



AcceleratorIndia

Building High Technology Businesses: A Structured Approach

An AcceleratorIndia White Paper describing a process to build technology businesses from innovation.

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Introduction

The biggest challenge in building successful technology businesses is to understand the linkage between the technology and markets. Quite often, the technology is in its nascent stage and so far removed from the potential markets making it very difficult to develop the right products and services to satisfy the market needs.

To overcome this challenge, a structured approach is essential to create technology-driven products and services and introduce them into potential markets. This White Paper describes a 4-stage process that any new technology-based business needs to follow to achieve long-lasting commercial success. The process will track the progression of technology innovation from the lab to a product or service across technology development, business building, team building and fund raising aspects.

First, this white paper reviews the landscape of commercializing technology innovations across varying levels of intelligence about the market needs. Then, it discusses the various options available for commercialising technology innovations such as IP Licensing, IP Sale and Spin-outs and how to choose between them. Finally, it describes the process of new business building from technology innovations.

Options for commercialising technology innovations

For successful exploitation of the full potential of technology innovations, a thorough understanding of market needs is essential. Quite often, the level of information available about the market needs governs the choice of one form of commercial exploitation over other.

In particular, when the market needs cannot be easily ascertained and where there is limited capability to take the innovations to market, Licensing and/or Sale of the intellectual property are the most commonly taken options.

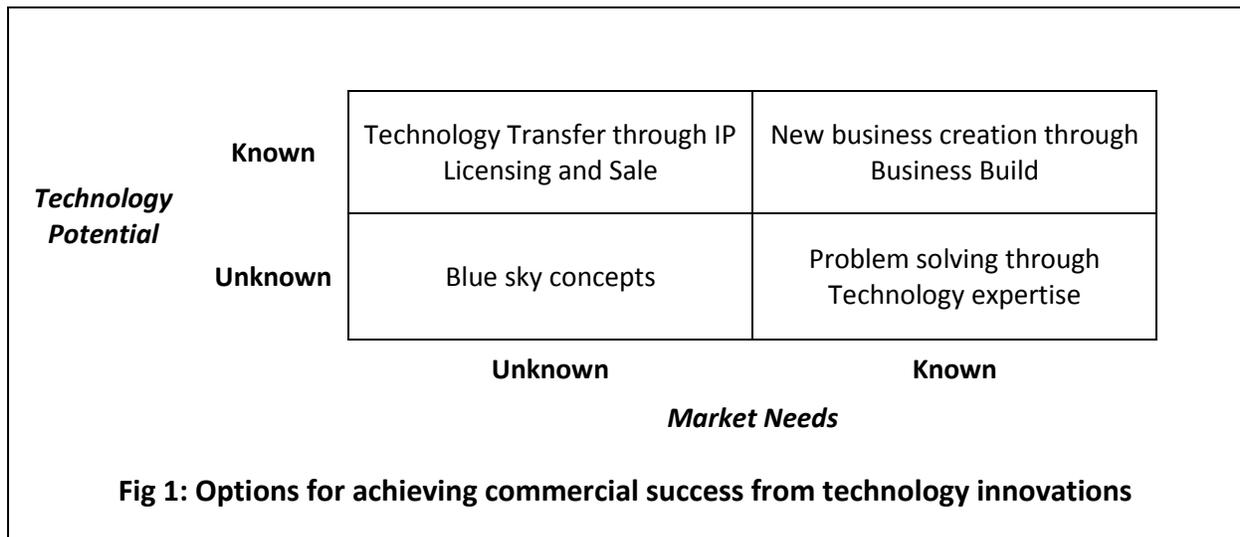
On the other hand, where a clear market need has been identified, there is an opportunity to create a new business through spin outs. This success of taking this option relies on gathering the expertise and resources, finding team members and investors to build a new business.

Fig 1 describes an approach to evaluating the technology potential and the awareness of market needs to identify the options that are available to commercialise technology innovations. Illustrated as a 4x4 matrix, it leads to the following four options:

- Technology Transfer – Transfer of IP to organizations that are closer to the market and possess the resources necessary to exploit the innovation
- New business creation – Use the IP to build a new business to address a specific market need by creating new products and services

- Problem solving – Solve an existing market need or problem by exploring multiple technology options through a consulting project
- Blue sky concepts – Can result in some high level concepts but not realizable until more is known about the technology potential or market need.

The rest of this white paper will extensively focus on the ‘New Business Creation’ option. However, before doing so, it will briefly dwell on the Technology Transfer option that is most prevalent in commercializing University derived innovations to compare and contrast the two options.



Technology transfer

Very often, it is not possible to match the potential of a technology innovation to specific market needs. The key challenges that prevent this matching are:

- the technology being at a very early stage
- lack of a clear view of the market needs within the commercialisation team and
- insufficient resources and capabilities to develop new products or services

In such situations, the most commonly used approach is to license or sell the intellectual property (IP) rights to companies and organizations that have the capability to match the IP to specific market needs through their market presence and knowledge. Technology transfer offices within universities adopt this as their primary commercialization strategy due to the limited number of resources they control and their relative isolation from commercial markets.

One of the unintended consequences of this approach is the emergence of companies, whose primary objective is to accumulate IP with a view to using them later. Known as 'Patent Trolls', these companies accumulate IP on the basis that the needs will eventually be identified.

New Business Build

Where the technology potential can be matched to a specific market need through a new business concept, there is potential for a new business to be created to satisfy that need. By identifying the right markets and their needs and by building a new business to create new products and services for them, maximum value can be created from the potential of new technological innovations.

Even when only partial information is available on the market need, by utilizing experts with in-depth market knowledge and extensive market relationships the match between the technology potential and the market need can be refined to identify new business opportunities.

After an opportunity has been identified, commercialization of technology innovations then requires

- effective packaging of the technology innovation into products and services
- finding the best business models to drive revenues and
- harnessing the right distribution channels to reach potential customers

The Technology Business building process

The process for building technology businesses consists of the following 5-stages as illustrated:

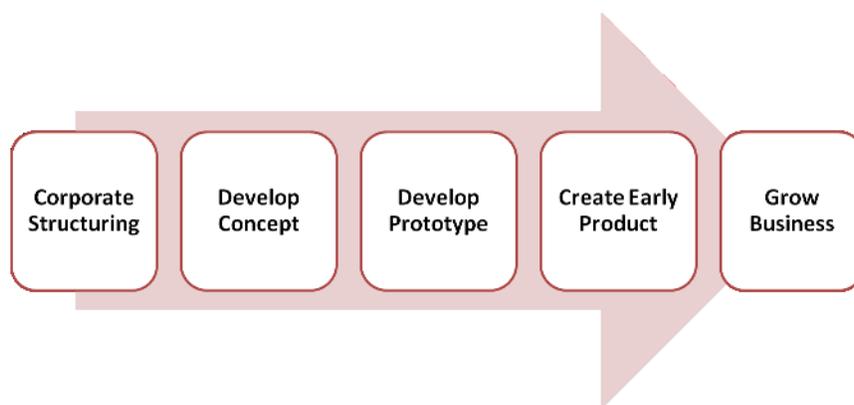


Fig 2: Technology Business Building process

- Create a structured corporate vehicle structured to reflect contributions to IP development and commercialisation
- Develop a proof of concept based on the underlying technology and create a business entity
- Convert concept into a prototype product or service by working with early customers and partners and create a high level business plan
- Establish a beachhead for the product or service through paying early customers and develop a detailed business plan for the business build and obtain growth funding
- Pursue growth by selling the product or service in high volumes into new markets, segments or geographies to build revenues

Depending on the origin of the business, the industry sector it operates and the environment in which it evolves, some of these 5-stages can overlap or even merge into fewer stages. However, the tasks within each individual stage will nevertheless have to be performed. These tasks cover the transition across multiple stages from: concept to demonstrator, demonstrator to early product, and early products to volume products. These transitions and their significance are discussed in detail in our related White Paper '[Building High Technology Businesses: The Triple Chasm Model](#)'.

1. Establish a corporate structure

Creating the right corporate structure and ownership is essential to establish a firm foundation for any commercialization effort. Any new investor and other team members coming will expect a properly set-up company, with unfettered rights over the underlying intellectual property, an appropriate share structure and formal agreements.

Business build Stage: Corporate Structuring	
Technology evolution	Native form
Business stage	Does not exist
Funding source	Grants and own funding
Skills profile	Scientific + Corporate set up + Legal

Key tasks that need to be performed at the corporate structuring stage are:

- Develop a technology description for the intellectual property in the form of disclosures and other relevant supporting documentation to prove claims
- Establish IP position in terms of its development stage and ownership
- Clarify proposed legal structure, IP ownership and valuation model for the new business

2. Develop Concept

Business build status: Develop Concept	
Technology evolution	Proof of concept
Business stage	Legal entity
Funding source	Grants and own funding
Skills profile	Scientific + Commercial

At the concept development stage, the primary objective is to transform the technology innovation into an application concept with a supporting commercial model. We believe that even at this stage, a high level commercial model is key to create a viable product or service.

The concept may or may not be addressed at a specific market need but it should have enough detail to identify a number of target markets with unmet needs. The high level commercial model will then serve to prove the viability of the new business.

Key tasks that need to be performed at the concept development stage are:

- Define the application and commercial concept
- Validate through preliminary market and competitor research
- Develop high level commercial model

Typical challenges faced during the concept development stage are:

- IP valuation – Identifying and establishing the right valuation for the IP to reflect past effort and future potential
- IP protection – Establishing the right legal and ownership frameworks to protect the defensibility of the IP

3. Create demonstrator product or service

Business build status: Create Demonstrator	
Technology evolution	Demonstrator product/ service
Business stage	Start-up
Funding source	Grants, Angel/Seed funding
Skills profile	Scientific + Technology + Commercial

At this demonstrator stage, the objective is to create a demonstrable product or service from the concept developed in Stage 1.

Typical challenges facing the development team face during the prototype stage are:

- Targeting the right market segments and customers with an unmet need
- Building the demonstrator to address key aspects of the unmet need
- Making the solution accessible so that target customers can relate it to their own contexts

4. Create early product or service

Business build status: Create early Product/Service	
Technology evolution	Early product/ service
Business stage	Early stage
Funding source	Angel/Seed funding
Skills profile	Tech + Commercial

The key objective at this stage of taking technology to markets is to establish a beachhead for the product or service by offering it to as many early customers as possible. These early customers will help refine the product or service and also serve as references for any early marketing efforts.

Key tasks that need to be performed are:

- Fine tune product or service through inputs from early customers
- Establish the customer needs, size of the market and growth potential
- Identify competition, strengths and weaknesses and their competitive positioning
- Develop product or service road map aligning with industry, customer need, technology evolution and market growth
- Develop brand and position the product or service and company
- Decide whether to reach the market through third-parties or directly
- Create business plan, set milestones; identify assumptions, risks and constraints and assign responsibilities

Typical challenges that need to be addressed during the early product stage are:

- Technology adoption
- Making the product accessible and available to potential customers
- Educating the customer

- Changing business models
- Changing delivery models

5. Grow the business by reaching mass markets

Business build status: Business Growth	
Technology evolution	Mass product/ service
Business stage	SME/growth
Funding source	Venture Capital
Skills profile	Tech + Commercial + Support/Service

Business building takes an established, commercially proven product or service into a much wider market and builds revenues by offering it into new markets, segments or geographies. When a product or service has relevance and appeal across multiple markets, business building is essential to expand the offering and create a strong and viable business.

The alternative is to acquire an existing business with an established customer base and revenues. This approach brings the benefit of providing a senior management team with local market relationships already in place.

Key tasks to be executed as part of the business build stage are:

- Identify and recruit executive team and other key resources
- Develop or adapt service in line with varying customer or market needs
- Identify and target new markets for product or service
- Build sales and distribution infrastructure and partnerships to build sales volumes

Typical challenges that need to be addressed during the business growth stage are:

- Getting through channel bottlenecks
- Usability
- Differentiating the offer
- Shortening product 'shelf life'
- Investments needed to maintain edge

It's not just about technology and markets

In our experience, most market failures do not occur because of problems with technology, management or funding, but arise from the failure of companies to recognise where they are in

the business build process and understanding the different skills and resources required at each stage.

If the focus is too much on technology, this results in other aspects of the business to be overlooked. At all stages of building a new technology business, equal emphasis should be placed across the key dimensions of Technology, Business, Funds and Skills to ensure that the fledgling business is appropriately endowed with the resources and capabilities necessary to progress from one stage to the next.

Fig 3 presents a summary of Technology evolution, Business build stage, Funding source and Skills profile of a technology business right from the initial structuring to the point it becomes a growth business. The summary demonstrates the complexity involved in taking an innovation into the market through building a new business and resources and capabilities to make this happen.

	Corporate Structuring	Concept	Prototype	Early product or service	Business Growth
Technology evolution	Native	Proof of concept	Demonstrator product/ service	Early product/ service	Mass product/ service
Business stage	Yet to be formed	Legal entity	Start-up	Early stage	SME/growth
Funding source	Grants and own funding	Grants and own funding	Grants, Angel/ Seed funding	Angel/Seed funding	Venture Capital
Skills profile	Scientific , Corporate set up and Legal	Scientific and Commercial	Scientific , Tech and Commercial	Tech and Commercial	Tech , Commercial and Service

Fig 3: Summary view of Technology Business Building process

It's no wonder that so many technology businesses find it so hard to transition across each of these stages and many that fail to cross the stages are either stuck in limbo or even end up being shut down.

Next Steps

If you are interested in learning more about how AcceleratorIndia can help you with developing and building your technology-based business, please contact us at info@acceleratorindia.com.

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