy

Benefits

- Avoid bad product decisions
- Risk awareness
- Strategy formulation

Challenges:

- Expensive and consumes time
- Accuracy of findings
- Problem of Bias

Data Required for Market Research

Market and Customer Data includes

- Size and geography of the market
- Customer profiles and need
- Perception of current offerings and so on

Product data includes

- Customer's perception of product quality, value for money and other product related factors
- Possible extensions and adjacencies of the product
- Are there new markets for product and brand

Economy Data includes

- Rate of economic growth and Inflation
- Government economic policies

Competition Data includes

- Competitor products and their prices
- Customer value perception
- Market share
- Strengths and weaknesses
- A view to future-plan and roadmap

Primary research

- Gathering data directly from customers and market
- Methods used ranges from questionnaires, surveys and experiments
- Interviewing techniques are also important and sources can be internal or external

Secondary research

- Data is gathered through sources like internet from records like annual reports, analysts reports and third-party databases
- Other external sources include media reports, competitor reports and websites
- Cheaper compared to primary research, but accuracy is lower relatively

Information Gathering Techniques

Observations is about observing customers closely and noting down their feelings, expressions, actions and attitude. This will help designing of a shop floor to optimize customer's journey and maximize convenience.

Surveys involve a questionnaire on specific subject, for example what kind of toothpaste would you prefer(fluoridated or non-fluoridated) and so on. Questions will be focused around getting customer preferences on a specific aspect of a product. There can be several surveys related to a single product and can be conducted in several mediums such as direct contact, telephonic, email and online (websites).

Experiments involve practical actions which will involve changing the price of the product, shape of the product, altering store layout and so on to observe the customer reaction. This will help in understanding customers expectation visibly and act as per desire.

Sampling involves collection of data from specific set of customers to save time. Sampling technique selection play important role in determining quality of the outcome. Some of the sampling techniques are Random sampling, stratified sampling, cluster sampling, quota sampling and snowballing sampling.

Market Segmentation

Market Segmentation divides the market into a meaningful divisions based on behavior, pattern, tastes or future trends. For example, to sell a non-fluoridated toothpaste, one should choose a geography with high fluoride content in the local water bodies. So the segmentation should be done based on water body's fluoride content in each region. Then producer can have a better understanding of market segment that will receive the product well.

Once the segmentation is done and appropriate audience/segment is identified, the marketing team will prepare unique offering (product) to the targeted customers. This attempt is called 'Market Positioning' of the product in the market. Its about target market, target customers and unique value proposition about product vis-a-vis competition.

Market can be segmented in various ways such as

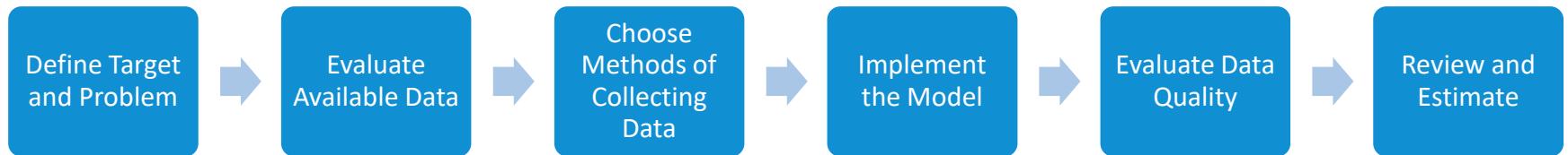
- Segmentation by demographics – mass behaviors aspects of the population
- Segmentation by Psychographics – behavioral aspects of individuals like attitudes, opinions, lifestyle etc.
- Segmentation by geography – regional aspects where people live and stay
- Segmentation by industry – type of industries, size , location and service requirements

Market Sizing

Purpose of market sizing is to understand the addressable market size which is relevant to the product we intend to sell. ‘Market Forecasting’ logically follows market sizing and involves various techniques that predict probable number of products/services, which can be sold in market of a given size.

- Lot of investment will be required when a product gets launched. The market size should justify the investment required and confidence on sizing results is important to allow management to proceed with investment.
- Data is generally difficult to get for estimation activity. Even if data is available, the accuracy, reliability of the data will be poor.
- During sizing it is equally important to understand other factors such as political, regulatory, demography and economy.

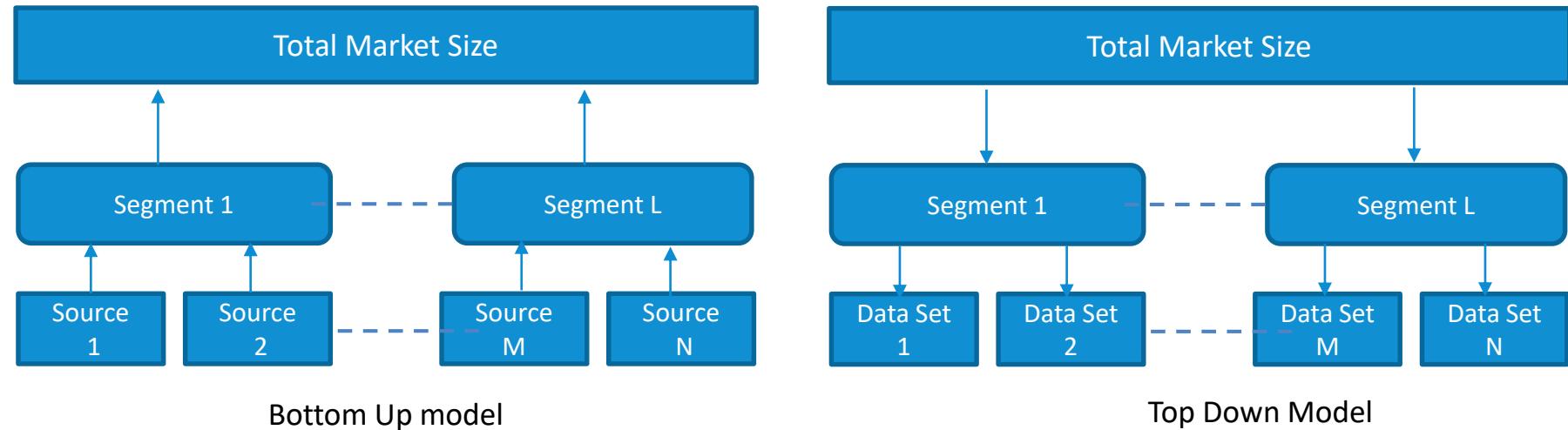
Approaches



As shown in Figure above, the method involves

- Defining the target of the sizing and problem product owner is trying to solve,
- Evaluation of existing or available data or lack of data,
- Choose method of collection of data related to market size,
- Evaluating the sufficiency and accuracy of the data after implementing the same
- Iteration with different data collection methods if required
- Review and estimation of market size with agreed data

Market Sizing Methods



- There are two methods, namely Top Down approach and Bottom Up approach
- Availability of data determines selection of the method
 - If the market is highly fragmented and it is difficult to get the data, sample representative data can be used in bottom up approach to estimate the overall size (using extrapolation)
 - Top down approach can be used when historical data is available

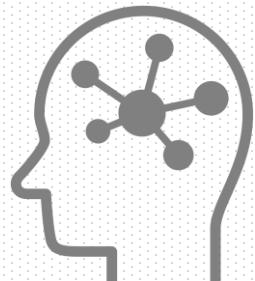
Summary

- Market research is a process of understanding a given market to explore if there is viable market for a given product created by a producer. This is a fundamental step every producer will need to do before investing on building a product. The research activity is an ongoing process as market continuously changes.
- There are several methods to conduct market research, namely primary and secondary.
- Market segmentation divides the market into a meaningful divisions based on behavior, pattern, tastes or future trends.
 - Some of the examples of segmentations are by geography, individual personalities, mass behaviors and industry type
- Purpose of market sizing is to understand the addressable market size that is relevant to the product we intend to sell. Market forecasting is one of the objectives of market sizing.
- There are two methods to size the market namely top down and bottom up methods.

References

- https://en.wikipedia.org/wiki/Market_research
- https://en.wikipedia.org/wiki/Market_segmentation
- <https://towardsdatascience.com/sizing-up-market-sizing-for-your-business-c569e45730ef>
- <https://trackmaven.com/marketing-dictionary/market-segmentation/>
- <https://www.forbes.com/sites/alejandroremades/2018/09/23/how-to-effectively-determine-your-market-size/>
- <https://www.qualtrics.com/experience-management/brand/what-is-market-segmentation/>
- <http://www.optimizationgroup.com/methods/market-sizing/>

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title: **Product Positioning, Pricing & GTM Strategy**

Contact Hours: 2 Hours

Lesson Number: 10

Author Name: Gopal Menon

Objectives of the Lesson

- An innovation fulfils its intentions only if it ensures the investors get a good return on their investments while solving the problems for which it was created
- For this, the ‘innovation’ must become a reality as an ‘offering’ – a Product in the market, which can deliver the revenues and profits for the business
- An important stage of a successful innovation is its Commercialization & its Market Success
- This requires that the product is positioned properly, has a profitable pricing strategy and there is a detailed strategy to ensure its success in the market
- This session will be covered in three parts
 - Product Positioning
 - Pricing Strategy
 - Go-To-Market Strategy

Product Positioning (Definition)

- ◆ Positioning helps to define where the organization's offering (product – goods or service) finds a spot for itself in the market that has similar products in the marketplace as well as in the perception of the consumers
- ◆ A Product Position statement provides the base on which Marketing & Sales teams decide their strategies

Product Positioning needs to ensure the following

- Highlight the uniqueness of the product – the Unique Selling Proposition (USP)
- Project the distinct benefit the product can provide to the customer
- Make the product or brand stand out in the market

Positioning enables the product to

- Keep away or overcome competition
- Charge a premium price
- Gain market mind-share & trust

Developing the Product Positioning Statement

- ◆ To set up the Product Positioning statement – an organization needs to define the following elements
 - **Vision** – What is the Vision for the product – Vision is always the futuristic view
 - **Mission** – Why is the product being developed. Why is it necessary
 - **Market** –The segment of customer and region that the product is expected to address
 - **Product Statement** – The tagline or catch phrase that defines your product or the organization
 - **Customer Pain Points** – List the top 2-3 pain points that the product is looking at addressing
 - **Organization's Uniqueness** – 2 or 3 characteristics of the organization that makes it uniquely qualified to address the customer's pain points
 - **Product Differentiators** – The unique 2 or 3 value-creating characteristics of the product
 - **Branding Specifics** – What attributes would the product & organization want to be known for
- ◆ This requires
 - Understanding the customer and their needs
 - Understanding the market – what other alternatives exist and their shortcomings
 - Assessing the product – A SWOT analysis against similar products in the market

Product Positioning Characteristics

- ◇ Marketing needs to determine where & how to position their products in the marketplace
 - Needs to be based on target demographics – such as age, gender, education, language, income level....
 - Needs to consider target market segments
 - Decide the appropriate uniqueness that needs to be highlighted
 - Price (ex. Lowest)
 - Quality (ex. Best)
 - Feature (ex. Unique)
 - Purpose (ex. Aptness)
 - Attributes (ex. Size, Color)
 - Advantages (ex. After sales services, Fast reacting)
 - Competitor comparisons (ex. Longer lasting, Easier to use)

◇ The Product Position Statement

For < target customer groups > that are looking for <problem solution/need/want>, <organization's product> is a <unique attribute> <category/solution> that uniquely solves this by <benefit>

Pricing Strategies: Principles

- Pricing is the prime consideration for most customers
- A proper pricing strategy is essential to the success of a product in the market
 - Consumers will accept a price that convince them the value they receive is more than what they pay
- Pricing is largely driven by the purchasing power of the target market segment
 - **Low Price Strategy:** Appeals to customer with limited budgets; Wide market; Could indicate compromises made in quality or low offerings
 - **High Price Strategy:** Creates perceptions of high quality; Will need to focus on superior features and benefits; Elite Clientele
 - **Differential Price Strategy:** Price based on the region, target market, size of sale (by volume), features (limited features at lower price, premium price for more/all)

Marketing needs to help in driving and gaining customer mindshare

- That there is a value to buy the product both based on product quality and after sale support
- The price is worth paying against the value they receive

Pricing Strategies: Practices (1 of 2)

- **Premium Pricing:** Higher than Industry Standards/Competitor Pricing; Here the customer believes that the premium price is for a high-quality product with more utility value than existing products plus enhancing their own image. Brand must ensure customer confidence is not lost.
- **Penetration Pricing:** Starts lower to capture market (and embraces early losses). Once there is a good customer base, the strategy will be to increase to make it profitable without losing the customer – who is now attached to the product (due to quality, service, experience, etc.).
 - A variation of this strategy is also called **Predatory Pricing**, where a product may be introduced at extremely low prices with intent of eliminating competition and gaining maximum market share. This is illegal in certain countries as an unfair practice, against competition laws.
- **Economy Pricing:** The base product is made available with no frills or extra features and just satisfies the core need of the consumer. Aimed at the most cost-conscious customers. Additional requirements will be charged separately and may command premium
 - A variation of this strategy is providing **Freemiums**, where basic services are provided free of charge and charges are levied on any additional features/services

Pricing Strategies: Practices (2 of 2)

- **Bundle Pricing:** Pricing one or more products or features at a lower price than what they would have cost if purchased separately. This strategy is useful to sell ‘less in demand’ products by attaching it to high selling products
 - A variation is the Buy <X> Get <Y> Free type of offers
- **Psychological Pricing:** works on consumer emotions to entice them to purchase
 - Pricing it less by a minimal amount to project a low price (Rs. 299 instead of Rs. 300)
 - Publish an anchor price but lower sale price (Printed label will show a higher price, but actual sale price would be lower to printed anchor price. Customer perceives to get a discount.)
- **Pay As You Use:** It is a model that is gaining acceptance with consumers. Here the price of the product is defined by the consumers. The consumer may get the product free of charge or at a low price initially. Additional payments may only be needed to be done based on their level of use.

- It is the projected vision of an organization, to deliver their Product to customers and achieve competitive advantage in the market
- Defines the way in which an organization brings a product to the market
- **What constitutes a GTM Strategy for a Product?**
 - Business Strategy Blueprint
 - Business Plan covering
 - Sales & Marketing Plans
 - Product Management & Engineering (incl. Implementation & Support) Plans
 - Measurement Of Success

Business Strategy Blueprint

- ◆ A Business Strategy Blueprint outlines the following:
 - **Product Objectives:** Vision for the product, Targets (Revenue, Customers)
 - **Organization Structure:** Executive Sponsor, Product Leadership Team (Sales, Marketing, Engineering, ...)
 - **Market Problem Addressed:** Problem understanding, Scenarios, Impact, Consequences if unaddressed
 - **Target Market & Sizing:** Market Segments - Sizing, Characteristics, Risks (Local, Global), Timelines
 - **Key Players in the market in the same space:** Potential USP of the product as compared to them, their market share vis-à-vis size of the market, SWOT analysis against Key competitors
 - **Product Positioning messages** (as was discussed in Part 1)
 - **High Level Product Management, Sales & Marketing Strategy**
 - **Proposed Commercial Models:** Pricing Strategies, Contracting & Licensing Models (Proof of Concept (PoC), Trial, End User License Agreement (EULA), Warranties, Guarantees, and Professional Services)
 - **High Level Engineering, Implementation & Support Strategy**

A Business Strategy Blueprint (BSB) is the highest level of strategic planning in setting up the GTM

Business Strategy Blueprint: Importance

- Helps an Organization (or a Venture Capitalist) to evaluate how realistic the product vision is and evaluate the offering to decide on investments and realization strategies
- Helps define the overall goals of your business and potential plan to achieve them – big picture goals and overarching visions
- Helps establish a long-term outlook
- Sets up the basis for the sales & marketing strategies; product engineering & support strategies
- Establishes the planned roadmap to move from '*where you are*' to '*where you want to be*'

Business Plan: Sales & Marketing Plans

- ◆ Sales and Marketing plan is the most important pillar that ensures the commercial success of a Product, the factor that means most to the organization & stake holders
 - Guides how the product is being delivered to customers
 - Needs regular review & revision based on changing market dynamics
 - The planning and projections would be for 3-4 years in the future and should provide details such as
 - Year on year revenue growth
 - Investments needed and expected costs
 - Expected profits (and/or losses) and operating margins, investment break even time frames

Sales Plan Detailing

- ◆ The Sales Plan must include both strategic and tactical detailing of various parameters that need to be tracked & monitored. Some sample parameters are as listed below:

- **Strategic**

- **Market Context:** Detailing the problem; the need; current handling; current impact
- **Market Segmentation:** Geography (Global, Regional, Local), Industry Domain (Functional and Technical Area), Demographic Data
- **Customer Segmentation:** Personas (Age Group, Gender, Roles), Enterprise Size
- **Customer Qualifying Criteria:** Buying Propensity, Paying potential
- **Anchorage Strategy:** Early Adopters, Joint Development, Incubation
- **Pricing Strategy:** Introductory Schemes, Discounts (Special/Volume), Freebies

- **Tactical**

- **Sales Channels:** Product Sales team, Partner led sales (if applicable), Joint GTM, Dealerships, Retail /Wholesale Setups, Online..
- **Sales Plan:** Indicative Milestones, Revenue Projections, Tracking & Realization
- **Sales Team:** Geography Based, Tele calling, Digital sales, Clear roles & responsibilities
- **Sales Goals/Targets:** Time periods, Geography, Industry, Domain, Revenue, Sold Units, Customer Acquisition
- **Collaboration with Marketing:** Ensuring topical collaterals
- **Contract Management & Licensing:** Details the commitments from both the provider & the customer regarding usage of the product

Marketing Plan Detailing

- Marketing is what creates the image of the product with the customers – attract the attention, convince the value and create the need
- The Marketing Strategy needs to detail lot of parameters to ensure that they provide the right support to Sales & Product Engineering teams such as
 - **Market Analysis:** To help determine the specific marketing strategies based on the targeted geography, customer segment, language & culture, local sensitivities,
 - **Branding Strategy:** Communication (Ads, Newsletters/Press Releases, Media, Social Media Presence) & Events (Participating, Sponsoring), Analyst Relationships
 - **Collateral Management:** Brochures, Hand outs, Presentations, Release Notes, Testimonials
 - **Customer Experience Management**
 - **New Version Launches**

Business Plan: Product Management & Engineering Plans

- ◆ The Product Management plan defines the framework under which the product is planned to be taken to market. It includes planned strategies around:

- **Product Management**

- **Continuous Market Discovery** to stay ahead of competition
 - **Prioritizing features:** To stay ahead of competition, Customer demands, Market demands
- **Differentiator Management:** Identify USPs, Futuristic features
- **Roadmap Communication guidelines**
- **Retirement or Sun setting policy**

- **Implementation and Delivery Strategies**

- **Packaging and Installation**
- **User manuals, Release Notes, and Training**
- **Deployment steady state review**
- **Professional Services Option**

- **Engineering the product**

- **Architecture and Technologies to be used** (Open Source, Technology Partnerships, etc.)
- **Logistics:** Infrastructure needs, Locations, Resource requirements, Manpower (Skills)
- **Versions and Release Management**
- **Intellectual Property (IP) Management** (Organisation's IP, 3rd Party IP)

- **Support strategies**

- **Support ecosystems:** helpdesks, after sales service, customer management (feedback), training and professional services
- **Warranty management**

Business Plan: Measurement of Success

- An organization needs to continuously measure itself to ensure success of the product
- This is usually done through what is called as a Business Score Card (BSC) which is continuously updated on a few parameters
- Some of the indicators of a good performance are:
 - Profitability of the business (Return on Investment)
 - Revenue Growth Rate (License, Services, Royalty)
 - Size of Market Share (Rate Of Growth)
 - Customer Movement (Acquired, Lost, Renewed, Upgraded)
 - # of Customer Testimonials (Customer Appreciations, Analyst Recommendations), References
 - Customer Satisfaction Index

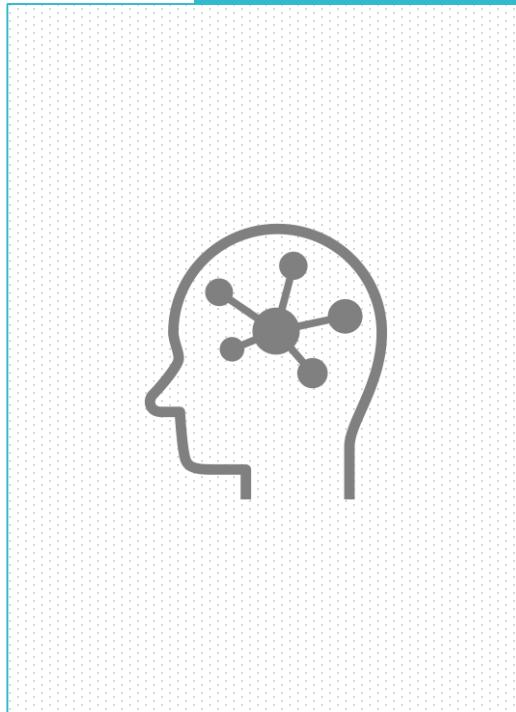
GTM Strategy: Summary

- Product Positioning helps in setting up the relative position of the product vis-à-vis other products in the market
- Pricing strategy is based on the premise that consumers will accept any price which convinces them that they are expecting more value for the money
- A GTM Strategy for a Product includes
 - Business Strategy Blueprint
 - Business Plan covering
 - Sales & Marketing Plans
 - Product Management & Engineering (incl. Implementation & Support) Plans
 - Measurement Of Success
- Organization needs to continuously measure the success of their products using BSC

References

- <https://smallbusiness.chron.com/examples-positioning-strategy-marketing-10166.html>
- <https://www.inc.com/encyclopedia/product-positioning.html>

2.11: Innovation, IP Management and Entrepreneurship



“Problems cannot be solved by thinking within the framework within which the problems were created”.

Albert Einstein

Lesson Title: **Innovation Assessment**

-
- ⌚ Contact Hours: 1 Hour
 - 📋 Lesson Number: 11
 - 👤 Author Name: Parthapratim Indra

Objectives of the Lesson

Any innovation to be relevant to bring market-differentiation in any contemporary business or to introduce any new business, it is to be continuously monitored and assessed against a set contextual metrics.

- *Studies consistently reveal that **no long-term correlation** exists between the amount of **money** a company spends on its innovation efforts and its overall financial **performance**.*
- *What matters is how companies use that money and other resources, as well as the quality of their **talent, processes, and decision making**.*
- *Top innovators, as identified by their peers, have significantly **better results** than top R&D spenders in terms of **Revenue Growth, EBITDA, and Market Cap Growth**.*

The objectives of this lesson are to:

- Provide an understanding of key aspects of Innovation and Innovation Assessment (What to assess?)
- Provide an understanding of pragmatic set of Innovation Measurement metrics (What to measure?)
- Define a pragmatic Innovation Assessment approach for an entrepreneurship initiative that can be used to support the development of innovation capabilities (How to assess?)

At the end of this lesson, one will develop generic skills to analyse business potential of an innovative initiative

Key Aspects of Innovation and Innovation Assessment: What to Assess

Key Aspects of Innovation

Ecosystem:
An Open Innovation capability is key, as creating and realizing the value of innovation in Industry 4.0 paradigm

Innovation Strategy Formulation: An effective innovation strategy is highly aligned with entrepreneur's vision, reflected in a holistic set of "measures that matter," closely linked with core capabilities, and broken into themes

Idea Generation: Ideation can happen in a variety of ways and encompasses both new insight generation and novel idea creation, elaboration, and evaluation

Opportunity Identification: Ideas go through a gated screening and classification process, using a strategically aligned set of evaluation criteria to determine which should progress to pilot and ultimately to full launch

Feasibility Analysis: Iterative experimentation to quickly & cost effectively prove or disprove hypotheses made about the idea's business viability

IP Management: Enables innovators & inventors to identify potential IP & subsequently create & protect the same; facilitates entrepreneurs to develop IP based products & solutions

Commercialization: Realization of benefits of those opportunities that successfully pass feasibility analysis – may be in the form of new/refreshed product or service or the realization of a reimagined business model

Portfolio Management: There has to be clear traceability between entrepreneurship vision, innovation strategy & innovation portfolio to optimize RoI

Capabilities to Drive The Above Aspects

Leadership & Governance

Talent & Culture

Enablers & Infrastructure

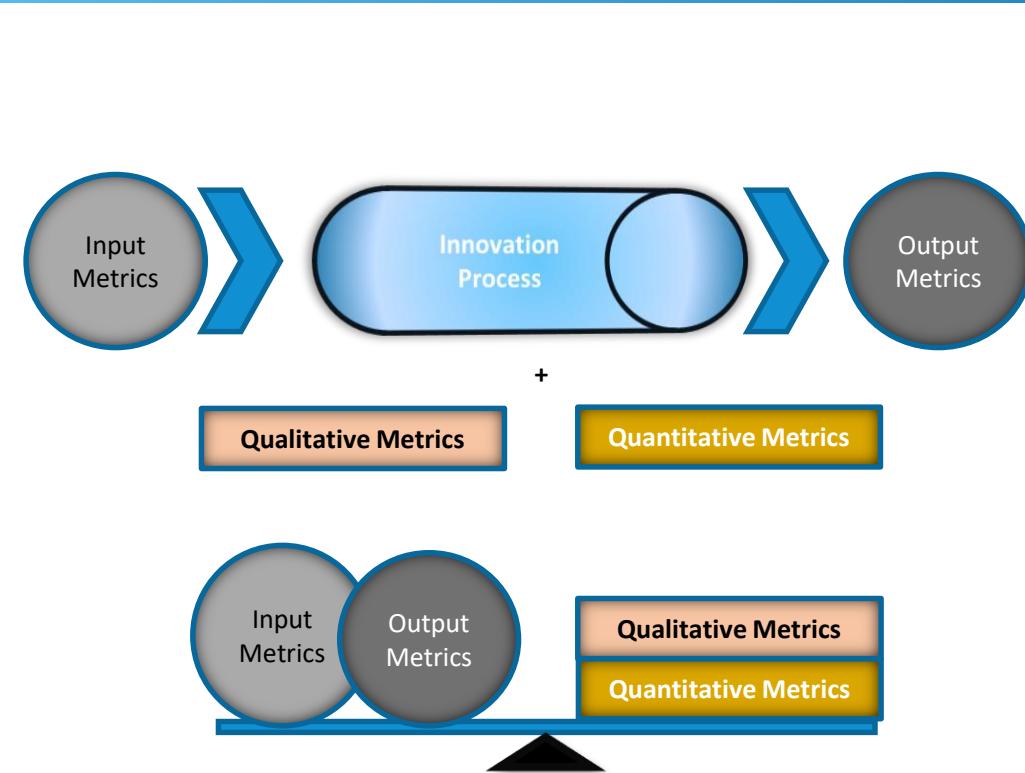
Allies & Partners

Measurement & Tracking

Innovation Assessment: What to Measure (1 of 2)

- Appropriate innovation metrics enables an entrepreneur to monitor whether the effort is channelized for right kinds of activities to achieve the desired results.
- Measuring innovation can help the entrepreneur to:
 - mobilize right resource/s at the right time
 - Hold people accountable for their actions and responsibilities
 - Assess the effectiveness of innovation activities

Innovation Assessment: What to Measure (2 of 2)

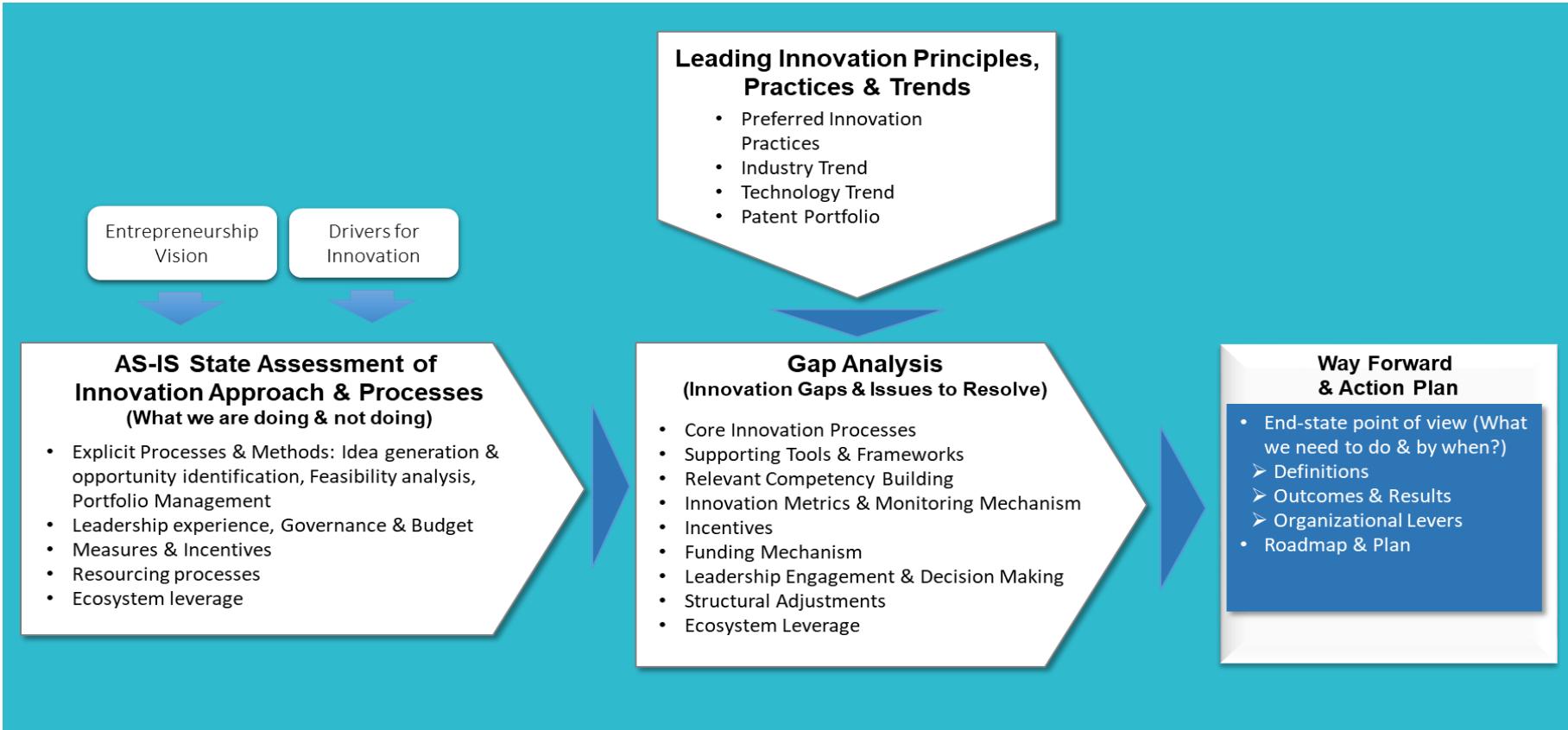


- Input and output metrics measure what goes into innovation process & what comes out of it.
- It is important to keep in mind that input doesn't ensure output!
- It is also important to have the clarity about the difference between qualitative metrics & quantitative metrics
- An entrepreneur should keep a right balance between input and output metrics as well as qualitative & quantitative metrics
- In an ideal situation, all metrics should be quantitative

Innovation Assessment: Measurement Metrics

Potential Input Metrics	Qualitative or Quantitative	Delineation	Potential Output Metrics	Qualitative or Quantitative	Delineation
The number of new ideas in the pipeline	Quantitative	Measures rate of idea generation	Number of new products launched in <X> amount of time	Quantitative	Measures innovation realization success
The number of innovation projects started	Quantitative	Measures actual implementation	Revenue/profit growth from new products	Quantitative	Measures actual business model success
Team size for innovation projects	Quantitative	Easy to obtain but does not indicate innovation efficiency	Ratio of sales of new products to R&D expenditures	Quantitative	Indicator of R&D efficiency
Total R&D spending	Quantitative	Easy to obtain but does not indicate innovation efficiency	Increase of IP embedded assets	Quantitative	Increase in the number of IPs that are embedded into products, platforms, solutions & services
Rate of conversion of invention to IPR	Quantitative	<ul style="list-style-type: none"> Time to complete (i.e., efficiency of) the invention disclosure process Quality of invention disclosures (number of iterations; prosecution costs; rate of issuance) 	Ratio of sales of new products to total sales	Quantitative	Measures success in the market
Innovative work behavior (IWB)/team innovativeness	Qualitative	Flexible, can measure any innovation activity but Low correlations with number of implemented innovations	Product branding index	Quantitative	Count of positive comments through Online Sentiment Analysis / total comments
Ecosystem Strength and relevance	Qualitative	Extent of allies, partnership & collaboration	New markets entered	Quantitative	Measures radical/ disruptive innovation

Innovation Assessment Approach: How to Assess



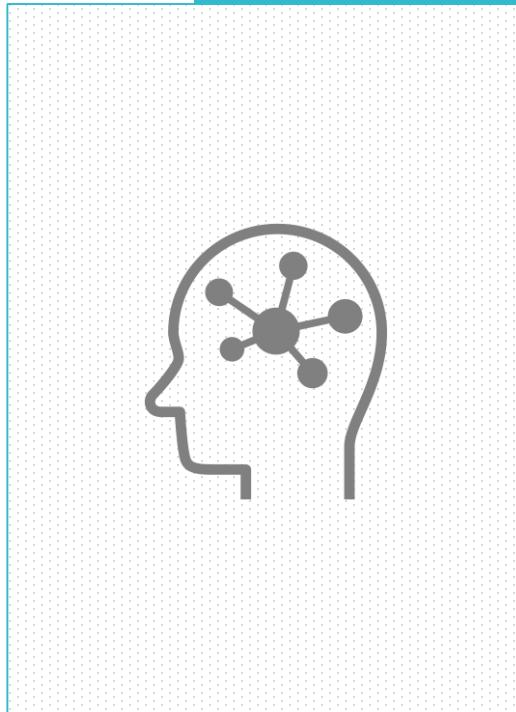
Summary

- Any innovation to be relevant to bring market-differentiation in any contemporary business or to introduce any new business, it is to be continuously monitored and assessed against a set contextual metrics.
- Some of the key aspects of innovation that are to be considered for any successful innovation-venture:
 - Innovation Strategy Formulation
 - Idea generation and opportunity identification
 - Feasibility analysis
 - IP Management
 - Commercialization
 - Portfolio Management (ideas/opportunities/initiatives/assets/IPs)
- Some of the capabilities required to have or built to drive innovation with positive ROI:
 - Leadership and Governance
 - Talent and Culture
 - Enablers and Infrastructure
 - Ecosystem readiness (allies & partners)
 - Measurement and tracking
- Input and output metrics measure: what goes into innovation process and what comes out of it
- An entrepreneur should keep a right balance between input and output metrics as well as qualitative and quantitative metrics
- An effective innovation assessment approach would help to:
 - to assess what is currently in place that directly supports and enables innovation
 - to identify the organizational systems and processes that indirectly impede the work of innovation in material ways
 - to assess the current state against leading innovation principles and practices to derive potential actions

References

- A New View Of The Skew: A Quantitative Assessment of The Quality of American Entrepreneurship by Catherine Fazio, Jorge Guzman, Fiona Murray, Scott Stern
- Booz & Company, The Global Innovation 1000 Reports
- Creating Better Innovation Measurement Practices by MIT Sloan Management Review
- Collaborative invention mining at TCS, Santosh Mohanty and Akhilesh Srivastava
- McKinsey Special Collection on Growth and Innovation (Referred a select set of articles)
- Success in Innovation, Jan Verloop
- The Innovator's Field Guide: Market Tested Methods and Frameworks to Help You Meet Your Innovation Challenges, Peter Skarzynski and David Crosswhite

2.11: Innovation, IP Management and Entrepreneurship



“When you measure what you are speaking about and express it in numbers, you know something about it, but when you cannot (or do not) measure it, when you cannot (or do not) express it in numbers, then your knowledge is of a meager and unsatisfactory kind.”

Sir William Thompson, Lord Kelvin (1824-1907).

Lesson Title: **IP Valuation**

 Contact Hours: 1 Hour

 Lesson Number: 12

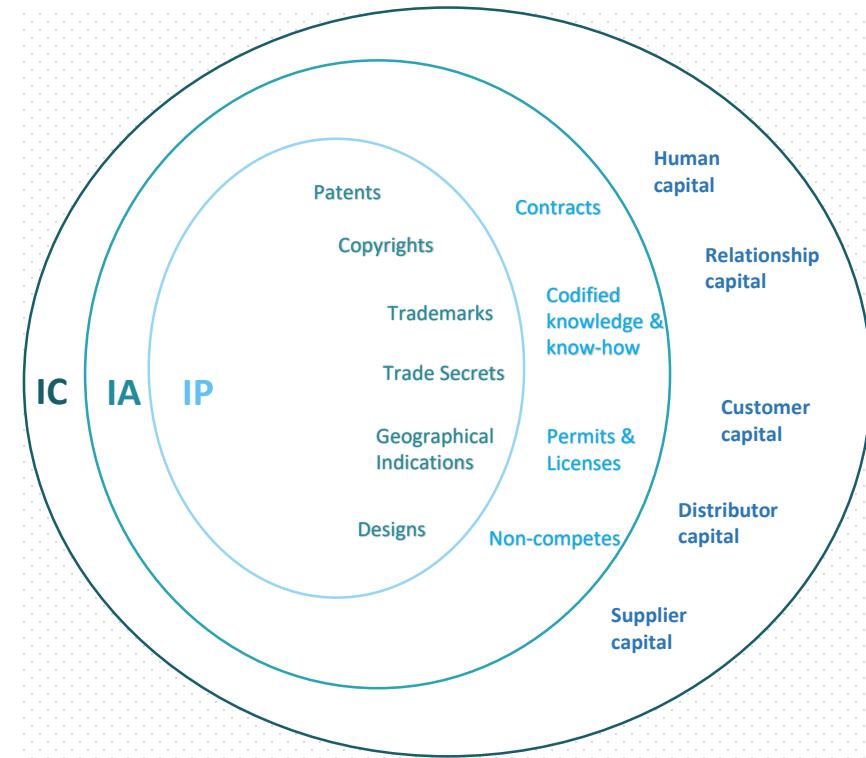
 Author Name: Parthapratim Indra

Objectives of the Lesson

- Exploitation of Intellectual Property (IP) is usually the key reason for the creation of IP in business or by the entrepreneurs. Creation of IP rights requires significant amount of investments in terms of time, money and talent. Therefore, exploitation of such IPs is the main priority in business. The stakeholders wish to start exploitation process as soon as possible so that the returns are maximum and proximate.
- The first step for the successful exploitation of IP is to know its value and IP valuation is the process to derive this value.
- The objectives of this lesson are to:
 - Provide an introduction of the basic concepts of IP valuation in the context of Intellectual Capital and Intellectual Assets
 - Provide an understanding of IP Valuation Triggers (When IP(R) is valued? How IP(R) is valued?)
 - Provide a brief introduction of various IP Valuation approaches and methods with pros and cons
- At the end of this lesson, students should be able to:
 - Develop basic understanding of the essence of IP Valuation along with few of the mostly used IP Valuation methods

Intellectual Capital (IC), Intellectual Assets (IA), Intellectual Property (IP)

Common Attributes	<ul style="list-style-type: none"> No physical substance Last to appear, first to disappear
Intellectual Property (IP)	<ul style="list-style-type: none"> IP is a special classification of intangible assets and is unique because the owner of IP can be protected by law from unauthorized exploitation of it by others Generate additional value from the ability of its owner to exercise exclusive rights of ownership (i.e. use, sell, etc.)
Intellectual Assets (IA)	<ul style="list-style-type: none"> IA represents the codified tangible or physical descriptions of specific knowledge to which a company can assert ownership rights Not all IA can be protected by law
Intellectual Capital (IC)	<ul style="list-style-type: none"> IC represents the cumulative knowledge of a business which allows for knowledge transfer and leverage. It creates competitive advantage

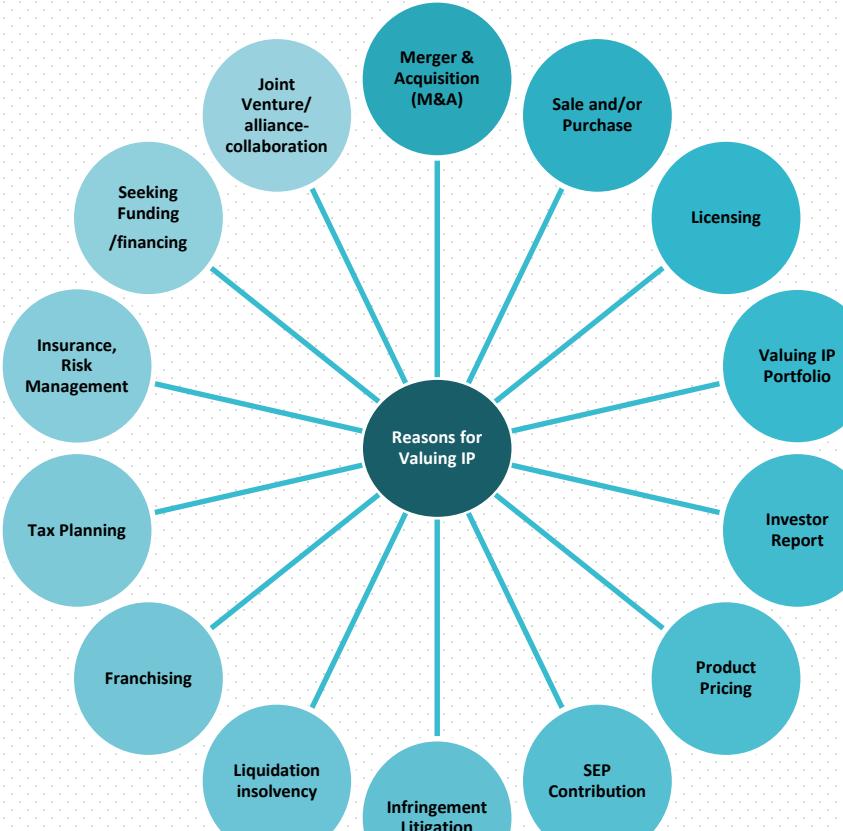


Value of an IP Asset

- The value of an IP asset is proportional to its degree-of-exclusivity in a competitive market-place. This exclusivity comes through legal-rights as well as economic rights.
 - Legal-rights provides the right-to-exclude
 - Economic rights provides the capacity to influence the usage of the IP asset
- For an IP asset to have a quantifiable value, it should:
 - Generate measurable amount of economic benefit to its owner/user.
 - Enhance the value of other assets with which it is associated.
- IP assets do not have an absolute value — they may have different valuation results depending on how they can or will be put to commercial use and by whom. Key factors influencing the value of an IP asset:
 - Valuation context
 - Time
 - Legal status
 - External Variables
 - Geographical Reach
 - Financial aspects

- IP valuation is a process to determine the monetary value of an IP asset.
- An IP asset should pass through the following basic qualifying criteria before undergoing an IP valuation exercise:
 - The asset must be distinctly identifiable and should have distinguishable description
 - The asset should have legal existence, legal protection and capable of being legally transferred
 - The asset is in existence for a definitive period or have emerged due to an obvious event
 - The income from the asset should be distinctly noticeable as a contribution to the asset leveraged business
 - The asset should be an independently selling entity in an enterprise
 - The asset should have a end-of-life or a definitive period of existence

When IP(R) is Valued



IP Valuation Approaches & Methods (1 of 3)

Quantitative Approach

- The science part of valuation
- Looks into the numerical value of IP
- Number of methods in use but the most common are cost, market, Income and Value based

Qualitative Approach

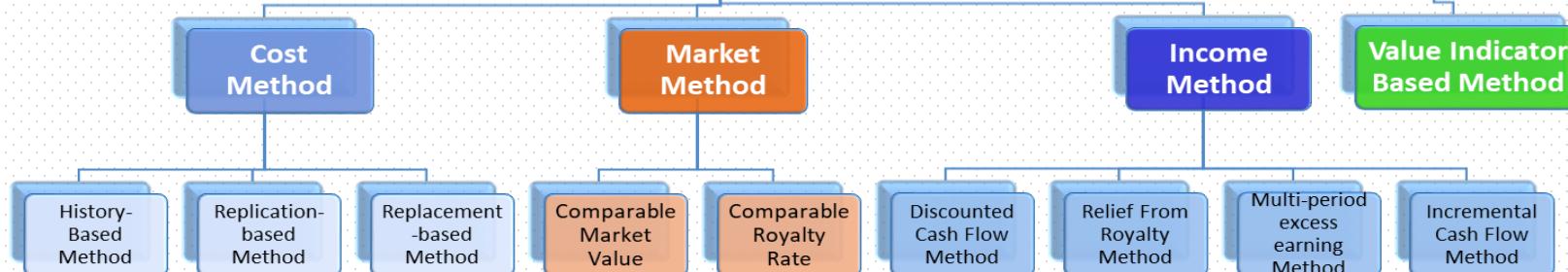
- The art part of valuation
- Evaluates using different indicators like quality and potential of the IP in terms of strength, weaknesses, validity of protection etc.

IP Valuation

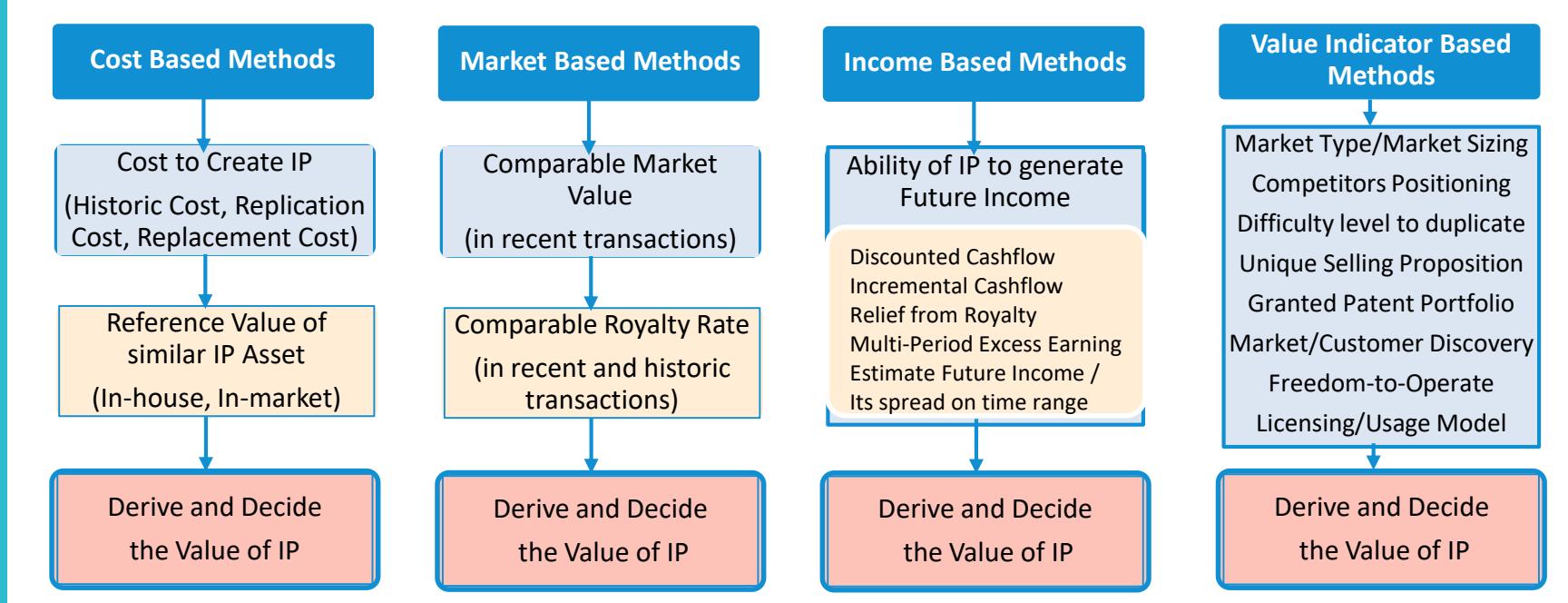
Quantitative Approach

Qualitative Approach

Source: Quisumbing Torres, 2017



IP Valuation Approaches & Methods (2 of 3)



IP Valuation Approaches & Methods (3 of 3)

	Method	When/Why	Advantages	Disadvantages
Quantitative	Income Based	<ul style="list-style-type: none"> ▪ Valuation for fund raising 	<ul style="list-style-type: none"> ▪ Analytic 	<ul style="list-style-type: none"> ▪ May be difficult to use in high risk sectors ▪ Subjective assumptions can be made
	Market Based	<ul style="list-style-type: none"> ▪ Valuation for internal purposes ▪ Valuation for IP transactions ▪ Valuation in litigation situations ▪ Trademark valuation 	<ul style="list-style-type: none"> ▪ Accuracy, since it is close to market reality ▪ Objectivity 	<ul style="list-style-type: none"> ▪ May be difficult to gather comparable or similar data, since transactions are often confidential
	Cost Based	<ul style="list-style-type: none"> ▪ Valuation of an asset in the early stages of development ▪ Cases where there is no market revenue data ▪ Accounting and tax purposes 	<ul style="list-style-type: none"> ▪ Simplicity ▪ Information gathered easily since most of it is in the accounting sheets 	<ul style="list-style-type: none"> ▪ May be difficult to isolate the costs related to the intellectual property assets from the other research costs ▪ The economic benefits associated with the assets are not considered
Qualitative	Value Indicator Based Method	<ul style="list-style-type: none"> ▪ Internal management decision making 	<ul style="list-style-type: none"> ▪ Market, Ecosystem and IP driven 	<ul style="list-style-type: none"> ▪ Subjective interpretation. Needs regular recalibration

Challenges in IP(R) Valuation

Unclear Definition / Context

- IP, Knowhow
- Market segment
- Valuation Context
- Ownership vs. Commercial Rights

Limited or No Data

- Attributable R&D costs
- Attributable revenue/profits
- Comparable licensing/sale deals
- Royalty rates
- Lawsuit settlements

Limited or No Expertise

- Valuation techniques
- Market insights
- Legal aspects
- Scenario and sensitivity analysis

Summary

- Intellectual property is the core component of intellectual capital
- Many variables which may influence the value of IP assets — including the types of IP rights at stake, the larger valuation context, the purpose of the valuation, and the point-in-time at which it takes place
- There are various situations in contemporary business context when an IP is required to be valued such as M&A, Joint Venture, Investor report, Licensing etc.
- IP valuation is a process to determine the monetary value of an IP asset and there are various prerequisites for undertaking IP valuation for an IP asset
- The widely used IP valuation methods are: Cost based, Market based, Income based and their variations
- Each method has its own advantages & disadvantages
- There are various challenges to arrive at an appropriate value of an IP asset in contemporary eco-system driven digital business scenario

References

- A Review of the Methods for Valuing Intellectual Property Rights, Alina Saaranto
- Fair Value Measurement: Practical Guidance and Implementation, 2nd Edition, Mark L. Zyla
- Intangible Asset & Intellectual Property Valuation: A Multidisciplinary Perspective, Paul Flignor and David Orozco
- Intellectual Property: Valuation, Exploitation and Infringement Damages 2013 Cumulative Supplement, 11th Edition, Russell L. Parr
- Patents, their importance and valuation methods, Liina Tonisson and Lutz Maicher
- Software IPR Valuation Model, Santosh Mohanty and Kaushik Gala
- Valuation of Intellectual Property Assets by Akshat Pande

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title: **Startup Business Models**

Contact Hours: 3 Hours

Lesson Number: 13

Author Name: Santosh Mohanty

Objectives of the Lesson

The objective of this lesson is to introduce a tool for startups to build their business models. The lesson covers

- The importance of Business Model Innovation
- Introduction of Business Model Canvas (BMC) and its pillars
- Elaborating why, what and which aspects of BMC
- Developing a generic example that explains BMC for a given context
- Introduction of venture capital, venture capitalists and angel investors as a key source for startup funding
- Introduction of the concept ‘Unicorn in Business’ and Providing a list of unicorns in India

We expect the readers to have a better clarity and motivation of ‘why’ to start a startup and ‘how’ to go about it once they complete this lesson.

Business Plan

- Set up documents prepared by a company's management team to summarize its operational and financial objectives for the near future (usually, one to three years) and to show how these objectives will be achieved.

Business Model

- Describes the rationale of how an enterprise 'creates, delivers and captures' value in 'economic and social' context

Startup Angle (Business Plan and Business Model)

- There is a problem with business plan for early stage startups. There is a possibility that by the time you finish the document, it might be already irrelevant. Or after one month in execution, the fundamental assumptions might be proven to be wrong.
- Business model need to be tested and it does not need a product to be tested.
- One size fits for all may not be true. Business model can differ according to customer segments.
- Prove that you are learning from failure and build fast and scale smart once you know it is working

Business Model Canvas

- A single reference model based on the similarities of a wide range of business model conceptualizations. With this business model design template, an enterprise can easily describe their business model.

Business Model Innovation (1 of 3)

Business model innovation is about creating value for stakeholders. To steer the business in the face of constant change or to disrupt the market, business strategists are starting to use business model innovation to identify new opportunities. It is a designed approach to help and align leaders on the shifts in customer segments, value propositions, revenue streams and cost structure.

The scale and speed at which innovative business models are transforming industry landscapes is unprecedented. For entrepreneurs, executives, consultants, and academics, it is important to understand the impact of this evolution and methodically address the challenge of developing and implementing a business model innovation.

Business model innovation involves taking a proposed business model or models from ideation to implementation in line with an overall business strategy. Using a design-oriented approach, business model innovators construct observations about their environment and the position of the organisation within that environment, including a description of the current-state business model. Then they develop and test a set of hypotheses using alternative future-state business models and may design working prototypes to test and validate assumptions.

Business Model Innovation (2 of 3)

Traditionally, business innovation has focused on product development or on process optimization. Businesses are increasingly recognizing that there are other aspects of the enterprise that offer opportunities for improvement. For example, customer segments (targeting lower middle class than mass market), value propositions (emphasizing service rather than just the physical product), revenue streams (moving customers to subscription models rather than one-time purchases), or cost structures (streamlining the supply chain). Business model analysis enables this kind of innovation by calling out other aspects of the business that may provide opportunities to improve business outcomes.

Business model innovators then build prototypes and use test results to validate hypotheses – either confirm, iterate or reject the hypotheses. Finally, they select the optimal business model (or models, as required to address different value propositions and customer segments within a single business) and describe them with adequate detail under a framework to support planning, development, and deployment.

Business Model Innovation (3 of 3)

While conceiving a new business model is important, implementing it and then continuously adapting it has challenges. In the current environment of constant and rapid change, implementation and adaptation are exactly where successful organizations need to excel. It is not adequate to establish a business model and then stop there; companies must constantly re-evaluate and redefine basic precepts including:

- What the company currently does
- How the company does it
- What the company could do
- How the company could do it
- With whom the company should do it
- How each part interacts/interplays with enterprise ecosystem

While constructing a business model, organizations should ensure that they design and build all elements of the business model that enables the business to thrive in a state of constant motion. Key questions are:

- How can we systematically invent, design, and implement new business models?
- How can we question / challenge the current dominance (in-house or market) with superior alternatives?
- How can we turn visionary ideas into game-changing business models?

Business Model Canvas (BMC) Explained

The research of Alex Osterwalder and Yves Pigneur suggests that a complete description of a company's business model can be broken down into **nine elements**:

1. **Customer Segments:** The specific group of people that the organization aims to serve.
2. **Value Propositions:** A clear description of the offering and how it solves problems or creates value for customers.
3. **Channels:** The means to reach customer segments to communicate and to deliver products and services to them.
4. **Customer Relationships:** The methods used to maintain relationships with customer segments.
5. **Revenue Streams:** The income generation and collection mechanisms in the business.
6. **Key Resources:** The most important assets that the company needs to make the business model work.
7. **Key Activities:** The most important things that a company must do to make its business model work.
8. **Key Partnerships:** The network of suppliers and partners that make the business model work.
9. **Cost Structure:** The major costs that need to be incurred to sustain the business model.

These **nine business model building blocks** is captured in a single diagram called **the business model canvas**. It sets the **value proposition** at the centre of the business model as the primary focus area. The customer building blocks (**customer segments, channels and relationships**) can be found to the right of the value proposition and infrastructure building blocks (**activities, resources and partners**) to the left. The finance-based building blocks (**revenue and cost structure**) can be traced on the lower block of the diagram.

Business Model Canvas: Schematic Template



Nine Pillars

1. Customer Segments
2. Value Propositions
3. Channels
4. Customer Relationships
5. Revenue Streams
6. Key Resources
7. Key Activities
8. Key Partners
9. Cost Structure

Customer Block
(Customer Segments, Channels and Customer Relationships)

Infrastructure Block
(Activities, Resources and Partners)

Return on Investment Block
(Revenue and Cost)

NOTEPAD

The Business Model Canvas

Design for: Org. A

Design by: Org. B

Version: x.y.z

Date: dd-mm-yyyy

Key Partners

Description 01
Description 02
.
..

Key Activities

Description 01
Description 02
.
..

Value Propositions

Description 01
Description 02
.
..

Customer Relationships

Description 01
Description 02
.
..

Customer Segments

Description 01
Description 02
.
..

Key Resources

Description 01
Description 02
.
..

Channels

Description 01
Description 02
.
..

Cost Structure

Description 01
Description 02
.
..

Revenue Streams

Description 01
Description 02
.
..

Business Model Canvas: Customer Segments

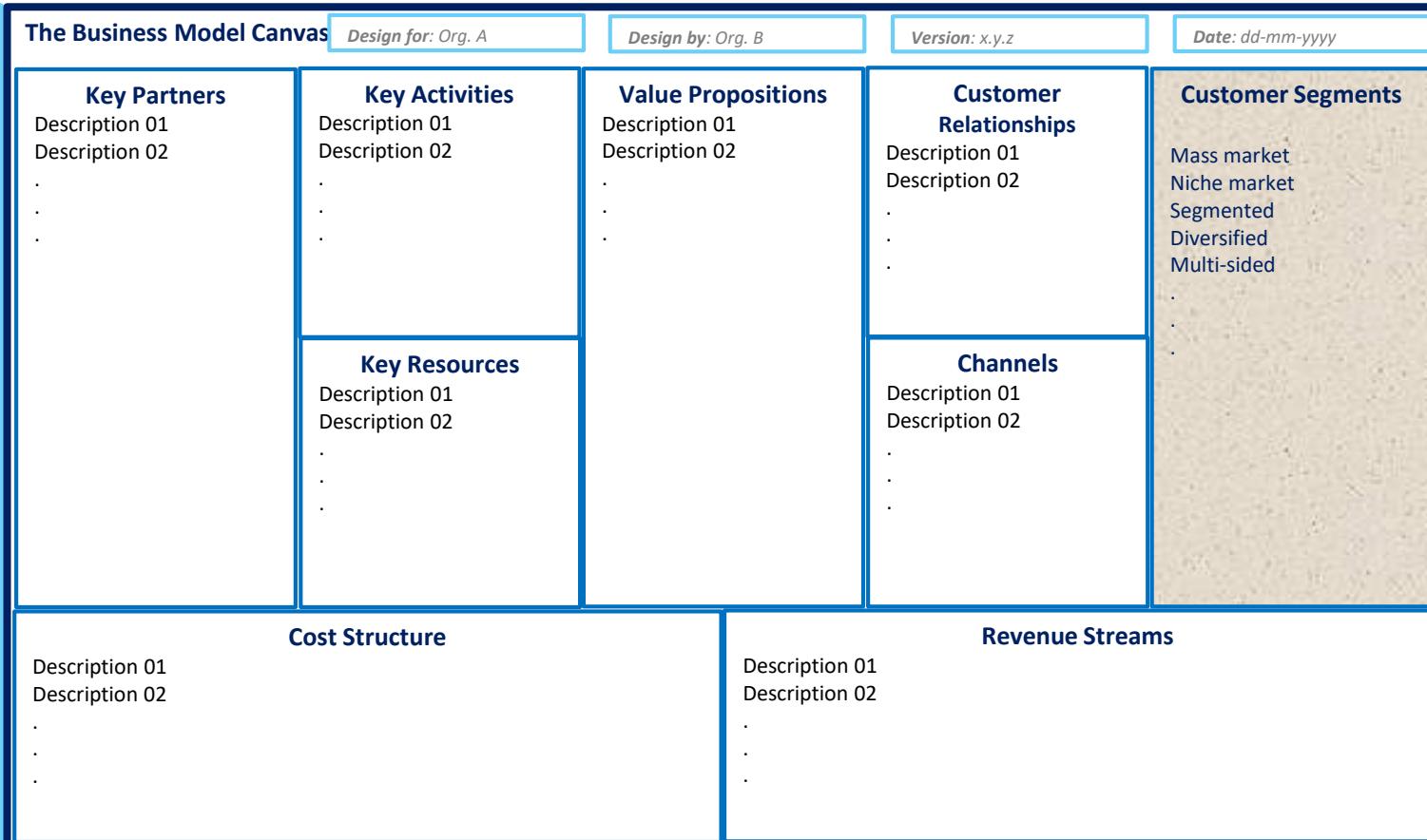
Customer Segments

- Which customer profiles have the need?
- For whom are we creating the value?
- Who is willing to pay?
- How much they can pay?
- How long they can pay?

Guidelines:

Identify attributes to profile customer segments (enterprise/mass, global/geo-specific/ country-region specific, gender, occupation, lifestyle, medical history, social networking, age, etc.)

NOTEPAD



Business Model Canvas: Value Propositions

Value Propositions

- What is the customer need? How frequent is the need? How painful is the experience of not meeting the need?
- How are you planning to fulfill this need? What value does it create?
- Can it be measured? What measurable returns customer gets?

Guideline:

Cheaper is not enough as value proposition. Neither product or service features.

NOTEPAD

The Business Model Canvas		Design for: Org. A	Design by: Org. B	Version: x.y.z	Date: dd-mm-yyyy
Key Partners Description 01 Description 02 . . .	Key Activities Description 01 Description 02 . . .	Value Propositions Unique/Novel Better/Stable performance Ease of customization Flexible design Brand value Price advantage Cost reduction Risk reduction Accessibility Convenience Service Assurance	Customer Relationships Description 01 Description 02 . . .	Customer Segments Description 01 Description 02 . . .	
	Key Resources Description 01 Description 02 . . .		Channels Description 01 Description 02 . . .		
		Cost Structure Description 01 Description 02 . . .		Revenue Streams Description 01 Description 02 . . .	

Business Model Canvas: Channels



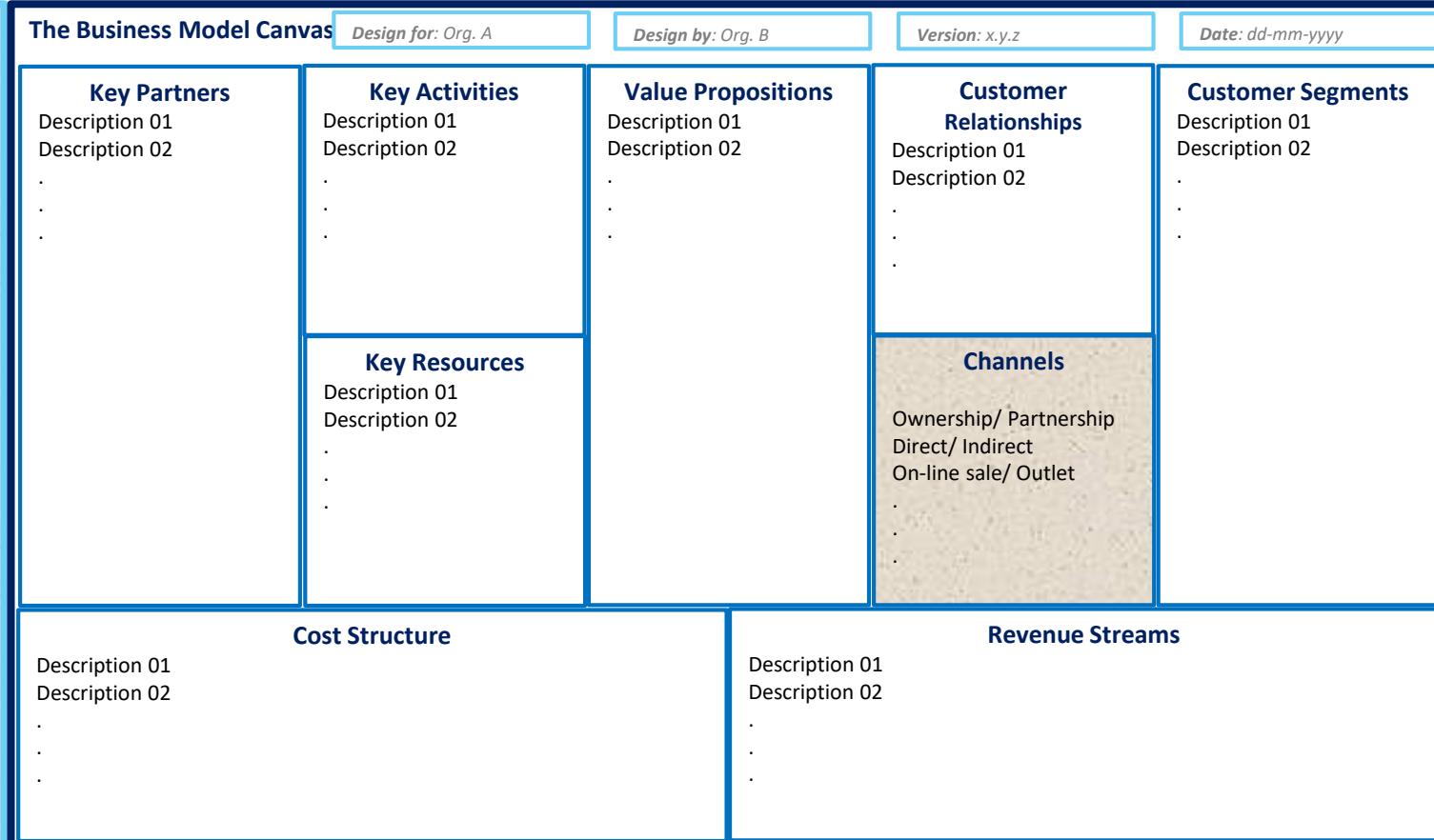
Channels

- How the customers will get to know about the value proposition?
- What are the touchpoints to communicate value?
- Choice between direct or indirect channel – which one works best? Or, there is different option for different profile
- How are you integrating it to customer routines?

Guidelines:

Map-out value chain of the market with stakeholders.

NOTEPAD



Business Model Canvas: Customer Relationships

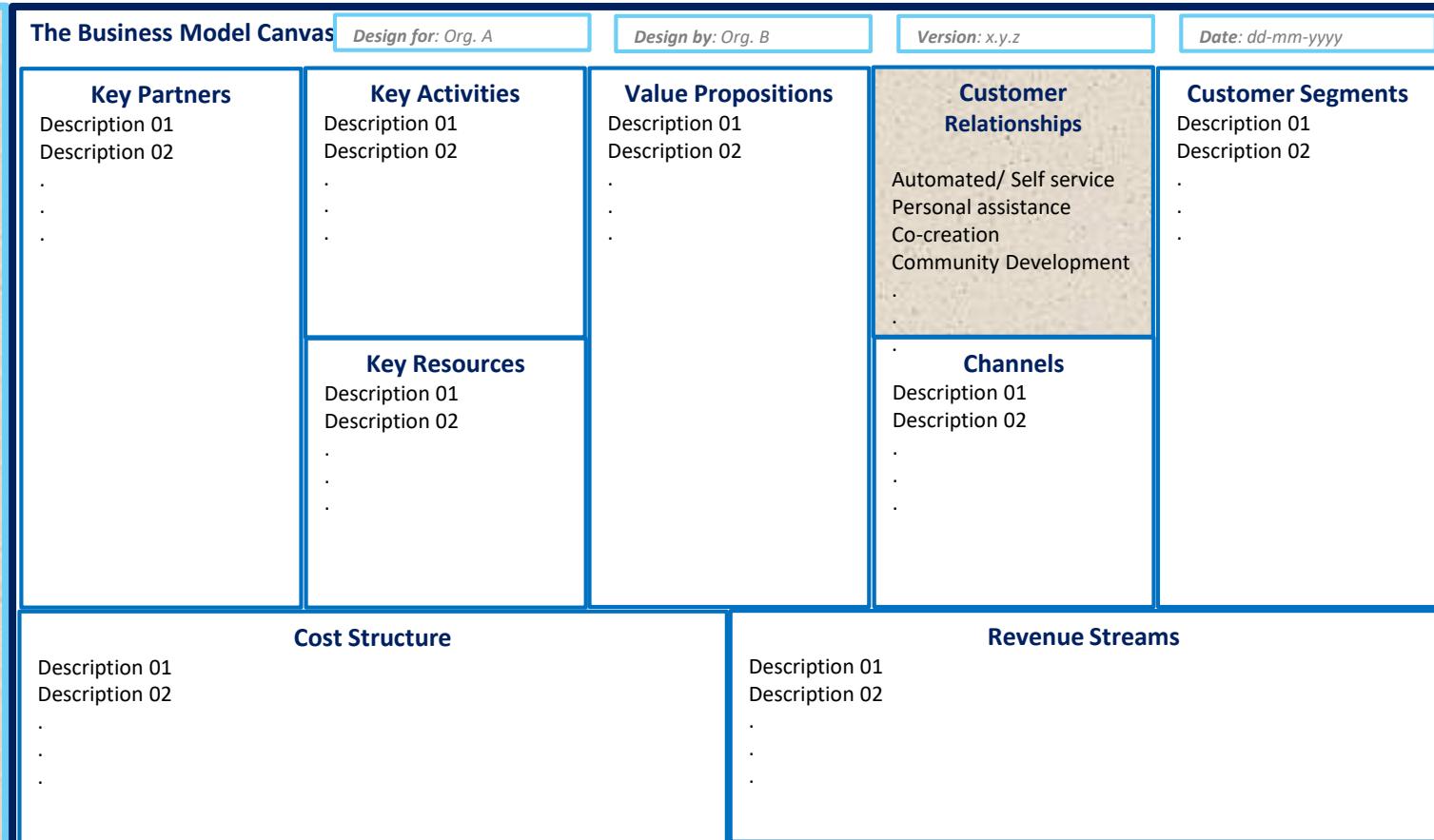


Customer Relationships

- What kind of relationship does any customer segment expect us to establish?
- How are you addressing personalization/ self-service/ transactional / long-term/ automation needs?
- How are you articulating switching cost/ option?
- What is your plan on co-creation and community development?

Guideline:
Establish through channels

NOTEPAD



Business Model Canvas: Revenue Streams

Revenue Streams

- For what value customers are willing to pay and which segment of customers will pay for it?
- What is the quality and sustainability of this revenue stream?
- What is the opportunity to package the product to strengthen pricing and revenue stream?

Guidelines:

Factor asset sale, usage fee, lending, renting, leasing, licensing, subscription, etc.

NOTEPAD

The Business Model Canvas

Design for: Org. A

Design by: Org. B

Version: x.y.z

Date: dd-mm-yyyy

Key Partners

Description 01
Description 02
.
.
.

Key Activities

Description 01
Description 02
.
.
.

Value Propositions

Description 01
Description 02
.
.
.

Customer Relationships

Description 01
Description 02
.
.
.

Customer Segments

Description 01
Description 02
.
.
.

Key Resources

Description 01
Description 02
.
.
.

Channels

Description 01
Description 02
.
.
.

Cost Structure

Description 01
Description 02
.
.
.

Revenue Streams

Asset sale/ Usage fee/ Subscription fee
Lending/ Renting/ Licensing
Brokerage/ Advertising/ Aggregator
Fixed price/ Dynamic price/ Freemium model
.
.

Business Model Canvas: Key Resources

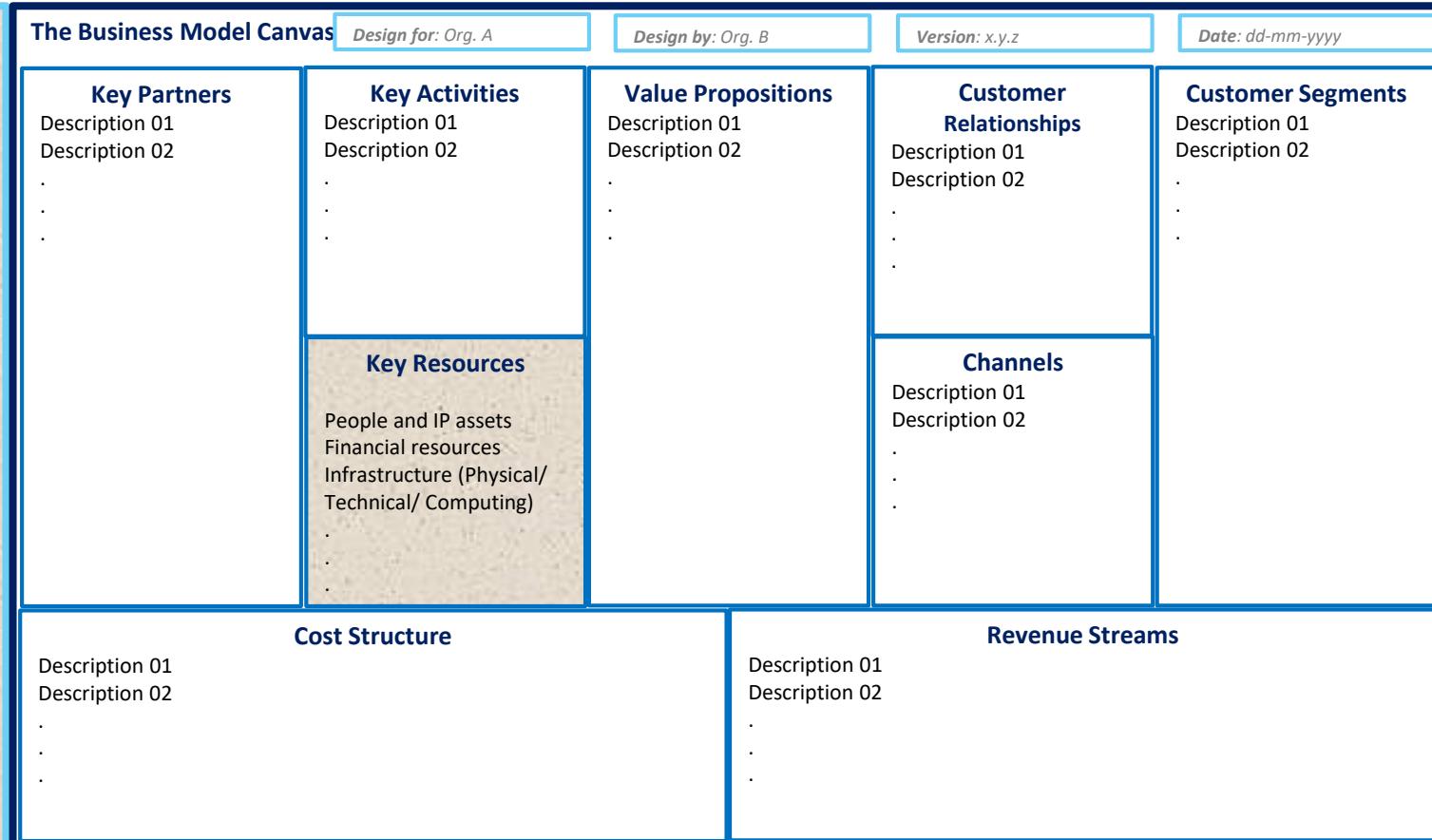
Key Resources

- What key resources required to deliver value proposition, analyze the customer segments, enable channels, build customer relationship, analyze revenue streams and collect revenue?

Guidelines:

Consider all resource types
– People and their subject expertise, Intellectual Property, Financial support, Physical / Technical / Computing Infrastructure

NOTEPAD



Business Model Canvas: Key Activities



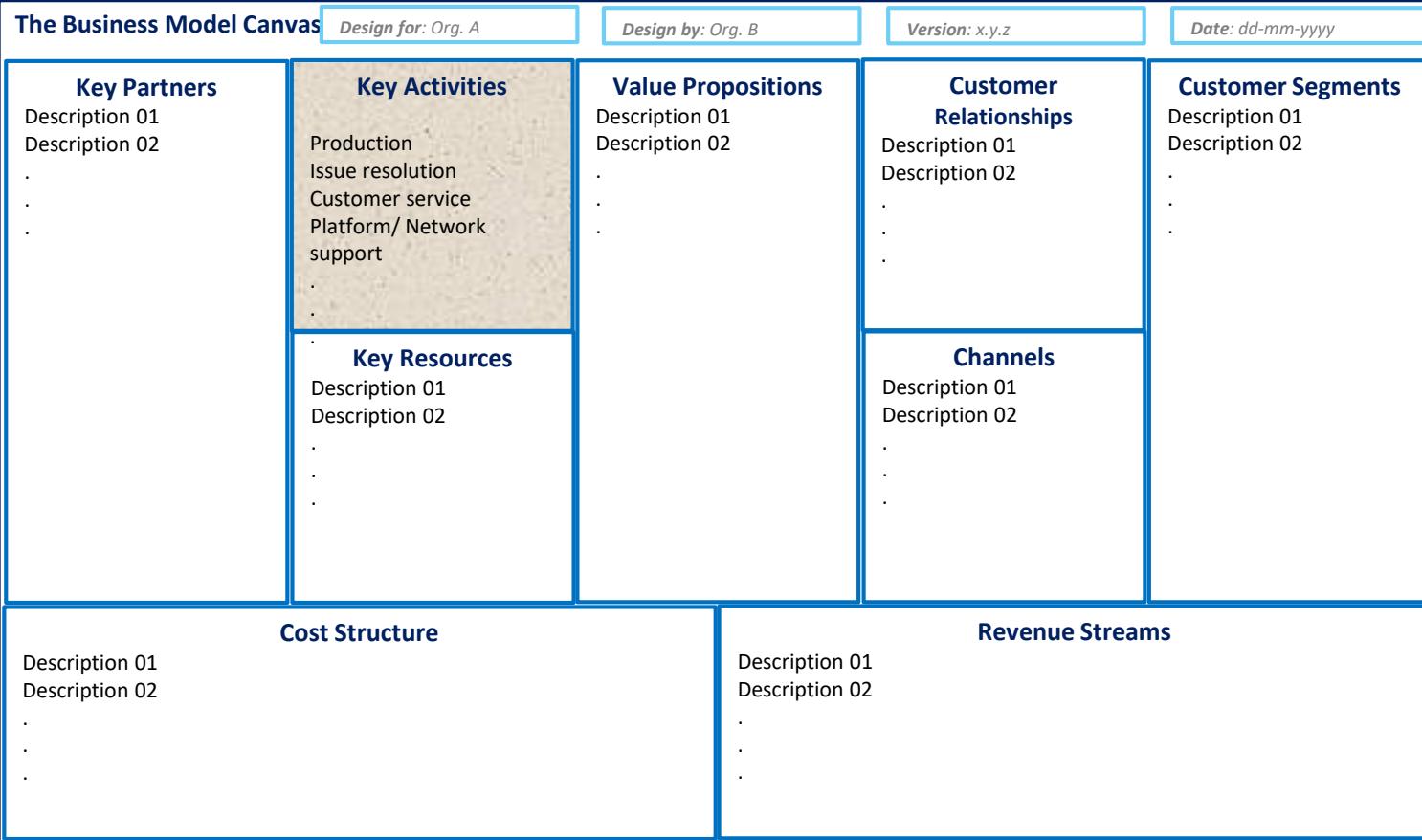
Key Activities

- What key activities required to deliver value proposition, analyze the customer segments, enable channels, build customer relationship, analyze revenue streams and collect revenue?

Guidelines:

Consider all the tasks that need to be done under each activity covering marketing, sales, product development / maintenance, regulatory needs, risk mitigation, etc.

NOTEPAD



Business Model Canvas: Key Partners



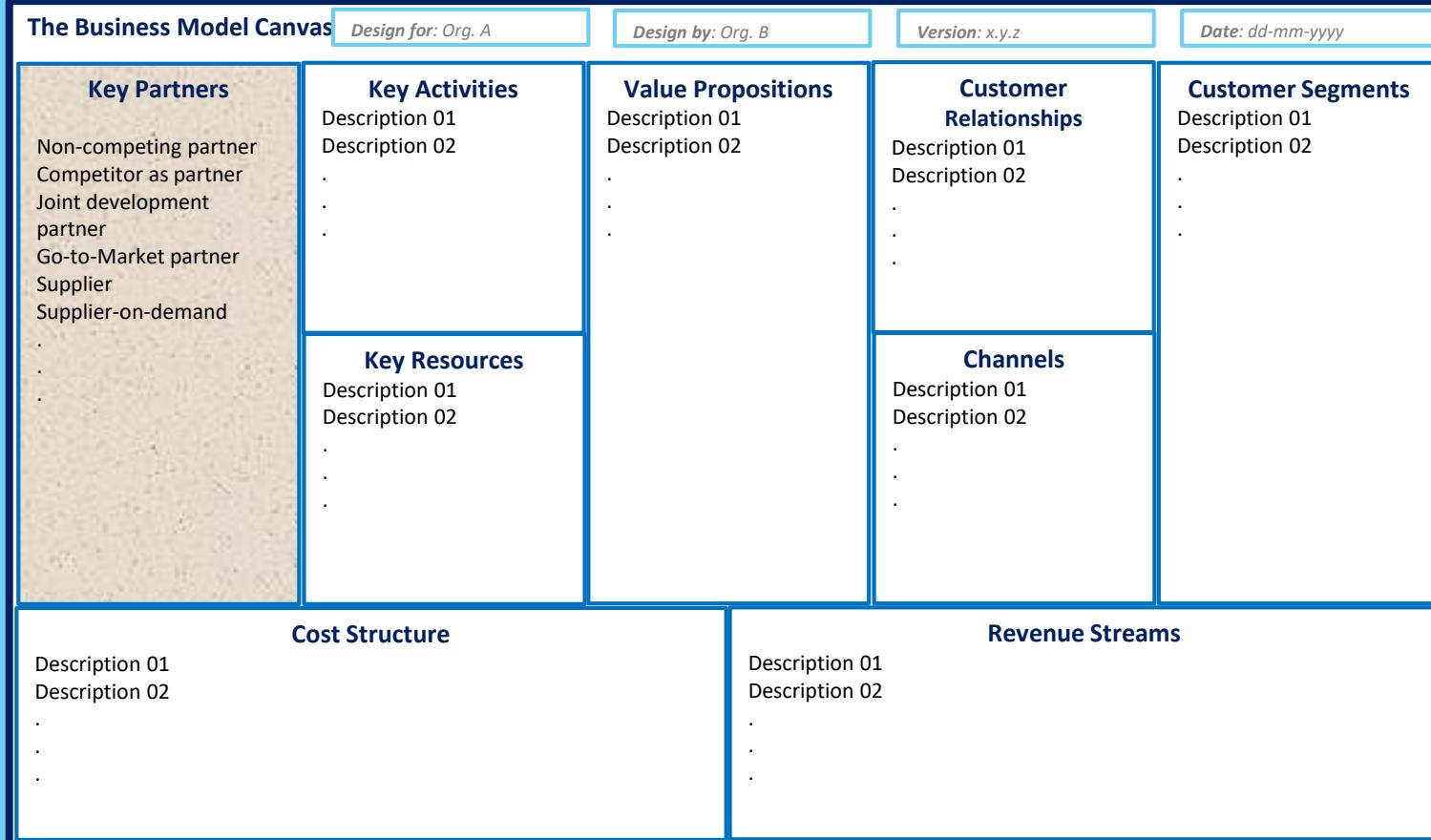
Key Partners

- With whom we want to partner to make the business model work?
- What key resources are we acquiring from suppliers?
- What activities partners are performing for us?

Guidelines:

Prepare /provide justification – Economy of scale, timely availability, risk /uncertainty reduction, better value creation, long term interest, etc.

NOTEPAD



Business Model Canvas: Cost Structure

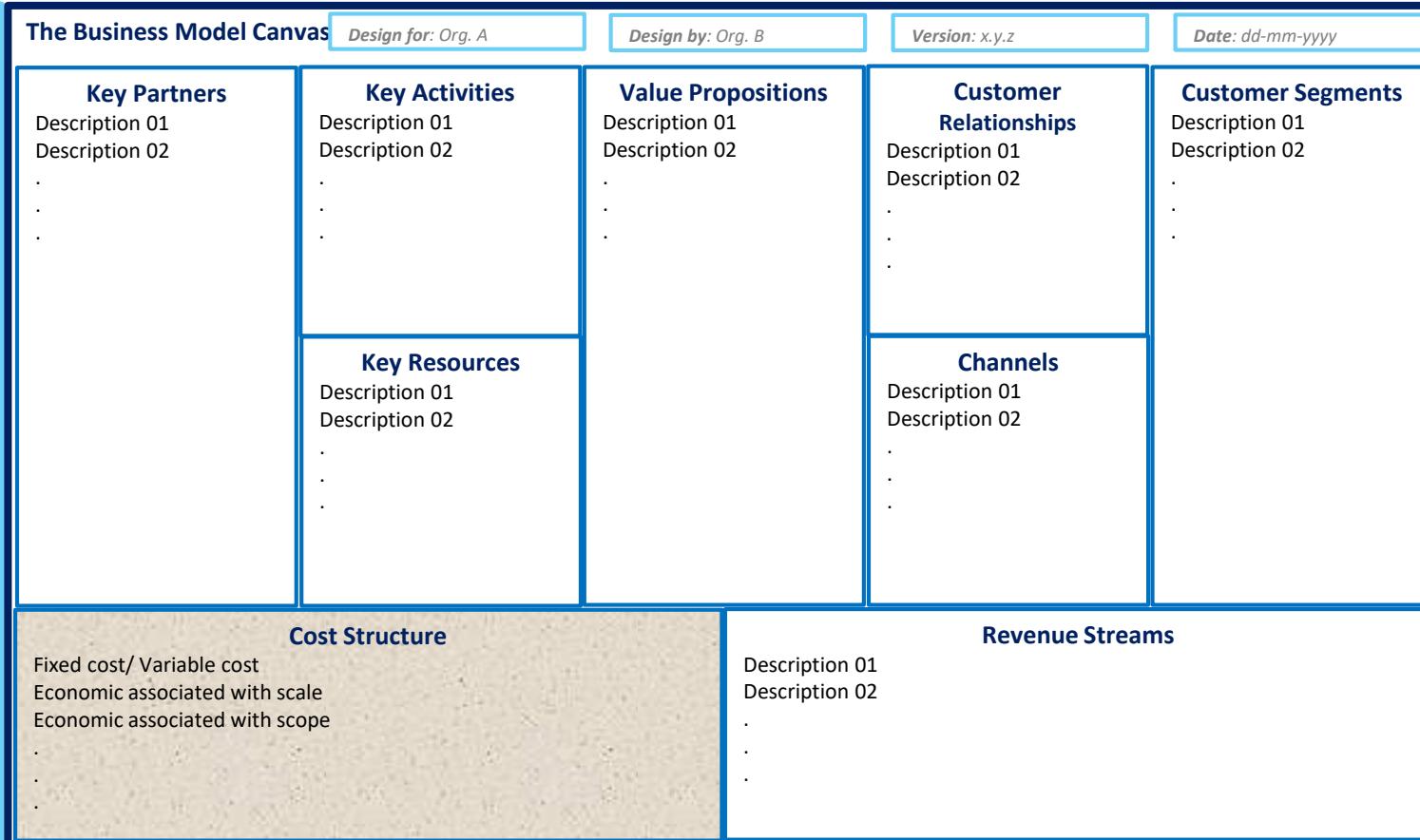
Cost Structure

- Estimate the cost of value delivery (marketing, sales, product development, customer support), key resources /partners, and inherent cost
- Estimate the cost of risk mitigation and regulatory compliance

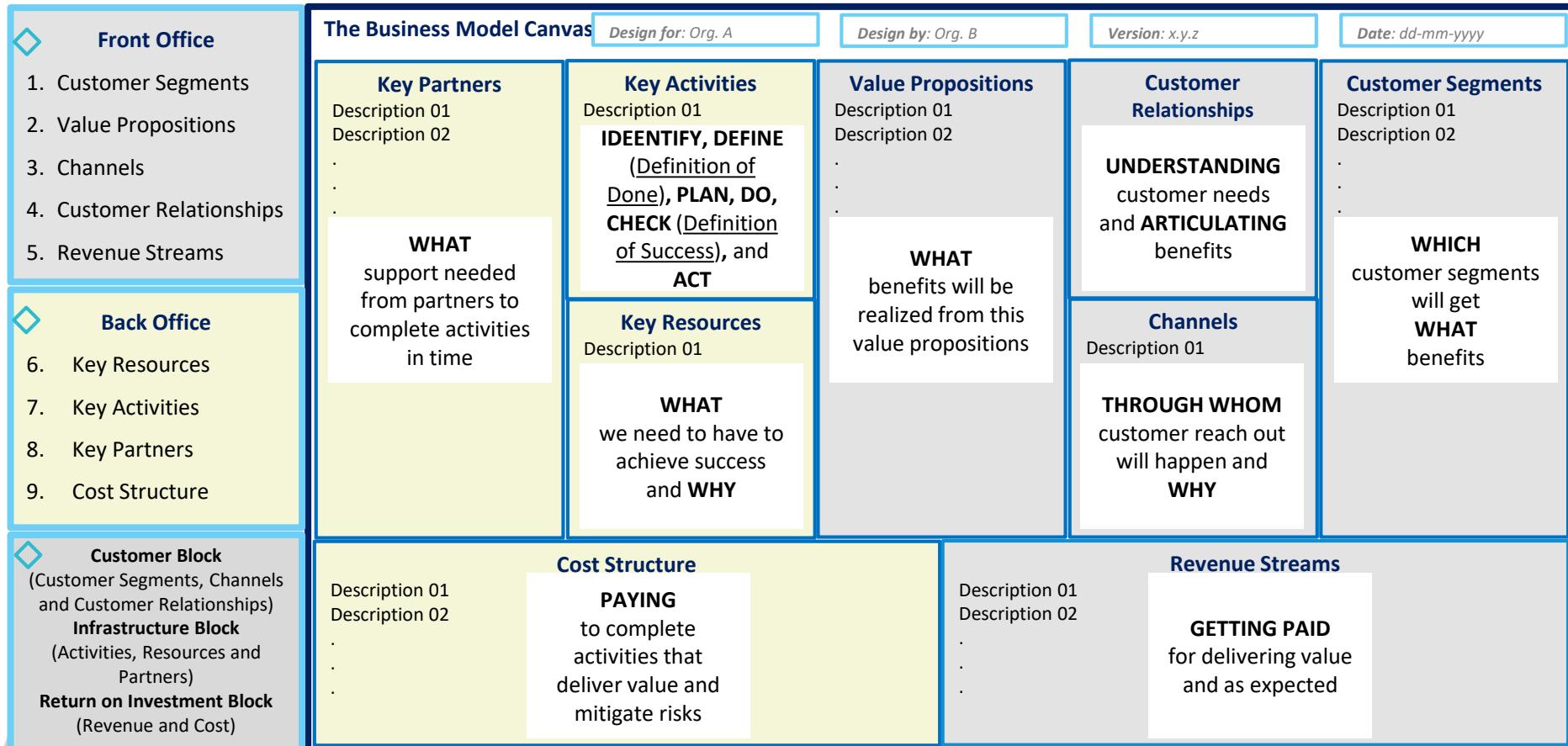
Guidelines:

Align the cost structure to Value Delivery and Risk Mitigation, Identify fixed and variable costs.

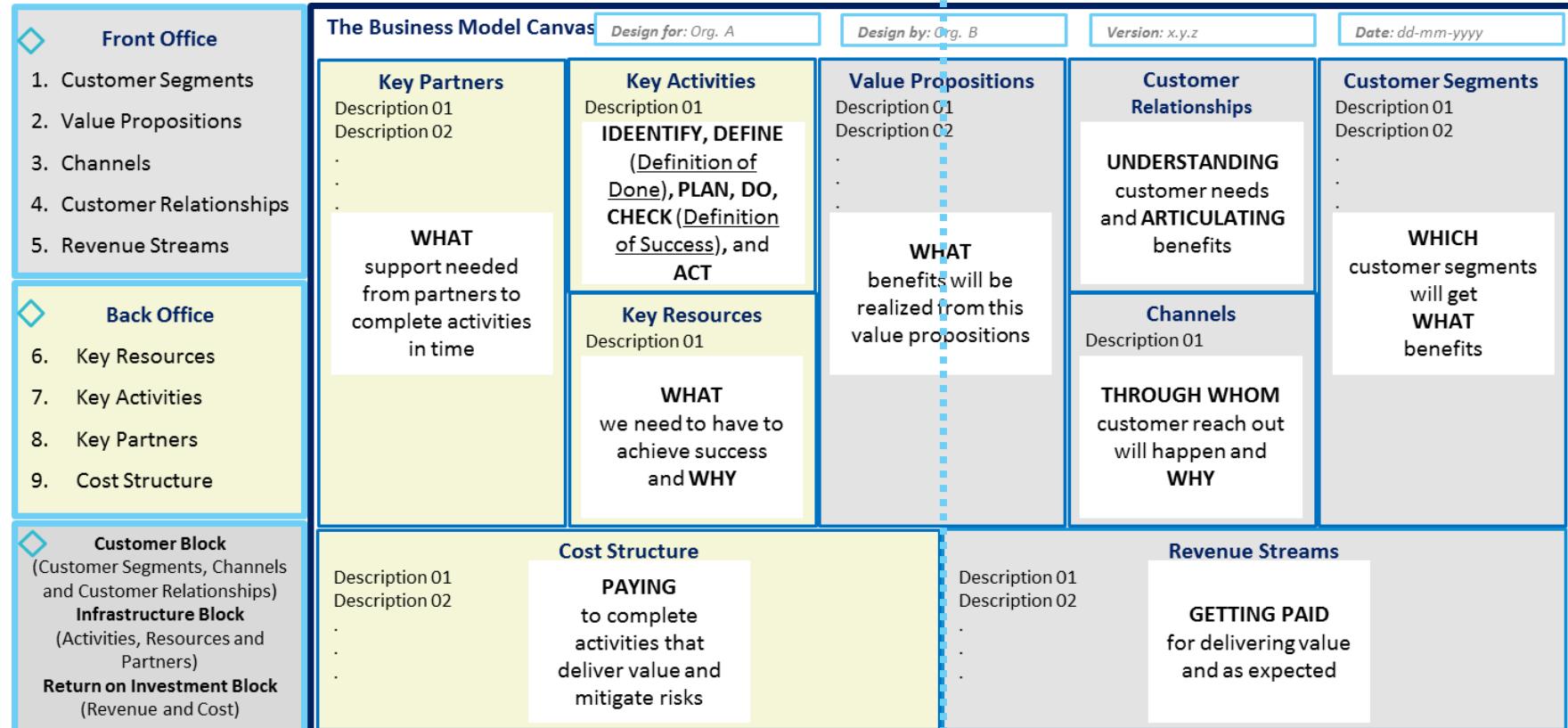
NOTEPAD



Business Model Canvas: Schematic View



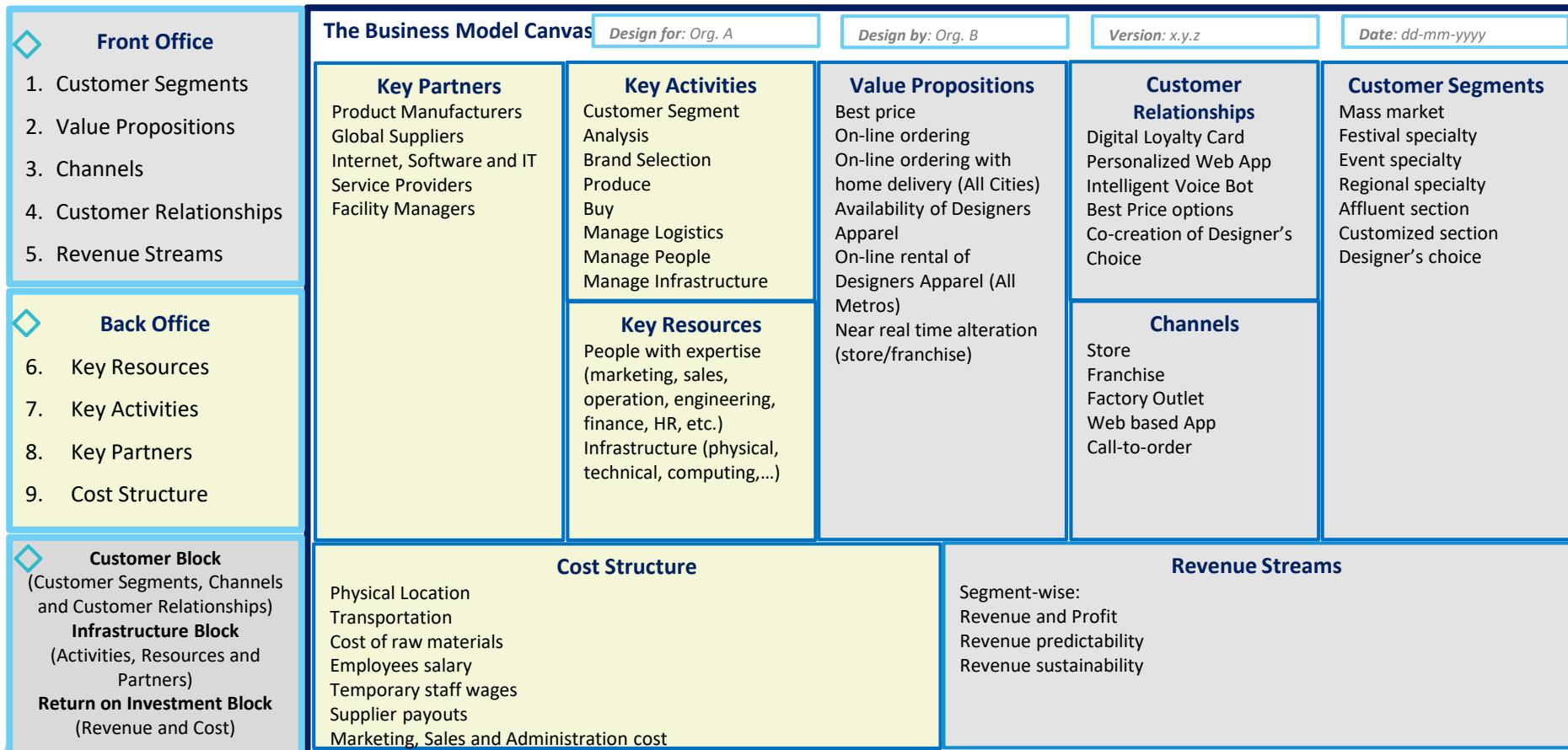
Business Model Canvas: Schematic View – Directional Focus



Product: Optimize through Institutionalization and Industrialization

Market: Learn, Prototype, Pivot, and Scale

Business Model Canvas: Generic Example (Apparel Business in India, Year 2019)



Venture Capital (1 of 2)

Venture Capital is a private or institutional investment made into early-stage / start-up companies (new ventures).

Venture Capital is money invested in businesses that are small; or exist only as an initiative but have huge potential to grow. The people who invest this money are called Venture Capitalists (VCs). The venture capital investment is made when a venture capitalist buys shares (stake in equity rather than giving loan) of such a company and becomes a financial partner in the business.

Venture Capital investment is also referred to risk capital. The risk includes the possibility of losing the money if the venture doesn't succeed and takes medium to long term period for the investments to deliver certain results. Venture Capital typically comes from institutional investors and high net worth individuals and is pooled together by dedicated investment firms.

Venture Capital is the most suitable option for funding initiatives / companies who need large up-front capital investment and do not have adequate alternatives. **Software and other intellectual property** are generally the most common cases whose value is unproven. Therefore, Venture Capital funding is most widespread in the fast-growing technology and biotechnology fields.

An Angel Investor (also known as a private investor, seed investor or angel funder) is a high net worth individual who provides financial backing for early-stage startups, small startups or entrepreneurs, typically in exchange for ownership equity in the company.

Types of Venture Capital Funding

The three types of venture capital funding are early stage financing, expansion financing and acquisition/ buyout financing.

Early Stage Financing:

- Seed money: Low level financing for proving a new idea
- Start-up: New firms needing funds for expenses related with marketing and product development
- First-Round: Manufacturing and early sales funding

Expansion Financing:

- Second-Round: Operational capital given for early-stage companies selling products but not returning a profit
- Third-Round (also known as Mezzanine financing): This is the funding for expanding a newly beneficial company

Acquisition/ Buyout Financing:

- Fourth-Round (also known as bridge financing): This is the financing to support the "going public" process

Methods of Venture capital financing

- Equity
- Participating debentures
- Conditional loan

Venture Capital Investments: Features

- High Risk
- Lack of Liquidity
- Long term horizon
- Equity participation and capital gains
- Venture capital investments are made in innovative projects
- Suppliers of venture capital participate in the management of the company

In the venture capital industry, a unicorn refers to any tech startup company that reaches a \$1 billion dollar market value as determined by private or public investment. The term was originally coined by Aileen Lee, founder of Cowboy Ventures (<https://ecorner.stanford.edu/in-brief/unicorn-lessons/>).

The following link provides some details on India's unicorns: <https://www.thebetterindia.com/86539/inspiring-unicorn-founders-india-startups/>; <https://www.strategy-business.com/feature/Indias-new-unicorns?gko=76038>

- India is the third-largest startup ecosystem in the world. The number of tech startups reached 7,500 in 2018, a growth of 12 to 15 percent from 2017. Many of these were advanced technology startups; companies involving data analytics, artificial intelligence, and the Internet of Things experienced the fastest growth (<https://www.nasscom.in/knowledge-center/publications/indian-tech-start-ecosystem-2018-approaching-escape-velocity>).
- One of the key aspect of the technology startups in India today is their ambition for expansion elsewhere in the world. There is conviction that if they can rapidly build a business at home, they can compete elsewhere too.
- Indian startups also have some distinctive advantages: overall familiarity with the English language, few restrictions on investment and partnership, a long-standing precedent for inexpensive innovation in the IT services industry, and a large diaspora of technology-savvy Indians across the world.

India's Unicorn: 2014 – 19

Name	Business	Year Founded	Year of Unicorn
InMobi	<i>Enterprise platforms for marketers</i>	2007	2014
Ola	<i>Ride-sharing, taxi, food delivery</i>	2010	2014
Snapdeal	<i>E-commerce</i>	2010	2014
Quikr	<i>Classified advertising</i>	2008	2015
Hike	<i>Freeware, messaging, and voice over IP</i>	2012	2016
ShopClues	<i>Online marketplace</i>	2011	2016
One97 (Paytm Mall)	<i>E-commerce</i>	2010	2017
ReNew Power	<i>Renewable energy</i>	2011	2017
BillDesk	<i>Online payments</i>	2000	2018
Flipkart	<i>Online store</i>	2007	2018
Freshworks	<i>Enterprise software</i>	2010	2018
Musigma	<i>Data analytics and management consulting</i>	2004	2018
OYO	<i>Budget lodging website</i>	2013	2018
Pine Labs	<i>Merchant payment platform</i>	1998	2018

Name	Business	Year Founded	Year of Unicorn
Policy Bazaar	<i>Insurance plan aggregator</i>	2008	2018
Swiggy	<i>Online food ordering and delivery</i>	2014	2018
Think and Learn Private (Byju's)	<i>Educational technology and tutoring</i>	2008	2018
Udaan	<i>B2B trading platform</i>	2016	2018
Zomato	<i>Restaurant aggregator and food delivery</i>	2008	2018
Big Basket	<i>Online megastore</i>	2011	2019
CitiusTech	<i>Healthcare technology services</i>	2005	2019
Delhivery	<i>Third-party logistics</i>	2011	2019
Dream11	<i>Fantasy sports platform</i>	2008	2019
Druva	<i>Cloud-based data protection</i>	2014	2019
Icertis	<i>Contract management software</i>	2009	2019
Ola Electric	<i>Mobility</i>	2017	2019
Rivigo	<i>Logistics</i>	2014	2019

Summary

This lesson introduces the concept of Business Model Canvas (BMC) as a potential business planning tool for startups and the concept of venture capital as a prime source of funding for startups.

- The lesson starts with a brief refresh of the concept of business plan and business model learned from previous lessons
- Reiteration of the importance of innovation in the business model
- Business Model Canvas (BMC) is introduced as a tool to generate business plan for a given scenario
- The BMC concept is further elaborated through an industry example
- Introduction of venture capital, venture capitalists and angel investors as a key source for startup funding
- Concept of ‘unicorn in business’ is explained, and the list of Indian unicorns are tabled as a motivation for innovator to think about ‘creating job’ instead of ‘seeking a job’

References

- Business Model Generation, Alexander Osterwalder and Yves Pigneur, John Wiley and Sons.
- Business Model Canvas, Arvydas Bloze, evergrowth.io
- <https://cdn.ymaws.com/www.businessarchitectureguild.org/resource/resmgr/docs/linkingbusinessmodelsb.arch.pdf>
- <https://ecorner.stanford.edu/in-brief/unicorn-lessons/>
- <https://www.edupristine.com/blog/venture-capital>
- <https://www.nasscom.in/knowledge-center/publications/indian-tech-start-ecosystem-2018-approaching-escape-velocity>
- <https://www.strategy-business.com/feature/Indias-new-unicorns?gko=76038>
- <https://www.thebetterindia.com/86539/inspiring-unicorn-founders-india-startups/>

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:

Co-innovation and Open Innovation (academia, startups, corporates)



Contact Hours: 2 Hours



Lesson Number: 14



Author Name: Tara Prasad

Objectives of the Lesson

The aim of this lesson is to provide different ways academia, startups and corporates engage with each other using co-innovation and open innovation model for mutual benefits

- Provide different co-innovation and open innovation models
- What are different IP aspects to be considered as part of collaboration

Introduction to Co-Innovation and Open Innovation

- For an organization, in today's competitive world, the ability to innovate has become vital not just for driving business growth but also to stay relevant for changing customer needs. Organizations collaborating with internal and external stakeholders help position the Organization as an innovation–driven partner, customer or employer. It is key to fostering innovation.
- Open innovation is a business model that helps organization to connect with external sources with the aim to produce the most innovative services, and products by combining both internal and external ideas, processes, technologies.
- Co-innovation is a collaborative innovation partnering with customers, startup, venture capital, academia for creating next generation technology and domain solutions spread. As the name implies, it involves two (or more) entities that purposively manage mutual knowledge flows across their organizational boundaries through joint invention and commercialization activities.
- Artificial intelligence & Machine learning, IoT are the top technology focus areas for Enterprise Start-up collaboration as per NASSCOM-Infoholic Research report titled “Co-Innovation: Enterprise Start-up Collaboration”

Closed Innovation: Challenges

Organizations operate under a self-contained innovative environment

- Depend only on internal ideas coming from its R&D division
- Limited knowledge on niche technologies
- Limited options in arriving at solutions for problems
- Idea generated which are not in line with organization's core business are discarded
- Demotivated or not empowered employees
- No importance to voice of Customer
- All technology, know-how, intellectual property and processes stay under the Organization's control

Reasons to Move Away from Closed Innovation

- Companies need to be very agile and keep on innovating to stay in the competitive world. Companies like Facebook, Uber took shorter time to build a large company
- Companies like Kodak, Blockbuster, Border's who used to dominate in their domain could not stay in market
 - In 1975, Kodak invented digital photography, but it did not invest to avoid losing the main film business. A few years later it was bankrupted by this new technology
 - In 2000, Blockbuster refused to buy Netflix, in 2010 Blockbuster filed for bankruptcy protection
 - In 2001, Borders Group outsourced its online book-selling to Amazon.com. In 2011, e-books outsold print books at Amazon.com, and Borders Group filed for bankruptcy protection

For Organizations to remain competitive

- Need to be agile in adopting to new technologies
- Need to continuously innovate

"It is not the big fish which eats the small fish, it's the fast fish which eats the slow fish." – Klaus Schwab, founder and executive chairman of World Economic Forum

- **Innovation Labs**
 - generate disruptive ideas working with startups
 - internally developed products which could be of use to business units
- **Innovation Challenge**
 - obtain novel solutions to problems, from various external and internal sources through hackathon
 - opportunity to shortlist startups for future collaboration activities
- **Joint Venture**
 - increased technical expertise
- **Incubators & Accelerator**
 - Business support - engaging employees as mentors/advisors
- **Venture Capital**
 - is a private or institutional investment made into early-stage / start-up companies

Co-innovation and Open Innovation Models (2 of 2)

- Acquisitions – acquire IPs of external company
- Crowdsource – reach out to a large network of people for great ideas that serve a purpose
- Partnership with Academia
 - Internships: students from university join corporate for shorter duration to get to know business
 - Study program: consultants from corporate can attend job integrated learning / research program
 - Source of new ideas and technology
 - Invite academic researchers to work in the labs, and support publications and events
- Innovation Forums
 - provides platform to connect with customers, technology experts from venture capital, startups, academic partners, research units, organization to discuss innovation in emerging technologies that impact businesses
 - get access to cutting edge technologies and new business models
- Partnership with Customers
 - Customer bring in their requirements and work together on solutions

Co-innovation and Open innovation partnerships help exploit mutual capabilities

- **Startups, Academia**

- Agile in experimenting with different approaches being closer to users and customers
- Faster development, testing and delivery of novel products and services
- Faster response to changing requirements
- Expertise in niche technologies

- **Corporates**

- Larger market reach
- Availability of experience and expertise to successfully commercialize new products
- Availability of Regulatory and IP expertise
- Availability of financial funds for R&D

Corporate–Startup Collaborations Benefits (1 of 2)

Benefits for corporate

- Revitalizing corporate culture
 - Startups help create openness to innovation among employees as they become exposed to agile teams and lean approaches
 - Startups help to create awareness of future trends and the potential of new technologies
- Innovating big brands
 - Startups modify the external perception of corporate brands among their customers, partners and future employees
- Solving business problems
 - Startups help develop new innovative solutions and products quicker
 - Startups bring new technologies, business models and talent to the table
- Expanding into future markets
 - Startups can be an important conduit to expand business operations into new markets
 - Startups will have the capabilities and agility to compete in newly emerging sectors
- Customer focus
 - Startups can adapt and customize solutions as per customer need very quickly, which helps corporate to serve its customers better

Corporate–Startup Collaborations Benefits (2 of 2)

Benefits for Startups

- Revenues and independence from external capital
 - For startups revenue often is a key incentive. Corporates can invest considerable amounts of money for products
- Success story for future sales
 - Corporate customers significantly enhance the reputation of startups and serve as reference cases for future sales
- Expand market in foreign countries
 - Offers the possibility to expand into other countries by partnering with the corporate's local subsidiaries
- Attractive retail sales channel
 - Corporate infrastructure and its existing clients, allows faster scaling of the start-up business model than the start-up could achieve on its own
- Access to proprietary assets
 - Partnering with a corporate can enable a start-up to utilize corporate assets and create new business opportunities
- Market knowledge and mentoring
 - Corporate with its vast experience can mentor startup

Examples (1 of 2)

- Lego has 'Create and Share' site and 'Ideas' site that lets the users to share their designs, ideas. It invites users to work with internal innovation team. This open innovation approach is one of the key to be a successful brand.
- Mozilla's Firefox web browser is developed by Mozilla's worldwide community of coders and other professionals in open source software development. Open source software development is an open innovation. The source code is open, and anyone can contribute to the software development.
- Facebook - organizes hackathons for their employees to generate new ideas. This is an example of internal open innovation.
- Procter & Gamble has 'connect and develop' strategy through which company connect with suppliers, retailers, academic, research institution, VC firms, individual entrepreneurs etc. and gather ideas.

Examples (2 of 2)

- GE conducts open innovation challenges and initiatives on their open innovation page which aim for external open innovation and new ideas. The prizes for these challenges include scholarships, monetary awards, chances to work with GE on projects, and paid internships
- TCS - Co innovation network (COIN) cross-pollinate ideas and practices from external entities such as, academic institutions, startups, venture capital, strategic alliance partners, and key customers
- TATA has www.tatainnoverse.com based on Open Innovation principle which provides a platform to people to demonstrate skills and creativity to develop novel solutions to solve industry challenges
- TCS has set up Digital Impact Square (DISQ) www.digitalimpactsquare.com/, an open innovation center in Nashik. It solves social problems in local communities. encourages innovation using digital technologies to address social challenges prevalent in health and hygiene, housing, transportation, food, agriculture etc.

- Co innovation & open innovation involves sharing know-how and inventions among collaborators hence IP should be properly managed at beginning of the collaboration
- **Background IP**
 - Existing IP belonging to the different entities before the collaboration agreements are executed
 - The restrictions for access to background IP should be clearly defined and agreed
- **Foreground IP**
 - IP created with the scope of the collaboration by the entities
 - Access rights to foreground IP generated by the entities if required for the collaboration should be covered in the agreement
- **Side ground IP**
 - IP created by any of the entities during the collaboration but is not considered as part of agreement
- **Post ground IP**
 - IP created by any of the entities after the completion of collaboration
- Any issues and expectations relating to IP needs to be discussed between the collaborators before entering into agreement

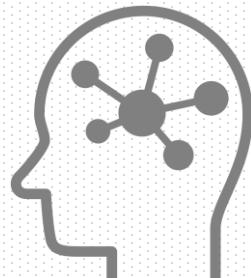
Summary

- Co-innovation and open innovation partnerships between technology startups, academia and corporates is key for fostering innovation. No company has all the competencies it needs
- Collaboration can lead to mutual benefits - helps corporates to enter and create new markets and startups and academia to develop their products/solution and to grow
- Collaborating entities need to identify the right co-innovation and open innovation model as per their engagement which could be joint ventures, incubation, acceleration or partnership, acquisition
- For the successful engagement roles and responsibilities needs to be clearly defined by the collaborating entities
- IP aspects as part of collaboration needs to be carefully managed

References

- Co-Innovation: Enterprise Start-up Collaboration – NASSCOM-Infoholic Research -
14299-coinnovationenterprise-start-up-collaboration.pdf
- Why Your Company Should Embrace Co-Creation
<https://www.forbes.com/sites/esade/2018/09/24/why-your-company-should-embrace-co-creation/#997ad991bddf>

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title: **Technology Innovation – Case Studies**

Contact Hours: 2 Hours

Lesson Number: 15

Author Name: Santosh Mohanty

Case Study #1

Jile™ – A Scalable Agile DevOps Product

Jile™: The Story

The screenshot shows a Microsoft Edge browser window displaying the Jile website at jile.io/about-us/. The page has a header with the Jile logo, navigation links for PRODUCT, SOLUTIONS, PRICING, RESOURCES, ABOUT, SIGN IN, and TRY NOW, and a background image of a woman's face. The main content area features a large image of a typewriter with a play button overlay, a potted plant, glasses, and a latte. To the right, there is a text block and another image of a woman's face.

All it takes is an idea! And behind every innovation, there are impediments. Amidst discussions and debates around Agile adoption in enterprises, we at TCS realized that Agile seems to work better for smaller co-located teams than with large distributed teams! The challenge was not only to scale across multiple teams, geographies and time-boxes, but also to align the overall enterprises' business strategy to what is being built by distributed teams.

While the market was buzzing with different Agile tools and frameworks, there was none that could completely address the real difficulty of scaling across various dimensions. And so, we built something unique and comprehensive, yet simple and relevant in today's scenario.

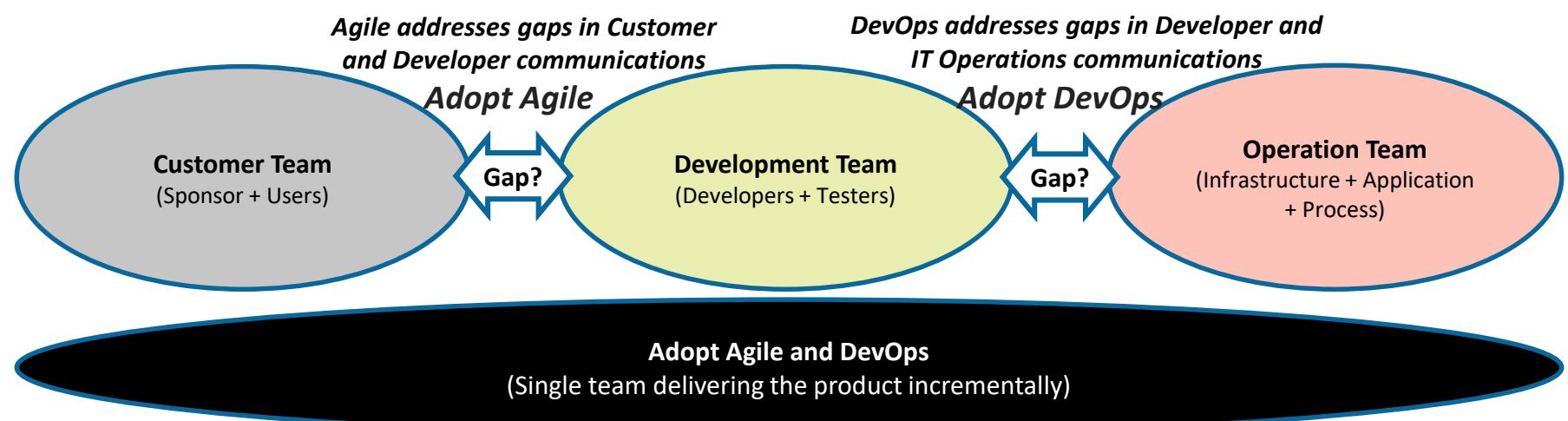
Enter Jile! The first Agile DevOps product on cloud, by Agile teams and for Agile teams, that will help you scale from single teams to large programs and portfolios to drive change. While striving to provide you the best-in-class product, we have been understanding evolving needs and continuously refining Jile, to present you not just a product, but an experience! We, at Jile, aspire to give you a platform that will help you plan, deliver and track Agile programs, thus adding value incrementally to your business.

Search the web and Windows 1:49 PM
11/15/2019

Introduction to Agile and DevOps

Agile Methodology involves continuous iteration of development and testing in the Software Development Life Cycle (SDLC) process. The focus is on incremental and evolutionary development. The development process breaks the product into smaller pieces and integrates them for final testing. Agile method gives priority to develop a working system that delivers value to the customer. It is ideal when requirements at detail level is evolving.

DevOps is a software development method which focuses on communication, integration, and collaboration among IT professionals that enables rapid deployment of products. It promotes the culture of collaboration between Development team and Operations team and allows the code to deploy on production in an automated way. This results in increasing an organization's speed to deliver application and services.



Jile™: The Introduction

In this digital world, the challenge is for organizations having multiple structures, methodologies and practices to adopt and scale Agile, that too in a consistent and repeatable manner.

Jile™ (<https://www.jile.io>) is a scalable, Agile DevOps product built for product-centric delivery that can also be used by Agile teams practicing project-centric delivery. It is an on-the-cloud, single product of an enterprise Agile planning tool that also orchestrates and automates the DevOps pipeline, and includes test management capabilities.

With Jile™, organizations of any size and in any part of their Agile journey can adopt Agile, scale from teams to programs to portfolios, and finally, transform into a truly agile enterprise. Jile ensures ease of Agile planning at enterprise level, while keeping the team level simple and comprehensive. Jile enables an enterprise to align their IT initiatives with their core business objectives and subsequently equips teams to deliver continuous value to their stakeholders. Jile applies Agile methods to large-scale, multi-site program execution, which requires scalable Agile approaches, empowering companies in their digital transformation.

Jile™ 3.0 (released on May 2019) is a powerful and flexible platform that can help organizations of all sizes deliver valuable software by adopting and accelerating Agile software development, scaling Agile across the enterprise, and transforming them into new age Digital enterprises. Jile comes from the foundry of Tata Consultancy Services Ltd. (www.tcs.com)

Business Model Canvas: Jile™

		The Business Model Canvas				
		Design for: Org. A		Design by: Org. B	Version: x.y.z	Date: dd-mm-yyyy
Front Office		Key Partners TCS as Partner <ul style="list-style-type: none">Sales and Delivery leadership teamTCS Agile ChampionsTCS Finance, Legal, and Procurement team Other Partners <ul style="list-style-type: none">IT Service ProvidersSoftware ResellersSoftware DistributorsAnalysts & Agile ExpertsUser communities Key Vendors <ul style="list-style-type: none">Payment GatewayCollaboration partnerSocial Media platforms	Key Activities <ul style="list-style-type: none">Developing capabilities for Agile frameworksCloud deploymentP&L managementMarketing managementDeveloping plug-ins for automation products Key Resources <ul style="list-style-type: none">Agile DevOps expertsFinancial Investment: Up to \$X M over 3 yearsAccess to TCS Sales and Marketing teamsMarketing utilities for content, video & blogs	Value Propositions <ul style="list-style-type: none">Jile is world's first product that scales Agile across 5 dimensions: Teams, Backlogs, Timebox, Quality & DevOps.Jile is designed for multi-team agile delivery with supporting frameworksTeams can start small and then scale by bringing multiple teams and performing synchronized delivery.Seamless Integration of DevOpsEasy to try, buy and use	Customer Relationships <ul style="list-style-type: none">Leverage TCS Customer relationships to make Jile as platform of choiceLeverage social media & online marketing to build a strong online Channels <ul style="list-style-type: none">Sales Channels<ul style="list-style-type: none">CPs, BRMs, Geo Sales for TCS CustomersDirect Online & B2BGTM PartnersMarketing Channels<ul style="list-style-type: none">Online, PhysicalAnalysts, Events	Customer Segments Target Market <ul style="list-style-type: none">Agile DevOps Practitioners in global market space TCS Customers <ul style="list-style-type: none">ADM Other Customers <ul style="list-style-type: none">SMBsIT Service ProvidersTechnology InstitutesSmall (Agile) teams
Back Office		Cost Structure <ul style="list-style-type: none">Engineering, Product Management & Support, and infrastructureSales & Marketing teamsCloud infrastructureSales incentives & partner commissions, Payment processors' feesTravel, marketing, events, legal, etc.	Revenue Streams <ul style="list-style-type: none">Direct-online buy B2B/B2C customers (monthly subscribers)Bulk purchase by enterprise customersAgile certification on Jile & training feesFree trial followed by online subscription (per-user, per-month)Potential volume incentives, promotional pricingRevenue share (commissions) for external partnersSales incentives for direct sales teams			
Customer Block (Customer Segments, Channels and Customer Relationships) Infrastructure Block (Activities, Resources and Partners) Return on Investment Block (Revenue and Cost)						

Experience Jile™ @ www.jile.io

The screenshot shows the Jile website homepage. At the top, there's a navigation bar with links for PRODUCT, SOLUTIONS, PRICING, RESOURCES, ABOUT, SIGN IN, and TRY NOW. Below the navigation is a large banner featuring a group of five professionals (three men and two women) working together around a laptop. A blue callout box on the left side of the banner reads "Enterprise Agile Planning Tool" and "jile". A yellow callout box next to it reads "DevOps Pipeline Automation". Below these boxes are buttons for "LATEST RELEASE" and "WATCH VIDEO". To the right of the banner is a large monitor displaying the Jile software interface, which includes a sidebar with icons for HOME, STRATEGY, PRODUCT, RELEASE, DOCUMENTS, and REPORTS. The main area shows a user profile for "Ryan Mathew" and sections for "VISION", "ELOBRATE", "PLAN", and "DELIVER". To the right of the monitor is a tablet displaying the same software interface. The bottom of the page features a Windows taskbar with various pinned icons and a search bar that says "Search the web and Windows". The date and time in the bottom right corner are "11/15/2019 1:42 PM".

Case Study #2

CureFit – A Platform to Stay Healthy

CureFit: Objectives and Activities

Cure.fit (CureFit Healthcare Pvt. Ltd) is a preventive and curative healthcare & fitness company headquartered in Bengaluru, India.

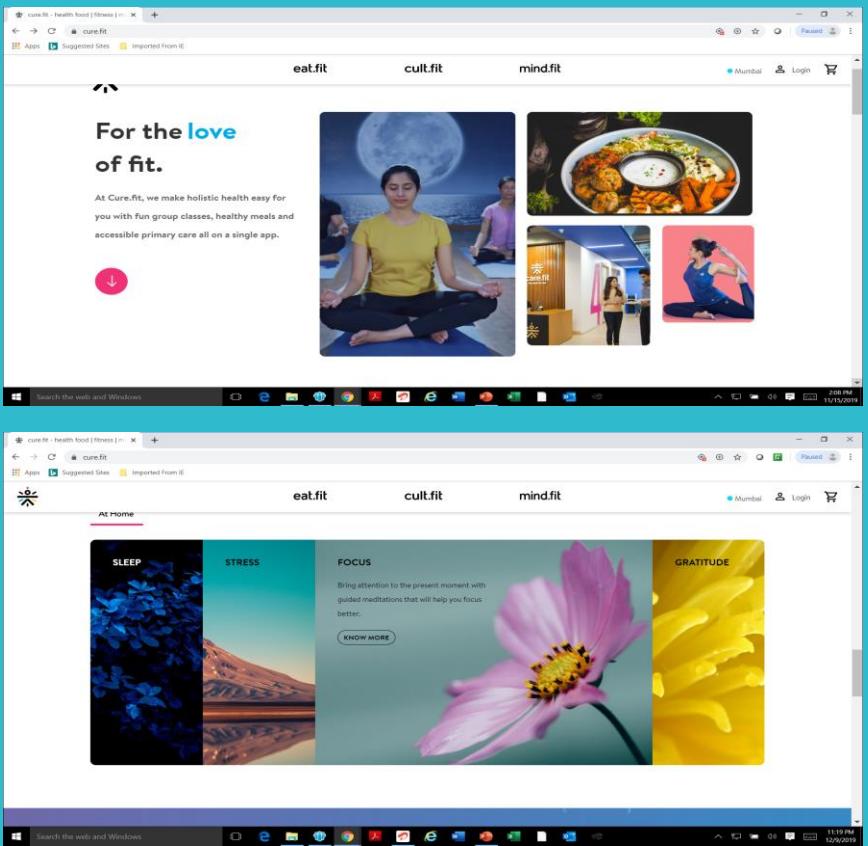
It delivers physical and mental well being across 4 flagship verticals:

- **Cult.fit** is a chain of group workout fitness centres and it comprises different workout formats such as Zumba, Yoga, Boxing, Strength & Conditioning, Sports Conditioning, HRX by Hrithik Roshan, Prowl by Tiger Shroff, Football and Running. It also offers **do-it-yourself** packs on the **cure.fit app**.
- **Eat.fit** is an online food ordering and delivery platform that delivers daily health meals. It also offers weekly and monthly subscriptions.
- **Mind.fit** is a chain of mental fitness centres that comprises Yoga and Meditation as its primary offerings. It also provides **do-it-yourself** packs, such as Sleep Stories, Yoga Nidra and Pranayama, on the **cure.fit app**.
- **Care.fit** provides doctor consultations and full-body checkup at its health centre with Pharmacy & Diagnostics facility (Ultrasound, ECG, TMT, X-ray, Blood & Urine tests). Care.fit offers zero wait time, 24x7 video consultation and free follow up for the users.

Currently, cure.fit is serviceable in Bengaluru, Hyderabad, Delhi and Gurugram and Mumbai. The cure.fit app is available on iOS and Android devices. It houses **free do-it-yourself** videos on fitness workouts from home. The app also allows users to book classes, and track progress through a simplified activity points system. In March 2017, the company launched a unique HRX workout with Hrithik Roshan. In March 2018, it partnered with Tiger Shroff's clothing line PROWL for a new fitness program comprising a mix of combat, dance and functional fitness.

About CureFit

- Company Categories: Healthcare and Wellness
- Headquarter: Bengaluru
- Founded: July 01, 2016
- Founders: Ankit Nagori and Mukesh Bansal
- IPO Status: Private (as of Nov 15, 2019)
- Company Type: For Profit
- Website: www.cure.fit
- Tagline: #BeBetterEveryDay
- Number of Employees: Around 1000
- Legal Name: Diverse Retails Private Limited
- Facebook: <https://www.facebook.com/BeCureFit>
- Twitter: <https://twitter.com/becurefit>
- Contact Email: hello@cure.fit
- Phone# +91-80-30630990



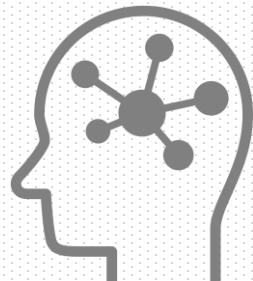
Business Model Canvas: CureFit

<p>Front Office</p> <ol style="list-style-type: none"> Customer Segments Value Propositions Channels Customer Relationships Revenue Streams 	<p>The Business Model Canvas</p> <p><i>Design for: Org. A</i></p> <p><i>Design by: Org. B</i></p> <p><i>Version: x.y.z</i></p> <p><i>Date: dd-mm-yyyy</i></p>				
<p>Back Office</p> <ol style="list-style-type: none"> Key Resources Key Activities Key Partners Cost Structure 	<p>Key Partners</p> <ul style="list-style-type: none"> Equipment provider Content provider Brand partner Event partner <p>Key Vendors</p> <ul style="list-style-type: none"> Payment Gateway Social Media platforms 	<p>Key Activities</p> <ul style="list-style-type: none"> Facility management Event management Marketing management Experts grooming and retention P&L management <p>Key Resources</p> <ul style="list-style-type: none"> Financial investments Fitness experts – physical, mental and dietary Marketing utilities for content, video and blogs 	<p>Value Propositions</p> <ul style="list-style-type: none"> High intensity movements to improve endurance, speed and athletic performance Bodyweight exercises to burn fat / build muscle Guided body exercise to improve flexibility Guided meditation for soothing sleep, better management of stress, concentration while performing any task and experiencing happiness Physical and mental fitness: diagnostic and consulting 	<p>Customer Relationships</p> <ul style="list-style-type: none"> Team workouts Freemium options Guided workouts with no-equipment Leverage social media & online marketing to build a strong brand <p>Channels</p> <ul style="list-style-type: none"> Sales Channels Brand partnership Direct Online B2B <p>Marketing Channels</p> <ul style="list-style-type: none"> Event sponsorship Conducting event 	<p>Customer Segments</p> <p>Metros in India</p> <ul style="list-style-type: none"> Workouts at centre Diagnostic at centre <p>Workouts at Home</p> <p>Fitness-related online consulting</p>
<p>Customer Block (Customer Segments, Channels and Customer Relationships)</p> <p>Infrastructure Block (Activities, Resources and Partners)</p> <p>Return on Investment Block (Revenue and Cost)</p>	<p>Cost Structure</p> <ul style="list-style-type: none"> Infrastructure Sales & Marketing teams Employee/Contractor salary/incentives Sales incentives & partner commissions, Payment processors' fees Travel, marketing, events, legal, etc. 		<p>Revenue Streams</p> <ul style="list-style-type: none"> Direct-online buy B2B/B2C customers Group subscription Workouts at centre Workouts at home Diagnostic and consulting 		

References

- Business Model Generation, Alexander Osterwalder and Yves Pigneur, John Wiley and Sons.
- Cure.fit portal (<https://www.cure.fit>)
- Jile portal (<https://www.jile.io>)

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:
Innovation, Incubation and Entrepreneurship in Corporate Context

Contact Hours: 1 Hour

Lesson Number: 16

Author Name: Santosh Mohanty

Objective of the Lesson

The objective of this lesson is to encourage corporates to develop entrepreneurial mindset so that they can get into a newer market or launch a newer product in continuity. The lesson describes

- Innovation, incubation and entrepreneurship in a corporate context
- Context and approach to plan and mature new product or new service in a corporate
- Identifies the horizontal strengths of a corporate that is immediately available to support a new product / new service initiative
- Discusses the potential challenges in a corporate setting to drive new initiatives and the ways to address these challenges

Innovation in Corporate Context

In previous lessons, we have learnt about lifecycle of innovation, co-innovation, open innovation, challenges in innovation, and innovation assessment. In this lesson, we understand why a corporate needs to develop intrapreneurship and the need of incubation to support innovators. The following is a list of six principles that supports a lasting innovation culture in a corporate setup.

- **Startup as a method:** Use startups' principles and practices as a method for developing new products under conditions of uncertainty. Managing uncertainty must underpin the innovation process of a corporate designs.
- **Searching vs. executing:** Innovation process should not direct teams to execute; rather teams should be encouraged to search.
- **Business model matters:** A great business model involves making products that delivers value. This is the magic corporate should search and find before launching products at scale.
- **Right thing, right time:** Navigate uncertainty by doing the right things at the right time.
- **Right question, right time:** A good innovation process helps managers understand where their teams are on their innovation journey and helps them make decisions about what to do next.
- **Evidence based decisions:** Innovation teams should make decisions based on evidence and change directions based on learnings.

Incubation in Corporate Context

The long-term success of large established companies depends not only on their ability to leverage their current capabilities and improve efficiency but also on taking risks and exploring unknown areas. To meet this challenge, established companies are increasingly relying on corporate incubators to fuel innovation and growth with entrepreneurial mindset.

A corporate incubator acts as a “specialized corporate unit that hatches new businesses by providing physical resources and support to the innovators”. It primarily supports during the development cycle of PoC, PoT, Prototype and Pilot. In the process, it helps in building and grooming new intrapreneurs.

Indicative Support Functions:

- Enterprise Business Context & Competition
- Product Funding & Investment
- Product positioning
- Integration of product in the technology ecosystem
- Creation and Protection of Intellectual Property
- Legal and Contracts
- Risk Identification and Mitigation
- Business plan preparation

Entrepreneurship on Corporate Context

Entrepreneurship is the process of setting up one's own business as distinct from pursuing any other economic activity, be it employment or practicing some profession. The person who set-up the business is called an entrepreneur. The output of the process, that is, the business unit is called an enterprise.

Entrepreneurs produce goods and services that meet the needs of the society. Every entrepreneurial action results in income and wealth generation. Many times, innovations led entrepreneurship bring creative disruption to the existing dominant options in the market through technological breakthroughs (for example, photocopy machine vs. carbon paper; typewriter vs. digital print; mobile vs. landline; and many others).

Entrepreneurs in developing countries may not be pioneering always in introducing radical innovations, they may be the pilot adopters of technologies developed elsewhere to provide better, faster, cost-effective and environment friendly options.

Every corporate desires to promote and groom entrepreneurs within the organisation (called 'intrapreneurs') to launch and scale innovative new products, solutions and services in the existing or new markets. While the entrepreneurial initiatives in the corporate leverage the common management structure (for example, HR, Finance, Legal,...), there is always a fear factor of complacency, existing perception in the market, risk taking appetite, and longevity against sustained challenges.

New Product and Service Initiative: The Context

- Any corporate at a given point of time, has certain products and services positioned in a select set of markets (geography / consumer category)
- It strives to drive ambitious business plan with a near-term, mid-term and long-term focus towards its growth and transformation.
- The growth and transformation may come through scaling the existing business by expanding market, introducing new product or service or a combination of both.
- The decision to expand business or focus on a new or adjacent area is based on understanding the market and discovering the customer needs.
- Corporates need a framework to develop and manage new product and service initiatives at scale.

New Product and Service Initiative: The Approach

Once there is a fair understanding of the market and potential opportunities, business goes through a basic justification on where to invest for further exploration.

The exploration leads to Proof-of-Concept (POC), Proof of Technology (POT) and Prototypes. A reasonable success on Prototypes leads to Pilots (Controlled launch in the market). The success of Pilots is a critical threshold where business goes through another justification to decide on the continuity of focus and if so, a business plan to scale and penetrate in the market with sustainable value proposition.

The business plan typically covers customer segments addressed, competitors, value proposition, financial returns, sales & marketing and situational state that would lead to product retirements.

The end-to-end approach is called New Product Initiative (NPI). In the contemporary digital age, technology gets obsolesce in a short cycle. Hence, launching new product/service, scaling it in the market and exercising the retirement, requires continuous innovation, agile product management and discipline operation.

Key Dimensions for Consideration

Focus Areas

- Objectives, Problem Statement
- Market & Customer Discovery
- Enterprise Business Context & Competition
- Product Funding & Investment
- Product Roadmap Strategy and Partnership
- Product Management, Marketing & Sale
- Revenue, Profits & Value
- Product Development, Technology & Architecture
- Intellectual Property
- Legal and Contracts
- Risk Identification and Mitigation
- Product Sustenance and End-of-Support

Product Readiness Maturity

- Understand
- Discover
- Proof
- Prototype
- Pilot
- GTM (Go-To-Market)
- Sustain

Gaining Knowledge across Focus Areas while Maturing the New Product Initiative

	Understand	Discover	Proof	Prototype	Pilot	GTM	Sustain
Objectives, Problem Statement	*	**	**	***	****	*****	*****
Market & Customer Discovery	*	**	**	***	****	*****	*****
Enterprise Business Context & Competition	**	**	**	***	****	*****	*****
Product Funding & Investment	*	*	*	*	***	*****	*****
Product Roadmap Strategy & Partnership			*	*	**	*****	*****
Product Management, Marketing & Sales				*	*	*****	*****
Revenue, Profits & Value				*	**	*****	*****
Product Development, Technology & Architecture		*	**	***	****	*****	*****
Intellectual Property	*	**	**	***	****	*****	*****
Legal and Contracts	*	*	*	*	***	*****	*****
Risk Identification and Mitigation	*	*	*	**	***	*****	*****
Product Sustenance and End-of-Support	*	**	**	***	****	*****	*****

Knowledge/Experience Level: *: Basic Knowledge; **: Comparable Knowledge; ***: Depth in Knowledge; ****: Depth in Ecosystem Knowledge; *****: Differentiated Knowledge



New Product and Service Initiative: A Case Study (<https://digitate.com/>)

Ignio™ is a cognitive automation solution for IT Operations that prevents outages before they happen. It can rapidly identify root causes and automate routine tasks. It combines enterprise business context and pre-built knowledge about IT infrastructure technologies to enable better decision-making and ultimately solve many IT operations challenges.

The key use cases that ignio is designed to solve are rapid root cause isolation, automation of tasks and predictive impact analysis. It is designed to integrate with existing IT enterprise infrastructure and applications.

The ITSM and ITOM agnostic ignio cognitive platform is deployed on an organization's existing instrumentation layer, providing value without requiring changes to the existing systems.

Digitate is a new venture of Tata Consultancy Services (TCS). It was founded in 2015 as a wholly-owned entity under TCS to build next-generation products. Its first product is **ignio™**, a cognitive automation platform for enterprise IT. The headquarter is in Santa Clara, California and Pune, India.

Further information can be accessed through the website: <https://digitate.com/>

Summary

This lesson discusses on the approach to promote and execute innovation in a corporate. It explains

- Innovation in a corporate context
- Incubation in a corporate context
- Entrepreneurship in a corporate context
- New Product and Service Initiative – The context
- New Product and Service Initiative – The Approach
- Key Dimensions for consideration
- Maturing the New Product Initiative
- New Product Initiative in an Enterprise – A Case Study (ignio™)

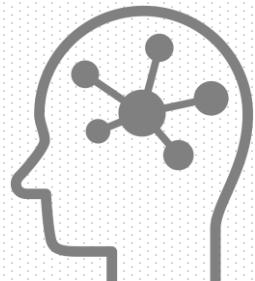
Key attributes for consideration

- Availability of existing leadership
- Availability of functional groups like R&D, HR, Finance, IP & Legal, Sales and Marketing
- Availability of Customer Contact
- Availability of fund to invest
- Potential challenges:
 - Mindshare with existing customers and market segments
 - Risk taking appetite of the management team
 - Culture of entrepreneurship

References

- <https://digitate.com/>
- <https://www.entrepreneur.com/encyclopedia/business-incubator>
- <https://www.forbes.com/sites/tendayiviki/2018/03/26/six-principles-corporate-innovation-process/#44fc91b44f45>

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:
Technology Driven Social Innovation and Entrepreneurship

Contact Hours: 1 Hour

Lesson Number: 17

Author Name: Santosh Mohanty

Objective of the Lesson

The objective of this lesson is to motivate entrepreneurs to identify key social issues and bring innovative technology interventions to solve these issues at scale.

The lesson introduces a framework to guide entrepreneurs for technology led social innovation.

An example of a Social Innovation Platform is discussed.

You must be the change you want to see in the world.

Mahatma Gandhi

In a free enterprise, the community is not just another stakeholder in business but is in fact the very purpose of its existence.

Jamsetji Tata

No success or achievements in material terms is worthwhile unless it serves the 'needs' or 'interests' of the country and its people and is achieved by fair and honest means.

JRD Tata

Introduction to Social Innovation

A broad definition of social innovation is ‘the application of innovative, practical, sustainable, market-based approaches to benefit society in general, and low-income or underserved populations in particular’.

Social innovation means being more strategic, more ambitious and more collaborative in how access and opportunity can be provided for billions of low-income people to participate in the global economy.

Socially innovative organisation typically follows four steps – identify, design, learn and scale. Though it is quite analogous to traditional business development processes, when these steps are applied to a social innovation opportunity, important differences emerge.

There is a growing expectations among other stakeholders for the private sector to become more deeply involved in solving pressing social challenges. Governments can create the right incentives through fiscal and public policy or by offering catalytic funding to help new entrants take initial steps. Networks can bring together companies and other social innovators to invest in their knowledge and capacities and promote a common language and collective action. Investors can play an important role by taking a longer-term view and asking right questions to the boards.

A Framework for Implementing Social Innovation

← Partner →

Scale

- Leverage technology for scale
- Create a center of excellence to support scale
- Find new opportunities to create business value

Learn

- Embrace experimentation
- Create robust learning loops
- Define and measure performance

Design

- Focus on the real problem being solved
- Offer funding and incubation support
- Engage a cross-functional change management team

Identify

- Mobilise teams around a leadership vision
- Co-create with your future leaders
- Empower the front lines

A social innovation journey starts with unearthing opportunities with the potential to contribute to a company's strategic objectives. These ideas may come from numerous sources within the company – employees, the leadership, and from front-line business operations. Significantly, ideas can also be generated from beyond the company, including supply chain partners, civil society actors and other key stakeholders in operating markets. The key drivers are

- Mobilise teams around a leadership vision
 - *Senior leadership has an important role to play in igniting social innovation. They can outline a long-term vision for how this can support a company's business strategy and set goals that incentivize business units to generate and pursue opportunities. The leadership needs to come forward to participate in the initiative to provide guidance and motivation to the team.*
- Co-create with your future leaders
 - *Employees can be a vital source of socially innovative ideas. Companies can engage employees in idea generation through development programs, competitions, awards or intrapreneurship workshops.*
- Empower the front lines
 - *Business units and local teams interact closely with consumers, communities and other societal stakeholders in their day-to-day work. If empowered, they become successful "intrapreneurs" who can spot high-potential social innovation opportunities relevant to day-to-day business.*

Companies need a robust yet flexible design process to convert ideas into feasible concepts, prototypes or business models. Social innovation opportunities almost invariably demand collaborations with external stakeholders and business models that differ from business as usual. It may take longer to get to market and to reach profitability. Hence, opportunities may need design and incubation support that sits outside of established structures. The key drivers are

- Focus on the real problem being solved
 - *Internal structures that work well in a “business-as-usual” scenario may not be sufficiently equipped to incubate socially innovative ideas. As a result, ideas can get stuck within a large company. Hence, practitioners have often either refine existing structures or create new ones.*
- Offer incubation support
 - *Socially innovative ideas often need more time to get to market and reach profitability. Companies can support their scoping and implementation through dedicated financial resources and targeting lesser financial performance in the short term.*
- Engage a cross-functional change management team
 - *An effective change management process is often a key ingredient to make social innovation successful. Collaboration between internal champions with executive authority and functional expertise is important to drive ideas forward. It is also important for the cross-functional team to factor the feedback that comes from market interaction.*

The gestation period for a social innovation to succeed may take long. Therefore continuous learning and factoring the same into plan and action is critical to path of success. The learning comes from rapid prototyping, field testing and information while interacting in the market. Factoring the learning into plan and action requires open mindset, willingness to rethink on hypothesis based on market experimentation and signal, and flexible metrics to track performance and measure outcomes. The key drivers are

- Embrace experimentation
 - *Companies can test a portfolio of new ideas in small pilots. These can then be regularly reassessed, with some being halted and others scaled up as outcomes become clear.*
- Create robust learning loops
 - *Many valuable insights on how to make products and business models more robust will surface as initiatives progress. Companies will benefit from establishing robust processes that ensure lessons are captured and transferred back to the company so that products and services can be improved.*
- Define and measure performance
 - *To effectively monitor performance and refine results, it requires clearly defined business and social outcomes. Whenever possible, the Key Performance Indicators should be kept simple, while measuring both business and social performance.*

Achieving success in pilot and creating a niche space in the market is the fundamental requirements to scale. However, scaling has its own challenges. Unless the value is seen as transformational in the longer term, putting the right focus and resource to drive the scaling may get lukewarm attention. The key drivers are

- Leverage technology for scale
 - *Companies should assess their business models on a regular basis and make adjustment to pick up growth. This includes making continuous upgrades to products, processes, or internal structures as well as changing external partners if necessary.*
- Create a center of excellence to support scale
 - *Establishing a centre of excellence can help companies identify and share best practices and centralize tasks that support growth, such as establishing partnerships and measuring results.*
- Find new opportunities to create economic value
 - *Social innovation need not be a one-off project or initiative within a company. With an entrepreneurial mindset, it can be an evolving process to generate new sources of social value while supporting business growth and market competitiveness. Profiling and segmenting market is key to understand and identify the social and economic value that is of interest and important for a given strata.*

- Partnership is about establishing strong and clearly defined relationships with other entities that bring in complementary assets, resources, skills and expertise.
- Partnering with the right people decreases the likelihood of “reinventing the wheel” and avoiding mistakes others have previously made.
- Partners should provide market intelligence and specialized expertise that does not exist inside the company to maximize the chances of designing an appropriate and scalable solution.
- Partnership can bring solution and process capabilities in the supplementary areas of the ecosystem that is required for experimenting, piloting or scaling the innovation throughput.
- Inclusive practices such as measuring social impact and designing services for low-income customer segments, may not be the strength of many corporates. One can partner with social enterprises, civil society and other actors who have established trusted relationships with underserved populations and have built business models that effectively serve these markets.
- Successful partnerships are two-way streets: while a company has a lot to offer a partner in terms of its geographic reach, human capital, technology and distribution infrastructure, it has much to gain as well.

DISQ™: Digital Impact Square (A Social Innovation Platform from TCS)

Digital Impact Square (DISQ), A Tata Consultancy Services (TCS) Foundation Initiative, is an open social innovation center - in the city of Nashik, Maharashtra. DISQ encourages innovation using digital technologies to address social challenges prevalent in Health and Hygiene, Housing and Transportation, Food and Agriculture, Water and Environment, Financial and Personal Security, Citizen Empowerment and Transparency, Education and Skills Development across India. These challenges are drawn from the voice of citizens, domain experts, local administration and government.

This unique model for collaboration is in part inspired by the MIT Media Lab's Camera Culture research group's previous work in India to encourage innovators, conducted in collaboration with TCS, the local government and citizen representatives in Nashik.

DISQ™: Salient Features

- Is a living lab where research and technology from academia and industry influences everyday life
- Fosters a culture of innovation through a series of sustained innovation cycles
- Accelerates the journey of many from being idea creators to entrepreneurs, researchers or corporate leaders

This lesson discusses the importance of technology driven social innovation and entrepreneurship. The lesson covers

- Introduction to social innovation
- A framework to implement social innovation
 - Identify (Mobilise, Co-create and Empower team)
 - Design (Problem focus, Funding support and Change management)
 - Learn (Embrace challenges)
 - Scale (Capability, Capacity and Effectiveness)
 - Partner (Accelerate market penetration and scale)
- A Case Study (DISQ™) of Social Innovation Platform is tabled

References

- Social Innovation: A Guide to Achieving Corporate and Societal Value (Insight Report, World Economic Forum, 2016)
- www.digitalimpactsquare.com

2.11: Innovation, IP Management and Entrepreneurship



Lesson Title:

Manage Innovation, IP and Entrepreneurship Programs – Processes, Governance and Tools



Contact Hours: 3 Hours



Lesson Number: 18



Author Name: Shekhar Guha

Objective of the Lesson

- The objective of this lesson is to introduce the concept of managing entrepreneurship programs with focus on their inherent innovations and IP rights, to ensure that the program is well managed and governed, which in turn enables key success factors for entrepreneurial ventures to flourish in the era of Industry 4.0.

Setting up an Innovation, IP and Entrepreneurship Program

- Innovation lifecycle is intrinsically interwoven with entrepreneurship, and IP is an integral part of the lifecycle of innovation. Research on business-sustainable ideas gives rise to the innovations that an entrepreneur would see potential value in by incorporating into the business venture.
- Having established an entrepreneurship interwoven with innovation and intellectual property rights, it is necessary to set up a program that involves processes, governance and tools to manage that program.
- This will enable the entrepreneur to objectively manage the entrepreneurship in a well-planned and strategic manner. All business stakeholders need to be exhaustively identified and their involvement, responsibility and accountability laid out clearly, for which a standard RACI exercise may be employed.

Aspects of Innovation, IP and Entrepreneurship Program – Broad Perspective

An entrepreneurship program needs careful thinking, planning and execution to initiate, operate and govern. Following is a non-exhaustive list of aspects to cover:

- *Business plan*
- *People management policies, principles, processes, tools*
- *Livelihood, compensation and incentive management framework*
- *Talent acquisition, development, retention and attrition*
- *Learning processes, tools, assets development*
- *Research framework and operating processes*
- *Innovation and IP policy creation and maintenance*
- *Networking and relationship management and branding focus*
- *Enterprise administration policy, processes, procedures and methods*
- *Financial management processes*
- *Marketing policy and principles*
- *Information management framework*
- *Media management guidelines*
- *Legal & contracts management*
- *Environmental, community and social responsibilities guidelines*

Each of the above components of a program are elaborate subjects and need to be well understood so that an entrepreneur may make informed and judicious decisions on how much or how little, and in what depth or what breadth to incorporate in a business venture.

Setting up a Business Plan:

- It is an essential tool for running an entrepreneurship.
- Considers what is being planned to achieve in the short term, long term and on a periodic basis, how they are planned to be achieved, and what the enablers are for the planned achievements.
- Also provides clarity on any frameworks of operation to adhere to, financial management plans, methods of governance, stakeholder responsibilities and organizational structure, among other things.
- Referred to on a periodic basis and the success of the enterprise needs to be measured as per the set of targets mentioned.
- Governance plan mentions periodicity of measurement and financial, strategic and operational reporting plans.
- Lays out strategies to address all aspects of innovation, like innovation challenges, IP protections challenges and IP risks, opportunity identification, innovation assessment, market research, segmentation & sizing, products or services positioning and their GTM strategies.
- It has adequate details to cover assessment of any innovations, valuation of any IP that are protected, and collaboration principles with any external parties or business partners that may need to be allied with to achieve the short term or long-term vision of the enterprise.

Typical composition:

- Objectives
- Strategy to achieve the vision and objective(s)
- Realization plan for carrying out the strategy
- Operating principles
- Product and services plan
- Enablers identification, strategy and implementation for realization of activities and tasks
- Governance framework for effectiveness and sustainability of the program
- Organization structure and RACI (responsible, accountable, consulted, informed) matrix
- Qualitative and quantitative targets against key performance indicators (KPI)
- Budgeting and funding outline
- Key changes from any earlier business plans with articulation of motivation for change

Key Aspects of Innovation, IP and Entrepreneurship Program

Essential to understand landscape of areas that would need attention. The following lists a set of areas.

Vision & Objective

- *Key purpose(s) of the program*
- *Driver and motivation for the program*

Scope

- *Boundaries of ecosystem, services, products and deliverables*

Strategy

- *Broad plan that articulates how the objectives are to be achieved given the scope that is defined.*
- *Initiatives for driving the program towards aligning with its objectives*

Realization

- *Specific areas of enablement*
- *Key enablers and tools*

Balanced scorecard

Broadly, targets can be categorized into the following headers, and with different kinds of businesses these can be further modified:

- *Financial targets*
- *Customer targets*
- *Internal process targets*
- *Continuous improvement and innovation targets*

Processes, frameworks, principles

- *Frameworks and guidelines*
- *Processes, procedures and methodologies*
- *Execution approach*
- *Schedule of activities*
- *Detailed articulation of deliverables and measurable output items*

Financials and budgeting (Headcount and OpEx)

- *Manpower budgets*
- *Operating expenditures*
- *Time, activities and events based distribution*

Key Aspects of Innovation, IP and Entrepreneurship Program – Governance

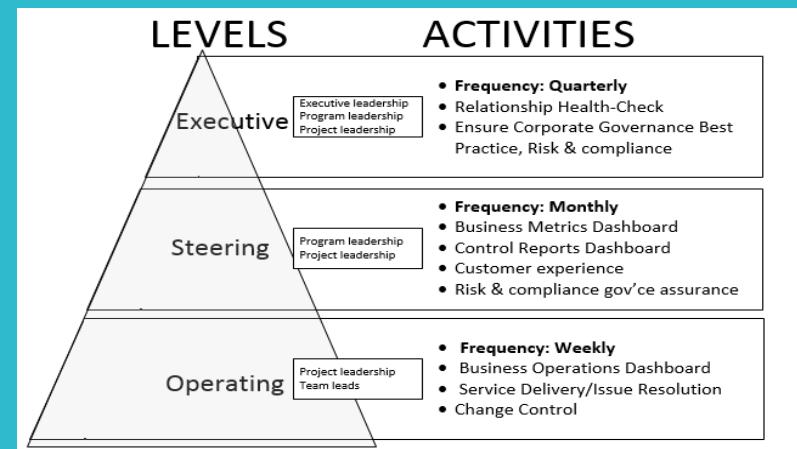
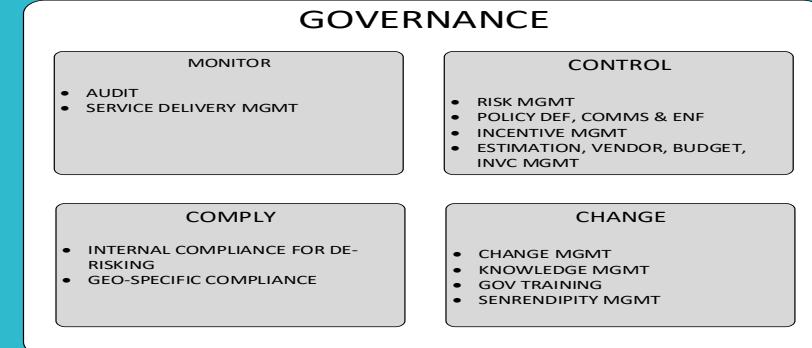
Monitor: All the relevant activities across the process life-cycle phases, two of the most important functions are **Audit** and **Service Delivery Management**

(includes periodic SWOT analysis, delivering value through services across relevant functions.

Control: All the relevant facets of a process, the most important being: Risk Management, policy definition, communication & enforcement, Incentive Management, Estimation, Vendor, Budget & Invoice Management.

Comply: Regulations & compliance of the same is of immense importance. Contemporary Governance has to have internal as well as external compliance mechanism.

Change: To manage influence of change and to facilitate and mobilize within the enterprise, capturing opportunities and leveraging the same as a growth-enabler, developing the desired culture can only be possible through Change Management, Knowledge Management, Governance Training & Awareness, and Serendipity Management.



Key Enablers and Tools

System enabled tools may be made available for all functions of the program for effective and efficient management and governance. Such enablers could be as follows:

- *People management tools*
- *Budget management tools*
- *Innovation and IP management tools*
- *Legal management tools*
- *Risk management tools*
- *Knowledge management tools*
- *Compliance management tools*
- *Asset management tools*
- *System creation tools*
- *Marketing tools*
- *Market survey and competitive intelligence tools*
- *Audit information gathering and reporting tools*
- *Competency monitoring, training asset tools*
- *Project management and schedule management tools*

Understanding and Identifying tools that enable performance of activities and tasks:

Every aspect and component of a program needs to have enablers that reduce or eliminate human interventions except where current technology is yet inadequate for purpose, and such enablers need to be actively pursued to effectively and efficiently carry out activities of such a program. There thus needs to be an active pursuit of prioritizing, acquiring or building tools for all components of a program. Some such tools are listed above.



Summary

The phenomenon of Industry 4.0 influences enterprises of all sizes and across all industries. Entrepreneurs in the current Industry 4.0 era need to be especially aware that it may not be sustainable to simply sell proprietary products; it is important to explore possibilities to sell outcome-based combinatorial solutions while exploiting their individual business ecosystems.

Innovation and IP rights are important for enterprises of all sizes. Every enterprise needs to embrace it, else the possibility of falling back and eventually failing is getting increasingly higher.

Wide distribution and heterogeneous nature of infrastructural components from different supply entities, require a robust program or programs that aims to realize the vision of the enterprise. Such a program needs to seek awareness of the role of innovation and IP rights in entrepreneurship, the importance of positioning products and / or services in the market through carrying out market research, valuation of IP that is generated and protected, seeking partnerships with other innovators, building the right IP portfolio and bringing about social innovation and betterment of the community and society at large.

With the Industry 4.0 era providing enormous innovation possibilities, the scope and possibilities of entrepreneurs to make it big is high. The number of challenges being presented is also innumerable, and with the promise of success also comes greater risks that present numerous openings for failure, and it is thus an unescapable aspect that needs a planned and governed risk management program.

A well managed, well governed entrepreneurship program that includes programs to manage innovation and IP, with the optimum number and quality of enablers and tools enables sustainable growth of an enterprise.

- <https://www.iam-media.com/patents/intellectual-property-40>

Abbreviations

Abbreviations

- **AMC:** Annual Maintenance Contract
- **ARIPO:** African Regional Intellectual Property Organization
- **BMC:** Business Model Canvas
- **BSB:** Business Strategy Blueprint
- **BSC:** Business Score Card
- **CCI:** Competition Commission of India
- **DCF:** Discounted Cash Flow
- **EoL:** End of Life
- **EPO:** European Patent Office
- **EULA:** End User License Agreement
- **FRAND:** Fair Reasonable And Non-Discriminatory
- **FTO:** Freedom to Operate
- **GI:** Geographical Indications
- **GTM:** Go To Market
- **IA:** Intellectual Asset
- **IC:** Intellectual Capital/Integrated Circuits
- **IP:** Intellectual Property
- **IPO:** Indian Patent Office
- **IPR:** Intellectual Property Rights

- **IWB:** Innovative Work Behavior
- **MEEP:** Multi Period Excess Earning Method
- **M&A:** Merger & Acquisition
- **MCD:** Market and Customer Discovery
- **MVP:** Minimum Viable Product
- **NDA:** Non-Disclosure Agreement
- **NPI:** New Product Initiative
- **PCT:** Patent Cooperation Treaty
- **PoC:** Proof of Concept
- **PoT:** Proof of Technology
- **R&D:** Research & Development
- **RoI:** Return on Investment
- **SEP:** Standard Essential Patent
- **SSO:** Standard Setting Organization
- **SWOT:** Strength-Weakness-Opportunity-Threat Analysis
- **USP:** Unique Selling Proposition
- **USPTO:** United States Patent and Trademark office
- **VC:** Venture Capitalist
- **WIPO:** World Intellectual Property Organization

Glossary

Glossary (1 of 14)

Applicant

A person who makes a patent application. Often this will be the inventor, but it need not be so. Several people can apply jointly for a patent, as can organizations.

Application (for Patent)

Papers comprising petition, specification, drawings (when required), one or more claims, oath or declaration and filing fee, whereby an applicant seeks a patent.

Assignee

The person(s) or corporate body to whom all or limited rights under a patent are legally transferred. Assignment Transfer of all or limited rights under a patent.

Assignment

The transfer of intellectual property rights from the owner of the rights to another person or organization.

Bottom Up approach

Extrapolation of sample data at segment level to arrive at market size.

Business Case Assessment

To assess an investment decision to carry out the development of the identified opportunity by way of developing a business case considering all the quantifiable and non-quantifiable factors.



Glossary (2 of 14)

Claims

A precise statement of the invention that the applicant wishes to protect. It is the monopoly rights that the applicant is trying to obtain for the invention. A main claim will define the invention in its broadest form, by including its essential technical features. Further "dependent" claims can then relate to additional features of the invention. The claims become the actual monopoly that is given when/if the patent is granted.

Competition data

Data related to competition presence in markets, their products and market share.

Commercialization

Process of realizing the benefits expected of those opportunities that successfully pass feasibility analysis.

Cost method

Based on the economic principle of “substitution”, the amount that is required to acquire, produce or recreate a similar IP asset capable of producing the same economic value.

Customer Data

Data related customer perception about a product or service.

Demographics

Mass behaviors aspects of the population.

Glossary (3 of 14)

Design Patent

A type of patent covering the shape characteristics of an object.

Description

A full and detailed explanation of the invention and how it works, filed at the Office to initiate a patent application. The description may be accompanied by one or more drawings.

Drawing

One or more specially prepared figures filed as a part of a patent application to explain and describe the invention. Drawings (or illustrations, where appropriate) are more commonly found with inventions for mechanical or electrical devices. As a rule, chemical patents will include chemical formulae in the description of the invention and/or in the examples.

Ecosystem

An Open Innovation capability contextual to the innovative initiative.

Entrepreneurial Alertness

Entrepreneurial identification/recognition of opportunities.

Environmental Trends

This analysis helps in identifying business or product gaps vis-à-vis market/customer expectations by way of analyzing various contemporary aspects.



Glossary (4 of 14)

Examiner

A patent office official who is appointed to determine the patentability of applications.

Experiments

Change in ecosystem of a system or store and observing/recording reactions from customers.

Expiry Date

The date when a patent has run its full term in a country and is no longer protected there (see also Lapse, Withdrawn).

Feasibility Assessment

Rapid & iterative experimentation to prove or disprove the business viability of an innovative initiative.

Feasibility Assessment

Rapid & iterative experimentation to prove or disprove the business viability of an opportunity.

Filing date

The date on which a full description is lodged at the Office. An important date when considering if the invention in the patent application is novel and inventive.

Freedom To Operate

Patent Search to check whether any product or process utilized or carried out by an entity is not infringing on any live patent's claim in particular jurisdiction.

Glossary (5 of 14)

Geographic

Regional aspects where people live and stay .

Grant (Patent Grant)

A temporary right given by a patent office for a specified period, to prevent anyone else from using the technology defined in the claims of a patent.

Idea

An idea is a concept that can be used to create opportunity. Usually it centers around product or service that may lead to create opportunity in business.

Idea Generation

Encompasses both new insight generation and novel idea creation, elaboration, and evaluation.

Income Method

Based on the premise that the value of a business or business asset emanates from the income that the business or asset can generate for the investor — the value of a business asset equals the estimated earnings the asset can produce (in the form of additional income or avoided costs) over its productive life.

Infringement (IP Infringement)

Carrying out an action which falls within the scope of the IP rights owned by another person, without their permission.

Glossary (6 of 14)

Injunction

A court order prohibiting a person from doing something or requiring a person to do something.

Innovation Assessment

Assessment of an Innovative initiative against a set of contextual metrics towards achieving its objective.

Innovation Strategy Formulation

Defines core innovation agenda.

Input Metrics

To measure the quantum of right activities to achieve desired result with the optimum utilization of resources.

Intellectual Assets

An investment in brands, design, technology or creative works.

Intellectual Capital

The intangible value of a business, covering its people (human capital), the value relating to its relationships (relational capital), and everything that is left when the employees go home (structural capital), of which intellectual property (IP) is but one component.

Glossary (7 of 14)

Inventive step

If a patent for an invention is to be granted, the invention must contain an inventive step. This means that the invention must not be an obvious development of what has gone before, when considered by someone who is skilled in the area of technology to which the invention relates.

License

The means by which the owner of a patent gives permission to another person to carry out an action which, without such permission, would infringe the patent. Thus, a license can allow another person to legitimately manufacture, use or sell an invention protected by a patent. In return, the patent owner will usually receive royalty payments.

Market & Customer Discovery

To understand market requirements related to customer pain-points, regulatory requirements, technology-led new opportunities, competitive landscape, analysts' viewpoints on industry trends etc.

Market Positioning

Identifying target market, target customers and unique value proposition about product vis-a-vis competition.

Market Method

This approach uses comparable transactions to measure the value of an IP right.

Market Research

The systematic and objective collection of forms of information that allows trends in market behavior to be identified and predicted.

Glossary (8 of 14)

Market Segmentation

Method to divide the market into a meaningful divisions based on behavior or pattern or tastes or future trends.

Market Sizing

Addressable market size which is relevant to the product.

Minimum Viable Product

It is the bare version of an offering that can help provide an intermediate solution to an existing problem and provides the confidence of providing the entire solution in due course.

Non-Disclosure Agreement (NDA)

Legal contract between at least two parties that outlines confidential material, knowledge, or information that the parties wish to share with one another for certain purposes, but wish to restrict access to or by third parties.

Novelty

If an application for a patent is to be granted, the invention must be novel. This means that the invention must not have been publicly disclosed, anywhere in the world, before the date of filing of the patent application (or before the priority date, if the application has one).

Observations

Information gathering based on behavior patterns of the customer and design of the store or facility.



Glossary (9 of 14)

Opportunity

Perceived means of generating economic value (i.e. profit) that have not been exploited, and are not currently being exploited by others.

Opposition

The time period allowed for an interested party to post oppositions to the grant of a patent. For example, this may be up to nine months from the date of grant of a European patent.

Output Metrics

To measure the results of innovation-investments whether that have yielded the desired result/s.

Patentability

The basic conditions of patentability, which an application must meet before it is granted, are that the invention must be novel, contain an inventive step, be capable of industrial application and not be in one of several excluded fields. In some countries certain types of inventions, e.g. computer software and plants, may be unpatentable.

Personality Traits

Personality traits of entrepreneurs and their contribution to the success of entrepreneurial ventures.

Portfolio Management

Optimizes the returns from the innovation portfolio consistent with its defined innovation strategy.

Glossary (10 of 14)

Primary Research

Gathering of data from first-hand resources like interviewing the customers, observations and so on.

Prior Knowledge

Discovery of opportunities based on prior knowledge – it triggers recognition of the value of the new information.

Prior Art

Previously used or published technology that may be referred to in a patent application or examination report.

Priority date

A patent application may claim as a priority date the filing date of an earlier patent application provided that the earlier application was (i) filed in the previous 12 months, (ii) filed by the same applicant as the later application and (iii) filed in a Convention country. Thus, the later application need not be made in the same country as the earlier one. In practice, this means that all patent applications filed in Convention countries in a single year by the same applicant and relating to the same subject matter can be given the same effective date of filing. This effective date of filing is important when considering if the invention in the patent application is novel and inventive.

Process & Technology Readiness Assessment

To assess changes/impact in the process ecosystem as well as technological readiness in terms of infrastructure, competency & cost.



Glossary (11 of 14)

Product Data

Data related to product presence in market, its value and future prospects

Product Positioning

defines where your product (item or service) stands in relation to others offering similar products and services in the marketplace as well as the mind of the consumer.

Publication

A patent application which is successfully granted will be published twice. The first time (A-publication) occurs around 18 months after the filing date of the application (or the priority date, if it has one). The application will generally be published "as filed". The second time (B-publication) occurs when the patent is granted and publishes the application in its final form.

Psychographics

behavioral aspects of individuals like attitudes, opinions, lifestyle etc.

Qualitative Approach

This approach includes a precise analysis of the current or intended use of the IP by examining its properties, characteristics or states.

Qualitative Metrics

Metrics based on qualitative aspect of innovation in terms of strength, weakness, market-potential etc.

Glossary (12 of 14)

Quantitative Approach

This approach is based on the determination of the monetary or economic value of the IP.

Quantitative Metrics

Metrics based on numerical aspects in terms of cost, income etc.

Sampling

Collection of data from specific set of customers.

Secondary Research

Desk research based on internet resources, historical data and third-party reports.

Specification

The term used to cover the description, drawings and claims contained in an application.

Social networks

Entrepreneur's networks are one of source of idea generation & subsequently or even directly opportunity identification.

Solving A Problem

Identifying opportunities simply involves noticing a problem and finding a way to solve it.



Glossary (13 of 14)

Surveys

Questionnaire used to collect information from customer.

Term of patent

The maximum number of years that the monopoly rights conferred by the grant of a patent may last.

Top Down Approach

Market size Estimation based on historical data at segment level.

Trade Secret

Businesses often rely on confidential information -- inventions, strategies and processes -- to keep their competitive edge. If such information is improperly disclosed -- for example, by a former employee -- or otherwise illegally acquired by a competitor.

Unicorn

Refers to any tech startup company that reaches \$1 Billion dollar market value as determined by private or public investment.

Utility Patent

Utility Patents, sometimes called "functional"(or, final) patents, cover a new and useful invention in the categories of processes; mechanical, electrical or chemical procedures; machines with moving parts; articles of manufacture, such as hand tools; compositions of matter, like chemical compounds, combinations, or mixtures. the life of a utility patent is currently 20 years from the date of filing.

Glossary (14 of 14)

Venture Capital

Private or institutional investment made into early-stage/start up companies (new ventures).

Value Indicator Based Method

Provide a value guide through scoring of different factors related to the IP asset.

WEF

World Economic Forum.

WIPO

The World Intellectual Property Organization. An intergovernmental organization with its Headquarters in Geneva, Switzerland. It is responsible for the promotion of the protection of intellectual property throughout the world through co-operation amongst states. It is also responsible for the administration of various international treaties, such as the Patent Co-operation Treaty.



Master Reference List

(Note: If you are unable to view the page by clicking the reference link, please copy/paste the link in the browser)

Master References (1 of 5)

Reference Links	Lesson's Referred
http://www.businessdictionary.com/definition/entrepreneurship.html à Not able to open from TCS, but opening on mobile	Lesson 1
https://www.infoentrepreneurs.org/en/guides/use-innovation-to-grow-your-business/	Lesson 1
https://www.managementstudyguide.com/what-is-entrepreneurship.htm	Lesson 1
https://www.wipo.int	Lesson 1
https://www.iam-media.com/patents/intellectual-property-40	Lesson 1, 18
https://hbr.org/2011/12/think-like-an-indian-entrepreneur	Lesson 2
https://www.forbes.com/sites/gregsatell/2014/09/05/a-look-back-at-why-blockbuster-really-failed-and-why-it-didnt-have-to/#4c416aed1d64	Lesson 2
https://www.oecd-ilibrary.org/science-and-technology/oslo-manual-2018_9789264304604-en	Lesson 2
Jugaad Innovation: Think Frugal, Be Flexible, Generate Breakthrough Growth Navi Radjou, Jaideep Prabhu, Simone Ahuja , John Wiley & Sons	Lesson 2
http://sourcesofinsight.com/innovation-life-cycle/	Lesson 3
https://www.investottawa.ca/	Lesson 3
https://www.Lead-innovation.com	Lesson 3
https://www.msi.org	Lesson 3
https://www.tatainnovista.com/	Lesson 3
http://fun4biz.com/coach/coach/creativity_6barriers_ja.html	Lesson 4
https://scottberkun.com/2007/the-8-challenges-innovations-face/	Lesson 4

Master References (2 of 5)

Reference Links	Lesson's Referred
https://trainingindustry.com/articles/strategy-alignment-and-planning/cause-and-effect-barriers-to-creativity-and-innovation/	Lesson 4
https://www.innovation-asset.com/blog/9-challenges-hindering-innovation-in-your-organization	Lesson 4
https://www.torbennick.eu/blog/strategy/30-key-obstacles-to-innovation/	Lesson 4
Discussion Paper on Standard Essential Patents and their availability on FRAND terms, March 2016, Department for promotion of Industry and Internal Trade, Govt. of India	Lesson 5
HTTP://FACULTY.HAAS.BERKELEY.EDU/SHAPIRO/THICKET.PDF	Lesson 5
ISO/IEC Guide 2:2004 Standardization and related activities - General vocabulary	Lesson 5
WIPO (2019). WIPO Technology Trends 2019: Artificial Intelligence. Geneva: World Intellectual Property Organization	Lesson 5
WIPO Publication No. 450(E) ISBN 978-92-805-1555-0: What is Intellectual Property?	Lesson 5
WIPO Report 2017: Intangible Capital in Global Value Chains	Lesson 6
https://www.iam-media.com/copyright/building-ip-risk-management-framework-innovation-leaders	Lesson 7
Bringing Opportunity Oversight Onto the Board's Agenda, Frank Leonard and Larry Bennigson	Lesson 8
Finding Fertile Ground: Identifying Extraordinary Opportunities for New Ventures, Scott Shane	Lesson 8
Identifying Entrepreneurial Opportunities: Cognition and Categorization in Nascent Entrepreneurs, Matthew J. Karlesky	Lesson 8
New Venture Creation: Entrepreneurship for 21st Century, Jeffry Timmons and Stephen Spinelli	Lesson 8
Open Innovation: New Product Development Essentials from the PDMA, Abbie Griffin, Charles Noble, and Serdar Durmusoglu	Lesson 8
Sandler Enterprise Selling: Winning, Growing, and Retaining Major Accounts, Brian Sullivan et al	Lesson 8
The Opportunity Paradox, Kathleen M. Eisenhardt, Nathan R. Furr and Christopher B. Bingham	Lesson 8

Master References (3 of 5)

Reference Links	Lesson's Referred
http://www.optimizationgroup.com/methods/market-sizing/	Lesson 9
https://en.wikipedia.org/wiki/Market_research	Lesson 9
https://en.wikipedia.org/wiki/Market_segmentation	Lesson 9
https://towardsdatascience.com/sizing-up-market-sizing-for-your-business-c569e45730ef	Lesson 9
https://trackmaven.com/marketing-dictionary/market-segmentation/	Lesson 9
https://www.forbes.com/sites/alejandrocremades/2018/09/23/how-to-effectively-determine-your-market-size/	Lesson 9
https://www.qualtrics.com/experience-management/brand/what-is-market-segmentation/	Lesson 9
https://smallbusiness.chron.com/examples-positioning-strategy-marketing-10166.html	Lesson 10
https://www.inc.com/encyclopedia/product-positioning.html	Lesson 10
A New View Of The Skew: A Quantitative Assessment of The Quality of American Entrepreneurship, Catherine Fazio, Jorge Guzman, Fiona Murray, Scott Stern	Lesson 11
Booz & Company, The Global Innovation 1000 Reports	Lesson 11
Collaborative invention mining at TCS, Santosh Mohanty and Akhilesh Srivastava	Lesson 11
Creating Better Innovation Measurement Practices by MIT Sloan Management Review	Lesson 11
McKinsey Special Collection on Growth and Innovation (Referred a select set of articles)	Lesson 11
Success in Innovation, Jan Verloop	Lesson 11
The Innovator's Field Guide: Market Tested Methods and Frameworks to Help You Meet Your Innovation Challenges, Peter Skarzynski and David Crosswhite	Lesson 11

Master References (4 of 5)

Reference Links	Lesson's Referred
A Review of the Methods for Valuing Intellectual Property Rights, Alina Saaranto	Lesson 12
Fair Value Measurement: Practical Guidance and Implementation, 2nd Edition, Mark L. Zyla	Lesson 12
Intangible Asset & Intellectual Property Valuation: A Multidisciplinary Perspective, Paul Flignor and David Orozco	Lesson 12
Intellectual Property: Valuation, Exploitation and Infringement Damages 2013 Cumulative Supplement, 11th Edition, Russell L. Parr	Lesson 12
Patents, their importance and valuation methods, Liina Tonisson and Lutz Maicher	Lesson 12
Software IPR Valuation Model, Santosh Mohanty and Kaushik Gala	Lesson 12
Valuation of Intellectual Property Assets by Akshat Pande	Lesson 12
Business Model Canvas, Arvydas Bloze, evergrowth.io	Lesson 13
https://cdn.ymaws.com/www.businessarchitectureguild.org/resource/resmgr/docs/linkingbusinessmodelsb.arch.pdf	Lesson 13
https://ecorner.stanford.edu/in-brief/unicorn-lessons/	Lesson 13
https://www.edupristine.com/blog/venture-capital	Lesson 13
https://www.nasscom.in/knowledge-center/publications/indian-tech-start-ecosystem-2018-approaching-escape-velocity	Lesson 13
https://www.strategy-business.com/feature/Indias-new-unicorns?gko=76038	Lesson 13
https://www.thebetterindia.com/86539/inspiring-unicorn-founders-india-startups/	Lesson 13
Business Model Generation, Alexander Osterwalder and Yves Pigneur, John Wiley and Sons	Lesson 13,15

Master References (5 of 5)

Reference Links	Lesson's Referred
Co-Innovation: Enterprise Start-up Collaboration – NASSCOM-Infoholic Research - 14299-coinnovationenterprise-start-up-collaboration.pdf	Lesson 14
https://www.forbes.com/sites/esade/2018/09/24/why-your-company-should-embrace-co-creation/#997ad991bddf	Lesson 14
https://www.cure.fit	Lesson 15
https://www.jile.io	Lesson 15
https://digitate.com/	Lesson 16
https://www.entrepreneur.com/encyclopedia/business-incubator	Lesson 16
https://www.forbes.com/sites/tendayiviki/2018/03/26/six-principles-corporate-innovation-process/#44fc91b44f45	Lesson 16
https://www.digitalimpactsquare.com/	Lesson 17
Social Innovation: A Guide to Achieving Corporate and Societal Value (Insight Report, World Economic Forum, 2016)	Lesson 17



Thank You