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First edition

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Chapter 1

Basics of Technology Commercialization and Entrepreneurship

1.1. Technology

A technology is any systematized practical knowledge, based on experimentation and/or scientific theory, which is embodied in productive skills, organization, or machinery (Gendron, 1977). It is the single greatest factor that distinguishes developed economies from developing countries. The technology provides wide opportunities for value realisation by creating new products / services to match consumer needs, to reduce the cost production, maximising outputs at a reasonable cost, etc.

1.2. Importance of Technology to the Society

1.2. 1. Process of Technological Advancement

There are four processes leading to technological advances in an economy - discovery, invention, innovation, and diffusion (Spaulding, 2015). The process of technological advancement is displayed in Fig. 1.1.

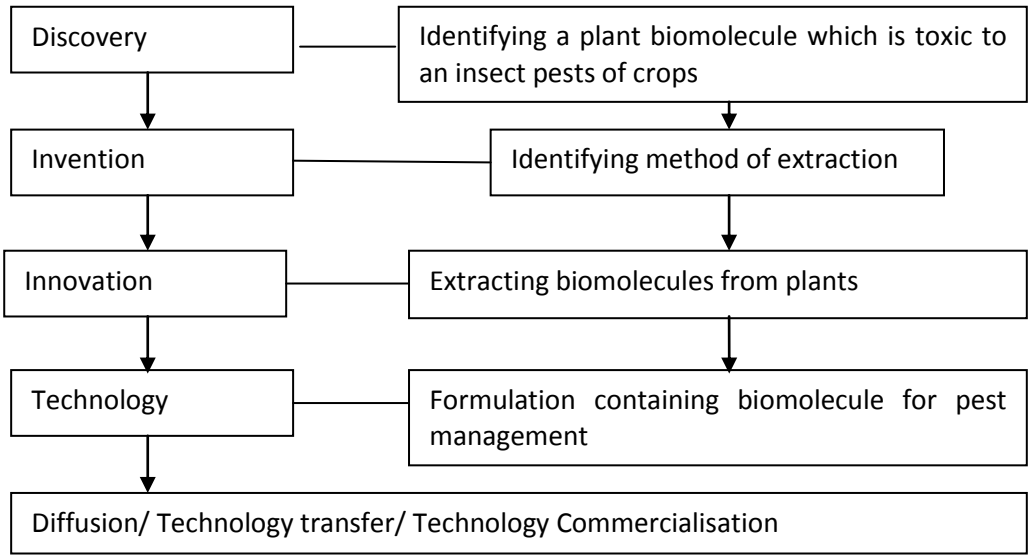

Fig 1.1. Process of technological advancement (Adapted from: Spaulding, 2015)

(a) Discovery

Discovery involves the elucidation of the fundamental processes of nature through observations of nature, reasoning, and experimentation. The scientific method is used to unfold the realities of the nature in a systematic and unbiased way.

(b) Invention

Invention is creation new idea, techniques and resources to utilise the discovery. Inventions often begin as prototypes of the final technology showing essential features, which are then improved by modifying the characteristics of the prototype until no other improvements can be made.

(c) Innovation

Innovation is applying the discoveries or inventions to produce a useful product or process for a specific application. Product innovation is the development of new and improved products or services, while process innovation refers to new or improved methods of production or distribution. An invention becomes an innovation only when a user finds value in and the value has been delivered to the user. Innovation is the applied form of discovery or invention and forms an important component in the technological advancement process.

Satell (2013) has developed simple 2×2 matrix to identify potential innovations for converting them into useful technologies (Fig. 1.2)

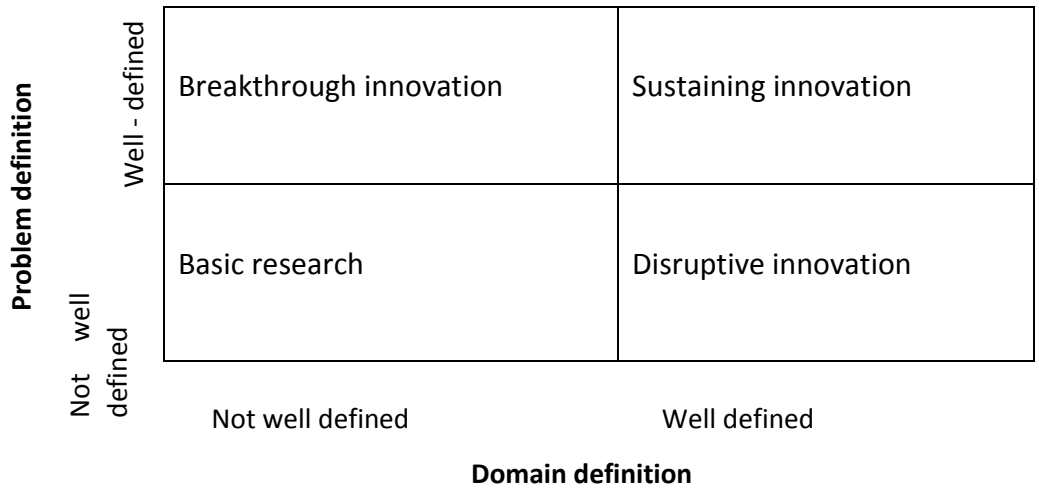

Fig 1.2. Innovation Management Matrix (Satell, 2013)

By putting the parameters of problem definition and domain definition on two separate axes, Satell (2013) has created four categories of innovations such as Basic research, disruptive innovation, breakthrough innovation and sustaining innovation.

(i) Basic research

A scientific inquiry conducted in Universities and R & D organisations for to discover and understand the natural phenomenon. In basic research both problem and domain are not well-defined and the outcomes are not necessarily being converted into innovations or technologies. For example, the tuberization process of potato under varied environmental conditions may us to understand the factors influencing the tuber yield. However, this information will not be directly used unless converted into a management practice.

(ii) Breakthrough innovation

The breakthrough innovation refers to large technological advances that propel an existing product or service ahead of competitors (Kalbach, 2012). The breakthrough innovations are results of research conducted in R & D organisations with clearly defined problems, but the outputs are significant enough for use in diverse application domains. For example, developing a high-yielding crop variety which can also tolerate a common disease is a breakthrough innovation.

(iii) Disruptive Innovation

A disruptive innovation is an innovation which provides high-end customer value of the existing product range thereby creating a new market. In the process of providing high-quality consumer benefits, this innovation eventually disrupt the existing market and makes it obsolete. Few examples of disruptive technologies are Compact Disks which replaced floppies and computers bringing an end to typewriters. In agriculture, the development of high-yielding varieties in R & D labs has resulted in the disappearance of local genotypes in the long run.

(iv) Sustaining Innovation

The sustaining innovations are technological advances which systematically improve the performance of current technologies along dimensions that the market already values. They are the outcomes of systematic research conducted with well-defined problem on a specific application domain. In contrast to disruptive innovation, a sustaining innovation does not create new markets but rather only evolves existing ones with better value, allowing the companies to compete against each other's sustaining improvements. These innovations are created by companies by outsourcing basic research innovations from research organisations. For example, a company may buy a “gluten-free” pasta production technology from a R & D lab to produce pasta of different shapes and flavours to suit diverse customers.

(d) Technology

The technology is the applied form of innovation to put into use. Technology is the knowledge, products, processes, tools, and systems used in the creation of goods or in the provision of services (White and Bruton, 2011). Technology comprises a system of application-oriented statements about means and ends, while the technique represents an applicable element of a technology.

1.3. Technology Diffusion – Transfer and Commercialisation

The technology diffusion is the spread of innovation to other prospective users to develop useful products to meet the emerging demands. This diffusion occurs by either emulating or copying others' products or processes (Spaulding, 2015). Diffusion is the essential final step in the technological advancement which helps to spread the fruits of discovery/ invention to a larger community. The technology diffusion can occur in two ways i.e. by (i) technology transfer and (ii) technology commercialisation.

1.3.1. Technology Transfer

Technology transfer refers to formal and informal movement of know-how, skills, technical knowledge, procedures, methods, expertise or technology from one organizational setting to another (Roessner, 2000). The technology transfer process often faces unfavourable economic incentives and an inadequate supply of

complementary services to translate new ideas into technological and economically viable innovations.

Technology Push Vs Market Pull

The technology transfer process begins with either technology push or market pull mechanisms. In the technology push system, the innovations developed at the R & D organisations and Universities that are "perceived" to provide significant consumer benefits are transferred. It is assumed that the technology *per se* can cater to existing market or create a new market, without considering actual consumer needs. For example, most of the agricultural technologies developed in India during and post-green revolution period are transferred through "technology push" mechanisms. The technology push model is depicted in Fig. 1.3.

Fig 1.3. The Technology push model

In the "market pull" system, need or requirement for a new product or a solution to a problem, reflected from the market – industry or actual consumers. Market pull sometimes starts with potential customers asking for improvements to existing products. According to this model (Fig. 1. 4), a successful approach to innovation would be to research the market thoroughly first, assess what needs exist, how far they are met by existing products and processes and how the needs might be met more effectively by means of a new or improved innovation. Once the appropriate technology is developed, a receptive market is assured because the innovation process has been tailored to meet a definite consumer need.

Fig 1.4. Market pull model

1.3.2. Technology Commercialisation

The technology commercialisation is a systematic attempt to translate technological advancements into commercial products or services targeted to satisfy the felt and unfelt needs of the consumers. Commercialisation is a specific case of technology transfer, which occurs when the party transferring technology receives money in exchange for giving up some or all the rights to the technology (Speser, 2008). It involves selling, licensing, or contracting of technology services, intellectual assets, and related-knowledge to the potential users i.e. independent entrepreneurs, companies or other public/ private sector organisations.

1.4. Technology Commercialisation and Entrepreneurship Development in Agriculture

Indian agriculture is the second largest in the World in terms of its total output. The agriculture contributes 14.4% of national GDP and employs about 48.9% of the total work force (Ministry of Finance, Government of India; Economic Survey 2010-11). In the post-economic liberalisation era, the Indian agriculture has slowly transformed as an industrial sector, with a focus on maximising its economic value.

1.4.1. Enabling Factors for Technology Commercialisation

(i) An Instrument of Poverty Reduction

The agricultural entrepreneurship through value addition has been promoted as an instrument for securing food security and reducing poverty. A World Bank study (Ravallion, and Datt, 1996) has estimated that a one per cent rise in agricultural value added per hectare results in a 0.4 per cent and 1.9 per cent reduction in poverty in the short- and long-run, respectively.

(ii) Rising Share of High Value Agriculture

The high value products like fruits and vegetable crops on average generate Rs. 3.30 lakh worth of output per hectare compared with Rs. 37.5 thousand in the case of cereals and Rs. 29 thousand and Rs. 48.7 thousand in the cases of pulses and oilseeds, respectively (NITI Aayog, 2015). These variations in value productivity indicate a very

large scope for raising the value of agricultural output through a shift from cereals, pulses and oilseeds into commercial cultivation of fruits and vegetables.

(iii) Shift in Household Dietary Consumption Patterns

The nature of eating and composition of foods consumed has changed dramatically over the years. India's gross national income (per capita), increased by about 2.3 times in the last decade (2000-10), leaving surplus money in the hands of Indian consumers. A National Sample Survey Organisation's study (NSSO, 2014) indicates that cereals consumption declined by 16.3% in rural and 12.4% in urban areas during 1993-2012 period. A pooled data indicates that, per capita consumption rose by 21 per cent in the case of fruits, 14 per cent in the case of vegetables, 11 per cent in the case of milk and 23 per cent in the case of meat, eggs and fish during the same period.

(iv) Changes in Demographic Composition of Indian Population

The age-related factors play a crucial role in agricultural commercialisation because food consumption by an individual changes over his/her lifetime. A recent survey indicates that India has the world's highest number of 10 to 24-year-olds, with 242 million making it the largest youth population in the World. The rising youth brigade has following implications (swissnex India, 2015). Considering the creativity, innovativeness and enthusiasm of youth, a National Policy for Skill Development and Entrepreneurship 2015 is formulated and several programmes were initiated to motivate them to create new ventures (Ministry of Skill Development and Entrepreneurship, 2015).

(v) Growth in Export Opportunities for High-Value Agricultural Commodities

In the past few decades, India has mastered its export competitiveness in agricultural commodities especially high value products, making it the world's 14^{th} largest agricultural, fishery, and forestry product exporter. A report prepared by a not-for-profit organisation Centre for Environment and Agriculture (Centegro) indicates that Indian agricultural commodities exports are likely to grow to Rs 6507 billion by 2022 from the present ₹ 2342.7 billion (The Economic Times, Aug 23, 2017).

(vi) Emerging Agri-Food Retail Chains

Retail industry in India is expected to grow to ₹23400 billion 2020 from the current level of ₹21613 billion, registering a Compound Annual Growth Rate (CAGR) of over 10% (Euromonitor International, February 2017). Grocery and food account for more than 50 percent of fast-moving consumer goods (FMCG) sales and together form the biggest retail channel in India.

(vii) Increase in the Foreign Direct Investment Inflow for Agri-Businesses

The FDI in agriculture can be made in three sectors such as food processing, agricultural services and agricultural machinery. The food processing industry is one of the largest industries in India and ranks fifth in terms of production, consumption and exports and contributes 14 percent of the Gross Domestic product of India. The food processing is a hallmark sector attracting FDI at an increasing level. The FDI in food processing sector rose from Rs. 3357 crore in 2014-15, to 4732.28 crore in 2016-17 (Press Information Bureau, July 2017.

1.4.2. Technology Commercialisation and Entrepreneurship Development by Agricultural Universities and Research Institutes

The entrepreneurial development activities of the Universities and Research Institutes are channelized in three ways. The inter relationships among these core functions are displayed in Fig. 1.5. An overview of entrepreneurship development process is displayed in Fig 1.6.

(i) **Technology management** involves planning and executing stakeholder-oriented technology development strategies and programmes;

(ii) **Intellectual Property (IP) management** deals with protecting the intellectual property rights (IPR) of the viable technologies and

(iii) **Commercialisation management** translates the products of research/ technologies including IP protected technologies into commercial products and services.

(i) Technology Management

The technology management refers to the planning and execution of stakeholder-oriented technology development strategies for generating high impact technological

products and services. The strategies are formed by critically analysing the external drivers of technology and the existing infrastructure available in the organisation. The technology management if performed by the Directorate of Research and Planning of the Agricultural Universities and Planning, Monitoring and Evaluation (PME) Unit in ICAR Institutes.

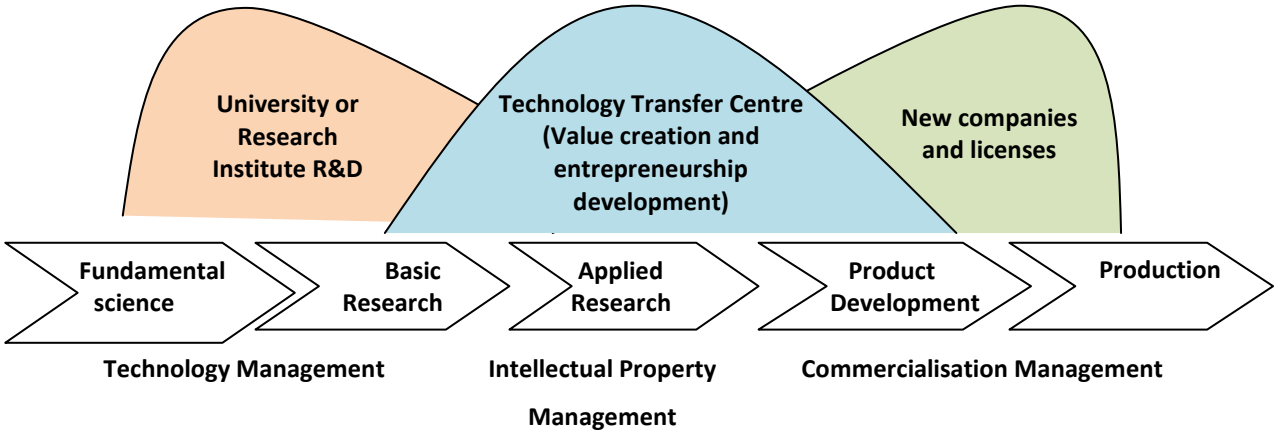

Fig. 1.5. Technology management and commercialisation process (Adapted from: Park, 2015)

(ii) Intellectual Property Management

The IP management at the Universities and research institutes is undertaken by an IPR Cell (Agricultural Universities) or Intellectual Property and Technology Management Unit (ICAR Institutes). In ICAR Institutes, the Intellectual Property and Technology Management Unit manages Intellectual Property and Technology Commercialisation

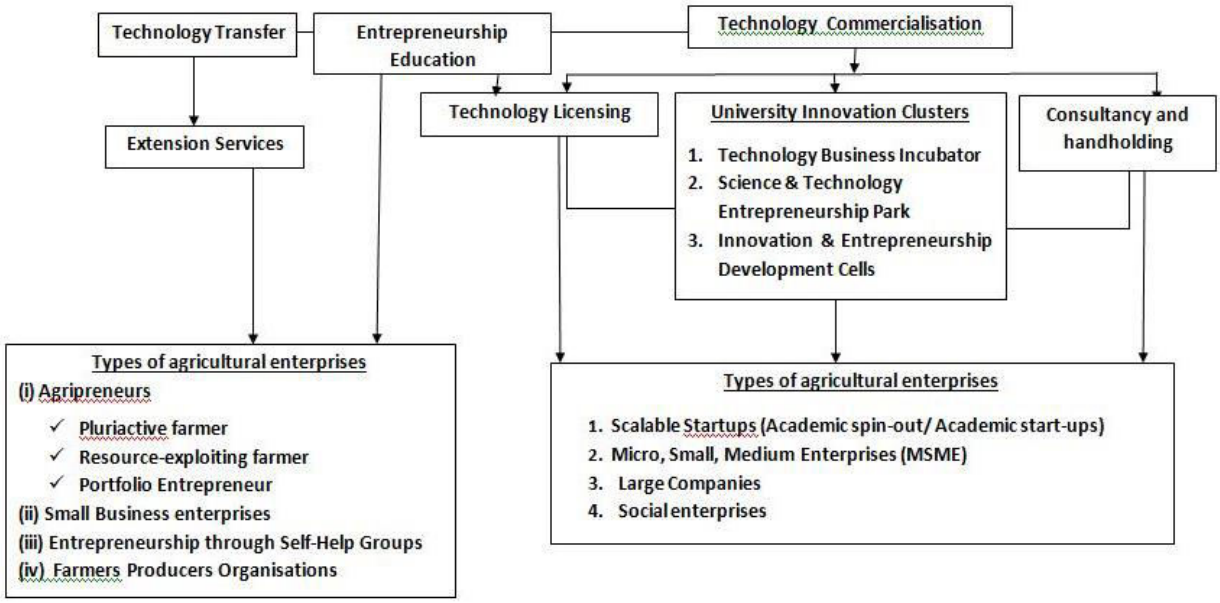

Fig 1.6. Entrepreneurship Development in Universities and Research Institutes

at the Institute level with the guidance from Intellectual Property and Technology Management Committee. The Zonal Technology Management Unit (ZTMU) at the regional level and the Intellectual Property and Technology Management Unit (IPTM) at ICAR HQ are the coordinating agencies at higher levels.

The IP management has three components:

Technology or invention disclosure

The inventor elaborates the details of the technology to a commercialisation committee in a confidential meeting. All the members provide an undertaking of non-disclosure of the technology details. During the meeting, the inventor(s) provide details of name of the invention, technical details, the inventors, source of funding for creating the invention, advantages of the technology over prior art, potential drawbacks, its scope of use, publication records related to the invention, proposed price, market potential and prospective buyers. After critical discussion, the committee decides on whether to proceed for IPR protection. The technology disclosure is mandatory for protecting IPR of the technologies.

Intellectual Property Rights Protection

The Intellectual Property Protection involves identification of potential technologies for IP protection through critical assessment of their market viability, selecting suitable IPR protection method, preparing and filing IPR application, and managing the process until the IPR is granted. The purpose of IP protection is to safeguard of the intellectual property rights of the technologies developed at the Universities and Research Institutes from possible misuse by other parties. Four common types of IPR include patents, copyrights, trademarks and Geographical indications (Box 1.1).

Box 1.1: Common forms of Intellectual Property Rights

1. **Copyrights** protect original works of authorship, such as original literary, dramatic, musical or artistic work, cinematograph films, and sound recordings and computer programme (treated as Literacy work). With copyright protection, the holder has the exclusive rights to modify, distribute, perform, create, display, and copy the work. In general, the protection is valid for 60 years for most types.
2. **Patent** is a document, issued, upon application, by a government office, which describes an invention and creates a legal situation in which the patented invention can normally only be exploited - manufactured, used, sold, imported, with the authorization of the owner of the patent. "Invention" means a solution to a specific problem in the field of technology. An invention may relate to a product or a process. The protection conferred by the patent is valid for 20 years
3. **Trademark** is a word, phrase, symbol, or design that distinguishes the source of products (trademarks) or services (service marks) of one business from its competitors. In order to qualify for patent protection, the mark must be distinctive. The registration for trademark is valid for 10 years and renewable for every 10 years. In addition to trademarks, the Certification marks (granted to anyone who can certify that the products involved meet certain established standards like ISO and ASTM), and Collective marks (owned by associations and the members allowed to use it to identify themselves with a level of quality and other requirements and standards set by the association) can also be protected.
4. **Geographical Indications (GI)** identify a good as "originating in a place" where a given quality, reputation, or other characteristic of the good is essentially attributable to its geographical origin. For example, Darjeeling tea and Mysore Silks are unique products protected by GI.

Source: Nishith Desai and Associates (July 2015)

Intellectual Property Portfolio Management

The IP Portfolio management is the processes and tools that enable acquisition, analysis, and organization of IP information available both inside and outside the universities and research institutes. The IP Portfolio managers analyse the current IP scenario of specific technological products and develop future IP management strategies. The IP Portfolio is a key function which determines the choice of technologies for protecting IP, guides decision-making on mode and extent of commercialization of technologies and type of entrepreneurships created by the Universities and research institutes.

The specific functions of IP Portfolio management (Burdon, 2007) include technology scan, IP surveillance, licensing/business development IP support, patent development/patentability, patent landscape and managing infringement claims.

(iii) Commercialisation Management

The commercialisation management of technologies is the process of turning IP assets into value for both stakeholders and the university and research institute. The commercialisation management has two components: Technology Transfer and Technology Commercialisation.

(a) Technology Transfer

Technology transfer is a generic term which indicates the formal and informal movement of know-how, skills, technical knowledge, procedures, methods, expertise or technology from one organizational setting to another (Roessner, 2000). It includes both “for profit” and “non-profit” forms and used as a mechanism to apply the technological products to derive impacts which enhance the welfare of the stakeholders. While the “for profit” forms represent technology commercialisation, the “non-profit” forms are implemented through “extension outreach” programmes. The differences between “for profit” and “non-profit” forms of technology transfer are displayed in Table 1.1.

The entrepreneurship development activities of extension services are focusing on farmer’s welfare. The technological products and services are provided at reasonable cost or free to help the stakeholders including farmers to maximise returns.

Table 1.1. Differences between "for profit" and "non-profit" forms of technology transfer

Aspect	"For profit" technology transfer (Commercialisation)	"Non-profit" technology transfer (Extension services)
Purpose	To recover costs incurred in developing the technology and realize the value for the innovation	To enhance stakeholder welfare by applying technological products and services
Type of technologies	With or without IP protection	Only technologies which are not IP protected
Target group	Existing and new enterprises, individual entrepreneurs, Public and private sector agencies which are interested to use the technologies for generating revenue	Non-profit public and private sector agencies like KVKs, state extension agencies, NGOs and other stakeholder groups.
Mechanism of technology transfer	Technology licensing, contract research, Direct and online sale of technologies	Extension outreach programmes

The types of entrepreneurships created through extension services are as follows:

a. Agripreneurs: The agripreneurs are primarily the farmers who are engaged in entrepreneurial activities associated with their farm (Box 1.2). The agripreneurship development focuses on creating a new breed of farmers with core business skills in undertaking farm-based businesses for maximising their income.

Box 1. 2: Types of Agripreneurs

According to Alsos et al., (2003), there are three types of agripreneurs: Pluriactive farmer, Resource-exploiting and the Portfolio Entrepreneur

1. Pluriactive Farmer

They derive a reasonable proportion income from the off-farm income generating activists. The purpose of engaging in off-farm economic activities is to sustain their farming and/or to expand their farms to provide employment to their family members. This approach is used as a coping mechanism to sustain in adverse climatic conditions and other shocks which affect their livelihoods (Shucksmith et al., 1989). In pluriactive approach, the farm business is owned by the family and less capital intensive

2. Resource Exploiting Entrepreneur

They are farmers who utilize the unique resources available in their farm to develop a new farm-based business. For example, the livestock farmers can prepare compost from cowdung; farm can be used as an agri-tourism venue to generate additional income. The capital requirement for the business activity varies with nature of the business.

3. The Portfolio Entrepreneur

They are progressive farmers who wish to exploit a novel but risky business idea. They develop teams to implement their ideas and ready to invest large capital for translating them into viable business. Though the ideas originate from farm, the new business is registered as a separate entity from farm. For example, when a group of farmers create a mango pulp processing factory using their own produce at the initial stages, they procure from others when expanding the production.

b. Small Business Enterprises: The small-scale enterprises are focusing only on few commodities or services. They are created by agripreneurs or rural youth to sustain their livelihoods. This business doesn't require specialised skills and can run with farmers' own capital. The examples include Agri-clinics and horticultural nurseries.

c. Entrepreneurship through Self-Help Groups (SHGs): A SHG is a village-based financial intermediary usually composed of 10–20 local women or men. The SHGs are formed by NGOs and financed by banks to undertake a specific entrepreneurial activity. The SHGs are working mostly on traditional agri-businesses and the profit earned are utilised in a collective way.

d. Farmers Producers Organisations (FPOs): The FPO consists of collectivization of producers especially small and marginal farmers so as to form an effective alliance to collectively address many challenges of agriculture such as improved access to investment, technology, inputs and markets. This collective can be registered as a company in the Company's Act and undertake farm-based business.

(b) The Technology Commercialisation

Technology commercialisation is a systematic attempt to translate technological advancements into commercial products or services targeted to satisfy the felt/ unfelt needs of the consumers. As indicated in the Table 1.1, it is a special form of technology transfer, which occurs when the party transferring technology receives money in exchange for giving up some or all the usage rights to the technology (Speser, 2008). Technology commercialisation involves selling, licensing, or contracting of technology services, intellectual assets, and related-knowledge to the potential users i.e. independent entrepreneurs, companies or other public/ private sector organisations.
The technology commercialisation management involves following activities:

1. Technology valuation

Technology valuation involves estimation of the value of the technologies in both buyers and sellers perspectives for deciding the licensing fee. In case of non-IP technologies, the technology price is determined by negation between the buyer and seller.

2. Developing technology commercialisation strategies

Technology commercialisation strategies are series of options a university or research institute employs to move its technologies from concept to the market-place. The

purpose of devising the commercialisation strategies is to realize the value of Intellectual Property developed by the university or research institute and also to recover the costs incurred in developing those technologies. Various technology commercialisation strategies employed by Universities and Research Institutes are – (i) Technology licensing; (ii) Venture creation and (iii) Consultancy and handholding

(i) Technology Licensing

Technology licensing involves the transferring rights of IP protected technologies, technological knowhow (confidential information), copyrights and registered or unregistered designs developed by the university or research institute to entrepreneurs. It is basically an agreement whereby an owner of a technological intellectual property (University/ Research Institute) allows another party (Entrepreneur) by granting exclusive or non-exclusive rights to use, modify, and/or resell that IP in a particular market for a specific purpose in exchange for compensation. The compensation may take the form of a (1) lump sum license fee and (2) royalty based on volume of sales. Such agreements are legally binding commitments by one or both parties not to use or disclose to others the confidential information that they learn of during the negotiations. The period of licensing varies with the stage of technology development (Box 3) and its market potential.

Among the technology development stages, the technologies at the “Prototyping, formulation and compound” are directly licensed to interested entrepreneurs for large scale commercialisation. The stage 3 technologies need scaling up for making them “Market-ready”. Both stage 1 and 2 technologies are requiring extensive research for making them into commercial form (Box 1.3).

The technology licensing and contract research with Universities and research Institutes may help the agricultural enterprises to acquire valuable technology from them for improving the existing businesses or develop a new one.

Box 1.3. Stages of Agricultural Technology

Stage 1 - Early stage: An early-stage technology is an idea which is expected to work and solve an existing problem or create a new need. For example, a plant extract known to have a pesticidal property, but the components and modalities are unknown.

Stage 2 - Proof of concept: The early stage idea was researched and a new technology has been developed to the point that it shows signs of having the proposed effect. In this stage, few components of the plant extract which cause the insect morality have been identified, but the mechanism by which they act is unknown.

Stage 3 - Reduction to practice: In this stage, several experiments on the specific idea have been completed and the intended results have been reliably and repeatedly reproduced. The pesticidal properties of specific components of the plant extract have been identified and mode of action is documented and validated.

Stage 4 - Prototyping, formulation and compound: The technology is now standardised and found reliable and valid and ready for commercialisation. In the previous example, the components having pesticidal properties are extracted using a specific method and reformulated into a pesticide with target-specific claims. Source: Markman *et al.* (2005)

In addition to technology licensing, the Universities and research institutions are also undertaking contract research with public sector or private agencies for developing a new technology/ assessing the existing technology for its viability and efficiency/ upgrading the technologies in stages one to three for making them “market-ready”.

(ii) Venture creation

The entrepreneurship developed by Universities and research institutes are largely technology-based with an aim to translate various technological products and services into sustainable businesses. Various Institutional mechanisms for creating enterprises include University Innovation Clusters including Technology Business Incubator, Science & Technology Parks and the Innovation and Entrepreneurship Development Centre (IEDC) along with Consultancy and Handholding services. The types of agricultural enterprises created by university and research institutes are given in Box 1.4.

Box 1.4. Technology Commercialisation - Types of agricultural enterprises created

1. Startups

- ❖ Baby companies which are developing innovative products or services based on a marketable idea, but yet to establish a concrete business model.
- ❖ Often registered as Private Limited Company
- ❖ Up to seven years from the date of its incorporation/registration.
- ❖ Annual turnover – Maximum of Rs. 25 crore

Types of startups

- ⇨ ***Academic spin-out*** - A commercial entity that derives a significant portion of its commercial activities from the application or use of a technology and/or know-how developed by or during a research program of a university or non-profit, usually public, research organization.
- ⇨ ***Academic start-ups*** – Technology-based enterprises created by the persons having studied at a university or research Institutions. They are built upon technological knowledge derived from the academic research.

2. Micro, Small, Medium Enterprises (MSME)

- ❖ A MSME is a permanent and structured business unit that focuses on the delivery of value to its already-known customers.
- ❖ As per Govt of India guidelines, the MSME are classified based on investment. Micro- up to Rs 5 crore; Small- up to Rs 75 crore and Medium- up to Rs 250 crore.

3. Large Companies

The universities can help the large companies to develop new ideas and business opportunities, leading to new business ventures and the improvement of organizational profitability, thus enhancing the competitive position of the existing firm.

4. Social enterprises

- ❖ A social enterprise is an organization that applies commercial strategies to maximize improvements in financial, social and environmental well-being of people and maximizing social impact alongside profits for external shareholders.
- ❖ Social enterprises are not volunteer organizations in that they operate as an enterprise by selling in a market (Profit or non-profit enterprises).

Mechanisms of venture creation

(a) University Innovation Clusters and its constituents

The University Innovation Clusters are macro-interventions aimed to create an innovation network of with multiple stakeholders like Industry, other Universities, R&D

Labs and others. The focus is on developing an innovation culture for developing novel in products, processes, services and delivery which will in-turn enable growth and development (Office of Adviser to the Prime Minister on Public Information Infrastructure and Innovations, 2011). Within each cluster, project teams made up of researchers, students, entrepreneurs, policy makers, extension agencies and funding agencies co-design new strategies for addressing a specific unmet need within a population.

The University is acting as a focal point of such a cluster and will be able to leverage the following (Office of Adviser to the Prime Minister on Public Information Infrastructure and Innovations, 2011):

- ✓ The technology R&D and problem solving strengths of the University
- ✓ The entrepreneurial spirit of the students and faculty
- ✓ Collaboration with local industry, NGOs and others
- ✓ The teaching and training capabilities of the University
- ✓ Infrastructure and capital available locally
- ✓ Government policy initiatives more efficiently

Several govt agencies including National Science Technology & Entrepreneurship Development Board (NSTEDB) - DST, Biotechnology Industry Research Assistance Council (BIRAC) and NAIF- National Agricultural Innovation Fund of Indian Council of Agricultural Research (ICAR) have created University Innovation Clusters on specific focal areas. Typically, a University Innovation Cluster comprises of a Technology Business Incubator/ Agri-Business Incubator, Science & Technology Entrepreneurship Park (STEP) and Innovation & Entrepreneurship Development Cells (IEDC), which are linked to its stakeholders.

(b) Technology Business Incubator (TBI)

Business Incubator is an organization designed to create, accelerate the growth and success of entrepreneurial companies through an array of business support resources and services that could include physical space, capital, coaching, common lab facilities and services, and networking connections. TBI is a special type of business incubator, where the focus group consists of innovative, mostly technology-oriented, or knowledge-intensive service sector enterprises which constantly interact with

academic sector to bring innovative technology-based solutions to solve persistent problems of the society. The impact of TBIs is assessed by the number of companies that have been founded and developed there, the number of created jobs, commercialised technologies or obtained patents. Few technology incubators available at Agricultural Universities and ICAR Institutes are listed in Table 1.2.

(c) Science & Technology Entrepreneurship Park (STEP)

A Science Park is an organization managed by specialized professionals whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge – based institutions (International Association of Science Parks and Areas of Innovation, 2017). The main task of STEPs is to create the scientific research infrastructure available for creating new companies. Further, the technology parks are to provide the students and university staff with the opportunity of scientific-research cooperation with the enterprises. The STEPs are offering services like technology transfer, incubation, business support and link with academics.

Table 1.2. Technology Business Incubators available at Agricultural Universities and research institutes

Name of the TBI	Host Organisation	Contact details
Association for Innovation Development of Entrepreneurship in Agriculture (A-IDEA).	National Academy of Agricultural Research Management (NAARM) (ICAR), Rajendra Nagar, Hyderabad-500030, Andhra Pradesh.	Tel: +91-40-24581427 Email: coo.aidea@naarm.in
Society for Innovation and Entrepreneurship in Dairying (SINED)	National Dairy Research Institute Campus, Karnal – 132001, Haryana.	Tel:+91-184-2259329 Email : tbi@ndri.res.in

Agri Business Incubation Society – TBI	Tamil Nadu Agricultural University (TNAU), Coimbatore-641003, TN.	Tel: +91–422–6611310 Email: business@tnau.ac.in
NIELAN –Technology Business Incubator (TBI)	Indian Institute of Millets Research, Rajendranagar, Hyderabad-500030, Telangana	Tel: +91- 8499895407 Email: nielan-tbi@millets.res.in

(d) The Innovation and Entrepreneurship Development Centre (IEDC)

The IEDCs are promoted in educational institutions to develop institutional mechanism to create entrepreneurial culture in Science & Technology academic institutions and to foster techno-entrepreneurship. The IEDC programme is focused directly on the entrepreneurship development in academic institutions by maintaining closer relations with the existing businesses and R&D practice.

(e) Consultancy and handholding

Apart from licensing technologies to enterprises, the Universities and Research Institutes are also offering consultancy and handholding services for commencing commercial production of the technologies. The consultancy services are offered on individual and institutional forms to help the entrepreneurs to solve specific problems. Handholding is the provision of careful support or guidance to budding entrepreneurs for establishing agricultural technology based ventures. It involves technology transfer or licensing, extending farm advisory services, liking with funding agencies, establishing the industry, product planning and development, business mentoring, linking with marketing agencies and others.

Entrepreneurship Education

The Entrepreneurship education in agriculture is offered by most of the Agricultural Universities, Private Universities and Institutes and few ICAR Institutes. This education

and capacity development on entrepreneurial skills is both a (I) regular course in UG, PG and PhD level; (ii) Specialised course at Masters level and (iii) continuous education programmes in technology commercialisation and entrepreneurship development.

Regular courses

Considering the importance of agricultural entrepreneurship, Entrepreneurship development course is introduced in all agricultural and animal husbandry disciplines. The purposes of these courses are to sensitize UG students about the importance and techniques of entrepreneurship and equip them with critical skills in creating and managing enterprises.

In general, there are two components of teaching entrepreneurship, First aspect to develop a fundamental understanding of the entrepreneurship and business management by providing concepts, principles, structures and processes associated with entrepreneurship. The second aspect focuses more on creating entrepreneurship and managing the business where the students are equipped to apply their fundamental understanding with critical skills to create and manage enterprises. For example, teaching on agricultural marketing develops a fundamental understanding of the concept, principles, channels, and structures associated with marketing of agricultural produce. However, the actual practice of marketing requires critical skills in understanding consumers, devising marketing strategies and managing market intelligence through proven strategies and methods/ techniques. The current curriculum of entrepreneurship at the Undergraduate level focuses more on creating a fundamental understanding of entrepreneurship and business management, but lacks in their application. Though Post-Graduate curriculum in extension covers both aspects in a general way, there is a need to enrich it with state-of-art approaches and tools with adequate hands-on experience for creating and managing successful agri-businesses.

Specialised course

A specialised MBA in Rural and agri-business management is offered in many Universities to develop adequate business manpower to meet emerging demands. These specialised courses are well-designed to make the students competent in

creating and managing agri-businesses. Apart from Agricultural Universities, the Deemed Universities under ICAR system are also offering MBA courses in agriculture.

Continuous education

The continuous education programmes on entrepreneurship are offered to equip the professionals on critical skills in business planning, technology management, marketing etc. The Indian Institute of Management (IIM) at Ahmadabad and Lucknow, Institute of Rural Management (IRMA), Anand, National Academy of Agricultural Research Management (NAARM) and National Institute of Agricultural Extension Management (MANAGE), Hyderabad, Indian Institute of Plantation Management, Bengaluru; CCS National Institute of Agricultural Marketing (NIAM), Jaipur along with many public sector and private universities and colleges are offering specialised short term courses in business management.

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Chapter 2
Technology Entrepreneurship

2.1. Technology entrepreneurship

Technology entrepreneurship or technopreneurship is a particular sub-field of entrepreneurship focusing on how science and technology is or is intended to be converted into value. Technopreneurship is a style of business leadership that involves identifying high-potential, technology-intense commercial opportunities, gathering resources such as talent and capital, and managing rapid growth and significant risks using principled decision-making skills (Dorf and Byers, 2007). It specifically focuses on the identification and exploitation of previously unexploited opportunities, to maximise the benefits of technology.

Technopreneurship is essentially the merging of knowledge in technology with entrepreneurship skills and competency. It requires not only technical knowledge but also a thorough understanding of creativity, the innovation process, marketing, finance, and strategic thinking. Technopreneurship largely revolves around the research outcomes of a University or R&D organisation, both in public and private sector.

2.2. New Technology-Based Firms

The New Technology-Based Firms (NTBFs) are innovative ventures/ enterprises created for the purpose of exploiting new technological innovations. NTBFs is an entrepreneurial organization established with the goal to create, develop, and commercialize offerings based on technology or research outputs, particularly innovative products, processes, applications and services. These organisations are relatively young business enterprises, which are no more than 12 years in operation and which is usually still led by the original founder or founder team or, at least, one member of founder team (Runge, 2014). Startups are essentially the new technology based firms.

Research-Based Stratup

Research-Based Startup (RBSU), is special NTBF which is a new profit-oriented company created to commercialize the significant research outputs of a particular person or by members of a research group at a university or public research institution. Founding and developing RBSUs is also referred to as "academic entrepreneurship" (Runge, 2014). The RBSUs are created either using a license obtained for a technology from the parent research organization, or by providing a service using scientific or technical research-derived knowledge or expertise.

2.2.1. Types of technology-based ventures

Several typologies of NTBFs were proposed by various authors. Among them, three typologies which are relevant for agriculture and food processing sector are described below:

A. Classification based on Opportunity

In general, the technology-based business enterprises are created based on an opportunity. An opportunity is a favourable juncture of circumstances with a good chance for success or progress (Dorf and Byers, 2007). Entrepreneurs identify the previously unexploited opportunities and develop business ventures to exploit those opportunities. A technopreneur develops a business venture based on a variety of opportunities - incremental changes, innovation, imitation, or rent-seeking behaviour.

The classification of business ventures developed based on opportunity is as follows (Dorf and Byers, 2007).

1. **Incremental venture** - Creation and management of a routine business with modest level of novelty. E.g. A new agri-clinic
2. **Innovative venture** – A business created to commercialise an innovation i.e. novel methods, processes, and products. Eg. Novel organic farming input shop and services
3. **Imitative venture** – Locating and expanding the successful novel businesses from a particular region or country to other regions or country. Eg. Agri-tourism

4. **Rent-seeking or profit-seeking venture** - Leveraging laws, regulations and standards to benefit from an emerging opportunity. E.g. Utilising the IPR regime, the patent attorneys exploit the opportunity to develop business of filing patents etc.

B. Relationship with academic institutions

There are four types of Relationship based NTBFs (Egelan *et al,* 2002) i.e. academics-based foundations (academic spin-outs/ spinoff and academic start-ups), non-academics-based foundations (science or technology-oriented services), corporate spinoffs and independent firms.

i) Academics-based organisations

The academic-based foundations are of two types

- **Academic spin-out/ spinoff** - a commercial entity that derives a significant portion of its commercial activities from the application or use of a technology and/or know-how developed by or during a research program of a university or non-profit, usually public, research organization. For example, iKen Solutions Private Limited (http:// http://www.ikensolutions.com/) is an IIT Bombay spinoff backed by India Innovation Fund.
- **Academic start-ups** – Technology-based enterprises created by the persons having studied at a university or research Institutions. They are built upon technological knowledge derived from the academic research (Runge, 2014). The Strand Genomics Pvt. Ltd (http://www.strandls.com/) is the first academic start-up in India created by professors from Indian Institute of Science, Bangalore in 2000.

ii) Non-Academics-based foundations

The non-academic based foundations cover essentially science- or technology-oriented services, such as data processing and software and technical offices with low level of R&D activities.

iii) Corporate spinoffs

A corporate spinoff is a division of an existing company into one parent company as well as one or more spinoffs. The spinoffs are formed to take up new technology-based business and which has formal and informal relations with the parent company after separation. For example, HCL Infosystems has created three separate units HCL System Integration Ltd (for hardware), HCL Learning Ltd (for learning business) and HCL Care Ltd (Services).

iv) Independent firm

An independent firm is a technology based firm which is operating outside the academic or research setup, which uses the knowledge developed from these systems. Often these independent firms are carved from parent organisations, but do not have any direct relationship with them. Though the founders lack material resources as well as the required business skills of independent firms, they often have a strong driving force and commitment to their ventures.

C. Based on origin and innovativeness of the product

Based on the origin (academic, corporate or independent firm) and the degree of innovativeness of the main product (Disruptive, sustaining or incremental), Bergek and Norrman (2015) classified the NTBFs into nine categories (Table 2.1.).

In this classification, the disruptive innovation refers to the technology which offers a new performance dimension to new customer segments. The sustaining innovations are providing a considerably improved product or service to the existing customer segments. The incremental innovations provide a small performance improved product/ service to existing customers.

Table.2.1. Classification of NTBFs based on their origin and the degree of innovativeness of the main product*

Degree of innovativeness	Origin of venture		
	Academic spin-off	**Corporate spin-off**	**Independent firm**
Disruptive	Disruptive academic firm	Sponsored disruptive corporate venture	Disruptive independent firm
Sustaining	Product-oriented academic spin-off	Competitive corporate spin-off; Complementary corporate spin-off	Innovative independent firm
Incremental	Academic side-business	Generic corporate spin-off	Inventive independent firm

*Adapted from Bergek and Norrman (2015)

a) Disruptive academic firm

It is an academic spin-off based on a technology or product that introduces innovative products and services which are very different in terms of performance characteristics from what is currently available on the market. This firm is a flagship for its university, as it combines significant academic achievements with current or future economic benefits.

b) Product-oriented academic spin-off

This NTBF is based on a sustaining innovation. It is commonly found in university business incubators, and is often supported by venture capital firms and is seen as an interesting candidate for acquisition by larger corporations.

c) Academic side-business

The academic side-business is an academic spin-off based on incremental innovation, which supplies specialized knowledge to a specific market segment. These NTBFs are run by individual researchers who either use their own research outputs or by their general academic knowledge and skills in a commercial setting (i.e. lecturing, analysing/diagnosing industry problems etc.) (Klofsten and Jones-Evans, 2000).

d) Sponsored disruptive corporate venture

This firm is built to develop and launch a disruptive innovation, which is spun off from a private company since it does not fit with the parent company's strategies and competences or because of opportunities to commercialise the product in markets that are not regarded as core from the parent company's point of view (Gilsing et al. 2010). The parent company supports the new firm, since it sees a commercial potential and believes in the team.

e) Corporate spin-offs based on sustaining innovations

The Corporate spin-offs based on sustaining innovations may be of two main types i.e. competitive corporate spin-off and complementary corporate spin- off.

- **Competitive corporate spin-off** - When the employees leave a company to start up a venture in opposition to the parent company, it is a competitive corporate spin-off. Based on their knowledge of the market, they sensed an opportunity and developed a new, competing product that they hope will win over some of the parent company's customers.
- **Complementary corporate spin-off** – The employees develop technologies or products that complement the parent company's offer to some customers (e.g. a new module in a business system). The new venture then becomes a partner or sub-supplier rather than a competitor, and also has the opportunity to broaden its scope towards other customers.

f) Generic corporate spin-off

A corporate spin-off based on an incremental. This firm is created by one or a few employee(s) who left the parent company to start up a separate business entity for providing consultancy services, components or manufacturing capacity to their parent company or its customers. Although this type of firm may generate a sustainable income, it is normally not focused on building its own brand to achieve rapid growth, but rather on working in its specific niche.

g) Disruptive independent firm

This NTBF is the archetypical sole inventor i.e. an independent person or firm with a disruptive idea which delivers new performance attributes to a new market. It is based on the idea of an individual or a smaller group of people and, when successful, it is the hallmark of innovation and entrepreneurship. However, such firms tend to be very risky and have a high failure rate.

h) Innovative independent firm

This firm enters an existing market on the basis of a product that provides an improvement in the performance attributes that established customers traditionally value.

j) The inventive independent firm

This NTBF is run by a sole inventor, who does not have any direct connection to either academia or existing firms. This firm is based on a single product which is new, but does not offer any substantial performance improvement in comparison with existing products (Porter, 1980

2.3 Technopreneur

In general, an entrepreneur is a person who undertakes the creation of an enterprise or business that has the chance of profit or success. A technopreneur is a special type of entrepreneur, who is a bold, imaginative deviator from established business methods and practices who constantly seeks the opportunity to

commercialize new products, technologies, processes, and arrangements (Baumol, 2002). Technopreneurs aim at creating and capturing economic value through the exploration and exploitation of new technology-based solutions. The technopreneur virtually destroys the existing economic order by introducing new products and services by creating new forms of organizations and by exploiting raw materials (Schumpeter, 1934).

Skills of a Technopreneur

The technopreneurs possess the same skills like entrepreneurs. They are creative, risk-takers, innovative, imaginative, and hard-working. Dorf and Byers (2007) has identified eight essential skills required for a successful technopreneur

1. Capability to initiate and operate a purposeful enterprise.
2. Ability to operate within the context and industrial environment at the time of initiation.
3. Identifying and screening relevant opportunities in a timely manner.
4. Capacity and efforts to accumulate and manage knowledge and technology.
5. Ability to mobilize resources—financial, physical, and human.
6. Ability to assess and mitigate uncertainty and risks associated with the initiation of the enterprise.
7. Capacity and efforts to provide an innovative contribution or at least a contribution that encompasses novelty or originality.
8. Ability to identify and manage a collaborative team of people who have the capabilities and knowledge necessary for success of the enterprise.

Importance of Developing a Technopreneur

Technopreneurship is a specialised skill which needs novel business acumen, uninhabited zeal, enthusiasm and consistent risk-bearing ability to venture into unexplored businesses. The technology start-ups are high risk ventures with studies indicating over 90 percent (Adams, 2010) failed in the first three years. The agro-technology start-ups are better placed with a modest 66% survival rate after four years of inception (Statistic Brain, 2016). Besides, the “return to Investment” in start-ups is also time and region bound. If an investor firm puts in Rs. 100 into start-ups in India,

the return after two years is Rs 110. However, these values are very high for other countries like Israel (Rs. 700) and USA (Rs. 500) (Sarangi, 2010). In view of these risky, but profitable opportunities available in the technopreneurship, there is a need to assess the existing entrepreneurial scenario of India.

(a). Business idea

The technology-based start-ups are special business entities which require idea which is new, fresh, innovative, technically sound, free of legal issues, socially acceptable, and needs to have the potential to make a lot of money (Sarangi, 2010). The ability to recognize business opportunities is one of the first and major skills an entrepreneur should acquire as it will dramatically shape the future of his/her venture. However, the most Indian technopreneurs are young professionals, who spent ample time studying during schooling and graduation and have little knowledge about the society and its needs. Despite their energy, zeal and enthusiasm to develop viable enterprises, they fail due to lack of solid business idea. The experienced technopreneurs too lack expertise to develop a new business idea as they over-worked in their past employment and have little exposure to the current and future market needs (Sarangi, 2010).

(b) Talent

Unlike in Western countries where technocrats create start-ups, the Indian start-ups are founded by business school graduates or technical people without any interest in technical work. This ignorance or inadequacy of technical expertise leads to the failure of the startup in the short run (Sarangi, 2010). As this skilled force is essential for developing technology-based startups, there is a need to equip the unemployed youth and other groups with essential technical skills.

(c) Creativity and practical skills

Creativity plays a crucial role in developing novel business ventures. The creativity involves an ability to come up with new and different viewpoints on a subject. It is essentially breaking down and restructuring our knowledge about the subject in order to gain new insights into its nature (Proctor, 2009). Creativity of a

person can help him/her to device novel search strategies for business ideas and also to sense a business opportunity based on knowledge acquisition. Blending the creativity with practical skills is a necessity for successful venture creation. Unlike the westerners, the Indian educational system has little emphasis on practical skills and produce students who lack necessary skills to run a successful startup (Sarangi, 2010). A Ministry of Skill Development and Entrepreneurship, Govt of India sponsored study indicated that skilled workforce with vocational skills in India is just 5% (20-24 years) compared to Western countries where the proportion is as high as 60% - 90% (Ministry of Skill Development and Entrepreneurship, 2015). So, it is essential to develop a creative workforce who can identify a novel business idea and use their practical skills to develop a viable business venture

(d) Business management skills

Understanding the dynamics of technology business is essential for the success of the startups. Converting a business opportunity into a viable venture requires a variety of skills like business analysis, investment analysis, employee assessment, market assessment, risk management etc. A sound business plan will kick start the enterprise, but developing the business plan requires specialist skills. A survey conducted by Statistic Brain (2016) in USA indicated that incompetence (46%) and poor management skills (30%) were identified as major reasons for startup failure.

Identifying potential entrepreneurs

Enterprising Tendency

The enterprising tendency is a approach widely used to identify the individuals with entrepreneurial capacities. An enterprising tendency is defined as the tendency to start up and manage projects. The most enterprising individuals set up projects more frequently; set up more innovative projects; and are more growth-oriented, which means that they have to be opportunistic, and good at utilising resources, including human, technological, physical and organisational resources. Several studies (Collins et al., 2004; Zhao et al. 2010; Brandstätter, 2011) demonstrated that the personality traits were predictors of entrepreneurial behaviour, besides differentiating them from non-entrepreneurs.

Measuring Enterprising Tendency

The General Enterprising Tendency v2 Test (GET2) is a commonly used instrument to measure the enterprising tendency of the individuals. The GET2 test has been designed to bring together and measure a number of personal 'tendencies' commonly associated with the enterprising person. These include: Need for achievement, need for autonomy, creative tendency, risk taking and drive and determination (Bennett, 2012). The entrepreneurial tendency assessment can help in recognising individuals with the inclination to behave entrepreneurially by considering aspects of personality that are characteristic of entrepreneurs (Cromie, 2000).

This approach focuses on the enterprising tendency based on the following personality characteristics of the individuals

a) Motivation

The enterprising person is highly motivated, energetic, and has a capacity for hard work. They are busy, driven, dynamic and highly committed to getting things done. Their high motivation levels are characterised by a high need for achievement and for autonomy, manifesting as the desire to lead, shape and compete projects.

b) Creative tendency

The enterprising person is restless with ideas, has an imaginative approach to solving problems, and tends to see life in a different way to others. Their innovative tendency and need for achievement helps them to develop ideas to create new products and processes, for example new technologies, businesses, projects, organisations, comedy and artistic outputs.

c) Calculated risk-taking

The enterprising person is opportunistic and seeks information and expertise to evaluate if it is worth pursuing the opportunity which will usually involve some risk.

d) Locus of control

The enterprising person has an internal rather than external locus of control which means that they believe they have control over their own destiny and make

their own 'luck'. This means that they confidently seek to exert control over life, draw on inner resources and believe that it is down to them if they succeed through their own efforts and hard work.

Applications of GET2 Test

The GET2 Test can be used to measure the enterprise tendency of

- Personnel involved in providing support to business, social and community enterprise
- People who wish to set up in business.
- The employers can use it for identifying enterprising individuals within their own organisations.
- Persons appearing for a job interview
- To identify changes that have taken place as a result of training or exposure to certain structured situations designed to encourage enterprise.

The General measure of Enterprising Tendency (GET) test - Available at: http://get2test.net/test/index.htm (Annexure B)

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Chapter 3
Basics of Business Planning

3.1. Creating a New Technology-based Ventures

Creating a new venture will follow five steps steps to prepare a business plan that is suitable for the team as well as for the investors and business partners (Byers et al., 2011). It applies to all types of businesses: independent or corporate, small or large, niche or broad, family or franchise, non-profit etc.

Five Step Process of Establishing a New Venture

1. Identify and screen opportunities. Create a vision and concept statement, and build a core entrepreneurial team. Describe the initial ideas about the value proposition and the business model.
2. Refine the concept, determine the feasibility, and prepare a mission statement. Research the business idea and prepare a set of scenarios. Create a story and the outline of a business plan with an executive summary.
3. Prepare a complete business plan including a financial plan and legal organisation for suitable to the venture.
4. Determine the amount of financial, physical and human resources required. Prepare a financial model for the business and determine the necessary resources. Prepare a plan for acquiring these resources.
5. Secure the necessary resources and capabilities from investors, as well as new talent and alliances. Launch the organisation.

3.2. Feasibility Report, Business Plan and Detailed Project Report

Before starting a business, the entrepreneurs seek to know the feasibility of the idea, try it on a limited scale and develop a detailed plan for creating and managing a

venture. Although the business plan is one of the most well-known documents, the feasibility study may be just as important.

The feasibility report presents the findings of the feasibility study - a controlled process for identifying problems and opportunities, determining objectives, describing situations, defining successful outcomes, and assessing the range of costs and benefits associated with several alternatives for solving a problem (Hamilton, 2018). The feasibility study shows the viability of the business idea - market viability, technical viability, business model viability, management model viability, economic and financial model viability, and exit strategy viability. The feasibility study helps determine whether an idea or business is a viable option. The feasibility study would be completed prior to the business plan.

The difference between a feasibility report and business plan are displayed in Table 3.1.

Table 3.1. Key difference between feasibility report and a business plan

Feasibility report	Business Plan
1. To find out if a business or project is feasible or not.	1. To develop a "feasible" business into workable form.
2. Presents calculations, analysis and estimated projections of a business opportunity	2. Presents the tactics and strategies to be implemented to start and grow the business.
3. Deals with business viability	3. Deals with business growth and sustainability
4. Reveals the profit potential of a business idea or opportunity to the entrepreneur	4. Helps the entrepreneur raise the needed startup capital from investors

The detailed project report is a complete document for investment decision-making, approval, planning. Detailed project report is base document for planning the project and implementing the project (National Institute for Small Government, 2018). It is essentially a combination of feasibility report and business plan.

3.3. Business Plan

A business plan is a written statement that describes and analyse the proposed businesses and provides detailed projections for the future. It carefully spells out a company's projected course of action over a period of time, usually the first two to three years after the start-up. A business plan covers the opportunity, its products/ services, prospective customers, context, strategy, team, required resources, financial return and harvest of a business venture.

3.3.1. Why Write a Business Plan?

To obtain funding for business

If you are seeking funding for the business, the business plan details how the desired investment or loan will further the company's goals and increase its profits. Every lender / banker wants to know how you will maintain the cash flow and repay the loan (with interest) on a timely basis. Every investor also wants to know also how his investment will improve the overall net worth of the company and help him to achieve his/her desired return on investment.

Helps the proposer to decide to proceed or stop

The business plan indicates the soundness of the business proposal and helps the proposer to decide on proceeding with the idea or not. It provides answers to all the questions that prospective lenders and investors will ask. Besides, it will also teach the proposer that how money flows through the business, what the strengths and weaknesses of the business idea and what are the realistic chances of success of the business.

Helps to improve the business idea

The business plan helps the proposer to fine tune the business plan and design to improve the probability of success. For example, a prospective entrepreneur can show the business plan to few colleagues, fellow businessmen and experts to seek their opinion. Based on their reactions on specific components, the proposer can improve upon the plan.

Improves probability of success

In general, businesses are executed with an element of risk which will either beneficial or non-beneficial in the long term. Writing a sound business plan will help the proposer to analyse each component critically with his/her own thoughts and from reactions of others and improve upon the weak elements. This exercise will considerably reduce the risk involved in the business thereby increase the probability of its success.

Helps to keep the business on track

A written business plan provides clear course of action toward the future and makes the decision making easier. It helps to set up milestones along with targets, which can be used to assess the progress of the business.

The business plan is required both for startups and established firms. While startups seek funds for establishment through business plan, the established businesses use the plans introduce new marketing system/ product line, to understand business model issues or expand their businesses.

3.3.2. Types of business plans

The business plans are prepared in four forms based on the purpose. They are miniplans, working plans, presentation plans and electronic plans (Entrepreneur India, 2018).

(i) The Miniplan

A miniplan may consist of one to 10 pages and should include important aspects like business concept, financing needs, marketing plan and financial statements, especially cash flow, income projection and balance sheet. It helps in quickly testing a business concept, or measure the interest of a potential partner or minor investor. It can also serve as a valuable prelude to a full-length plan later on.

(ii) The Working Plan

A working plan is a plan designed to operate the business. It is prepared in a detailed manner, but presented in short form. Mostly used internally for deciding on key expansions/ resolve issues and presented with accurate facts and figures.

(iii) The Presentation Plan

The presentation plan provides the details of working plan with an aesthetic treatment to attract the potential investors. This plan is suitable for showing to bankers, investors and others outside the company.

(iv) Electronic plan

The electronic plan provides detailed account of the business aspects and accompanied with supporting documents. The electronic plan helps the investor or potential partner to examine the plan and documents for decision-making.

3.3.3. The Business Plan Template

General guidelines for preparing business plan

- ✓ Keep the business plan short and specific to the point, and maximum of 15-20 pages. Add the essential support documents in the Annexure.
- ✓ Keep the tone, style, and voice consistent throughout the plan. Avoid contradictory facts and claims. The business plans are usually prepared by single person and later modified by the team.
- ✓ It is important to tailor the business plan to suit the audience.

(1) Cover sheet

If the business plan is presented to the prospective investors, money brokers, bankers, venture capitalists, it must include a cover sheet. The Cover Sheet of the business plan is similar to the cover of a book and provides the first impression to the reader of the business plan. It should be neat and attractive and should contain information that will grab the reader's attention. The information given in the cover sheet of a business plan is as follows:

1. Name of the company with logo
2. One sentence statement about the company - Tagline
3. Proprietor's name and any partners' names
4. Contact name and information including telephone, fax, e-mail and mailing address
5. Current month and year

(2) Table of contents

The Table of Contents includes key sections and annexure. It enables the reader of the plan to quickly find information on the various aspects of the business. It needs to be well-organized so that the reader can quickly find information on any aspect of the business. This will not only help the prospective lender to understand the road map of the proposed venture, it will also make a statement about the proposer. The table of contents are prepared at last and includes accurate page numbers.

(3) Executive summary

The executive summary is of 2-5 pages which summarises the overall content and purpose of the finished business plan, covering all of the key points. The summary provides an overview of the proposed business and works principally to catch the interest of prospective sources of financing. Many investors make their decision to proceed with further discussions based on this section. This portion of the business plan must be designed to capture attention in 20 seconds and hold the interest of the party to whom the plan is being presented. Though it appears at the beginning of the business plan, but should be written at the end of the writing process when all the information is available.

The executive summary describes the business succinctly in following sections

1. Statement of business opportunity

- ✓ How big the problem (technical/ economic/ social) and why are customers willing to pay for the businesses which provide solutions?
- ✓ Why is this big problem
- ✓ How does the proposed venture can solve the customer problem or need?
- ✓ Why this venture is uniquely positioned to solve this problem?

2. Statement of what the venture requires in loans or investments

The lender or investor should be able to get an idea of the amount purpose of the loan or investment request, timing, justification for financing, and a repayment statement (lender) or statement of potential return on investment (venture capitalist).

3. Expected financial results

The projected income from the investment along with its expected impact on the society.

The Executive Summary can be approached from either of the two following perspectives.

A. If the business plan is for internal use only and not for seeking funds

This statement would summarize the business. It would be a brief overview of the company's goals and statement of how it will focus to meet its projections.

B. If seeking funds

The Executive Summary specifies the purpose of the funding the venture seeks and justifies the financial feasibility of the plan for the lender or investor. In general an investor may be a lender (bank and independent money lenders) or investor (angels and venture capitalists). The lender is like a banker to whom you will repay money, while the angels and venture capitalists will be the partners in the company.

For a lender/ banker

The executive summary should provide details of loan repayment. The lender always wishes to see the company's ability to meet interest expense as well as principal repayments. The lender may seek to know when the loan is needed and what you will use as collateral.

For angel investors

The angel investor is a wealthy individual who often get personally involved with a start-up company he/she is investing — offering expertise, experience, and money. It is best to have a solid business plan to justify the funding.

For a venture capitalist

As the venture capitalist will be a likely partner of the company, the business plan should show the growth and progress every year. Presently, the investors (angels and venture capitalists) have been looking for an annual return of 45% to 60% over three to five years.

The executive summary should generate excitement and give the reader an awareness of the uniqueness of the business and the qualifications of the management team. Do not exaggerate the potential. Rather, stick to projections that you can back up with facts. One of the greatest errors of business plan writers is the overstatement of projected market share and potential revenues.

(4) Description of the business

A. Vision and Mission statements

B. Product/ service description

- What is the product or service? Who are the customers for your product/ service? – Describe the products and services by identifying the target customers.
- How do the product/ service satisfy the need of the customer? – Explain how do the product/ service satisfy an existing need or future need of the customer
- What is the value proposition to a customer and why it is compelling for the customer? - Value proposition refers to a business or marketing statement that a company uses to summarize why a consumer should buy a product or use a service. This statement convinces a potential consumer that one particular product or service will add more value or better solve a problem than other similar offerings will.
- Which are customers have validated the product and are willing to pay for it? – Explain if the consumer studies or test marketing conducted and its results
- What is the unique and defendable about the business? – Speciality and uniqueness of the product or service compared to competitors

B. For existing business, give history and financial performance – Explain the current portfolio and its performance.

C. Organization of the business, including management and ownership

- ✓ Key personnel at top, middle and lower management/ technical lines and their qualifications, experience and strengths.
- ✓ Divisions/ sections and their responsibilities
- ✓ Marketing and sales strategy
- ✓ Intellectual Property - owned or licensed
- ✓ Location advantage - The benefits of doing business in a specific place

D. Legal structure – Registration, statuary compliances, dispute resolution

(5) Market analysis

A. Industry Description and Outlook

1. Description of industry and primary competitors

- ✓ The major industry in which the products/ services belong; the scope; the current performance of the industry.
- ✓ Competitor analysis – Major competitors – financial information, their strategies, competitive strength and weaknesses, their offerings, comparative assessment of proposed products/ services with competitors, their unique features.

2. Size of the industry, currently, historically, and in projections – Estimation of market size of the product/ services; performance over the years and future projections

3. Industry characteristics – Current and past trends and future projections of technology status; technology changes and life cycle of technologies

4. Current demand state for specific product/ service – Demand is the quantity of a good or service that consumers and businesses are willing and able to buy at a given price in a given time period. Market demand is the sum of the individual demand for a product from buyers in the market. The nature of demand for specific product/ service (Box 3.1.)

Box 3.1. Types of Demand States

- ✓ Full demand – Consumers are adequately buying all products put into the marketplace
- ✓ Latent demand – consumers may share a strong need that cannot be satisfied by an existing product.
- ✓ Overfull demand – More consumers would like to buy the product without considering if it provides satisfaction
- ✓ Negative demand - Consumers dislike the product; even pay price to avoid it
- ✓ Non-existent demand - – Consumers may be unaware or uninterested in the product
- ✓ Declining demand – Consumers begin to buy the product less frequently or not at all.
- ✓ Irregular demand – Consumer purchases vary on a seasonal, monthly, weekly, daily or even hourly basis.
- ✓ Unwholesome demand - consumers may be attracted to products that have undesirable social consequences.

5. Major customer groups – Who are the major customers of the product/ service? - Businesses, governments and consumers.

6. Regulatory requirements – The regulatory requirements associated with the product/ service

(6) Market Overview

A. Describe target market

A market is anywhere where buyers and sellers come together to transact with each other. The type of market varies from physical to virtual forms (Box 3.2) and represent various market structures (Box 3.3).

Box 3.2. Types of markets

a. Physical Market

In physical market, the buyers can physically meet the sellers and purchase the desired merchandise from them in exchange of money. In physical market, prices are often negotiated by customers. e.g. Village mandi's, farmers markets, shopping malls. There are two types of physical markets, (i) Local markets - Where customers are a short distance from suppliers; and (ii) National markets - A market where customers are spread throughout the country or over a large area

b. Electronic or virtual markets

In this type of market, the transactions are completed electronically using smart phones (apps), tablets, and computers using INTERNET. The delivery method is decided based on the nature of the product sold E.g. Ebay, Amazon, SnapDeal

c. Auction Market

The seller sells his/her goods to one who is the highest bidder. e.g. Regulated markets

d. Market for Intermediate Goods

These markets sell raw materials (goods) required for the final production of other goods. e.g. B2B goods - cotton and sugarcane market

e. Knowledge Market

Knowledge market is a set up which deals in the exchange of information and knowledge based products. e.g. Educational and training institutions, market intelligence

f. Financial Market

Deals with the exchange of liquid assets/ money. e.g. Banking

Source: Kotler and Keller (2014)

Market segments

- ✓ A market segment is a group of people who share one or more common characteristics, lumped together for marketing purposes. Each market segment is unique, and marketers use various criteria to create a target market for their product or service. Marketing professionals approach each segment differently, after fully understanding the needs, lifestyles, demographics and personality of the target consumer.

- ✓ The markets are segmented based on consumers demographic, behavioural, psychographics characteristics and geographical location.

Box 3.3. Four Types of Market Structures

(i) Perfect Competition

Perfect competition is characterized by many buyers and sellers, many products that are similar in nature and, as a result, many substitutes. Perfect competition means there are few, if any, barriers to entry for new companies, and prices are determined by supply and demand. e.g. Soaps, cosmetics, food grains

(ii) Monopoly

Only one producer of a particular good or service, no reasonable substitute. The product is unique to the company E.g. Space technologies. Entry into such a market is restricted due to high costs or other impediments, which may be economic, social or political.

(iii) Oligopoly

Only a handful of producers make up a dominant majority of the production in the market system. e.g. Plasma reactors. The products that the oligopolistic firms produce are often nearly identical and, therefore, the companies, which are competing for market share, are interdependent as a result of market forces.

(iv) Monopolistic Competition

Numerous competitors in the market, who sufficiently different their products from the others. The entry and exist are very easy in this system. e.g. Music market

(v) Monopsony

Many sellers but a single buyer; e.g. Military, Space and prison industries.

B. Competitive products, current buying patterns and market trends

A description about competitive products and their performance, the target consumers buying behaviour and current market trends for specific product/ service is provided.

(7) Products and Services

A. Detailed Product/Service Description from the users' perspective.

What are the products and services of the company? What are the technical characteristics?

- ✓ Give a detailed description of the product/ service – describe the product / service characteristics, product/ service ranges (width, depth, coherence), technical specifications, drawings, photos, sales brochures, and other bulky items belong in Appendices.
- ✓ What are the unique features? Describe their value to the customer? What are the competitive advantages of the product/ service?
- ✓ How coherent / related are the products / services (technological or commercial)? - Warranty, after-sales service, change level of service,
- ✓ What is the planned time and financial schedule for the development and launch of the new product?

B) Position of the Product or Service on the Market

- ✓ Define clearly the perception which the target market should have of the product or service being sold.
- ✓ Product differentiation (in what way is the product/service perceived to be different to that of the competition?) is a key to the successful marketing of the product / service.
- ✓ Focus on the strengths of the business and define the position you wish to occupy in the minds of the customers when they consider the business alongside the competitors.

Consider factors such as:

1. Are you high, low or middle-priced?
2. Are you a specialist or generalist in the field?
3. How convenient are you for the customer (geographically, structurally - support, distribution, etc.)?
4. Who will be the final user? - Whom is the product aimed at?
5. To which needs will the product respond?

6. How are these needs satisfied at the moment - by which products and in what way?
7. Are similar products/services already on the market ('me too' products)?
8. Are there competitive products/services based on another technology?
9. What are the main criteria behind the users' choice of product/service (technology, price)?
10. How does the product/service respond to these expectations?
11. What is the company's differentiation strategy in relation to the competition?

C). Marketing and sales strategies

This section should clearly indicate how to successfully market and sell the product or service to the identified customer segments. The customer development strategy should be balanced with product development to improve the success rate.

- ✓ What are the most appropriate marketing mediums to reach the customer segments?
- ✓ What are the appropriate types of sales channel for the product (direct or indirect?
- ✓ Who is the customer decision maker with purchasing power and who influences that person to buy?
- ✓ What is the expected sales cycle length?
- ✓ Are there partnerships that can be leveraged to advertise and sell?

D). Research to support projections

- ✓ What is the present state of development of the product(s) or service(s)?
- ✓ What is the required work of research and development and what are its main stages?
- ✓ Who are the external partners (research centres, laboratories, etc.)?
- ✓ How is this work organised in practical terms? (what will be done internally, by external partners...?)
- ✓ What are the risks associated with this development?

E). Time line for starting and operating business

(8). Financial Projections

A more detailed set of financial projections and assumptions are generally included.. The forecasted financials and assumptions will serve as a starting point for valuing the venture. Be sure that methodology used to arrive at the financials is transparent to the reader.

A. Statements

1. Historical financial statements, if business exists – Audited financial statements for last few years, as required by the financier.

2. Projected financial statements:

a. Income statements - a financial statement that reports a company's financial performance over a specific accounting period. Financial performance is assessed by giving a summary of how the business incurs its revenues and expenses through both operating and non-operating activities. It also shows the net profit or loss incurred over a specific accounting period.

b. Balance sheets – The balance Sheet is the financial statement of a company which includes assets, liabilities, equity capital, total debt, etc. at a point in time. Balance sheet includes assets on one side, and liabilities on the other. For the balance sheet to reflect the true picture, both heads (liabilities & assets) should tally (Assets = Liabilities + Equity).

c. Cash flow statements - a financial statement that provides aggregate data regarding all cash inflows a company receives from its ongoing operations and external investment sources, as well as all cash outflows that pay for business activities and investments during a given period.

d. Debt-service projections – The Debt-Service Coverage Ratio (DSCR) is a measure of the cash flow available to pay current debt obligations. The ratio states net operating income as a multiple of debt obligations due within one year, including interest, principal, sinking-fund and lease payments.

e. Returns analysis - Return on investment (ROI) is a financial concept that measures the profitability of an investment. There are several methods to determine ROI, but the most common is to divide net profit by total assets.

B. Six Key Financial Assumptions

1. Startup costs - All fixed costs incurred in land, machinery and other fixed cost
2. Sales and revenue – Projected sales/d revenues from the business for next 10 years.
3. Operating costs - Cost of operating the business including raw materials, labour etc
4. Borrowing – The plan for managing the financial requirements.
5. Equity returns – Returns to equity

(9) Exit strategy

Understanding the exit strategy is important as professional investors (i.e., Venture Capitalists), will require a well thought out exit strategy as part of the business plan for any venture in which they plan to invest.

What are Some of the Forms of Exit?

- Selling all or a portion of the business
- Passing the business to a family member
- Selling to an Employee Stock Ownership Plan (ESOP)
- Taking the company public
- Liquidation

(10). Annexure

A. Résumés of key managers

B. Newspaper, magazine articles; industry trade reports

C. Key contracts, such as leases, employee agreements

D. More detailed financials for the business

E. Research to support projections

3.4. What Do Lenders and Investors Look For in a Business Plan?

- What does the venture intend to address? – Need for Delta efficiency; Priority for "Need to have" solutions
- Good scope for validating the idea
- The venture should solve only a few manageable problems.

- The team – Should have a person who understands the market
- The problem solution effect – Should be a real problem; the solution should be revamping for consumers. Competitor profile.
- Product – Market Fit: Specific market (segmented customer)
- Innovation – To prevent reengineering (defensible element)
- Scale potential – To reach a large number of consumers
- The mandate fit – Fit with investment mandate of the agency.

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Chapter 4

Financial Planning

A financial plan is a comprehensive evaluation of a venture's current and future financial state by using currently known variables to predict future cash flows, asset values and withdrawal plans (Investopedia, 2018a). The financial plan shows the viability of the business idea and determines if the business plan will attract investment.

4.1. Types of Financial statements required for financial plan

There are four types of financial documents such as (i) Statements of Sources and Uses of Funds from a Lender or Investor ; (ii) Pro Forma or projected Statements; (iii) Actual Performance Statements; and (iv) Financial Statement Analysis, are required for a business plan (Pinson, 2008). A detailed description of these statements are given below:

A. Statements of Sources and Uses of Funds from a Lender or Investor

The "Summary of Financial Needs" and the "Loan Fund Dispersal Statement" are written in paragraph form, and are included only if the business is seeking funds from a lender or investor.

- ✓ **Summary of financial needs -** A statement which describes, (i) Why the venture is applying for a loan or investment funds; and (ii) How much the venture need to accomplish the business goals.
- ✓ **Loan fund dispersal statement -** A statement of how the borrowed or invested money will be used. It is important to inform the investor or lender on how the funds will be utilised with a strong backup data to support the fund utilisation plan.

B. Pro Forma / Projected Statements

The pro forma or projected statements indicate cash flow, income projections, etc., that are used for predicting the future profitability of the business. The projections should be based on realistic research and reasonable assumptions. The pro forma

statements include (i) Cash Flow Statement; (ii) Three-Year Income Projection (iii) Break-Even Analysis, which are essential for all business plans.

Besides these four statements, two worksheets i.e. Cash to be Paid Out and Sources of Cash Worksheets (for developing cash flow statement) and Quarterly Budget Analysis Spreadsheet (for comparing the company's projections with its actual performance and revising cash flow statements) are included.

1. Cash flow statement

A cash flow statement is a financial statement that provides aggregate data regarding all cash inflows a company receives from its ongoing operations and external investment sources, as well as all cash outflows that pay for business activities and investments during a given period (Investopedia, 2018b).

- ✓ The Cash Flow Statement deals only with actual cash transactions and not with depreciation and amortization of goodwill or other non-cash expense items.
- ✓ Prepared on a monthly basis for the next tax year (or more) of the business. To be effective, it must be analyzed and revised quarterly to reflect actual performance in the preceding three months of operations.

The cash flow statement can help the investors in the following ways (Patnia, 2012)

- ✓ Provides summary of the inflows and outflows of cash and cash equivalents.
- ✓ Facilitates highlighting the cash generated from operating activities.
- ✓ Helps in planning the repayment of short term liabilities and other loan schedule.
- ✓ Helps to ascertain the liquid position of the firm and Banks and financial institutions mostly prefer cash flow statement to analyze liquidity of the borrowing firm.
- ✓ Gives vital information about the entity's performance and its major activities during the year.
- ✓ It assists in managing cash flows and employment of cost curtailment tools to avoid unnecessary cash payments

Preparation of Cash Flow Statement

Cash Flow Statement is prepared in an activity format and is basically segregated into four sections: (i) operating, (ii) investing (iii) financing activities and (iv) cash and cash equivalents. Usually, the operating activities are presented first, followed by the investing and then financing activities. A cash flow statement template (Table 4.1) for presentation of activities (Adapted from Patnia, 2012) under different heads is being provided below:

Table 4.1. Template for preparing cash flow statement

Particulars	**Item total (Rs.)**	**Sub-total (Rs.)**
Net profit before tax and extraordinary items	xxx	
Adjustments for Non Cash Items		
(i) Depreciation	xxx	
(ii) Interest / dividend	xxx	
Operating profit before working capital changes	xxx	
Adjustments for Increase / Decrease in Assets / Liabilities	xxx	
Cash before extraordinary items	xxx	
Adjustments for Extraordinary Items	xxx	
Net profit before tax and extraordinary items	xxx	
Net Cash from Operating Activities		XXX
(i) Purchase /Sale of fixed assets	xxx	
(ii) Purchase of Investments	(xxx)	
(iii) Interest / Dividend received	xxx	
Net Cash from Investing Activities		XXX
(i) Proceeds from issue of shares capital	xxx	
(ii) Dividend paid	xxx	
(iii) Proceeds from long term borrowings	xxx	
Net Cash from Financing Activities		XXX
Net increase / decrease in Cash and Cash Equivalents		XXX
Cash and Cash Equivalents at the beginning of the year		XXX
Cash and Cash Equivalents at the end of the year		**XXX**

Aspects to be included in cash flow statement

(i) Adjustment for Non-Operating Incomes/Expenses: Remove incomes or expenses that are not included in operating activities. Eg financial incomes, financial costs.

(ii) Adjustment for Non-Cash Items : remove items that are included in calculating profit but not involve cash payment. Eg. Depreciation, amortisation and impairment.

(iii) Adjustment for Working Capitals: adjust profit with working capitals because the sales do not involve cash transfer. Eg. Receivables, payables and inventories.

(iv) Net Cash from Operating Activities – Cash earned from the venture from the primary activities of the venture and are the principal revenue generating activities. Operating activities are those which provide either revenue or are the direct cost of producing a product or rendering services and includes the following**:**

(a) Net from Operations – It is calculated after adjusting following cash income and expenses

- ✓ Cash Incomes such as all cash inflows from cash sale, cash received from debtors, commission, fees, royalty, revenue; and
- ✓ Cash Expenses outflows including cash purchases, payment to creditors, cash operating expenses, payment of wages, income tax paid

(b) Changes in Net Working Capital – Shows the increase/ decrease in current assets/ liabilities.

(c) Extraordinary item – Unexpected non-recurring item like bad debts recovered, loss due to fire, winning from lottery etc.

The net inflow / outflow of funds after taking into consideration the above adjustments, is termed as Net Cash from Operating Activities.

(v) Net cash from Investing Activities - All activities of acquisition and disposal of long – term assets or fixed assets such as machinery furniture, land and building, etc. and other investments not included in cash equivalents. The cash payments to acquire shares, debt instruments, advances and loans made to third parties, fixed assets (this include research & development costs, cost incurred on intangibles etc.) and cash receipts from disposal of fixed assets (including intangibles), shares, repayment of advances, dividend from equity securities etc. are also included.

The net of all the transactions covered under this head is termed as Net Cash from Investing Activities.

(vi) Net Cash from Financing Activities - Cash flow related to obtain and repay capital and debt. Items under the financing activities section includes, (i) Cash proceeds from issue of shares, debentures, short or long term borrowings etc; (ii) Cash repayments of amounts borrowed etc.; (iii) Dividends paid and (iv) Payment of dividend tax.

The net of all the transactions covered under this head is termed as Net Cash from Financing Activities.

(vii) Cash and Cash Equivalents:

This includes cash on hand, demand deposits with banks and other short-term, liquid investments, readily convertible into cash and which are subject to insignificant risk of changes in values.

The balance of "Cash and Cash Equivalents" at the beginning of the year is to be added with the aggregate of Net Cash Flow from all the activities, as determined above, to ascertain the Cash and Cash Equivalents available at the end of the year. This closing figure display the actual cash position of the business.

2. Three-Year Income Projection

A three-year income projection is a pro forma / projected income statement. It differs from a cash flow statement in that it includes only projected income and deductible expenses.

At the end of each year, the venture can compare the projections against its actual performance. Some lenders or investors may seek to extend the projection period to five years.

A template of suggested by Pinson (2008), for three year income projection is displayed in Fig 4.1.

THREE YEAR INCOME PROJECTION

Venture Name:.....

Period:.....

	Year 1	Year 2	Year 3	Total
INCOME				
1. Sales revenues				
2. Cost of goods sold (c-d)				
a. Beginning Inventory				
b. Purchases				
c. C.O.G. Avail Sale (a+b)				
d. Less Ending Inventory (last date of ending year)				
3. GROSS PROFIT ON SALES				
EXPENSES				
1. VARIABLE (Selling) a to h)				
a.....				
b.....				
c.....				
d.....				
e.....				
f.....				
g. Miscellaneous selling expenses				
h. Depreciation (Production/service assets)				
2. FIXED (Administrative) (a to h)				
a.....				
b.....				
c.....				
d.....				
e.....				
f.....				
g. Miscellaneous fixed expenses				
h. Depreciation (Office equipments)				
TOTAL OPERATING EXPENSES (1+2)				
NET INCOME OPERATIONS (GPr-Expenses)				
Other Income (Interest Income)				
Other Expense (Interest Expense)				
NET PROFIT / LOSS BEFORE TAXES				
TAXES (All taxes – cumulative)				
NET PROFIT/ LOSS AFTER TAXES				

Fig 4.1. Template for preparing Three year Income projection (Source: Patnia, 2012)

3. Break-Even Analysis

A break-even analysis indicates at what level cost and revenue are in equilibrium. It is a simple and easily understandable method of presenting to management the effect of changes in volume on profits.

Break-Even point

The point at which a venture's costs exactly match the sales volume and at which the business has neither made a profit nor incurred a loss. The break-even point can be determined by mathematical calculation or by development of a graph.

The break-even point is expressed in It can be expressed in (i) Total Rupees of Revenue (exactly offset by total costs) and (ii) Total Units of Production (cost of which exactly equals the income derived by their sale).

To apply a Break-Even Analysis to an operation, three projections are required :

1. Fixed Costs - Administrative Overhead + Interest. Many of these costs remain constant even during slow periods. Interest expense must be added to fixed costs for a break-even analysis.

2. Variable Costs - Cost of Goods + Selling Expenses. Usually varies with volume of business. The greater the sales volume, the higher the costs.

3. Total Sales Volume - Projected sales for same period

Steps in calculating break-even point

1. Calculate Gross Profit per Unit

Gross Profit per Unit = Sales Price per Unit – Cost of Goods Sold per Unit

If the venture is engaged in service business, the hour is included in pace of the unit.

2. Calculate Fixed Monthly Expenses

3. Determine Number of Units Sold to Breakeven – The fixed monthly expenses are divided by gross profit per unit to determine how many units the firm need to sell in order to breakeven.

4. How Much Time to Breakeven – Calculated by dividing the number of units sold to break-even by the monthly units sold.

C. Actual Performance Statements

These are the historical financial statements reflecting the past performance of the business. This statement is not mandatory for new businesses, who are first timers with no business history.

(i) Balance sheet

The Balance Sheet is a financial statement that shows the financial position of the business as of a fixed date. It is usually done at the close of an accounting period.

The three important sections of any balance sheet are:

- ✓ Assets – Anything that has value and owned by a company
- ✓ Liabilities – This provides a list of debts a company owes to others
- ✓ Capital or Equity- Amount equal to the owner's equity
- ✓ The relationship between these terms: Assets - Liabilities = Net Worth

Importance of Balance Sheet

Balance sheet analysis can reveal a lot of important information about a company's performance. Importance of balance sheet is listed below:

- ✓ It is an important tool used by the investors, creditors and other stakeholders to understand the financial health of an entity.
- ✓ The growth of an organization can be known by comparing the balance sheet of different years.
- ✓ It is an essential document required to be submitted to the bank to obtain a business loan.
- ✓ Stakeholders can understand the business performance and liquidity position of the entity.
- ✓ Ability to undertake expansion projects and meet unforeseen expenses can be determined by analyzing a company's balance sheet
- ✓ If the company is funding its operations with profit or debt can be known

A Balance sheet template prescribed by the Ministry of Corporate Affairs, Govt of India (Ministry of Corporate Affairs, 2018) is displayed in Fig 4.2.

BALANCE SHEET TEMPLATE

Name of the Company.....

Balance Sheet as at .....

(Rupees in.....)

Particulars	**Note No.**	**Figures as at the end of current reporting period**	**Figures as at the end of the previous reporting period**
I. EQUITY AND LIABILITIES			
(1) Shareholders' funds			
(a) Share capital			
(b) Reserves and surplus			
(c) Money received against share warrants			
(2) Share application money pending allotment			
(3) Non-current liabilities			
(a) Long-term borrowings			
(b) Deferred tax liabilities (Net)			
(c) Other Long term liabilities			
(d) Long-term provisions			
(4) Current liabilities			
(a) Short-term borrowings			
(b) Trade payables			
(c) Other current liabilities			
(d) Short-term provisions			
TOTAL			
II. ASSETS			
Non-current assets			
(1)(a) Fixed assets			
(i) Tangible assets			
(ii) Intangible assets			
(iii) Capital work-in-progress			

(iv) Intangible assets under development			
(b) Non-current investments			
(c) Deferred tax assets (net)			
(d) Long-term loans and advances			
(e) Other non-current assets			
(2) Current assets			
(a) Current investments			
(b) Inventories			
(c) Trade receivables			
(d) Cash and cash equivalents			
(e) Short-term loans and advances			
(f) Other current assets			
TOTAL			

Fig 4.2. Balance Sheet Template (As per the 2017 modification to the Companies Act 2013 - Source: Ministry of Corporate Affairs, 2018)

(II) Profit and Loss Statement

A profit and loss account shows a company's revenue and expenses over a particular period of time, either one month or consolidated months over a year. These figures show whether the business has made a profit or a loss over that time period.

A template of Profit and Loss statement prescribed by Ministry of Corporate Affairs (2018) is displayed in Fig 4.3.

THE STATEMENT OF PROFIT AND LOSS

Name of the Company…….

Profit and loss statement for the year ended ……

(Rupees in……)

	Particulars	**Note No.**	**Figures as at the end of current reporting period**	**Figures as at the end of the previous reporting period**
	1	2	3	4
I	Revenue from operations		xxx	xxx
II	Other income		xxx	xxx
III	Total Revenue (I + II)		xxx	xxx
IV	Expenses: Cost of materials consumed Purchases of Stock-in-Trade Changes in inventories of finished goods work-in-progress and Stock-in-Trade Employee benefits expense Finance costs Depreciation and amortization expense Other expenses Total expenses		 Xxx Xxx Xxx xxx	 Xxx Xxx Xxx Xxx
V	Profit before exceptional and extraordinary items and tax (III - IV)		xxx	xxx
VI	Exceptional items		xxx	xxx

VII	Profit before extraordinary items and tax (V - VI)		xxx	xxx
VIII	Extraordinary items		xxx	xxx
IX	Profit before tax (VII- VIII)		xxx	xxx
X	Tax expense: (1) Current tax (2) Deferred tax		 Xxx Xxx	 Xxx Xxx
XI	Profit (Loss) for the period from continuing operations (VII-VIII)		xxx	xxx
XII	Profit/(loss) from discontinuing operations		xxx	xxx
XIII	Tax expense of discontinuing operations		xxx	xxx
XIV	Profit/(loss) from Discontinuing operations (after tax) (XII-XIII)		xxx	xxx
XV	Profit (Loss) for the period (XI + XIV)		xxx	xxx
XVI	Earnings per equity share: (1) Basic (2) Diluted		 Xxx xxx	 Xxx xxx

Fig 4.3. Template for preparing profit and loss statement (As per the 2017 modification to the Companies Act 2013 - Source: Ministry of Corporate Affairs, 2018)

D. Financial Statement Analysis

Financial statement analysis is the process of analyzing a company's financial statements for decision-making purposes and to understand the overall health of an

organization. Financial statements record financial data, which must be evaluated through financial statement analysis to become more useful to investors, shareholders, managers, and other interested parties.

Types of financial statement analysis

Different financial indicators tools used to work out the financial viability of the project are calculated as under.

A. Liquidity Analysis

The liquidity of a business is the ability it has to meet financial obligations. The analysis focuses on the balance sheet relationships for the current assets and current liabilities. Liquidity ratios can be used to see if the business is in any risk of insolvency. The lenders or investors will use these ratios to determine whether or not to extend credit. They will compare the ratios with those of previous periods and with industry standard ratios.

The three main measures of liquidity and their formulas are as follows:

1. Net Working Capital. The excess of current assets over current liabilities is net working capital. The more net working capital a business has, the less risky it is, as it has the ability to cover current liabilities as they come due.

Net working capital = (Current Assets - Current Liabilities)/ Net Working Capital

2. Current Ratio. The current ratio is a more dependable indication of liquidity than the net working capital. Current ratio is computed using the following formula:

Current Ratio = Current Assets/Current Liabilities

A higher ratio means a more liquid position. A ratio of 2.0 is considered acceptable for most businesses. This would allow a company to lose 50% of its current assets and still be able to cover current liabilities. For most businesses, this is an adequate margin of safety.

3. Quick Ratio. Since inventory is the most difficult current asset to dispose of quickly, it is subtracted from the current assets in the quick ratio to give a tougher list of liquidity. A quick ratio of 1.00 or greater is usually recommended, but that is dependent upon the business you are in. The quick ratio is computed as follows:

Quick Ratio = Current Assets Inventory/ Current Liabilities

B. Profitability Analysis

A Profitability Analysis will measure the ability of a business to make a profit. This type of analysis will utilize the profit and loss (income) statements.

1. Gross Profit Margin. The gross profit margin indicates the percentage of each sales dollar remaining after a business has paid for its goods.

Gross Profit Margin = Gross Profit/Sales

The higher the gross profit margin, the better. The normal rate is dependent on the business.. The Gross Profit Margin is the actual markup on the goods sold.

2. Operating Profit Margin. This ratio represents the pure operations profits, ignoring interest and taxes. In other words, this is the percentage of each sales rupee remaining after a business has paid for its goods and paid for its variable and fixed expenses. Naturally, a high operating profit margin is preferred.

Operating Profit Margin = Income from Operations/Sales

3. Net Profit Margin. The net profit margin is clearly the measure of a business success with respect to earnings on sales.

Net Profit Margin = Net Profit/Sales

A higher margin means the firm is more profitable. The net profit margin will differ according to specific type of business.

C. Debt Measures

The debt position of a business indicates the amount of other people's money being used to generate profits. The measures of debt use the balance sheet to tell the business how indebted it is and how able it is to service the debts. The more indebtedness of the venture, the greater will be the risk of failure.

1. Debt to Assets Ratio. This is a key financial ratio used by creditors. It shows the extent of indebtness over assets. The higher this ratio, the more risk of failure.

Debt to Assets Ratio = Total Liabilities/Total Assets

The acceptable ratio is dependent upon the policies of your creditors and bankers.

If, for instance, the venture had rates of 79% and 74% for two consecutive years, these would be excessively high and show a very high risk of failure. Clearly 3/4 of the company is being financed by other people's money, and it does not put the business in a good position for acquiring new debt.

2. Debt to Equity Ratio. This is a key financial ratio used by creditors. It shows what is owed in relationship to the owner's equity in the company. Again, the higher this ratio, the more risk of failure.

Debt to Equity Ratio = Total Liabilities/Total Equity (Net Worth)

D. Investment Measures

Indicates the ability of the business to get returns.

1. Return on Investment (ROI) - The Return on Investment uses your balance sheet and measures the effectiveness of you, as the business owner, to generate profits from the available assets.

ROI = Net Profits/Total Assets

The higher the ROI, the better. The business owner should get a target for the ROI.

E. Other measures

1. Net present worth (NPW)

It is the present worth of the incremental net benefit or incremental cash flow stream. The net present worth may also be computed by finding the difference between the present worth of benefit stream less the present worth of the cost stream. To become a project viable, net present worth (NPW) must be positive at 12 % discount rate (if assumed).

$$NPW = \sum_{t=1}^{t=n} \frac{B_t - C_t}{(1+i)^t}$$

Where,

B_t = Benefit in each year; C_t= Cost in each year; t=1,2,3,.....n; i=interest (discount)rate

2. Benefit cost ratio (B:C Ratio)

It is given as ratio of present worth of benefit stream to present worth of cost stream. The absolute value of benefit cost will vary depending on the interest rate chosen. To

become a project viable, benefit cost ratio must be >1 at 12 % discount rate (if assumed).

$$B{:}C\ ratio = \frac{\sum_{t=1}^{t=n} \frac{B_t}{(1+i)^t}}{\sum_{t=1}^{t=n} \frac{C_t}{(1+i)^t}}$$

Where,

B_t=Benefit in each year; C_t=Cost in each year; t=1,2,3,.....n; n=number of years; i=interest (discount) rate

3. Internal rate of return (IRR)

The above two conditions are fulfilled, workout the internal rate of return by using discounted cash flow technique. IRR for a project gives the measurement at what rate the project will give return to the capital. It is calculated by the discounting the cost and benefits of a project at a progressively higher discount rate till the net present worth becomes negative. Thereafter, discount factor at which NPW becomes zero is calculated by mathematical computation which is the IRR of the project.

$$NPW = \sum_{t=1}^{t=n} \frac{B_t - C_t}{(1+i)^t} = 0$$

Where,

B_t = Benefit in each year; C_t= Cost in each year; t=1,2,3,.....n

i=interest (discount)rate

The formula for estimation of IRR using interpolation method is:

Internal rate of return (IRR)= lower discount rate (LDR)+difference between the discount rates × (Present worth of incremental net benefit stream (cash flow) at the lower discount rate/Sum of the present worth of the incremental net benefit streams (cash flows) at the two discount rates signs ignored)

Table 4.2. Requirement of financial indicators

Financial indicators*	Requirement
NPW	Should be +ve
BCR	Should be >1.0
IRR	>12%
DSCR	Should be >1.5

*NPW, BCR, IRR & DSCR analysed by discounted cash flow @ 12% discounted rate.

Repayment of Bank Loan

Loan shall be repaid 10 years of instalments with one year grace period. However, in any case, should not exceed 15 years for consideration of bank finance.In order to qualify as a bankable, a project should yield enough return to repay the entire bank loan along with the interest within the project life.

Repayment schedule indicating total loan outstanding, interest accrued, net incremental income (Gross surplus), repayment of capital and interest and net surplus should be furnished with the project report.

Debt Service Coverage Ratio (DSCR):

Provides a basis for fixation of repayment schedule. The ratio indicates the capability of the unit to generate adequate cash accruals to pay off the instalments of term loan and interest thereon.

$$\text{DSCR: } \frac{\text{Profit after tax + depreciation + interest on term loan and deferred credit}}{\text{Loan instalments + interest on term loan and deferred credit}}$$

DSCR should be around 1.5 to 2.0, for the financier to be satisfied about the repayment capability of the project / enterprise.

Assumptions:

- Insurance charges for the fixed assets considered as 0.5% of the depreciated cost of the assets.
- Interest on working capital considered at 12.5% to 13% per annum
- Interest on term loan considered at 12% per annum.
- Margin money considered at 25% of the financial outlay.
- Depreciation rate of 5% has been considered for civil structures
- Depreciation rate of 10 % has been considered for plant & machineries

- Repayment period of ten years with one year grace period has been considered.

How to choose financial statements based on purpose

The financial statements enclosed in a business plan are decided based on the purpose for which a business plan is prepared (Pinson, 2014).

1. New business seeking funds from a lender or investor.

- ✓ "Application of Loan Funds" and the "Loan Fund Dispersal Statement" along with pro forma statements are required.
- ✓ Financial statement analysis will be based on projections only and will utilize the three-year profit & loss projection.

2. New business, not seeking funds from a lender or investor.

- ✓ Application of Loan Funds" and the "Loan Fund Dispersal Statement" are not required. Submit only pro forma statements.
- ✓ Financial statement analysis will be based on projections only and will utilize the three-year profit & loss projection.

3. Existing business, seeking funds from lender or investor -All financial documents are included.

4. Existing business, not seeking funds from lender or investor.

All financial statements required with the exception of the "Application of Loan Funds" and the "Loan Fund Dispersal Statement".

5. If this business plan is being written for a division within a larger business.

The division is considered as a business within a business and include financial documents as indicated in whichever of the above scenarios fits the situation.

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Chapter 5

Funding Opportunities for Agro-Technology Based Start-Ups

Today, the wide availability of affordable technology solutions has made it easier to turn ideas into well-developed concepts. As a result, early stage agro-technology startups need only small amounts of investments to either create a first version of a product or to create an early prototype in order to attract more investors or subsequent rounds of funding. However, the startup needs to grow at a higher rate to get back the investments besides attracting new investment.

5.1. Types of Financial Needs

The financial needs of an agro-technology start-up may be classified based on the extent of permanence or period of use.

5.1.1. Extent of permanence

Financial needs of an agro-technology startup may be classified into two on the basis of the extent of permanence.

Fixed Capital

The funds required to purchase fixed or durable assets are known as fixed capital or long term capital. The fixed or durable assets include land, buildings, machinery, equipment and furniture etc. The nature and size of the business generally determines the amount of fixed capital needed. For e.g. manufacturing activities require large investments in plant, machinery, warehouses and others. While, trading concerns need relatively lesser investment in such assets. These assets continue to generate income and profits over an extended period of time. Also, funds which are once invested in fixed assets cannot be withdrawn and put to some other use.

Working Capital

The money invested in short term assets or current assets is known as working capital. It includes purchase of raw materials, payment of wages and salaries, rent, fuel, electricity and water, repairs and maintenance of machinery, advertising, etc. Besides, sale of goods on credit leads to the holding of debtors balance and bills receivable, which may also be regarded as current assets. The requirement of finance for all these purposes arises at short intervals. Working capital is also known as Circulating capital or Revolving capital because funds invested in such assets are continuously recovered through realisation of cash, and again reinvested in current assets. The amount of working capital required depends mainly on the nature of the business, the time required for completing the manufacturing process, and the terms on which materials are purchased and goods sold. For e.g. trading companies require more working capital than manufacturing companies.

5.1.2. Period of use

On the basis of period of use, the financial needs of the business may be classified into three – long term, medium term and short term capitals

(i) Long-Term Capital

Long-term capital is required for a longer period i.e. five years or more. The fixed assets as well as the permanent part of the working capital is financed by it. The important sources of long-term finance are - Issue of shares, Issue of debentures, loans from financial institutions and reinvestment of profits

(ii) Short-Term Capital

Short-term capital is required for a shorter period i.e. less than a year. It involves financing the current assets and meeting day-to-day expenses. The important sources of short -term finance – banks, trade credit and instalment credit.

(iii) Medium-Term Capital

Medium-term capital is required for a period of 2 to 5 years. It involves financing certain activities like renovation of buildings, modernisation of machinery, heavy

expenditure on advertising, etc. The important sources of short -term finance are - issue of shares, issue of debentures, borrowing from banks and other financial institutions and reinvestment of profits.

5.2.1. Other types

Risk Capital

Risk capital denotes the provision of capital where the provider reduces the risk burden of the entrepreneur, and in turn bears some part of the overall risk involved in a productive activity. The 'risk capital' includes equity as well as mezzanine/ quasi equity financial products that have features of both debt and equity.

Seed Capital/Marginal Money

Seed money is a small amount of money required to prove that the concept of the startup is viable and feasible.

Bridge loans

A bridge loan is a short-term loan used until a person or company secures permanent financing or removes an existing obligation. This type of financing allows the user to meet current obligations by providing immediate cash flow. The loans are short term, up to one year, with relatively high interest rates and are usually backed by some form of collateral such as real estate or inventory.

5.3. Sources of Financing

There are two major sources of financing startups like debt and equity financing.

A. Equity Financing

The equity funding is an umbrella term that refers to any means of financing a company in which the owners receive money in exchange for sharing a part of ownership. There are multiple methods for raising equity capital ranging from 1 to 100%. Depending upon the nature of business. Types of equity financing include self-

financing/ bootstrapping, Friends and family members, government grants, angel Investors, crowdfunding and venture investors.

B. Debt Financing

The debt financing refers to borrowing funds from creditors with the stipulation of repaying the borrowed funds plus interest at a specified future time. The types of debt financing include friends and relatives, banks and other commercial lenders, commercial finance companies, government programs, bonds etc.

5.4. Sources of financing based on stages of startup

The entrepreneur should be able to recognize where the organization is in its life cycle, and specify which financing option has to be used. Also, he has to decide whether a certain option has to be sustained during further stages, or another option has to be considered, based on the requirements of the organization. The diagram shown below (Fig. 5.1) illustrates the different stages in the Financing Life Cycle of a startup company.

I. Planting the seed

A. Pre-Seed stage (Idea or concept stage)

When an entrepreneur has an idea, a working prototype of a product or service and are looking for funding that will allow him/her to develop it into a marketable product/ service, the pre-seed funding is available for them. It is focused on early stage product development of a minimum viable product (MVP) and funding is provided. Pre-seed capital covers the first stage in the life of a startup and is often comprised of five main sources of financing:

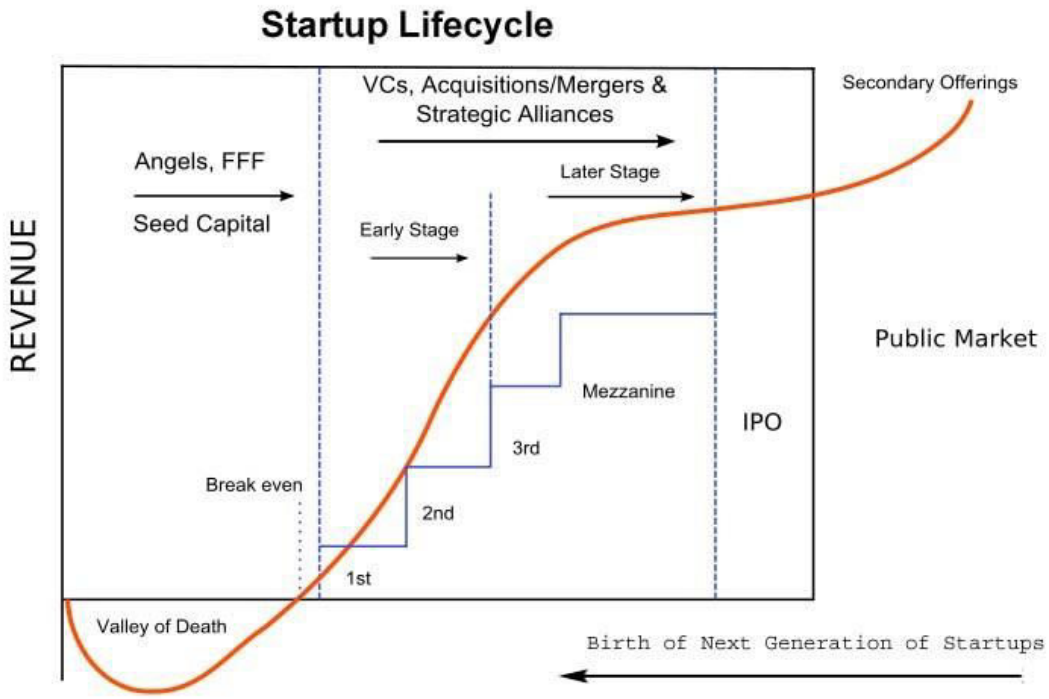

Fig. 5. 1. The Startup Life Cycle (Source: netvalley.com)

(i) Self-funding or Bootstrapping

Self-funding or bootstrapping is the first phase of the investment stages. It refers to using personal savings, credit cards, promising stock for sweat equity, or borrowing from friends and family as seed capital for the startup. Developing a business with own money provides the entrepreneurs with great control over their venture, but runs into the risk of losing own wealth if failed.

(ii) Friends and family members

The friends, family or close associates help to fund the business based on their relationship with the entrepreneur without proper assessment of the business plan. Borrowing capital from family and friends is help to kick off the business to a point where it can seek and get other types of funding.

(iii) Startup Incubators, accelerators, and excubators

The Startup accelerators and startup incubators assist entrepreneurs in the journey toward becoming successful companies, but each in their own way. An accelerator works with startups for a short and specific amount of time, usually from

90 days to four months. Accelerators also offer startups a specific amount of capital, and in exchange they require a part of ownership of the startup (usually 3-8%). The goal of accelerators is to grow the size and value of a company as fast as possible in preparation for an initial round of funding. The Centre for Innovation Incubation and Entrepreneurship (CIIE), Indian Institute of Management (CIIE-IIMA), Ahmadabad (http://www.ciie.co/start-up/) along with a-IDEA: Technology Business Incubator of National Academy of Agricultural Research Management, Hyderabad recently launched a food and agribusiness accelerator. In contrast, the incubators work with start-ups for a longer period of time ranging from 2-9 years, till they develop into fully grown companies. Incubators do not provide upfront capital like accelerators, and may or may not have ownership rights on the start-ups. In fact, some incubators may prepare the startups for an accelerator program. The Agri-Business Incubators promoted by ICRISAT and ICAR are examples of incubators. The Excubator is a novel form of incubators which is designed to support startups from the very beginning with ideation to the end of successful exit.

(iv) Angel investors

An angel investor is a rich individual, who provides capital for a business start-up, in return for convertible debt or ownership equity. In general, the angel investors have previous experience in running the similar business or have expertise in the business who can offer valuable advice and guidance to the entrepreneur at the initial stages. The angel investors will prefer to fund startups that will have the potential to grow at an annual rate of 40% or more. Angel investors may focus on earlier stage financing after pre-seed stage and smaller financing amounts than venture capitalists. The amount of money invested by angels is smaller and covers initial marketing, operating and production costs and salaries. In return, the angels expect a 10 to 30% return on their investment, usually over a five to seven year period. A number of angel investors have been organizing themselves into angel groups or networks to share research and pool their investment capital.

(iv) Small grants

Few government assisted programmers offer funding for initial investment.

B. Seed stage (Institutional seed)

In the seed stage, the company has a concept or product, but don't have a working prototype. The pre-seed and seed money gives the company just enough run way to move from this early conceptual phase toward a product. In some cases, funds are provided at the late seed stage where the company has a product or service for which the value proposition is already validated.

At the initial stages, the funds are not used to start the business on a wide scale, but to investigate its different possibilities. The company's goal in this stage is to test the market, establish the viability of the business idea, and measure interest and attractiveness to investors. A seed investment is provided to achieve one of the following (Whitehouse, 2015):

1. Product Identification: A startup founder may have an idea about the type of product or service he/she hopes to develop, and needs seed funding to design the product or service.
2. Marketplace Orientation: To conduct research into available marketplaces, understanding the competition and how best to sell a product or service within that niche.
3. Demographic Targeting: To identify the specific demographic or target audience for a product or service through market research.
4. Team Creation: To establish a working team based on the expertise required for establishment of the company.

A startup growth phase from the receipt of seed capital and its establishment of a secure cash flow (till the break-even point) is called as the "Valley of Death" curve (Fig. 1). During the "Valley of Death", the start-ups need seed capital and expert mentoring in order to survive. Because seed capital is smaller and more of a high-risk investment, it generally will come from self-funding/ bootstrapping, friends and family members, small grants, accelerators, angel investors, Startup Incubators, accelerators, and excubators as well as crowd funding.

Sources of funding

The main providers of capital at this stage are angel investors, early stage Venture Capital firms, crowdfunding and Syndicate investing.

(i) Venture capital

Venture capital (VC) is provided as a funding option to early-stage start-ups, usually after the venture has been funded by angel investors. In return for their investment, venture capitalists expect a return through an eventual realization event like an IPO or trade sale of the company.

Venture capital firms generally consist of people with a deep industry experience, or small teams of people with business training. VCs also take a role in managing start-ups at an early stage, thus adding skills as well as capital as an investment. . Venture capitalists can invest anywhere from Rs.10,000 up to the billions, expecting a return of up to 30% over a five to ten year period. Start-ups wanting to raise venture capital require innovative technology, potential for rapid growth, and a well-developed business model. The average time frame for a VC investment is usually within 5 – 7 years, up to the time the company becomes self-reliant.

Factors to be considered by an entrepreneur before taking venture capital funds (Prabhu, 2011):

- Equity Share – The investor owns a certain amount of shares in the company before sharing ownership with the venture capitalists
- Involvement of High Risk – TheVC is willing to take a risk by investing in the company, without any collateral or guarantees.
- Partnership Constraints – Providing reasonable level of ownership to VC who will have a say in the operation of the company.
- Win-Win Situation – When a VC invests in a growing startup, it can help the company grow faster and get better returns. They can help in devising strategy, acquiring customers, recruiting the team, etc.

(ii) Crowdfunding

Crowdfunding is the practice of funding a business by taking small amounts of capital from a large number of people, through a web-based platform or social networking site for a specific project, business venture or social cause. This mode uses the vast networks friends, family and colleagues via different social platforms to attract new investors. In India, crowdfunding is a recent development which has only about 200 accredited investors who can participate in this platform. eKuthir (http://www.oneacreventure.org/viewall) is one of the social cause crowdfunding platforms in India.

There are two types of crowdfunding that are closely tied to startup investing (startupxplore, 2015a).

(a) Reward-based crowdfunding

- The investors can fund projects to get some profit in return (physical or digital products and services), receiving no equity from the teams or companies providing such goods.
- Eg. Kickstarter (https://www.kickstarter.com/) & Indiegogohttps://www.indiegogo.com/

(b) Equity crowdfunding

- The banks or investors offer funds and get equity in return, thus becoming shareholders of the companies.
- This type of investing is often carried by platforms that serve as aggregators, choosing startups and inviting backers to invest in them through the platform, which get to charge a fee per deal closed. T
- Eg. Seedrs (https://www.seedrs.com/), Companisto (https://www.companisto.com/en) and FundedByMe (https://www.fundedbyme.com/)

(iii) Syndicate investing

A syndicate is an investment vehicle that allows investors to co-invest with relevant and reputable investors (leaders) in the best startups in the market (startupxplore, 2015b).

Angels with good track records can lead investments in early stage startups and allow other angels to co-invest, providing additional capital to the financing rounds.

In syndicate investing (startupxplore, 2015a),

- Lead angel investors select the startups they want to invest in and don't have to face the burden of providing all the capital.
- Angels that join in don't have to select the startups if they trust the criteria of the lead angel investors.
- Startups can get more money than usual, faster.

Eg. Tracxn Syndicate - https://tracxn.com/syndicate/; AngelList - https://angel.co/ ; Letsventure - https://letsventure.com/

C. Startup financing at the growth stage

The growth stage of the startup involves three phases' series A, series B, and series C. In all the cases venture capital and bank loan are primary finances.

II. Optimise - Series A

At the point when a company has a prototype, they can seek funding from a venture capital group to work toward bringing the product to market. The series A funding is larger than the seed stage, and is in exchange for a portion of ownership of the the company. Startups use "Series A "funding to devise the best business model for their company and to work out the costs and benefits of bringing their product into the actual marketplace.

Series A funding is given to achieve one of the following (Whitehouse, 2015):

1. Distribution: Optimizing the advertising and products/services distribution can lower overall costs or increase sale.
2. New Markets: Launching a successful product in a new region.

3. Stage 2: The primary function of a series A investment is usually to take a company to the next level. Capital raised during this round is often used to implement a new business plan geared towards meeting defined business goals like launching a new product or reaching a new sales target.
4. Shortfall: To make up for a shortfall in the capital. A startup may still be a promising investment opportunity, but unforeseen expenses can use up available funds, and so another round of investment might be required to offset this.

Most series A investors are venture capital funds, or angel investors, who are willing to accept the high risk involved. In India, a startup raises $2-5 million in a series A round

III. Build-Series B

When the startup reach series B, it has a product, established a customer base and a business model and need capital to bring the product to a broader market. This represents a significant increase in the funding. Investors usually pay a higher price for investing in the company than the Series A investors. The Series B funding is provided for the following (Whitehouse, 2015):

1. Team Expansion: As the company grows, more employees will be required. The funding is required to pay salaries, office space, new equipment, etc.
2. Globalization: To scale up the businss by expanding it on a global scale.
3. Acquisitions: If a startup has grown sustainably, it may acquire another businesses. Funds are required to buy new ventures.

IV. Scale up - Series C and beyond

When companies reach this stage they’re fully mature. Business model is working -whether the company is profitable or not-, user base is expanding and acquisitions might be in the crosshairs of the executives leading these companies. This is all about fast growth and companies focus on diversifying their product for multiple different platforms.

Financing rounds at these stages is in millions. A clear difference between Series C and other rounds, besides the amount being invested, is that at this point

private equity firms and investment banks tend to be the lead investors, with the participation of large Venture Capital firms. From this stage on the outcome tends to be an IPO or to get acquired by a much bigger company.

According to industry estimates, a startup in India usually raises $5-10 million in a series B round, $15-30 million in a series C round and about $50 million in a series D round, respectively (Bhattacharya, 2015).

Mezzanine

At this point, companies may be eyeing the following types of opportunities that require additional funds: An IPO (initial public offering), an acquisition of a competitor and a management buyout. The mezzanine financing or "bridge" financing help them to give a final raise before going public. Mezzanine financing is basically debt capital that gives the lender the right to convert the loan into equity in case of non-repayment in time and in full .

Mezzanine financing is usually provided very quickly with little due diligence and little or no collateral. However, such kind of financing is aggressively priced with the lender seeking a return in the 20-30% range (The Economic Times, 2013).

In the mezzanine round, a company is valued very high and has several hundred employees and is operating in more than one country. Mezzanine financing is often used 6 to 12 months before an IPO and then the IPO's proceeds are used by the company to pay back the mezzanine financing investor.

D. Established firm

Initial Public Offering (IPO)

An initial public offering (IPO) occurs when a company issues common stock or shares to the public for the first time. The startups which are started making profits through funds received from Venture Capitals, and wishes to expand their operations.

Benefits of IPOs (Whitehouse, 2015)

- The equity based of a startup is strengthened. When more investors are involved in the startup, it grows faster and attracts even more investors.
- Help the startup to get cheaper funding without having to repay it in direct terms. However, the stratup is bound to pay bonuses to its employees from the profits.
- The prestige of the stratup is enhanced when it is listed AS IPO.
- Help the start-up to attract expert talents.
- They create multiple funding opportunities like equity, cheaper bank loans, etc.

Conclusion

In general, a start-up company in India has different options to finance and sustain itself through the initial periods. Few options are seed funds, angel investors, venture capitals, and IPOs. A startup entrepreneur has to analyze various situations before selecting a financing option and work towards generate result with great benefits.

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Chapter 6

Technology Commercialisation through Technology Incubation

India, with one of the world's fastest growing and most populous economies and one of its largest farm sectors, is emerging as a potentially large market for global agricultural trade and investment. With the growth in Indian economy and liberalisation of investment regimes, India's agri-business is booming. Biotechnology, seeds, organic fertilizers and pesticides, farm machinery and food processing are major sectors of agri-business witnessed significant growth in the recent years. Currently, India's agri-business market size is estimated Rs. 17.44 trillion which is growing at 9% per annum driven by captive domestic demand and export opportunities. Indian Food Industry is the largest growing category in India, accounting for 31% share of the consumer wallet; approximately twice as high as any other category (Srinivas, 2011). The private equity investments in agri-business as a percentage of total investments have grown to 3.8 per cent in 2012 from 0.2 per cent in 2008. During the same period, venture capital investments in agribusinesses grew from 0.2 per cent to 1.6 per cent of total investments (KPMG-FICCI, 2013). As "Venture Capital" and "Private Equity Funds" are the primary drivers for the growth of new agri-business ventures, there is an urgent need to develop start-ups i.e. early stage technology ventures, to utilise the emerging opportunities.

Many Western countries are promoting business incubators to create new technology based business start-ups. In the agricultural sector, agri-business incubators (ABI) are promoted to help the farmers by encouraging enthusiastic entrepreneurs to initiate business start-ups. Promoting agribusiness and entrepreneurship is increasingly considered as a priority area for extension and there is a lot of interest in promoting agribusiness initiatives in developed countries. While many developed countries have a rich experience of promoting business incubation in the agriculture sector, in India it is a recent phenomenon. Though ABIs are developed through National Agricultural Innovation Project of ICAR with the help of International Crops Research Institute for the Semi-Arid-Tropics (ICRISAT), Hyderabad, there is a

need to expand this network to the grass root level to maximise its benefit to the farmers. In this context, the extension professionals have a great role to play to bring the benefits of ABIs to the farmers.

6.1. Business Incubators

In general, technology based ventures are considered as key growth sectors that foster economic development through income generation and job creation. Business Incubators are the popular ways of creating new technology ventures and commercializing R&D outputs to foster socio-economic development.

Business Incubators are organisations which create a supportive environment that is conducive to the ‘‘hatching’’ and development of new technology ventures (Chan and Lau, 2005). They eliminate the risk of business instability, especially among the start-ups by providing lab space, equipments and other business development support to budding entrepreneurs to help them to grow. Once a fledgling business is financially viable and the individual entrepreneur has developed the necessary survival skills, the technology venture is hatched into the open market, to stand on its own. Business incubators are originated in the United States of America in 1959 and proliferated rapidly during 1990s (National Business Incubator Association, 2009). Among the developing countries, China initiated the first business incubator at Wuhan in 1987 and India started its programme only during 2000s.Currently, there are over 8000 incubators in the World of which India has only 120 (Ryzonkov, 2013).

In the developed countries like USA, UK and other European counties, new technology ventures have created two-thirds of the net new jobs and 95% of the radical innovations in the last 25 years (Timmons and Spinelli, 2003). The business incubators vary in their objective and structure. Incubators vary in the manner they deliver their services, in their organizational structure and in the types of clients they serve. There are a variety of incubators, which are described in the following table. Various types of business incubators are described in the Table 5.1.

Table 6.1. Types of Business Incubators

Type	Aim	Objectives	Target sectors	Example
Mixed Portfolio Business Incubation	To reduce the business gap in environments where there is little entrepreneurial activity	Create start-up companies and Employment generation	Targets high-growth firms in the sectors that align with the overall regional or national competitiveness strategy	Foundation Chile and Technoserve of Mozambique
Technology Business Incubation	To reduce entrepreneurial gap in the areas where this infrastructure and human capital are weak	Create entrepreneurship, stimulate innovation, technology start-ups and graduates	Targets high-growth technology firms – IT and biotechnology	TBI, IIT-Delhi , India and Sid Martin Biotechnology Incubator, USA
Business incubation with university relationships	To bridge the gap between research and commercialization or technology transfer	Create entrepreneurship for university based technologies	Typically targets technology firm, but may work with other sectors	Rice Alliance for Technology and Entrepreneurship, Rice University, USA.

Type	Aim	Objectives	Target sectors	Example
Agri-Business Incubation	To improve the livelihood of farming communities through agri-preunership	Commercialise potential agricultural technologies and create competitive agri-business SMEs	Targets agri-business SMEs that have potential to improve the value chains	Agri-Business Incubator@ ICRISAT, India and Rutgers Food Innovation Center, New Jersey, USA
Social Business Incubation	To bridge the social gap by increasing employment possibilities for people with low employment capacities	To integrate social categories ; To create employment opportunities for people with low employment capacities	Creating socially valuable products and services in the non-profit sector	Social Incubator North, UK.
Basic research incubators	To reduce the discovery gap in a specialised area of study	To conduct blue sky research	High tech research sectors	DIBS Research Incubator, Durham, USA
Technology Parks	To accelerate growth of relatively mature businesses	For product advancement and innovation and to attract talent, ideas and financial resources and future clients	Focus on range of technology firms, but may target specific industries	Software Technology Parks of India

(Source: Ruby, 2004; Ayers, 2012)

However, in India, technology based ventures are a rare phenomena. Though India has a vast pool of S&T infrastructure with over 800 technical institutions including around 200 universities, 400 national laboratories, over 1,300 in-house R&D units in the corporate and other sectors, there is a significant gap in commercialising the significant technological outputs into new technology ventures. In the agricultural sector, the situation is still worse. Despite enormous scope for commercialising agricultural technologies in the emerging areas of biotechnology and food processing, there are very few initiatives from the potential agri-preneurs. The main reason is that new technology based start-ups face greater problems at the initial stages due to technology volatility and they take longer time to commercialize as compared to other start-ups especially those focused on services. Other problems like inadequate product development experience, inability to map the markets, poor managerial skills, inadequate networking, as well as shortage of financial resources also prevent birth of new ventures.

6.2. Agri-business incubators

InfoDev (2013) defines agribusiness incubation as a process which focuses on nurturing innovative start-ups that have high growth potential to become competitive agribusinesses by serving, adding value or linking to farm producers. Agri-business incubator is a specialised form of mixed-portfolio business incubators focusing exclusively on the agricultural sector. Like other business incubators, the agribusiness business incubators provide shared facilities and equipment, business development, market access, and technology assessment services, financial services; as well as mentoring and networking.

Agribusiness incubation has generally been conducted in the same way that general business incubation has, although the conditions for business success are substantially different. Agribusiness takes place in a complex environment, involving farmers, intermediaries, government policy and markets and follows a value chain approach, rather than improving individual businesses. The agribusiness incubator helps in the identification and commercialization of significant technologies and services from

public and private agricultural research institutions and universities to improve productivity in farmers' fields and increase the impact of research conducted in these organisations.

Structure and function of Agri-business incubators

In general, the agri-business incubators will host about 20 or more technology start-ups in a centrally located business complex. They are like single window service providers, which offer the techno-business services like lab space, equipment and library facilities, technical collaboration with host Institution scientists, business development services and training, professional networking etc at a cheaper rate (Ayers, 2012). Any budding entrepreneur with a sound technology/ idea with a high market potential can apply for a space in a business incubator. A high profile committee comprising of scientists, administrators and business managers will screen the applications and select the ideas based on (i) their market potential, (ii) ability of the entrepreneur to develop the idea into a viable business.

After selection, the companies will be invited to occupy an allotted space in the building. The rent for the space varies with the host organisation. The companies can set-up their laboratory and office inside the allotted space and utilize the centralised lab, equipments, INTERNET and other facilities; consult scientists and business experts; attend scientific, business development and client meetings organised by the incubators etc. to develop their technology product. A technology incubator will have large area under laboratory space while the agri-business and other incubators utilise more space for business development, demonstration units and training.

At a minimum, staffing should include a manager with business experience who has been trained in incubator operation, possibly an administrative assistant, secretary/ receptionist, and at least one business counsellor who provides technical services directly to tenants. The start-ups will graduate from the incubators once they are acquiring an assured market for their products/services; develop sound business management skills and ability to sustain in the competitive market. The graduation time varies from 4 years

(in case of software companies) to 8-10 years (for biotech products). Successful completion of a business incubation program increases the likelihood that a start-up company will stay in business for the long term: older studies found 87% of incubator graduates stayed in business (Molnar *et al.*, 1997).

ABI Programme of ICRISAT

The Agri-Business Incubation (ABI) program of ICARISAT, Hyderabad is the most successful business incubator in India. Started in 2003, the ABI has over 200 clients, commercialised 194 technologies and supported over 180 business ventures (http://www.aipicrisat.org/agri-business-incubation-abi-program/abi-impact/). The ABI is also working with 22 Business Process Development (BPD) – an agri-business incubator, units of NAIP -ICAR under Network of Indian Agri-Business Incubators (NIABI) to promote start-ups in various parts of India (Karuppanchetty, 2012). Award-winning BPD units in Tamil Nadu Agricultural University (TNAU), Coimbatore and Central Institute of Fisheries Technology (CIFT), Cochin are commercialising the agri-technologies at a faster rate and creating viable agriculture-based technology ventures.

ABI is the only incubator with an inclusive, market-oriented development plan that seeks to improve farmers' livelihoods through business incubation. The agri-enterpreneurship is developed through vertical strategy (service strategy) and a horizontal strategy (an outreach strategy based on partnerships in collaborative business incubation) (Sharma *et al.,* 2012). The service strategy focuses development on strategic areas related to the mandates of host organisation and its partners. For example, the ABI at the ICRISAT promotes (i) seed ventures, (ii) bio-fuel ventures, (iii) Innovative ventures on propriety products, (iv) farm ventures, (v) agri-business ventures and (vi) agri-biotech ventures. The outreach strategy of ABI is to collaborate with organizations locally and globally in business incubation (co-business incubation).

6.3. Conclusions

Business incubators are vital catalysts for developing new agricultural technology enterprises. In the developing countries, the incubators have contributed significantly in transforming potential start-ups into viable technology ventures. In India, the agri-business business incubators are relatively new entrants into the technology business, but their numbers are increasing at a significant rate. Few successful agribusiness incubators like Agri-Business Incubator of ICRISAT and Business Planning & Development Units of Tamil Nadu Agricultural University, Coimbatore and Central Institute of Fisheries Technology, Cochin have contributed significantly to agro-enterprise development in India. The business incubators in general have a limited funding support from the supporting organizations and largely work for profit organizations, limiting their own sustainability and scalability. There is a need to establish more business incubators to promote agricultural entrepreneurship in the country.

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Annexure 1: General measure of Enterprising Tendency test

Instructions: For each of the 54 questions below, please select the answer that you most closely feel reflects yourself by placing a tick (√) in the appropriate column. There is no time limit, so consider each question carefully and respond with candour. A for 'Tend to Agree', D for 'Tend to Disagree'

Statements	Agree	Disagree
1. I would not mind routine unchallenging work if the pay and pension prospects were good.		
2. I like to test boundaries and get into areas where few have worked before.		
3. I tend not to like to stand out or be unconventional.		
4. Capable people who fail to become successful have not usually taken chances when they have occurred.		
5. I rarely day dream.		
6. I find it difficult to switch off from work completely.		
7. You are either naturally good at something or you are not, effort makes no difference.		
8. Sometimes people find my ideas unusual.		
9. I would rather buy a lottery ticket than enter a competition.		
10. I like challenges that stretch my abilities and get bored with things I can do quite easily.		
11. I would prefer to have a moderate income in a secure job rather than a high income in a job that depended on my performance.		
12. At work, I often take over projects and steer them my way without worrying about what other people think.		
13. Many of the bad times that people experience are due to bad luck.		

Statements	Agree	Disagree
14. Sometimes I think about information almost obsessively until I come up with new ideas and solutions.		
15. If I am having problems with a task I leave it, forget it and move on to something else.		
16. When I make plans I nearly always achieve them.		
17. I do not like unexpected changes to my weekly routines.		
18. If I wanted to achieve something and the chances of success were 50/50 I would take the risk.		
19. I think more of the present and past than of the future.		
20. If I had a good idea for making some money, I would be willing to invest my time and borrow money to enable me to do..		
21. I like a lot of guidance to be really clear about what to do in work.		
22. People generally get what they deserve.		
23. I am wary of new ideas, gadgets and technologies.		
24. It is more important to do a job well than to try to please people.		
25. I try to accept that things happen to me in life for a reason.		
26. Other people think that I‘m always making changes and trying out new ideas.		
27. If there is a chance of failure I would rather not do it.		
28. I get annoyed if people are not on time for meetings.		
29. Before I make a decision I like to have all the facts no matter how long it takes.		
30. I rarely need or want any assistance and like to put my own stamp on work that I do.		
31. You are not likely to be successful unless you are in the right place at the right time.		

Statements	Agree	Disagree
32. I prefer to be quite good at several things rather than very good at one thing.		
33. I would rather work with a person I liked who was not good at the job, rather than work with someone I did not like even if they were good at the job.		
34. Being successful is a result of working hard, luck has little to do with it.		
35. I prefer doing things in the usual way rather than trying out new methods.		
36. Before making an important decision I prefer to weigh up the pro's and con's fairly quickly rather than spending a long time thinking about it.		
37. I would rather work on a task as part of a team rather than take responsibility for it myself.		
38. I would rather take an opportunity that might lead to even better things than have an experience that I am sure to enjoy.		
39. I usually do what is expected of me and follow instructions carefully.		
40. For me, getting what I want is a just reward for my efforts.		
41. I like to have my life organised so that it runs smoothly and to plan.		
42. When I am faced with a challenge I think more about the results of succeeding than the effects of failing.		
43. I believe that destiny determines what happens to me in life.		
44. I like to spend time with people who have different ways of thinking.		
45. I find it difficult to ask for favours from other people.		

Statements	Agree	Disagree
46. I get up early, stay late or skip meals if I have a deadline for some work that needs to be done.		
47. What we are used to is usually better than what is unfamiliar.		
48. I get annoyed if superiors or colleagues take credit for my work.		
49. People's failures are rarely the result of their poor judgement.		
50. Sometimes I have so many ideas that I feel pressurised.		
51. I find it easy to relax on holiday and forget about work.		
52. I get what I want from life because I work hard to make it happen.		
53. It is harder for me to adapt to change than keep to a routine.		
54. I like to start interesting projects even if there is no guaranteed payback for the money or time I have to put in.		

GET2test Answer and Scoring Sheet

Row 1	46 A D	37 A D	28 A D	19 A D	10 A D	1 A D
Row 2	47 A D	38 A D	29 A D	20 A D	11 A D	2 A D
Row 3	48 A D	39 A D	30 A D	21 A D	12 A D	3 A D
Row 4	49 A D	40 A D	31 A D	22 A D	13 A D	4 A D
Row 5	50 A D	41 A D	32 A D	23 A D	14 A D	5 A D
Row 6	51 A D	42 A D	33 A D	24 A D	15 A D	6 A D
Row 7	52 A D	43 A D	34 A D	25 A D	16 A D	7 A D
Row 8	53 A D	44 A D	35 A D	26 A D	17 A D	8 A D
Row 9	54 A D	45 A D	36 A D	27 A D	18 A D	9 A D

Scoring the GET2 Test

The Get2 test measures enterprising tendency by measuring five entrepreneurial attributes as follows:

1. Need for achievement – This is measured in rows 1 and row 6 of the scoring sheet, i.e. Questions 1,10,19,28,37,46, 6,15,24,33,42,51

2. Need for Autonomy – This is measured in row 3, i.e. Questions 3,12, 21,30,39,48

3. Creative Tendency – This is measured in rows 5 and 8, i.e. Questions 5, 14,23,32,41,50,8,17,26,35,44,53

4. Calculated Risk taking- This is measured in rows 2 and 9, i.e. Questions 2,11,20,29,38,47, 9,18,27,36,45,54

5. Locus of control – This is measured in rows 4 and 7, i.e. Questions 4,13,22,31,40,49,7,16,25,34,43,52

Scoring

- Even number statement: If the respondent agrees by circling A, he/she gets one point.
- Odd number statement – If the respondent disagrees by circling D, he/she gets one point.
- Other responses get zero points. Summing up category scores for individual entrepreneurial attributes
- Summing of all scores - Entrepreneurial tendency.

Interpretation

- The maximum score - 54
- 44-54 – The person is very enterprising (High); 27-43 – The person have some enterprising qualities (Medium); 0-26 – Low enterprising qualities.

Source

Caird, Sally (2013). General measure of Enterprising Tendency test. www.get2test.ne

Annexure 2: Private Investors for AGRISTARTUPs

Seed stage

Name of the firm	Strategy and focus Areas	Investment structure	Contact details
NEXUS VENTURE PARTNERS	Mobile, Data Security, Big Data analytics, Infrastructure, Cloud, Storage, Internet, Rural Sector, Outsourced Services, Agribusiness, Energy, Media, Consumer	Invests between $0.5 Mn and $10 Mn in early growth stage companies. Also, makes investments upto $0.5 Mn in their seed program.	301, Prestige Sterling Square, State Bank of India Road, Bengaluru 560001, India Tel: +91 (80) 662-60000 Email: plans@nexusvp.com Web: https://nexusvp.com/
ankur capital	Impact investing Agriculture, healthcare, skill development and education	Invests between INR 50 lakhs and 4 crores.	Ankur Fincon Management Pvt Ltd Unit 5 Jetha Compound, Byculla (E), Mumbai 400027 Email: info@ankurcapital.com Web: http://www.ankurcapital.com/
आविष्कार Aavishkaar	Impact investing Agriculture, dairy, education, energy, handicrafts, health, water and sanitation, technology for development, microfinance and financial inclusion	It typically invests between $0.47 million and $7.98 million in its portfolio companies,	Aavishkaar Venture Management Services 13B, 6th Floor, Techniplex II, IT Park Off Veer Sarvarkar Fly Over Goregaon West, Mumbai - 400 062 Telephone: +91 22 61248900 Fax: +91 22 61248930 Email: funds@aavishkaar.org Web: http://www.aavishkaar.in/

ACCION	Financial inclusion	Typically invest U.S. $300,000 to $500,000 in equity or quasi-equity instruments as part of the first institutional round of capital for seed-stage startups.	Accion Technical Advisors India No. 9/3, Kaiser-E-Hind, 1st Floor Richmond Road Bangalore - 560 025 India Tel: +91 80-67236400 Web: https://www.accion.org/india
BlueOrchard Impact Investment Managers	Impact investing Financial inclusion, education and climate adaptation		Web: http://www.blueorchard.com/
CHILASA	Agriculture, healthcare, education, microfinance	Invests in small growing businesses located in disadvantaged communities	Chilasa Venture Philanthropy Int. Chemin de la Combe, 1260 Nyon, Switzerland Tel: +41 78 803 8119 Email: info@chilasa.org ; ian.blowfield@chilasa.org Web: https://chilasa.org/
ennovent	An innovation accelerator working with a range of clients - including entrepreneurs, mentors, investors, foundations, NGOs and companies		Ennovent India Advisors Pvt. Ltd. Regus Business Centre KLJ Tower North B-5 District Centre, Netaji Subhash Place, Wazirpur, New Delhi – 110034 Email: office@ennovent.com Web: http://www.ennovent.com/

BLUME VENTURES	An angel and seed venture fund that backs startups with both funding as well as active mentoring and support. Focus areas - health tech & food, health information space, consumer problems like traffic congestion, power, small businesses, media, and education	Invests in seed or pre-Series A stages and typically invests between 50K to $250K in each of the start-ups.	Blume Venture Advisors Pvt Ltd Unit No 1, Jetha Compound, Opp Nirmal Park, Byculla East, Mumbai, Maharashtra 400027 Tel: +91-22-43471659 Email: admin@blumeventures.com Web: http://blume.vc/
SEQUOIA	Focus areas - Energy, financial, enterprise, healthcare, internet, and mobile start-ups.	Early-to-growth stage investment. It invests between $100,000 and $1 million in "seed" stage, between $1 million and $10 million in early stage, and between $10 million and $100 million in companies that are in their growth stage	Sequoia Capital India Advisors Divyasree Technopolis, 6th Floor, East Wing, Block B, 77° Town Centre, Off, Off HAL Airport Road, Yemalur Rd, Kodbisanhalli, Kadubeesanahalli, Bengaluru, Karnataka 560037 Tel: +91-80 4124 5880 Email: startindia@sequoiacap.com Web: http://sequoiacap.com/

Accel	Invests in the companies that will be responsible for the growth of next-generation industries. Focus areas - Consumer, Infrastructure, Media, Mobile, SaaS and Security	works with startups in seed, early and growth-stage investments	Accel 886/A, Confident Electra17th E Main Road, opposite Koramangala club, 6th Block, Koramangala 560095Bengaluru, Karnataka, India; Tel: +91 80 43539800 Web: https://www.accel.com/
kalaari capital	Invests in early-stage, technology-oriented companies in India. Focus - technology, cleantech, healthcare, education, pharmaceuticals, food and beverages, technology enable services, media and entertainment and retail sectors	It typically invests between $1 million and $5 million in its portfolio companies.	Kalaari Capital, Ground Floor, Unit-2 Navigator Building ITPB, Whitefield Road, Bangalore, Karnataka – 560 066 Tel: +91 80 67159600 Email: info@kalaari.com Web: http://www.kalaari.com/
IDG Ventures In	Focus areas - Consumer media & tech, Software, Health-tech and Fin-tech	Invests between $0.5 Mn to $10 Mn at seed, early and expansion stages in technology enabled ventures.	IDG Ventures India 7B, 7th Floor, Sobha Pearl, 1, Commissariat Road, Bangalore 560 025 Tel: +91 80 4043 4836 Fax: +91 80 4132 9226

BEENEXT	Focus area – Food(processing and delivery), marketplaces, payments, fintech, and software as a service	An early-stage investor - investing in startups from India, Southeast Asia, Japan, and USA. $0.05 million and $2 million	Beenext Singapore Web: http://www.beenext.com/
VillageCapital	Invests in early-stage entrepreneurs with business solutions to major global problems. Focus areas - Education, Healthcare, FinTech, Clean Energy and Agriculture.	$ 50000 to $3,000,000 in seed funding for stratups	Village Capital, 829 7th St NW, 2nd Floor, Washington, DC 20001 Email: info@vilcap.com Web: http://vilcap.com/
Aspada	Focus areas - agriculture, healthcare, education, financial services and logistics	Invest in home-grown business models that addresses the unmet needs of the middle class people by adopting a full stack approach Typically invests in the range of ₹5-20 crore in several stages, for a significant minority stake.	Aspada Investment Advisors, 2 Walton Road, (Off Lavelle Road), Bangalore 560001 Web: http://www.aspada.com/

Annexure 3

Free Model Bankable Projects Prepared by Funding Agencies

1. Department of Agriculture, Govt of Kerala - Model Bankable Agricultural Projects - http://www.keralaagriculture.gov.in/htmle/bankableagriprojects/ms.htm
2. National Horticulture Board - http://nhb.gov.in/model-project-reports/
3. Tamil Nadu Agricultural University, Coimbatore - http://agritech.tnau.ac.in/banking/crbank_nabard_mbproj.html
4. NABARD Bankable Projects - http://farmextensionmanager.com/English/Agribusiness%20oppertunities/Veterinary%20sector/NABARD's%20Model%20Bankable%20Projects1.htm
5. MSME Development Institute - http://msmedinewdelhi.gov.in/en/projectprofile.asp
6. Ministry of Micro, Small and Medium Enterprises - http://www.dcmsme.gov.in/publications/pmryprof/vol7.htm
7. Prime Minister's Employment Generation Programme - http://kvic.org.in/pmegpwebsite/pmegpwebsite/kvic-regppmegp.in/projectprofile.html
8. National Small Industries Corporation (NSIC) - http://www.nsic.co.in/projectprofiles.asp

Annexure 4: Procedures for Starting a Business in India

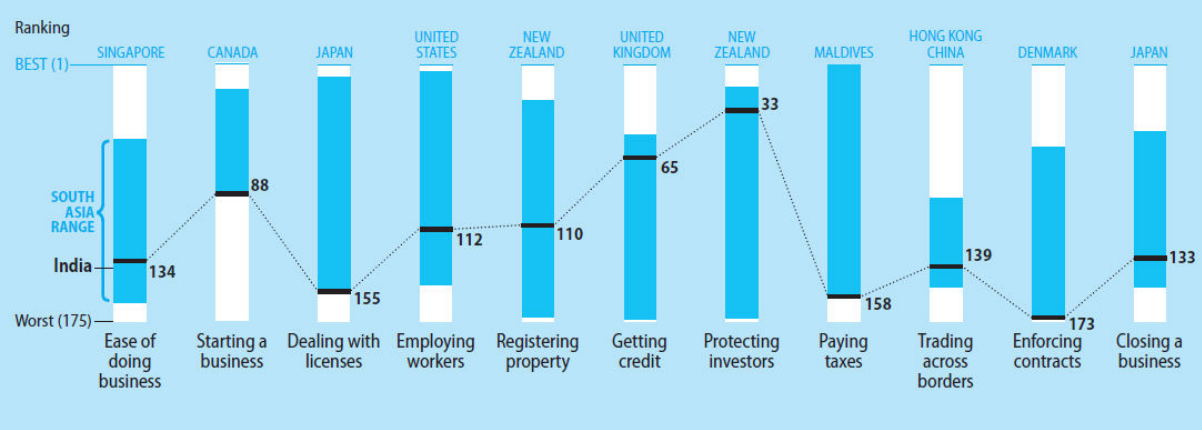
No:	Procedure	Time complete	Cost to complete
1	Obtain director identification number (DIN) online from the Ministry of Corporate Affairs portal (National)	1 day	INR 100
2	Obtain digital signature certificate online from private agency authorized by the Ministry of Corporate Affairs (National)	3 days	INR 1,500
3	Reserve the company name online with the Registrar of Companies (ROC) (National)	2 days	INR 500
4	Stamp the company documents at the State Treasury (State) or authorized bank (Private)	1 day	INR 1,300 (INR 200 for MOA + INR 1,000 for AOA for every INR 500,000 of share capital or part thereof + INR 100 for stamp paper for declaration Form 1)
5	Get the Certificate of Incorporation from the Registrar of Companies, Ministry of Corporate Affairs (National)	5 days	INR 14,133 (see comments)
6	Make a seal (Private)	1 day	INR 350 (cost depends on the number of seals required and the time period for delivery)

7*	Obtain a Permanent Account Number (PAN) from an authorized franchise or agent appointed by the National Securities Depository Ltd. (NSDL) or the Unit Trust of India (UTI) Investors Services Ltd., as outsourced by the Income Tax Department (National)	7 days	INR 67 (INR 60 application fee + 12.36% service tax + INR 5 for application form, if not downloaded)
8*	Obtain a Tax Account Number (TAN) for income taxes deducted at source from the Assessing Office in the Mumbai Income Tax Department	7 days	INR 57 (INR 50 application fee + 12.36% service tax)
9*	Register with the Office of Inspector, Shops, and Establishment Act (State/Municipal)	2 days	INR 6,500 (INR 2000 + 3 times registration fee for trade refuse charges)
10*	Register for Value-Added Tax (VAT) at the Commercial Tax Office (State)	12 days	INR 5,100 (registration fee INR 5000 + stamp duty INR 100)
11*	Register for Profession Tax at the Profession Tax Office (State)	2 days	No cost
12*	Register with Employees' Provident Fund Organization (National)	12 days	No cost
13*	Register for medical insurance at the regional office of the Employees' State Insurance Corporation (National)	9 days	No cost

* Takes place simultaneously with another procedure.

Source: http://trak.in/tags/business/2009/07/01/starting-business-in-india-simplified-process/

India's position in the "ease of doing business" in the World



Ease of doing business rankings 2015

Rank	State	Score	Rank	State	Score
1	Gujarat	71.14%	17	Himachal Pradesh	23.95%
2	Andhra Pradesh	70.12%	18	Kerala	22.87%
3	Jharkhand	63.09%	19	Goa	21.74%
4	Chhattisgarh	62.45%	20	Puducherry	17.72%
5	Madhya Pradesh	62.00%	21	Bihar	16.41%
6	Rajasthan	61.04%	22	Assam	14.84%
7	Odisha	52.12%	23	Uttarakhand	13.36%
8	Maharashtra	49.43%	24	Chandigarh	10.04%
9	Karnataka	48.50%	25	Andaman and Nicobar Islands	9.73%
10	Uttar Pradesh	47.37%	26	Tripura	9.29%
11	West Bengal	46.90%	27	Sikkim	7.23%
12	Tamil Nadu	44.58%	28	Mizoram	6.37%
13	Telangana	42.45%	29	Jammu and Kashmir	5.93%
14	Haryana	40.66%	30	Meghalaya	4.38%
15	Delhi	37.35%	31	Nagaland	3.41%
16	Punjab	36.73%	32	Arunachal Pradesh	1.23%

Source: World Bank (2015). Assessment of State Implementation of Business Reforms. Available at: https://www.kpmg.com/IN/en/IssuesAndInsights/ArticlesPublications/Documents/State-Assessment-Report.pdf

Websites providing details of starting a new business in various states of India

India

- ✓ Startup India - http://www.startup-india.org/
- ✓ How to set up your sole proprietorship firm in India - http://www.startupfreak.com/sole-proprietorship-procedure-business-licenses/.
- ✓ Checklist for Starting a New Business - http://smallb.sidbi.in/checklist-starting-new-business?field_company_type_tid=426&field_industry_type_tid=422
- ✓ India startup - http://www.indiastartup.in/
- ✓ Starting a Business - State wise Industry Opportunities - http://www.archive.india.gov.in/business/starting_business/states.php
- ✓ Policy & Process Guidelines For Farmer Producer Organisations - http://sfacindia.com/PDFs/FPO%20Policy%20&%20%20Process%20Guidelines%20%201%20April%202013.pdf
- ✓ Agribusiness Development Through Venture Capital Assistance And Project Development Facility - http://sfacindia.com/PDFs/SFAC_%20VCA_Guidelines-Hindi-English31-03-2014.pdf
- ✓ The Top 20 Startup Incubators In India - http://inc42.com/resources/top-20-startup-incubators-india/
- ✓ Startup village - https://sv.co/?redirect_from=startupvillage.in

Andhra Pradesh

- ✓ Andhra Pradesh Innovation & Start-up Policy 2014-2020 - http://www.ap.gov.in/Other_Docs/AP_Innovation_and_Startup_Policy02014-2020.pdf
- ✓ Step-by Step approach to start an MSME – http://msmehyd.ap.nic.in/
- ✓ Outreach Brochure - A user friendly guide for existing and prospective investors of Andhra Pradesh - http://www.cgg.gov.in/publicationdownloads2a/CGG%20Outreach.pdf
- ✓ Andhra Pradesh Industrial Infrastructure Corporation Ltd. (APIIC) - How to start an industry - http://www.apiic.in/how-to-start-an-industry/

Gujarat

- ✓ Starting a Business in Ahmadabad, Gujarat - http://www.doingbusiness.org/data/exploreeconomies/india/sub/ahmedabad/topic/starting-a-business
- ✓ Approvals required for establishing an Industrial Project in Gujarat- http://ic.gujarat.gov.in/?page_id=427

Jharkhand

- ✓ Starting a Business in Ranchi – India - http://www.doingbusiness.org/data/exploreeconomies/india/sub/ranchi/topic/starting-a-business
- ✓ Guidelines for investors - http://jharkhandindustry.gov.in/procedure_GI.htm

Karnataka

- ✓ Starting a Business in Bengaluru – India: http://www.doingbusiness.org/data/exploreeconomies/india/sub/bengaluru/topic/starting-a-business
- ✓ Integrated Agribusiness Development Policy 2011 - http://kappec.kar.gov.in/Integrated-Agribusiness-Development-Policy-2011(ENGLISH).pdf
- ✓ Karnataka Agribusiness and food policy 2015 - http://www.investkarnataka.co.in/assets/downloads/agriculture-policy-2015.pdf

Kerala

- ✓ Start your own Business - http://www.ksidc.org/start-business.php
- ✓ Kerala startup Mission - https://startupmission.kerala.gov.in/

Madhya Pradesh

- ✓ Starting a Business in Indore – India: http://www.doingbusiness.org/data/exploreeconomies/india/sub/indore/topic/starting-a-business

Maharashtra

- ✓ Starting a Business in Maharashtra - http://www.doingbusinessinmaharashtra.org/Starting_a_Business_in_Maharashtra.aspx
- ✓ Doing Business in Maharashtra May 2014 - http://www.indianchamber.org/wp-content/uploads/2015/06/Doing-Business-in-Maharashtra-May-2014.pdf

Odisha

- ✓ Starting a Business in Bhubaneshwar – India: http://www.doingbusiness.org/data/exploreeconomies/india/sub/bhubaneshwar/topic/starting-a-business
- ✓ Doing Business and Investing in Odisha – An Investor's Guide: http://www.investodisha.org/Application/uploadDocuments/Content/Odisha-Investors-Guide_1.pdf

Tamil Nadu

- ✓ How to Start a Business - http://www.tn.gov/ecd/topic/how-to-start-a-business
- ✓ Steps for Setting up an Industry - http://www.tiic.in/tiic_industrysetup.html
- ✓ Industrial Promotional Agencies in Tamil Nadu - http://www.tiic.in/tiic_agencies.html

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