



FastForward

AN INNOVATION GUIDE FOR SMALL AND MEDIUM ENTERPRISES



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 Canada

INNOVATION GUIDE FOR SMALL AND MEDIUM ENTERPRISES

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PART ONE: AN INTRODUCTION TO NEW PRODUCT DEVELOPMENT

Part One provides an introduction to new product development and highlights critical information that you should consider before undertaking an innovation project.



**INNOVATION GUIDE FOR
SMALL AND MEDIUM ENTERPRISES**

PART ONE:

**AN INTRODUCTION TO
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1.1

Introduction to the Innovation Guide

Who Should Read this Guide?

Any entrepreneurs, developers, or business managers interested in learning more about the innovation process and how to effectively bring a new product to market.

How to Use the Guide

This guide is divided into three sections. Part One provides an introduction to new product development and highlights critical information that an entrepreneur should consider before proceeding with an actual innovation project. If after reviewing Part One, the interested party wishes to proceed with a project, then the remainder of the document will be of use. Part Two and Three are variations on the same theme. They provide a methodology or roadmap to follow in order to bring your new product to market. From the idea stage through to market launch, a series of steps are laid out to assist the entrepreneur in going through the commercialization process. While you may wish to read through both Part Two and Three, only choose one of the models to work through your project. The main difference between the two sections is that Part Three is a more formalized process. Both should accomplish the same end.

Before you Start

Commercializing a new product is a complex undertaking. Studies of successful new products have revealed that measures can be taken to improve the chances of a successful launch. Many of these measures or approaches are discussed in this guide.

Where Does it all Begin?

The term innovation means different things to different people. The Conference Board of Canada defines innovation as, “A process through which economic value is extracted from knowledge through the generation, development, and implementation of ideas to produce new or improved products, processes and services”.

The term “innovation” encompasses much more than Research & Development (R&D) or technological change. Innovation makes knowledge useful and turns it into wealth and prosperity. Innovation does not come out of the blue. It requires commitment to a variety of activities, including training, R&D, technology commercialization, innovative corporate culture and entrepreneurial spirit. As noted above, this document uses the term “new product development” to include the creation of new products, processes and services.

Most innovations result from a conscious, purposeful search for new opportunities. Peter Drucker, best-selling author and management guru, has noted that because innovation is both conceptual and perceptual, would-be innovators must go out and look, ask and listen. Successful innovators look at figures. They look at people. They analytically work out what the innovation has to be to satisfy the opportunity. Then they go out and look at potential product users to study their expectations, values, and needs.

1.2

Innovation and Commercialization Options

Types of Innovation

Innovation can be classified according to three broad types:

Incremental Innovation is the most common and features the introduction of a product involving some level of “newness” and some value creation. An example is a “new and improved” type of laundry detergent.

Substantial Innovation is where there is a significant degree of product newness and important value creation for the customer. An example is the Sony Walkman. It allowed people to listen to music using portable CD technology.

Transformational Innovation is the least common and involves radical new products that create substantial value for the customer. The automobile can be considered transformational as it totally redefined the method in which people traveled.

Innovation can be classified into three broad types

As we move from incremental to transformational types of innovation, the degree of product newness and value delivered to the customer increases, and so does the potential to earn high profits.

Concurrently, the degree of business risk can also rise as we move up this innovation ladder.

Options for Bringing Your Product to Market

An entrepreneur or business owner is faced with a basic question early in the product development process. What vehicle will I use to bring my product to market?

Commercialization options range from selling the technology you are in the process of developing outright to starting your own company to bring the product to market. Before moving ahead with a particular product development project, it is important to review all the commercialization options available. The following paragraphs explore a few alternatives.

Selling Technology Outright/Assigning to a 3rd Party Company

One of the least resource intensive approaches to commercializing your technology is to sell it outright. Typically this would entail a lump sum payment for the technology and all rights associated with it. This alternative has the advantage of providing you with an immediate cash flow. In addition, the risks associated with investments of time and money are reduced. Selling outright will also allow you to pursue other research or technology opportunities.

On the down side, you will no longer have a say in the technology's future development, nor will you be able to reap the significant benefits of a successful technology.

Licensing Technology to Another Firm

The licensing agreement is a common approach to commercializing technologies for smaller firms. It is worth noting that large firms are also using licensing agreements to generate revenue from technologies outside their core lines of business. This mechanism will allow you to retain some rights over the technology and continue to develop the technology concepts without having to make significant investments in the commercialization efforts. Licensing agreements typically generate royalty payments based on revenues generated by the sale of the technology or product. An entrepreneur/developer may negotiate an exclusive license where only one company has the rights to exploit the technology or allow several firms to utilize the know-how to manufacture and sell the product. (See **Appendix 1** for a Technology License Agreement sample).

Before moving ahead with a particular product development project, it is important to review all the commercialization options available.



Finding a Partner

Another way to commercialize a technology is to approach a larger firm to partner on the research, development, and commercialization of the technology. Larger firms may be motivated to work with you if your technology fills a gap in their product line. This has the advantage of identifying a clear receptor market for the technology before expenditures on its development are undertaken. Striking an arrangement with a large firm will also allow you to tap into larger pools of capital, established distribution channels, marketing and management expertise.

A second reason why a large company may be interested in striking an alliance is if your technology can provide a lower-cost solution to a production problem the company faces. Often times partnerships will be arranged where the entrepreneur/developer provides an exclusive license to a jointly owned company (NEWCO). In return, he may be entitled to some combination of fees, royalties and equity in the NEWCO.

New Start-up

A final alternative for technology commercialization is that of the new business start-up. The entrepreneur seeking to bring an invention to market may decide to exploit the idea personally. In this instance, a new company is incorporated and the intellectual property is assigned to the company. The success of the venture is dependent upon the entrepreneur to develop, market and launch the product, organize and staff the business and generate the required financing.

A single entrepreneur is unlikely to possess all the skills necessary for the critical functions outlined above. That is why it is essential for the owner to build a strong management team through appointing experienced staff, and a “credible” board of directors when choosing the new start-up commercialization option.



Technology Transfer Options and Issues for Entrepreneurs and Developers (E/D)

The following table presents a few of the technology transfer options and issues for entrepreneurs and developers seeking to commercialize a technology.

FIGURE 1.1

ISSUES	OPTIONS			
	Sell or Assign Technology	License Technology for Fees & Royalties	Establish a Partnership	Start up a New Company
When does the Entrepreneur/Developer (E/D) obtain income from transfer?	Shortest period: fees normally paid on date of assignment	Fees normally paid during term of agreement. Patent license may have 20 year term	Fees normally paid during term of agreement. Revenue from equity dependent on many factors	Longest period, dependent on many factors: profitability, Initial Public Offering (IPO), Merger and Acquisition (M&A), etc.
Who will control the Intellectual Property (IP) rights to the technology?	The purchasing company owns IP and retains all or most of the control	E/D owns IP but gives significant control to licensee	Similar to second option, but E/D may have partial control as shareholder and/or director	Similar to first option, but E/D may have total or partial control as shareholder and/or director
What time commitment is required of the E/D?	Often limited to marketing technology and negotiating transaction. May also include time for consulting and/or R&D agreements	Similar to first option, but also includes agreement, administration & patent prosecution & maintenance matters	Often significant time commitment required	Greatest time commitment, as E/D establishes a business venture to commercialize the technology
What capital is required of the E/D?	Often limited to costs for marketing technology, IP protection, and finalizing agreement	Similar to first option	More capital required than two previous options, e.g. seed capital at a minimum	Greatest capital requirement: financing required for various stages of development, market launch, and operating expenses

General Overview of the Innovation Process

Consider the following general steps when thinking about commercializing your idea. While innovation happens in a variety of ways, most entrepreneurs have gone through the following nine steps on their road to successful new product development.

FIGURE 1.2

A step-wise approach to innovation

GATHER	Pull together a number of potential ideas by researching, listening and observing the marketplace.
SCREEN	Evaluate the ideas and concentrate on the ones with the most potential.
RESEARCH	Carry out market research, talk to prospective buyers, assess the competition and put your findings on paper.
ASSESS	If the idea passes the research test, then determine how you will finance the project. Who will be on the development team and can you make money selling the good or service?
DEVELOP	Develop the product/service using any technical expertise available to you and as much customer feedback as possible.
TEST	Test prototypes and processes in-house to a limited number of potential buyers.
ALTER	Make any adjustments required as a result of prototype testing.
EXECUTE	Launch the product by implementing the marketing plan.
MONITOR	Check sales figures and other financial indicators against budget forecasts. Modify strategy or product offerings where required.

1.3

Introduction to the New Product Development Process

The days of “build it and they will come” are coming to an end.

What is the best method for bringing a new product or service to the marketplace? The answer may vary, but studies indicate that entrepreneurs who establish and record a clear plan for bringing their new products to market are much more likely to succeed than those who do not. The days of “build it and they will come” (referring to entrepreneurs who develop and launch products without proper market research, testing and customer feedback) are coming to an end. Today’s top entrepreneurs use a more systematic approach when translating their ideas into tangible goods and services.

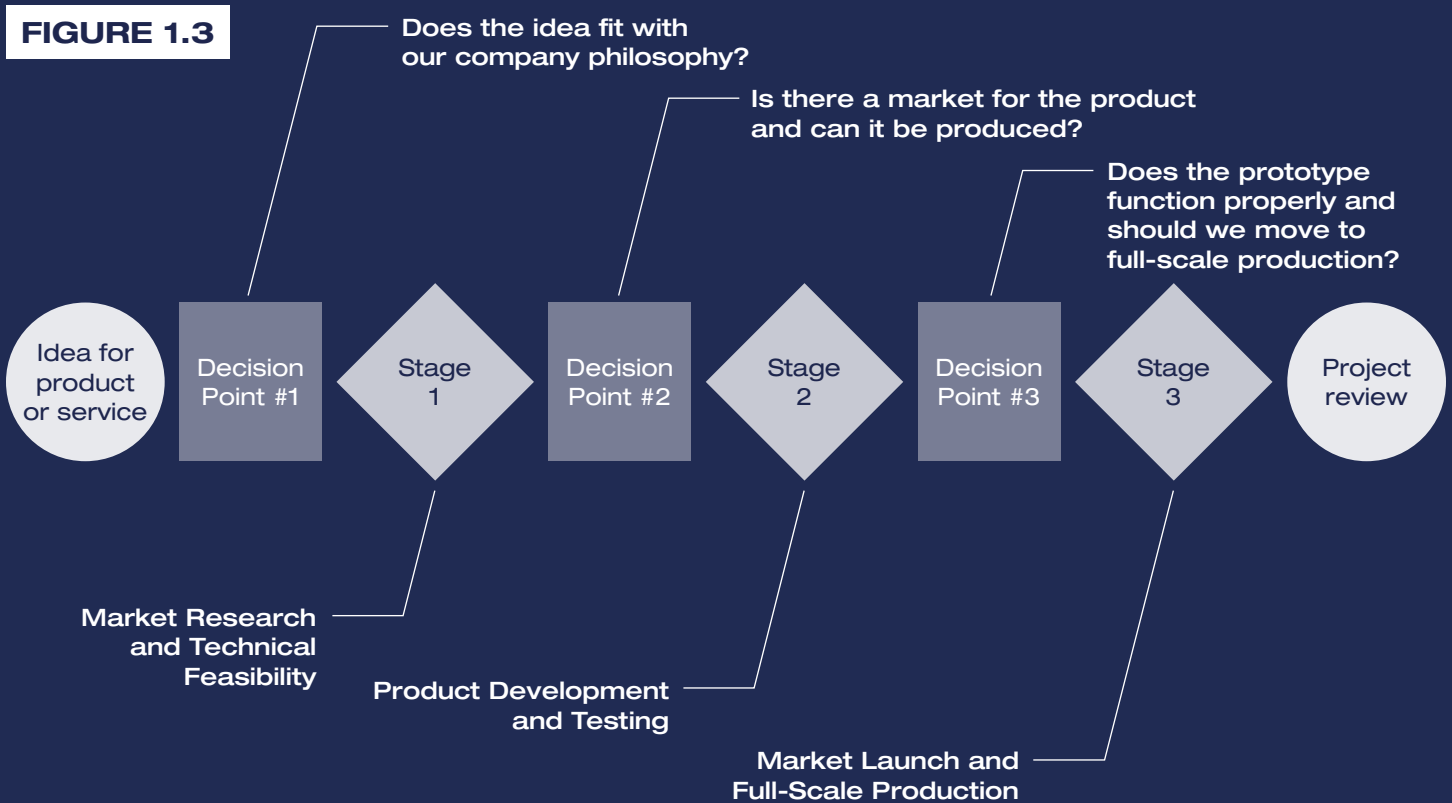
A basic new product development approach is outlined below. Based on the Stage-Gate™ approach developed by Dr. Robert G. Cooper, it consists of a series of research and due diligence activities culminating in an evaluation meeting to determine whether the project in question should continue. The basic process is depicted on the following page with a more in depth explanation of a new product development method later in the document.

It should be noted that the standard Stage-Gate™ approach recommended by Dr. Cooper consists of 5 stages as outlined in **Appendix 2**. Dr. Cooper also provides a fast track process or a 3-stage version of Stage-Gate™ for smaller lower-risk projects. It is this version that we will be considering throughout the document. The difference between the two processes is that while the classical version has five distinct stages, the fast track version combines stages 1 & 2 into a single stage, and 3 & 4 into a second stage. The result is a more compact process with three decision points (also referred to as gates) and three stages.

The system, outlined on the following page, consists of decision points (square), followed by their respective action stages (diamond). Passing through a decision

point enables the project team to undertake the activities associated with the next stage or action phase. A stage ends once the planned activities have been completed in the form of results or deliverables. The results are then reviewed by the decision-making group or person to see if the project passes to the next stage or must be stopped altogether.

Steps to Bringing Your Idea to the Marketplace



Key Points to Consider Before Starting the New Product Development Process

A new product may consist of a physical object, a software program, a service, a process, or a combination of the foregoing. New products range from updates of existing products to “new to market” products that are first of their

kind. Many new products that entrepreneurs and existing companies launch into the marketplace are not successful. As noted earlier, research studies into both failed and successful new products have revealed that measures can be taken to improve the chances for success. **Figure 1.4** outlines some key guidelines for product development.

FIGURE 1.4 Tips for Product Development

- › Don't underestimate the time and resources required to bring your product to market
- › Look for experienced and well connected investors
- › Recruit an experienced Board of Directors
- › Assess ALL your commercialization options
- › Recognize that inventors are often not suited to commercialize products
- › Take advantage of the commercialization infrastructure, such as Universities and Research Institutions
- › Form a team of technical and professional people from different functional areas. Cross-functional teams are critical in the development of successful new products
- › Assign a team leader/champion, responsible for advancing the project
- › Objectively evaluate your product for unique features that set it apart from the competition
- › Undertake research to confirm how much customers are willing to pay for your product
- › Be certain that your project will result in a positive return on investment within a reasonable time frame
- › Your market must be strong enough to justify commercialization
- › Reduce the time required to get the new product to market by:
 - Performing tasks in parallel rather than in sequential order
 - Using rapid manufacturing techniques to produce prototypes, etc.
 - Involving customers, suppliers and other business partners in the project at the earliest possible date

1.4 Innovation Diagnostic Tools

The Innovation Quiz

The chart below poses some key management, market, technical, and financial questions. These are the four main areas associated with most innovation projects. Complete the quiz and consider your results. There is no scoring involved with the assignment, but the outcome may help you identify areas of strength and weakness and provide some “food for thought.”

CRITERIA	QUESTION	YES	NO
MANAGEMENT			
Entrepreneurial team	Strong in key areas?	<input type="checkbox"/>	<input type="checkbox"/>
Stress tolerance	Thrives under pressure?	<input type="checkbox"/>	<input type="checkbox"/>
Risk/reward tolerance	Cuts in salary, long hours acceptable, calculated risk taker	<input type="checkbox"/>	<input type="checkbox"/>
Strategic fit	Opportunity fits with the overall mandate of the organization	<input type="checkbox"/>	<input type="checkbox"/>
Flexibility	Able to adapt, commit and de-commit quickly	<input type="checkbox"/>	<input type="checkbox"/>
Strategic alliances	Partnerships and relationships formed to offset management weaknesses	<input type="checkbox"/>	<input type="checkbox"/>
MARKET			
Market	Market driven product, generating recurring revenue	<input type="checkbox"/>	<input type="checkbox"/>
Customers	Easily reachable and will buy	<input type="checkbox"/>	<input type="checkbox"/>
User benefits	Payback to customer is quick	<input type="checkbox"/>	<input type="checkbox"/>
Value added	High and advanced impact on market	<input type="checkbox"/>	<input type="checkbox"/>
Market structure	Limited competition	<input type="checkbox"/>	<input type="checkbox"/>
Market growth rate	Market exhibits medium to strong growth	<input type="checkbox"/>	<input type="checkbox"/>
Market capacity	Market is undersupplied	<input type="checkbox"/>	<input type="checkbox"/>
Pricing structure	Pricing offers good profit margins	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturer's control over costs, prices, and distribution	Moderate to strong	<input type="checkbox"/>	<input type="checkbox"/>
Proprietary protection e.g. strong patents and trademarks	Have or will gain	<input type="checkbox"/>	<input type="checkbox"/>
Contacts and networks	Well developed and accessible	<input type="checkbox"/>	<input type="checkbox"/>
Distribution channels	Networks in place	<input type="checkbox"/>	<input type="checkbox"/>
User needs and wants built into product definition	Research demonstrates strong market demand for product	<input type="checkbox"/>	<input type="checkbox"/>
TECHNICAL			
Product timing	New to market	<input type="checkbox"/>	<input type="checkbox"/>
Technology	Leading edge	<input type="checkbox"/>	<input type="checkbox"/>
Has technology been assessed / evaluated	By a qualified 3rd party	<input type="checkbox"/>	<input type="checkbox"/>
Technical risk factor	Manageable level of risk	<input type="checkbox"/>	<input type="checkbox"/>
Patentability	Free of infringement issues, etc.	<input type="checkbox"/>	<input type="checkbox"/>
Development cycle	Reasonable time frame for given industry	<input type="checkbox"/>	<input type="checkbox"/>
Compatibility	a) Is your technology compatible with other related systems? b) Is the technology being developed considered "Platform" technology?	<input type="checkbox"/>	<input type="checkbox"/>
Spin-off products	Technology from which other products can be developed?	<input type="checkbox"/>	<input type="checkbox"/>
FINANCIAL			
Time to positive cash flow	Reasonable time frame according to industry standards	<input type="checkbox"/>	<input type="checkbox"/>
Capital requirements	Reasonable considering company's financial strength	<input type="checkbox"/>	<input type="checkbox"/>
ROI potential for project	Acceptable level for investors	<input type="checkbox"/>	<input type="checkbox"/>
Projected sales growth	Sufficient to sustain and grow operations	<input type="checkbox"/>	<input type="checkbox"/>
Financial partners have committed to invest in project	Investors lined up	<input type="checkbox"/>	<input type="checkbox"/>
Owner/entrepreneur has cash available to finance operations	Demonstrated cash flow available	<input type="checkbox"/>	<input type="checkbox"/>

The New Product Commercialization Questionnaire

For each of the statements in the **New Product Development Assessment Checklist** on the following page, rate the new product and your organization by checking the appropriate box.

- It is important that you consider each statement and base your response on how things actually are, not how you would like them to be.
- The Self Diagnostic ratings should be interpreted with great care based on the unique circumstances of your product.
- The Diagnostic rating for each question should be considered as an indicator of the need for corrective action to improve the probability of a successful market launch for the new product. Rating results do not accurately predict success or failure but are meant as a guide for the diagnostic respondent.
- Like the Innovation Quiz, the Diagnostic Guide will raise key project-related questions regarding Management, Markets, Technology and Finance. These are four critical areas for any development project. The tool also provides a short space below each question for you to validate your self-ranking with a brief explanation. The **SWOT Analysis** located on **page 24** is optional and can be completed by the respondent or a business mentor, based on the answers provided in the checklist.

This questionnaire has been developed on the basis of international research studies into the reasons for success and failure of new product development and commercialization projects.



New Product Development Assessment Checklist

For each of the 14 statements in the Assessment Checklist, rate and describe the new product and your organization by checking the appropriate indicators and completing the descriptive space.

STATEMENT	INDICATOR	
<p>1. The Management Team has experience in bringing new products to market</p> <p>Describe Management Team experience in bringing new products to market:</p>	<input type="checkbox"/> Experienced	<input type="checkbox"/> Not experienced
<p>2. The Development Team has technical, marketing, and finance expertise</p> <p>Describe the technical, management, and financial expertise of the Development Team:</p>	<input type="checkbox"/> Experience in all	<input type="checkbox"/> Limited experience
<p>3. The Company can develop this new product without damaging its current business due to diversion of resources and loss of management focus</p> <p>State how the Company can develop this new product without draining excessive resources from its current business:</p>	<input type="checkbox"/> A low risk	<input type="checkbox"/> A high risk
<p>4. The Company or the entrepreneur has the Financial Resources to fund the project</p> <p>Indicate the amount and location of Financial Resources available for the project:</p>	<input type="checkbox"/> Funds available	<input type="checkbox"/> Funding sources to be determined
<p>5. The new product will provide Payback to the customer within...</p> <p>Briefly explain how the new product will help the buyer either save, or make money:</p>	<input type="checkbox"/> A reasonable timeframe	<input type="checkbox"/> Hard to measure

STATEMENT	INDICATOR	
<p>6. The Target Market is attractive (e.g. rapid growth, large size, minimal competition)</p> <p>Describe the Target Market and state why it is attractive:</p>	<input type="checkbox"/> Extremely attractive	<input type="checkbox"/> Somewhat attractive
<p>7. Market Research will be conducted with:</p> <p>Describe how Market Research will be undertaken:</p>	<input type="checkbox"/> Direct customer involvement at different stages of development	<input type="checkbox"/> Developer's own knowledge of the industry
<p>8. The new product concept is Innovative compared to competitive products</p> <p>Explain how your product idea is unique versus others in the market:</p>	<input type="checkbox"/> New to market with no competition	<input type="checkbox"/> Other "me too" products in the market
<p>9. The Risks involved in commercializing the new product have been assessed (e.g. market, technical, regulatory, product liability, intellectual property)</p> <p>State the top 2 Risks associated with the project and how they will be mitigated:</p>	<input type="checkbox"/> Low risk	<input type="checkbox"/> High risk
<p>10. Distribution Channels for the product are...</p> <p>Explain how the product will be sold:</p>	<input type="checkbox"/> Already in place	<input type="checkbox"/> Need development
<p>11. The project's Capital Requirements such that</p> <p>Briefly outline the project costs:</p>	<input type="checkbox"/> The company could survive project failure or significant completion delays	<input type="checkbox"/> The company could not survive project failure or significant completion delays

STATEMENT	INDICATOR
<p>12. Developer has current Networks in relevant business sectors</p> <p>Highlight any key contacts that developer has in relevant business sectors:</p>	<p><input type="checkbox"/> Well established <input type="checkbox"/> New to the industry</p>
<p>13. The project will return a Positive Cash Flow to investors within...</p> <p>How will you demonstrate to investors that your project is a good investment with a positive return?</p>	<p><input type="checkbox"/> A reasonable timeframe <input type="checkbox"/> Hard to measure</p>
<p>14. The Market is currently...</p> <p>If the Market for your product is undersupplied or growing, what market research do you have to substantiate this?</p>	<p><input type="checkbox"/> Undersupplied to growing <input type="checkbox"/> Mature</p>



SWOT Analysis (optional)

Based on the results of the Assessment Checklist, record the main strengths, weaknesses, opportunities and threats associated with your project. Based on this information list the two or three critical success factors (events or occurrences that are essential in order for your project to succeed. e.g. Establish strong relationship with US distributor). This exercise is best completed with the help of an honest mentor.

CATEGORY	FINDINGS & RECOMMENDATIONS
Strengths <ul style="list-style-type: none">•••	
Weaknesses <ul style="list-style-type: none">•••	
Opportunities <ul style="list-style-type: none">•••	
Threats <ul style="list-style-type: none">•••	
Critical Success Factors Identified <ul style="list-style-type: none">•••	

1.5 Innovation Hot Topics

The following pages outline a number of important innovation related topics for the entrepreneur. The goal here is not to provide exhaustive comments on each of the subject matters, but to make the reader aware of the topic. Additional information may be sought by the entrepreneur if required.

Intellectual Property

The Government of Canada considers certain kinds of creative endeavour “intellectual property.” You can receive legal recognition for these endeavours in much the same way as you can receive title to a piece of land. In addition, the records and documents that protect intellectual property owners’ rights contain valuable information.



Types of Intellectual Property

Patents cover new inventions and improvements to existing inventions.

Trademarks are words, symbols or designs that distinguish products, services, or organizations from others.

Copyrights provide protection of artistic, dramatic, musical or literary works including computer programs.

Industrial Designs are visual features of shapes, configurations, patterns applied to finished goods.

Integrated Circuit Topographies refer to three-dimensional configurations of electronic circuits embodied in integrated circuit products or layout designs.

Plant Breeders Rights apply to certain new plant varieties.

A Word About Patents

Through a patent, the government gives you, the inventor, the right to exclude others from making, using, or selling your invention from the day the patent is granted to a maximum of 20 years. You can use your patent to make a profit by selling it, licensing it, or using it as an asset to negotiate funding. (See **Appendix 3** for Canadian Patent Filing Information.)

When to Apply for a Patent

File as soon as possible after completing your invention. Even if you can prove that you were the first to conceive of the invention, you lose the race if a competing inventor files before you do. It's imperative not to advertise, display, or publish information on your invention too soon, or it may be considered "public domain," available to be used by everyone.



Because of the large market, and because the United States is a world leader in many fields, inventors are often interested in filing for patent protection in the United States first. For more information on the differences between US and Canadian Patents see www.rir.utoronto.ca/utech/.

Non-Disclosure Agreement

A Non-Disclosure Agreement (NDA) is a signed formal agreement in which one party agrees to give a second party confidential information about its business or products and the second party agrees not to share this information with anyone else for a specified period of time. When discussing your new idea with someone, you may wish to have the person sign an NDA. (See **Appendix 4** for a Non-Disclosure/Non-Compete Agreement sample.)

Scientific Research and Experimental Development Tax Credits

The Government of Canada has established the Scientific Research and Experimental Development (SR&ED) Program to encourage Canadian businesses to conduct R&D that will lead to new or improved products and processes.

This program is administered by the Canada Customs and Revenue Agency (CCRA), through its' provincial offices. The SR&ED Program gives claimants cash refunds and/or tax credits for expenditures on eligible R&D carried out in Canada. Your project's success or failure is not a factor in determining its' eligibility. A service for first time claimants is available to help companies new to the SR&ED Program. SR&ED staff are available to answer questions and to visit your business to explain the program and requirements in more detail. You are advised to contact them prior to starting your innovation project. The SR&ED Program is worth checking into. For example, if you are a qualifying Canadian Controlled Private Corporation, with \$200,000 or less of taxable income in the previous year, you may receive a refundable investment tax credit of 35 percent of your qualified SR&ED expenditure. This is called a

refundable claim and may entitle you to a cash refund. For more information see www.ccra-adrc.gc.ca/sred/ or contact your local tax services office.

Assembling a New Product Development Team

A key component of successful new product development is having the right team in place to carry out the development work. The most effective product development teams have a group of individuals assigned full-time to a project rather than the latest development project simply piled onto staff's existing workload. It is preferable that certain employees be tied to the project from the idea stage through to market launch. This provides continuity and a sense of ownership for the work being completed.

The team should consist of individuals from different functional units of the organization. This means that technical or R&D staff should work along side people from marketing, production and finance in the development process. Building this variety into teams is critical and will bring new perspectives and insights into the development process. For example, an engineer may have developed a functional prototype that appears to work well. A marketing manager, however, may add value by recommending certain modifications based on hundreds of previous interactions with clients.

Teams need leaders. A new product development project must have a leader assigned to quarterback the initiative. The leader should have a customer-centered vision and excellent people skills. He should also be granted the proper authority to carry out the required work. In other words, the leader needs "buy-in" from senior management that will empower him/her to effectively complete the assignment. The team should be held accountable for its ultimate results and be rewarded according to its success.

New product development helps companies achieve higher profit margins and carve out niches to separate themselves from the competition. Cross-functional teams

are key to an effective New Product Development Process. Whether your organization is large consisting of several departments or has only a few employees, the above-noted information should be given careful consideration prior to commencing any new product development initiative.

Evaluating Technical Feasibility

A preliminary technical feasibility evaluation is designed to help you assess whether your idea is patentable and worth pursuing as a business opportunity. The key question you are answering at this point is “is it possible/feasible to develop such a product or service?”. During this stage, details on everything the product will do and how it will work should be documented. Performance specifications should be mapped out and discussed with your team. This study should also identify the risks and challenges associated with the initiatives and develop an experimental work plan to solve these problems. It is also advisable to undertake a patent search to see whether someone else already owns all or part of the technology you want to develop. The National Research Council (NRC) is often a good source for technical expertise and support for innovation-related projects. Visit their website at www.nrc-cnrc.gc.ca.

Managers should establish a system to receive and review innovative suggestions.

Improving Innovation Culture

To truly benefit from knowledgeable employees, companies must create a climate where change and creativity are embraced. Hiring inventive employees and throwing them into a stiff, policy driven environment will, without doubt, crush their ideas. Your firm’s culture must encourage and nurture ideas rather than kill them. Viable ideas should be evaluated and implemented if possible. Managers should establish a system to receive and review innovative suggestions. They should also seek to reward individuals whose ideas are implemented. An innovation business culture can result in the development of new products and services, cost reductions for the company, and increased employee satisfaction.



Identifying, Hiring and Retaining Highly Qualified Employees

For most organizations, hiring and retaining technically skilled employees is a challenge. HRDC's Human Resources Management Website at www.hrmanagement.ca is a one-stop source of information for small to medium-sized employers, intended to help them identify and hire qualified employees and handle professional development issues. See also: www.businessgateway.ca & www.sourcecan.com.



Productivity Improvement

In today's global economy, competitive advantage is critical. Companies must find ways to manufacture products or deliver services more economically and efficiently. Industrial studies in the US show that between 65 and 75 percent of industrial firms have adopted some form of productivity improvement strategy. One leading system is known as "Lean Manufacturing." This production strategy analyses the entire operation of a company and introduces value added changes designed to increase



efficiency. Some of the measurable benefits that a company might experience include a reduction in inventory carrying costs, lower scrap rates, fewer work related injuries, and significant lead time reductions. The ultimate goal is to make the company more profitable. If you want more information on productivity improvement strategies, visit the websites for TopTech (www.toptech.qc.ca) and Lean Enterprise Institute (www.lean.org).

Working With Universities, Colleges, and Research Centres

Our local institutions of higher learning are often an excellent source of technical assistance. The professors, teachers, and researchers have unique skill sets that can be of great assistance to businesses looking to develop new products or services. If you do not know where to start or what expertise is available at a given institution, try contacting the Research Office. These people are paid to help you access expertise at your local institution.

Each province in Atlantic Canada has one or more Research Centres that can help you develop your new product or service. Depending on the type of industry you are in, it may be worthwhile contacting such an organization to see if they have expertise in your particular area of interest. Examples of these types of organizations include the Canadian Centre for Marine Communications (Newfoundland & Labrador), The Food Technology Centre (Prince Edward Island), the Telecom Applications Research Alliance or TARA (Nova Scotia) and Genieo (New Brunswick).

Local institutions of higher learning such as universities and community colleges are an excellent source of technical assistance to business.

Ten Action Items for Generating New Product Ideas

1. Establish a focal point – a person to stimulate and handle new ideas
2. Survey your customers
3. Observe customers as they use (or misuse) your product
4. Examine the patent files and the Official Gazette regularly
5. Visit key Universities and Researchers. Consider putting several University Researchers on a retainer
6. Set up a new product idea suggestion scheme in your company
7. Organize creativity sessions involving sales and technical people in the same session
8. Invite lead or highly innovative users to a creativity or brainstorming session
9. Provide free time or scouting time for employees to work on pet projects. Set up a seed money fund to support creative projects
10. Do something with the ideas – don't just let them sit there

From “Winning at New Products”
By Dr. Robert G. Cooper

APPENDIX 1:

Technology License Agreement

Proposed Technology License Between Company A (owner of the technology) and Company B (exclusive licensee)

Proposed Technology for License

Technology: Product Q
Territory: Worldwide Exclusive
Fields of Use: All
License Term: 10 Years

Payment for Exclusive License Rights

License Fee: \$25,000 upfront payment (not credited to royalties due or refundable) and 5% of the outstanding shares of common stock of B, a subsidiary company of C to be created for this acquisition.

Running Royalty: 5% (on net sales of products or services incorporating this technology)

Minimum Annual Royalty: <i>(Credited against Running Royalties repayable)</i>	<u>License Year</u>	<u>Amount</u>
	3 rd	\$ 5,000
	4 th	\$ 7,000
	5 th	\$ 9,000
	6 th	\$ 12,000
	7 th	\$ 15,000

Patent Expenses and Fees

As soon as practicable, A shall file a patent covering this technology for US and Canadian rights. B shall reimburse A for all expenses and fees it incurs in making this patent filing. During the license term, B will pay all expenses and fees incurred for filing, prosecuting, issuing and maintaining all US and international patents and patent applications.

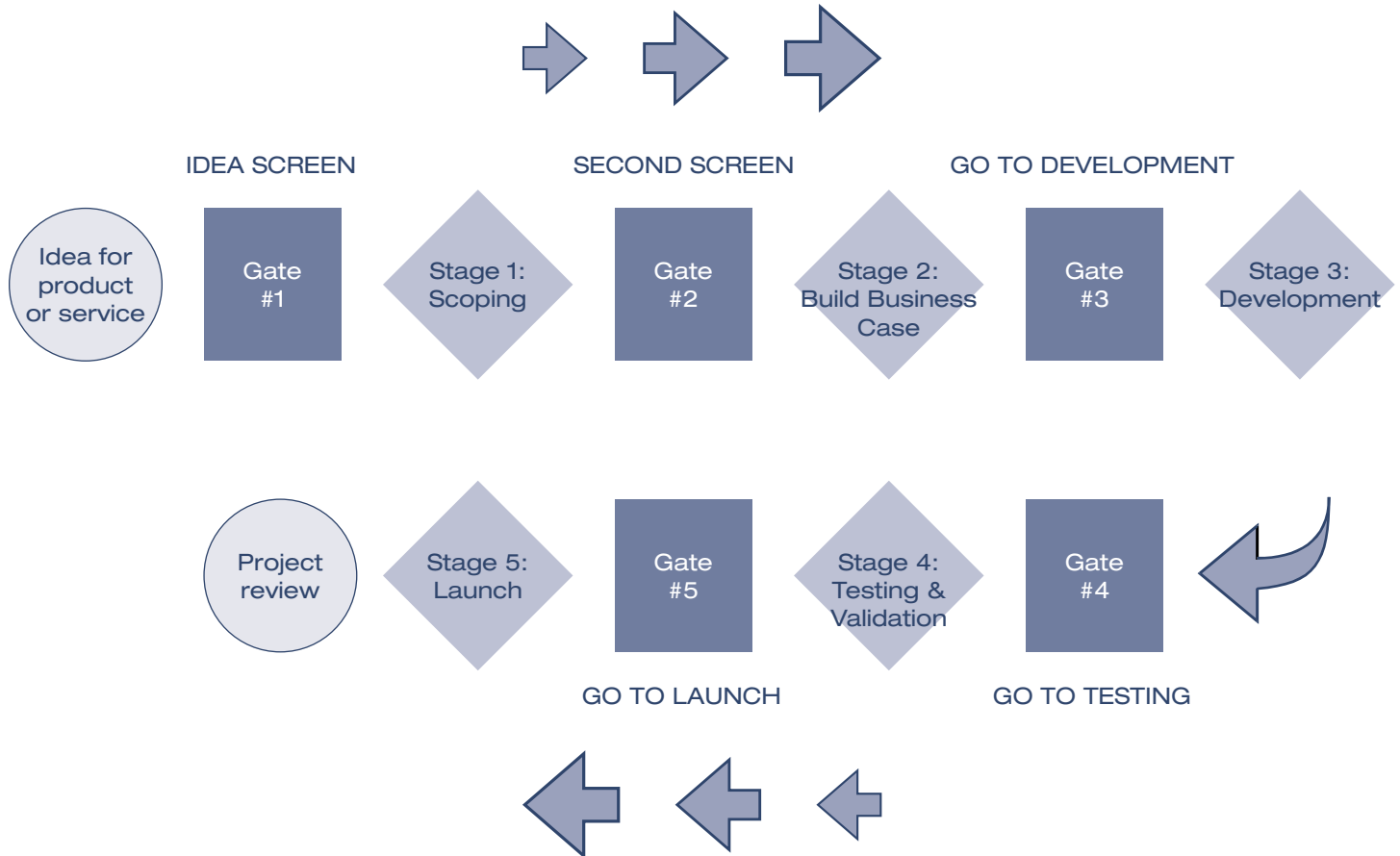
Right to Sublicense

A will receive 50% of all upfront consideration B receives from any sublicenses.
Minimum Royalty on Sublicense: A will receive 50% of all royalties sublicensees pay on net sales of their products and services incorporating this technology, but no less than 50% of the Running Royalty percentage.

APPENDIX 2:

Stage-Gate™ New Product Development Process

Driving New Products to Market



Note: While the term “Gate” is used in Dr. Cooper’s 5-stage New Product Development model, this document alternatively uses the term “Decision Point”.

APPENDIX 3:

Canadian Patent Filing Information

Patents: General Notes

In order to obtain a filing date in Canada, no document needs to be signed by the Applicant. In every case, agents can sign all necessary papers required for a filing date.

1. Items Needed to Obtain a Filing Date

- A. Abstract
- B. Specification, including disclosure portion and claims, in English or French
- C. Any drawings referred to in specification (may be informal)
- D. Name(s) and address(es) of inventor(s) and of Applicant, if Applicant is to be an assignee or other successor-in-title

To obtain a filing date, agents can prepare and execute the required petition on behalf of the Applicant. There is no need for the Applicant or inventors to sign the petition, or any other application papers.

2. Format of Specification/Drawings

A photocopy of a specification in United States, PCT, or EPC (English language version) format will usually suffice for Canadian filing purposes. Any necessary retyping can usually be deferred until allowance. A4 paper is preferred for the specification although 8.5 inches by 11 inches paper is also acceptable. Drawings should be on the same size paper, with a clear margin preferably of at least 1 inch (2,5 cm) on all sides, but there are no specific requirements for “formal” drawings.

3. Assignment Formalities

To be recorded by the Canadian Patent Office, an assignment must cover Canadian rights and be:

- A. An originally executed assignment, including proof of execution;
- B. A copy of the foregoing, certified by a notary public; or
- C. A copy of an assignment filed in another patent office, certified by such a Patent Office.

APPENDIX 3:

Canadian Patent Filing Information

Under a relaxed practice, the Canadian Patent Office will record any witnessed assignment. However, it is recommended that proof of execution of an assignment be in the form of a notarial certificate or affidavit of a subscribing witness sworn before a notary public or the like, to ensure compliance with the Patent Act. No legalization by Canadian consular officials or the like is required.

4. Convention Priority

Convention priority must be claimed between sixteen months of the filing date of the earliest priority application. A certified copy of the priority document is not ordinarily required.

5. Novelty Requirements

Canada has a one-year grace period for most statutory bars. That is, to be valid, a Canadian application must be actually filed in Canada within one year of any publication of the invention anywhere in the world by the Applicant or anyone deriving knowledge of the invention from the Applicant, or any public use or sale of the invention. A Canadian application must also be filed, or have a priority date prior to any publication of the invention anywhere by a third party not deriving knowledge of the invention from the Applicant.

6. “Small Entity” Status

A “Small Entity,” for fees purposes is an entity that employs 50 or fewer employees, or a university. Small entity status does not apply to an entity which has transferred or licensed, or is obliged to transfer or license, any right in the invention to (a) a third party which does not in itself qualify as a small entity; or, (b) a third party which does qualify as a small entity if the transferor, etc. has knowledge of any subsequent transfer or license of, or of any subsisting obligation to transfer or license, any right in the invention to another party which does not itself qualify as a small entity.

7. Request for Examination

Canadian Patent applications are no longer automatically examined. A request must be filed and an examination fee be paid within 5 years of the Canadian filing date. This can be done at the time of filing, if the Applicant wishes.

APPENDIX 3:

Canadian Patent Filing Information

8. Maintenance Fees

Canadian patent applications are subject to maintenance fees, which are payable commencing with the second anniversary of the Canadian filing date and annually thereafter throughout the pendency of the application and continuing throughout the term of the resulting patent. (Canadian Patents issue for a 20-year term, counting from the Canadian filing date).

APPENDIX 4:

Non-Disclosure/Non-Compete Agreement

Non-Disclosure/Non-Compete Agreement

This agreement is made as of DD/MM/YY, by and between: COMPANY NAME located in CITY, PROVINCE/STATE and INVENTOR NAME.

This agreement shall govern the conditions of disclosure by INVENTOR NAME to COMPANY NAME of certain “confidential information” including but not limited to prototypes, drawings, data, trade secrets, and intellectual property relating to the “Patent Pending” invention named, INVENTION TITLE invented by INVENTOR NAME. With regard to the confidential information, COMPANY NAME hereby agrees:

1. Not to use the information therein except for evaluating its interest in entering a business relationship with INVENTOR NAME, based on the invention
2. To safeguard the information against disclosure to others with the same degree of care as exercised with its own information of a similar nature
3. Not to disclose the information to others, without the express written permission of INVENTOR NAME, except that:
 - A. which COMPANY NAME can demonstrate by written records was previously known
 - B. which is now, or will become in the future, public knowledge other than through acts or omissions of COMPANY NAME
 - C. which is lawfully obtained by COMPANY NAME from sources independent of INVENTOR NAME
4. That COMPANY NAME shall not directly or indirectly acquire any interest in, or design, create, manufacture, sell or otherwise deal with any item or product, containing, based upon or derived from the information, except as may be expressly agreed to in writing by INVENTOR NAME
5. That the secrecy obligations of COMPANY NAME with respect to the information shall continue for a period ending 3 years from the date hereof

INVENTOR NAME will be entitled to obtain an injunction to prevent threatened or continued violation of this Agreement, but failure to enforce this Agreement will not be deemed a waiver of this Agreement.

IN WITNESS WHEREOF the Parties have hereunto executed this Agreement as of the day and year first above written.

COMPANY NAME

By

Date

Title

INVENTOR NAME and SIGNATURE

***** This is a sample and is not to be considered as legal advice of any sort. *****



PART TWO: COMMERCIALIZING A NEW PRODUCT IDEA

Part Two outlines a unique approach to new product development. It provides a framework to guide you from the new product idea stage through to market launch. The methodology used in this section is less formal than that employed in Part Three. You should choose the particular approach that is best suited to your needs.

PART TWO:
COMMERCIALIZING A
NEW PRODUCT IDEA

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2.1 Steps to New Product Development

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2.2 Stage 1: Market Validation and Technical Feasibility Study

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2.4 Stage 3: Production and Market Launch

Contents

2.1

Steps to New Product Development

If you have taken the time to review Part One, you will have been exposed to many critical innovation-related concepts. The New Product Development Process was briefly referred to and Part Two will further explore the key elements of the process.

We have polled experts in the field and developed a concise review of the stages of the New Product Development Process. This section is meant to guide you through this process.

It is best to identify a mentor, trusted business associate or investor to help you work through this process. The idea is to go one stage at a time, clearly understanding the purpose of the phase, answering several of the key questions listed, noting the advice provided by our field experts and then documenting your work in the form of deliverables.

Stage 1 addresses Market Validation and Technical Feasibility. These two issues must be assessed and validated before moving to Stage 2: Product Development and Testing. Once the product has been completed and is proven to work effectively, full-scale production and market launch is carried out in the 3rd and final stage.

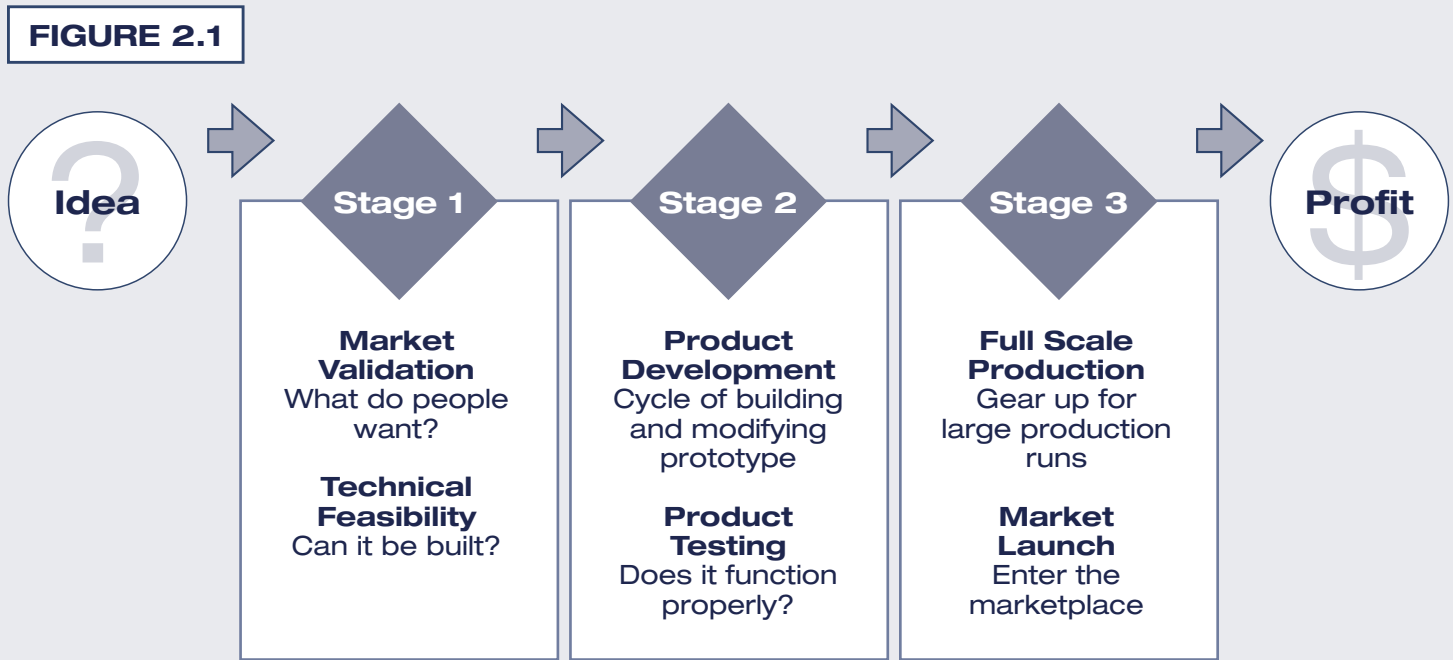
Four main elements of any successful innovation project are a strong and experienced management team, an attractive market for the product, a technically feasible idea and solid financial backing.

Four main elements of any successful innovation project are a strong and experienced management team, an attractive market for the product, a technically feasible idea and solid financial backing. These four ingredients should be present in your innovation project, as a major deficiency in any one could present difficulties with future commercialization of your idea.

Be sure to continually assess each area as you move through your product development cycle. **Figure 2.1** outlines a graphical representation of the process. Parts Two and Three of this guide provide a methodology for the New Product Development Process. Both will take

you through the process from start to finish. Part Two is a less formalized approach whereas Part Three provides a more detailed outline of the New Product Development Process. Feel free to review both, if you desire, and select the one you feel more comfortable with.

Steps in the New Product Development Process



2.2 Stage 1: Market Validation and Technical Feasibility Study

You are about to commence the first stage of the New Product Development Process. Stage 1 has two critical parts. Market validation will help determine what the customer's needs and wants are and whether they will purchase what you are proposing to manufacture. Technical feasibility will tell you whether it is possible or feasible to build the product the customer is looking for. It is important that the two studies be conducted in parallel. Information sharing between the two is essential for making the process move along as quickly and efficiently as possible.

This stage will help you to clearly define your product. When you have completed this phase, you should review your results and decide whether to move on to Stage 2. Your initial market feedback should be very positive, and you should also be very certain that you have the technical capabilities to produce your new concept.

According to Dr. Robert G. Cooper, market validation is one of the most important activities a company can undertake.

What is Market Validation?

Market validation will determine if your new product idea has any chance of succeeding in the marketplace. It answers the basic questions *will customers purchase the product I am proposing to develop? If yes, how does the market research prove this?*

It may consist of a variety of activities such as identifying a target market, holding focus groups to identify user needs and wants, assessing the competition and testing a concept or basic prototype with potential users.

Market validation is one of the most important activities a company can do. Dr. Robert G. Cooper, in his book, "Winning at New Products," notes that inadequate market analysis is the leading cause of new product failure. It saves time and valuable development and marketing resources



by testing a product concept, idea, position, and customer buying drivers before a product is engineered or launched. Market validation can be done by large companies exploring a new market or product line as well as start-up companies looking to introduce their first product.

Some believe that spending time and resources on market validation will delay a product's time to market, however this is not true. In fact, while conducting proper market research may take several weeks or months, the time to market will likely be reduced. This is because changes that are carried out during the development stage (when the product is being designed & built) take longer and are more expensive than modifications to the product concept carried out in the validation stage. The better the entrepreneur understands the clients' wants and needs, the less changes that will have to be made during the development stage. An entrepreneur is well advised to take extra time in the validation process to ensure what he plans to develop will be appealing to the customer. A dollar spent in the validation process will save ten dollars in the development process. It is critical that, before work starts on actual product development, the entrepreneur has completed sufficient market validation homework.

Here are some things you can do to validate your market:

- Identify user needs & wants (e.g. - Are there needs in the market currently not being met?)
- Determine your target market (e.g. - What specific characteristics do your customers have?)
- Determine the overall size of the market (e.g. - How many potential customers are out there?)
- Identify the characteristics of market segments (e.g. - Describe the different groups of consumers who would purchase your product)
- Identify the competition (e.g. - Is there room for you in the marketplace?)

An entrepreneur is well advised to take extra time in the validation process to ensure what he plans to develop will be appealing to the customer.



- Note potential market barriers (e.g. - What would prevent you from obtaining a share of the market once you have launched your product?)
- Identify industry trends (e.g. - Does your product use a technology that is growing in popularity?)
- Clarify unique features and benefits of your proposed product (e.g. - What separates your product from what is already in the market?)
- Identify your competitive advantage (e.g. - What is a specific advantage your organization has over the competition?)
- Use focus groups to discuss the product features and benefits (e.g. - Discuss with potential customers what would make your product the most appealing to them)
- Contact potential sellers & distributors (e.g. - Are customers asking for what you are planning to offer to them?)
- Obtain feedback from industry leaders (e.g. - Get opinions from individuals who have industry experience)

Sample of Questions to be Answered:

- Am I satisfied that there is a real demand for my product? If so, why?
- Which trends in the industry could affect the success or failure of my product?
- Does my product satisfy user needs and wants, based on actual interactions with potential clients?
- What differentiates my product from the competitions’?
- How many competitors are in the proposed marketplace?



Tips from the Field:

- Gather market information such as: who's going to use the product, where, how and why? Also identify customer needs and wants, the estimated retail price, annual quantity of production forecasted, distribution network and possible business partners.
- Use focus groups to get critical market information. When properly carried out, focus groups can significantly reduce testing, risks, costs and time to market.
- Validate ideas with consumers by using mock-ups or rough prototypes.
- Make sure you study your competition. You should know their products, retail prices, sales terms, marketing strategy and everything else about them.

Sample of Possible Deliverables for this Section:

Brief market assessment report (5 - 10 pages) outlining the following info:

- Market validation data highlighting answers to key questions.
- Your research methodology (how did you collect your information?).
- Listing of interviews with industry leaders, potential clients, competition, investors, etc.
- Conclusions drawn as a result of investigation.

Listen to what people are telling you. Don't assume you know what the market wants.



What is a Technical Feasibility Study?

One of the key questions answered through a technical feasibility study is “Is it possible to develop my new product idea?” The technical feasibility study does what the name implies, tells you whether your idea is worth pursuing from a technical scientific/engineering point of view. It will identify the key technical risks associated with your project and indicate whether or not there are potential solutions to address the challenges identified. Most technical feasibility studies broadly outline product specifications based on the developer’s vision. The proposed project objectives should also be laid out and be quantifiable or measurable. The study should help to more clearly define the product concept, with the understanding that this will evolve as user feedback is sought.

A technical feasibility study will help identify potentially viable solutions to your technical problems and minimize your R&D risks.

Such a study will also determine whether the product concept is patentable or if a patent has already been filed by another party. A patent agent or a patent attorney can perform a legal patent search for you. A key piece of information gained by the feasibility study is whether the developer has sufficient capabilities to develop the product using current human resources available (in-house) or whether development should be contracted out. In some instances, technical feasibility studies will also provide information regarding production requirements and preliminary production costs; however, this level of detail is not always required.

The study should be conducted concurrently with the market validation, in order to speed the process and reduce time-to-market for the new product. These two studies will make up the first of three stages in the New Product Development Process. As noted earlier, communication between the individuals carrying out the studies is important, since the results of the market validation will affect many of the technical aspects of the product, and the results of the technical feasibility study will tell you what solutions are possible.



Here are some things you can do to determine the technical feasibility of your project:

- Conduct literature searches to find out what the current state of technology is in your particular industry of interest (e.g. - what is the current state-of-the-art technology employed and how will your product improve upon this?).
- Conduct a patent search to make sure you are not infringing on already existing patents, and make sure you have a plan to protect any intellectual property you develop (e.g. - other products with similar features may force you to revise your product design or consider licensing rights to existing intellectual property).
- Investigate possible technical risks associated with the project (honestly assess what could go wrong during development).
- Get help from experienced individuals in your target industry (suppliers, manufacturers).
- Outline the steps that would be required to develop a prototype, and find out how much this would cost (e.g. - costs for use of labs, labour, etc.). A proposed work plan should serve as a technical roadmap to identify how both applied and experimental science/engineering approaches will serve to address technical objectives of the project.
- Create drawings, mock-ups, or a product concept outline - whatever will help you clearly communicate your concept with others in order to obtain a clear product definition.
- Determine product specifications or requirements (what functions will the product perform?).
- Determine whether you have the capability to produce this product yourself (use in-house capabilities or outsource production?).

- Estimate the costs involved in the actual production of your product (raw materials, labour, etc.). This will be a preliminary figure at this early stage.
- Seek advice from experts such as Industrial Technology Advisors (NRC), university researchers or staff from qualified labs engaged in product development.

Sample of Questions to be Answered:

- Is it possible to develop the product I am envisioning? Does the necessary technology exist?
- What are the technical risks associated with the project?
- Can I protect my intellectual property or am I infringing on someone else's patent?
- What will be the design specifications of the product?
- Do I have the expertise and equipment to manufacture the product in-house or should I subcontract?
- What are the estimated costs associated with the product development?
- What is the current state-of-the-art technology in the industry that I propose to enter?
- Can the product be easily expanded or modified if required?

Tips from the Field:

- Make sure the objectives of your technical feasibility study are clear and understood by everyone involved in the project.
- Seek out the help of a qualified R&D lab or government agency such as the National Research Council, before moving forward to a technical feasibility study.

- Be prepared to halt the project if technical feasibility is questionable or if the amount of R&D needed to solve the problem exceeds your financial capacity.
- Filing a patent is not always necessary. Decide what is the best method, if any, to protect your intellectual property.
- If you are engaging a consultant or using a lab to assist you with your technical feasibility study, ensure they are qualified and have a good track record in terms of commercialization.

Sample of Possible Deliverables for this Section:

The main goal of this section is to outline the technical objectives of the project and how the objectives will be met. With each technical challenge identified there should be a proposed experimental methodology to address the risk. You may also include:

- Brief introduction including your research methodology (how did you conduct your research?).
- Listing of interviews with industry experts, and researchers.
- Patent search, verifying uniqueness of the idea along with results of literature search.
- Breakdown of technical risks and possible mitigating factors.
- Review of state-of-the-art technology available for use in development of product.
- Breakdown of costs and skills set required to proceed with development.
- Conclusions.



2.3 Stage 2: Product Development and Product Testing

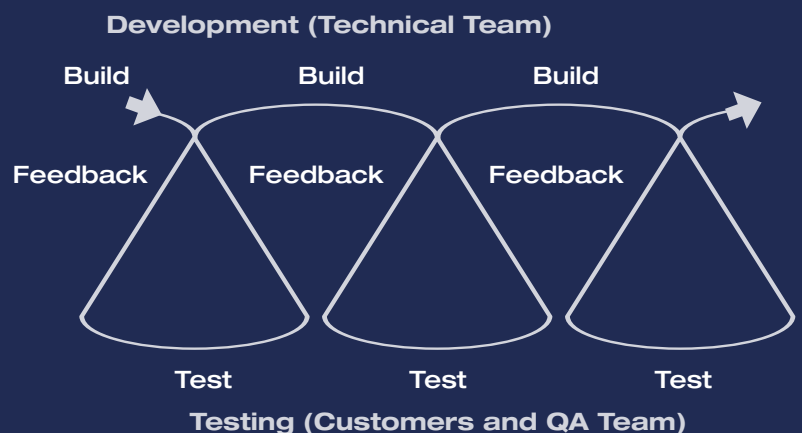
This second stage of the New Product Development Process is much more time consuming and capital intensive than the first phase. It is in this stage that you will fully develop and test your product, to ensure that it will meet customer expectations when introduced into the market.

As was the case in Stage 1, the two studies in Stage 2 should be done concurrently. This phase is an ongoing process of development and testing. The feedback acquired from testing your product will be used to alter your product so that it can be retested, and so on. This will help you to identify “bugs” and come up with solutions. These bugs can either be technical problems or something that the customer does not like about the product.

Although it can be tempting to continue this process until your product is “perfect”, you should set a predetermined point where you will stop development and move on to the next stage. When finished Stage 2, you should be ready to move into full-scale production and be confident that there are no flaws in the product design.

FIGURE 2.2
Development and Testing Cycle

This Figure shows a graphical representation of how the two studies are tied together.



Adapted from, “Winning at New Products: Accelerating the Process from Idea to Launch”, by Dr. Robert G. Cooper

Product Development - Moving Your Idea from Concept to Reality:

Now that you have completed the first stage of the New Product Development Process (Market Validation and Technical Feasibility Study), and decided to go ahead with the development of your new product idea, it is time to look at what steps you will take in order to complete a successful product development project.

By the end of this process, you should be able to deliver a prototype of your product that has been tested with prospective customers. Something you should keep in mind throughout this process is that the market conditions do not remain the same while you are developing your product. What this means is, if you take too long to develop your product, the conclusions you made during Market Validation may no longer be accurate. In order to avoid this, you should be in contact with your customers throughout the development process. It may be frustrating when you have to revise your product after obtaining feedback, but it will ensure that your product is developed with current customer needs and wants built into it.

Another good reason to maintain customer interaction during the development process is to make sure that your product definition remains relevant. Every time you alter your product slightly, it makes it that much different than the product concept that was tested with customers during the first part of Stage 1: Market Validation. Without customer interaction, your end product may be a different product than the one in which so many people showed interest.

The Product Development process may be different for each company. Larger firms may follow a more rigid process using cross-functional teams (staff members from different departments such as R&D and Marketing) to carry out product development. Some entrepreneurs may be developing their new product idea mostly on their own. Whatever the case, there are key activities that should be followed in the New Product Development Process, regardless of the size of the firm. A simple yet effective



Develop a “game plan” for your new product development initiative. Divide your project into tasks and to each task assign subtasks, a cost, completion date, person responsible for the work and deliverables.



way to organize the “development and testing” portion of your project is outlined below:

Product Development Game Plan (see chart pg. 58-59)

Break your project down into steps. Identify the major tasks to be carried out and organize related subtasks under each of the major tasks. Adopting a phased approach keeps the project team organized and working towards the same goal. Problems arising from the project are easier to identify and can be rectified before subsequent stages are negatively affected.

To each step, assign subtasks, a cost, completion date, person responsible for managing the step, and deliverables or milestones. Organizing a project in this manner helps the project leader better manage his/her resources as well as the project outcome. By knowing who is responsible to carry out what task and for what cost, a developer is better able to direct the overall New Product Development Process. Deliverables or milestones tied to each project step ensure that the activities remain on track. It also keeps people accountable to complete the work on time and on budget.

Itemize project costs clearly, according to the different inputs (labour, materials, equipment, subcontracting, miscellaneous, etc.). This is useful for budgeting purposes and critical for development projects where cost overruns can easily occur.

Carefully monitor the project. As you move through the development process, check to see if you are staying within your budgeted costs and timeline. If you have taken the time and effort to carefully plan and document your project development path, be sure to track your progress along the way.

Some Ideas for Constructing a Development Plan:

- Have a documented product development plan. It has been proven that entrepreneurs who have a clear plan of attack for their development projects are twice as likely to succeed as those who do not.

- Stay in close contact with the customer throughout the development process.
- Identify a project champion and give him/her the authority and resources to effectively manage the project. The champion and key team members should be assigned full time to the project, where possible.
- Use people with various backgrounds or from different departments to form your project team. Don't be afraid to use trusted suppliers or business contacts as sounding boards.
- Where possible, use rapid prototype techniques or virtual product development in order to reduce time and cost of producing product prototypes or mock-ups.
- Undertake fewer development projects in order to focus on ones with the greatest potential and reduce time to market.
- Take deadlines seriously and seek to achieve milestones within budget.
- Draw a line in the sand and stop development at a predetermined point. Don't be afraid to release a version 2. The tendency is to keep on developing, adding this feature and that one but never releasing the product for sale.
- Start your development process with a clear definition of your product (realizing that it is subject to modification based on customer feedback during this phase).

Sample of Questions to be Answered:

- How is my product going to meet customer needs and wants?
- How am I going to access the resources I need to develop this product?
- Do I have a clear vision of what the final product will be?

Stay in close contact with the customer throughout the development process.





- How will I determine the amount of time and money I should spend on development of my product?
- Do I have a product development game plan?
- How will I breakdown resources for each step of my development project?
- How will customer feedback be used to develop my product?
- Who is ultimately responsible for managing the project?
- When will I have a prototype ready?

Tips from the Field:

- Don't underestimate the importance of customer feedback. You may be surprised by what you hear! For example, in our company, quick customer sampling for a children's software game easily pinpointed a near fatal flaw – the entirely male product team had created a game without any female characters. As a result of the feedback, the team quickly went to work designing female characters.
- Beware of “false positives” from customers. Create an environment that will allow customers to provide you with frank feedback. All too often when we first began validating our new products with customers, we unintentionally guided them towards the answers we wanted. While the results looked good on paper, products either under-performed or failed in the marketplace.
- Never continue development of a bad product. Although it is very tempting to improve a bad product, it has been our experience that the energy spent trying to fix a bad product is better spent developing a new one.

Sample of Possible Deliverables for this Section:

Brief report on activities that you undertook during the Product Development stage, including:

- Completed Product Development Game Plan and progress reports.
- Prototype of product that functions as expected.
- Manufacturing specifications outlined.

Product Development Game Plan

Description of work

TASK	PERSON(S) RESPONSIBLE	COST	COMPLETION DATE	MILESTONE/ DELIVERABLE
No. 1 a) b) c)				
No. 2 a) b) c)				
No. 3 a) b) c)				
No. 4 a) b) c)				

from “Product Development – The Way of the Future”, by the Minister of Supply and Services Canada, and Ford-Q

Table Summarizing Project Costs

TASK	LABOUR	MATERIALS	EQUIPMENT	SUBCONTRACTING	MISCELLANEOUS	TOTAL
No. 1						
No. 2						
No. 3						
No. 4						
Total						

from “Product Development – The Way of the Future”, by the Minister of Supply and Services Canada, and Ford-Q

Testing Your New Product

This will complete the last phase before your new product is launched into the marketplace (Stage 3). It should deliver a final validation of the entire project, to ensure that the product is ready to move to production. It involves testing your product with customers to ensure that it will be accepted in the market, and in labs to make sure that the quality of your product will not disappoint customers when used.

Common activities that take place in this phase are in-house product tests, extended customer field trials, test markets, and a production test. All of these activities will help you to determine whether your product is ready to move on to the next stage. The in-house or *alpha* test allows you to work out the “bugs” in your product, so that it will perform up to consumers’ expectations. Someone in your organization should be familiar with the test requirements for your product. Often times companies will enlist the services of a testing-house or certification lab at this point. The extended customer field trials, or “beta testing”, involve customers trying your product over a longer period of time. This will give you feedback from potential customers so that you can make any necessary modifications to your product. Test markets are when you sell your product to a specific market, which is representative of the entire market. It might be selling

your product in a particular retail chain across only one province. This will help you to predict sales levels, and also to determine the demographics of people who will buy your product. A production test occurs when you run sample batches through the production process to make sure everything is operating efficiently. It is the last step before moving to full-scale production.

All of these activities are important, and if done properly, should leave you well prepared to go ahead with full-scale production and market launch. It may be necessary to have your product tested and certified by a recognized testing organization. For example, many electrical products obtain CSA certification (Standards Council of Canada) before they are sold to the public. In addition, many organizations are having their facilities or work flow processes certified in hopes of improving quality assurance.

Here are some things you can do to test your product:

- Test prototypes in-house, using them as end consumers would, to identify where problems in overall quality may exist.
- Hold focus groups to test your product, and be sure to obtain feedback from all of the participants. Monitoring participants actually using your product can be very insightful.
- Document common problem areas identified by focus-group users and revise product accordingly. Retest same user-group to obtain feedback.
- Make sure your tests simulate, as near as possible, actual conditions in which the product will be used.
- Decide on a test market where you can conduct a limited sale of your product. Collect relevant market data such as how many products were purchased vs. number of customers in the test market and key demographics of purchasing customers. Where

possible, do follow-up interviews with buyers or with potential customers who expressed an interest in the product but decided not to buy. This information can be invaluable in determining your overall marketing strategy.

- Do a trial production run to make sure that your facilities are operating at an acceptable level of efficiency, and that you will be able to meet production goals.

Sample of Questions to be Answered:

- Do you have the facilities and qualifications to conduct a proper physical test of the product or should you hire a specialized organization to do this for you?
- Do you have a plan (e.g. pre-set questions, script) as to how you will conduct focus groups, or other consumer tests?
- Have you decided on a test market that fairly represents your overall target market and can a proper test market be arranged with a wholesaler/retailer?
- Are your facilities ready to conduct a trial production run?
- Does your product need a particular certification before it can be sold?

Tips from the Field:

- Commit to properly testing your product. Ensure that it functions properly under real life operating conditions and not just “in the lab”. It is much easier and less expensive to fix problems prior to market launch, than after the product is in the hands of the consumer.
- Produce proper “test scripts” for the pre-production phase and have the product engineers validate the process, the testing procedure and the end product.

- If you don't have qualified in-house staff to organize proper product testing, then contact a qualified lab.
- Remember that different products/services will require different levels and types of testing. Contact industry associations and government agencies to determine what the requirements are for your product.
- Survey your competitors to see what warranties and claims they make about their products. Also, what product certification have they obtained?

Sample of Possible Deliverables for this Section:

- Product certification obtained where required.
- Market data indicating continued product demand.
- Testing documentation indicating that product functions “as advertised” and no problems to move to full-scale production.
- Product specifications and production/plant requirements.





2.4 Stage 3: Production and Market Launch

By now, you should have completed the first two stages of the New Product Development Process, and have a product that is ready for market. The last stage of your project is to implement your marketing plan and your business plan. Up until now, you have been designing and modifying. This is where you will set your plans into action.

While this part of the guide refers to production and market launch, these topics are only covered very briefly. The intention of this document is to bring you through the entire development process up to the point of the actual market launch. There is plenty of information available on production and market launch that can be used as effective instructional tools. ACOA offers **Your Guide to Preparing a Marketing Plan** and **Your Guide to Preparing a Business Plan** to assist you with these aspects of your operations. Industry Canada has also developed the **Commercialization Toolbox** and **Guide to Exporting** that are excellent tools as well.

Production considerations revolve around setting up a plant or facility where manufacturing will take place (other key elements may include staff training, Quality Assurance and proximity to suppliers and distributors). One of the most important things to consider is the experience and expertise of your management team. A team with industry experience and a strong track record will be of great benefit as you commence operations. A good production engineer or quality assurance manager will pay significant dividends once full-scale manufacturing begins.

Market launch activities are directed towards the initial promotion of your product, to create awareness and demand. Such activities as giving out product samples, distributing coupons, or using inserts in trade magazines are examples of ways to create interest in your product. Other activities that will increase your product awareness are demonstrations, participating in trade shows, and giving plant tours to potential customers. As you can

see, there are many options for promoting your product in the market launch phase. A good idea would be to hire a professional to assist you with this, as their previous experience will be very helpful in determining how to reach your target market.

Before you launch your product, you should have a complete marketing plan, and business plan. Be sure to follow these plans closely, as day-to-day activities may cause you to lose focus on your goal. Following your plans will help you to concentrate on working toward the objective that you set out to accomplish in the early stages of your project.

Keep in mind that this is not the end of the innovation process, even though you have finished developing your new product. After you have launched your product into the market, you will be able to gather valuable feedback from customers. This will highlight where your product needs improvement, and enable you to build the *voice of the customer* into your next *version* or *new product*.

Here are a few things you can do during the Production and Market Launch stage:

- Develop and implement a Market Launch Plan, to ensure the launch is organized and on track.
- Have an up-to-date marketing plan, with information that was gathered in the previous phases of the New Product Development Process.
- Ensure that the product, price, distribution channels, and communications strategy are clearly defined.
- Make sure all staff involved communicate with each other, and are working towards the same goals.
- Use feedback from customers, and begin the New Product Development Process again, designing an innovative solution to meet customer needs and wants - this is how an innovative firm operates; always improving their product through customer feedback.

- Complete trial runs on equipment to ensure it is functioning properly.
- Output from trial production runs should fall within acceptable error levels.
- Properly train staff.
- Hire experienced specialists to handle specific aspects of the production and launch.

Sample of Key Questions to be Answered:

- Do you have a market launch plan, with clear objectives and milestones?
- Have you updated your business/marketing plan using input from the previous phases of your project?
- Are you prepared to begin the innovation process again, after you have collected customer feedback?
- Are your staff and production facility ready to move to full-scale production?
- Are the proper channels of distribution in place?

Tips from the Field:

- Learn from your mistakes. Don't be afraid to make modifications to your operations if things aren't functioning as intended.
- Get as much feedback from various resources as possible. How do end users like your product, what do retailers think of your marketing mix, can staff suggest any improvements you may have overlooked?
- Invest in your human resources through training and incentive/reward programs.
- Where possible, measure the success of marketing initiatives and cut those initiatives that aren't effective.

- Consider implementing a program that will improve your internal processes such as “Lean Manufacturing”.

Sample of Possible Deliverables for this Section:

Management reports to monitor overall success of initiative:

- Sales reports
- Quality assurance reports
- Customer feedback surveys
- Other key reports



A man in a dark suit and glasses stands in a bright office, looking upwards and gesturing with his arms. The background shows a desk with a fan and a framed picture.

PART THREE: IMPLEMENTING A NEW PRODUCT DEVELOPMENT SYSTEM

Part Three will take you through a structured New Product Development Process. While it covers many of the same topics as Part Two, it offers a more formalized approach to new product development. The worksheets highlighted in Part Three are available for download from the ACOA website as directed.

**PART THREE:
IMPLEMENTING A NEW PRODUCT
DEVELOPMENT SYSTEM**

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3.8 Conclusion

NOTE:

This section of the Guide has been designed as another option to take a company through the New Product Development Process for an actual product concept. Companies looking for a more systematic approach to new product development are advised to review this section and move through the implementation if desired.

Part Three provides a detailed explanation of each element of the New Product Development Process, a flow chart of key activities to be carried out at each stage and worksheets to guide the user through the entire process. The formal Stage-Gate™ process is detailed in the book “Winning at New Products” available online at www.stage-gate.com.

3.1 Introduction to the New Product Development System

If you were to look for the best method to bring a new product to market, you would find yourself sifting through endless amounts of theory and opinion, mixed in with facts. Sorting through all this information can be confusing and time consuming. If you would like to go through a structured, tried-and-true New Product Development Process, this section of the Innovation Guide has been designed for you. On the following pages, you will find flowcharts and worksheets for a New Product Development Process that is based on the Stage-Gate™ system.

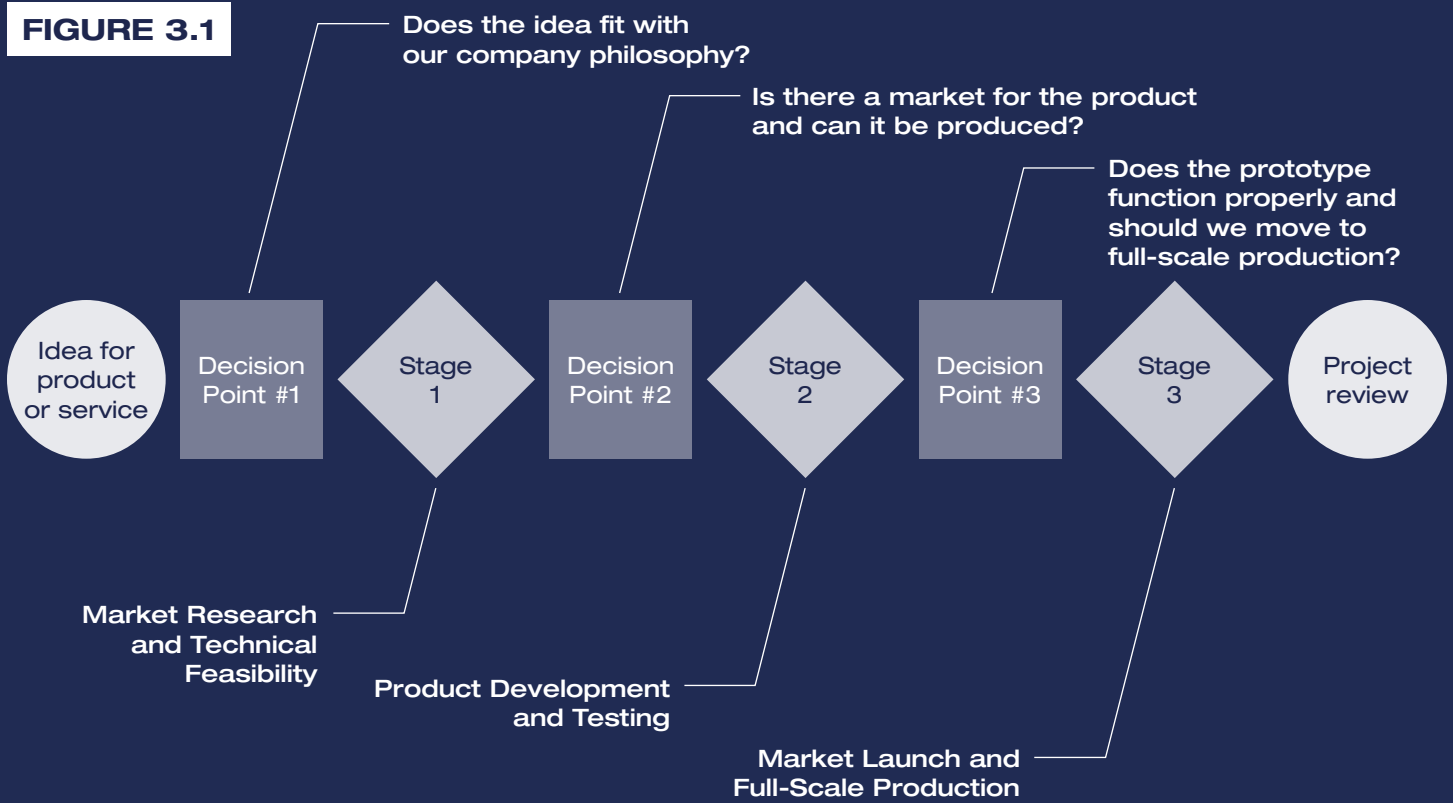
The Stage-Gate™ system is a proven approach for managing the New Product Development Process. Developed by Dr. Robert G. Cooper, the process is based on extensive research into numerous case studies of failed and successful new product development projects worldwide. It provides a disciplined methodology for managing the new product commercialization process. Cooper's book "Winning at New Products" is an excellent resource which covers the Stage-Gate™ process in detail.

The *core* elements of the new product development system are:

- A management process composed of a series of individual "stages" separated by "decision points"
- Formal criteria that must be met (e.g. minimum ROI) before the new project is permitted to "pass through the decision point" to proceed from one stage to the next
- "Decision Makers" made up of appropriate staff members or informed individuals appointed by management. They review the deliverables supplied by the project team to determine if the new product is qualified to pass through the decision point to the next phase or if the project is halted.

The system outlined below consists of three decision points followed by their respective stages. Passing through a Decision Point enables the project team to undertake the activities associated with the next stage. As noted above, a stage ends once the planned activities have been completed (in the form of deliverables.) The deliverables are then reviewed by the decision maker(s) to see if the project passes to the next stage or is stopped altogether.

New Product Development Process For SMEs



3.2

Further Explanation of the New Product Development System

Idea for product or service

Idea or Concept

Coming up with a good idea is like panning for gold, you may have to sift through a great deal of “dross” before you come across a valuable nugget. Section 1.5 of Part One lists several action items for generating new ideas. Whether an entrepreneur has one or several new product concepts in mind, each one should be considered and its merits weighed. This process begins at Decision Point 1.

Decision Point #1

Decision Point 1: Should This Project Even Be Considered?

During this initial screen the idea undergoes its first review. At this point the company or entrepreneur asks “Do we want to spend any time and money on the proposed project?”. In order to reach an informed decision, the project should be subjected to a few key “must meet” and “should meet” criteria. While these criteria will be different for every organization, it is important that each proposed project be subjected to some type of internal screening. A few examples are provided below:

Sample “Must Meet” Criteria

1. The company has the human resources available to properly manage the project. **Yes / No**
2. From an ethical point of view, management would not have a problem manufacturing and selling the product. **Yes / No**
3. Management can live with the level of financial risk associated with the new project. **Yes / No**
4. The market size for the product is large enough to be attractive. **Yes / No**

Sample “Should Meet” Criteria

1. The company has knowledge/expertise in the industry in which the new product will be introduced. **Yes / No**
2. There is limited competition in the marketplace. **Yes / No**
3. The proposed product is a good fit with the firm’s existing product line(s). **Yes / No**

Any projects which do not meet all of the “must meet” criteria developed by the firm should proceed no further. A “no” in the “should meet” criteria will need careful consideration in order to determine whether the project should be entertained.

Two final points regarding the initial screen are:

1. The go/no-go decision (i.e. to proceed to Stage 1) should be made by more than one person. It is preferable that a group or cross-functional team reaches a consensus on the decision whether or not to proceed.
2. To repeat, formal “must meet” and “should meet” criteria should be developed to help in guiding the go/no-go decision.

Stage 1: Market Research and Technical Feasibility

If the project passes through Decision Point 1, it moves into a due-diligence stage where the in-depth investigation begins. In Stage 1, the market research is done, a technical assessment is completed and the business case is established. Market research is critical to demonstrate that there is an actual market for the proposed product and to highlight the features and benefits that the product should possess. A technical feasibility assessment is also carried out in this stage (can we actually “do” the project in-house or will we need outside assistance?). If the project can be done, how long will it take and what

Stage
1

Stage 1 should determine the customer needs & wants, the target market and the product specifications.

resources will be required (including human, financial and physical)?

Building the business case for the project is the final step required under Stage 1. The business case is designed to line-up the project against certain business measurables to determine the merit of the undertaking. The business case is basically compiling a business plan, and touches on areas such as markets, financing, and management. See the flowchart in Section 3.3 for questions relating to this phase.

Fundamental Question:

What product should we manufacture, and can we manufacture and sell it for a profit?

Stage 1 should determine the customer needs and wants, the target market, and the product specifications. Concept testing with members of the target audience provides valuable insight at this stage. Information on existing competition and competitive product offerings should be carefully researched and documented.

An important part of the business case is the detailed financial analysis. What are the development and marketing costs associated with the project? When can revenues be expected? What is the break-even point in terms of units sold? From where would the funds come to finance the project?

Stage 1 Deliverables

1. Document outlining evidence of an attractive market and technical feasibility.
2. Clear outline of product concept.
3. Business case developed (should continually be updated as project proceeds).

Decision Point 2: Decision on the Market Research Findings and Technical Feasibility

Decision Point #2

At this point, the “decision maker” reviews the evidence obtained from Stage 1 in order to determine whether to proceed with the project. Stage 1 due-diligence was designed to answer such questions as: is there a market for the product, is the project technically feasible, and will the endeavour be a profitable one? The decision maker must be satisfied not only with the answers to these questions, but also with the method by which the answers were obtained. The more time and effort given to the research and business case process, the more likely the decision maker is to accept the conclusions drawn and the documentation tabled from Stage 1. For example, when researching customer needs and preferences, feedback gathered from a group of friends and family does not carry the same credibility as would a questionnaire administered to a dozen potential buyers.

Decision Point 2 is sometimes referred to as the “money gate “ as it is the final checkpoint before substantial dollars are spent on the development of the product.

This decision point is sometimes referred to as the “money gate” as it is the final checkpoint before substantial dollars are spent on the development of the product.

Stage 2: Product Development and Testing

Stage 2

As mentioned above, the majority of technical work is carried out at Stage 2. It is assumed that a solid product definition has been identified from Stage 1, which will guide the development process. Stage 2 begins with constructing a product or technical plan that maps out the technical work to be undertaken (preferably in specific stages), the time frame for each stage, the resources required, and all costs associated with implementing the plan. Section 3.7 provides a template for such a document.

Once the plan is completed, it is implemented and the product development begins. While this phase is focused on technical work, both marketing and manufacturing activities proceed in parallel. “For example, market-



Companies employ different types of testing at various stages of product development.

analysis and customer-feedback work continue concurrently with the technical development, with constant customer opinion sought on the product as it takes shape during development. These activities are back-and-forth or iterative, with each development result (e.g. first prototype) taken to the customer for assessment and feedback.”¹ Through the development stage it is critical to ensure that the product being developed continues to be attractive in the marketplace and is consistent with the product defined at the end of Stage 1.

Before entering the marketplace with a new product, it is essential that the product undergo sufficient testing. Companies may employ different types of testing at various stages of product development:

1. In-house/lab testing – verifies that the product functions as expected and identifies potential problems that may arise in the lab.
2. Field trials – expose the product to a limited “live” market, during which the product is tested and customer reaction identified. The product may be “tweaked” or modified to better meet customer needs.
3. Test market – an entrepreneur may choose to sell a limited amount of product to pre-selected customers or in a small geographic market. Again, the rationale here is to gauge client feedback, but also to test and correct problems in the production process. The objective is to ensure all potential kinks are worked out prior to the full production launch.

Section 3.3 highlights some key questions relating to Stage 2.

1) Dr. Robert G. Cooper, *Winning at New Products: Accelerating the Process from Idea to Launch*, Second Edition, Addison-Wesley Publishing Company, Inc., 1993



Fundamental Question:

Do we have a marketable product that functions properly, lives up to its claims, and has been proven to work in the field?

Stage 2 Deliverables

1. Completed product development plan with product budgets, timeframes, and tasks finished according to technical plan.
2. Actual product developed and completed. Product testing report(s) finalized with built-in customer feedback.
3. Updated business and marketing plan reflecting positive market and financing in-place.

Decision Point 3: Decision to Manufacture and Launch

At this point, the product has been developed and tested and all that remains is the launch of the product and the commencement of full-scale production. Decision Point 3 is the last place at which the project could be shelved. The business plan is reviewed once again in order to ensure that the project is still feasible, for example, an unforeseen competitor has not entered the marketplace and captured the target market. The marketing and production plans that commenced in earlier stages are now finalized and reviewed for completeness. Any financing required to set up the manufacturing line, commence marketing activities, and hire key personnel should now be in place. Assuming the above noted requirements have been satisfied, the product launch is executed as outlined in the marketing plan.



Decision Point #3

Stage
3

Stage 3: Market Launch and Full-Scale Production

Stage 3 opens the door to commercialization, during which the product is manufactured and sales are realized on the basis of a sound marketing plan. It is important that proper systems to monitor project success are established. Are sale levels on target or do marketing activities need to be adjusted? Can the cost of sales be adequately determined to verify that the new product launch is a profitable initiative? Proper management/accounting reports will become critical as sales increase and decisions must be made on where to expend valuable resources.

Section 3.3 outlines a list of questions relevant to this particular stage.

Fundamental Question:

How can we most efficiently manufacture the product and get it to the marketplace?

Stage 3 Deliverables

1. “Budgeted vs. Actual” management reports completed to judge overall success of project.

Project
review

Project Review

Somewhere from six to twelve months after product launch, a project review should be performed. The main benefit of the review is to highlight the best practices or things that worked well throughout the New Product Development Process. Of equal importance is the identification of ways in which the process can be improved for future product development projects. This review officially concludes the New Product Development Process for the product in question.

3.3

New Product Development Flow Chart

The following flow chart will serve as a guide to help you identify and develop key questions for your “decision points” and activities to be carried out during various “stages”.



3.4

New Product Development Worksheet

To download this worksheet, visit www.acoa.gc.ca/innovation/

You may use this worksheet to guide you through the New Product Development Process. It allows the user to document the activities to be carried out in each phase along with the corresponding deliverables. It should be used by the project manager who will detail the activities and deliverables. The Decision Maker(s) or mentor should fill out the "comments on deliverables" section after each phase.

Idea for product or service

Idea: _____

Decision Point #1

List company "must meet" criteria (completed by company management):

1. _____
2. _____
3. _____
4. _____
5. _____

List company "should meet" criteria:

1. _____
2. _____
3. _____
4. _____
5. _____

Stage 1

MARKET RESEARCH AND TECHNICAL FEASIBILITY

Record Activities to be carried out (completed by Project Manager):

1. _____
2. _____
3. _____
4. _____
5. _____
- Other: _____
- Other: _____
- Other: _____

Stage 1 Deliverables (completed by Project Manager):

1. _____
2. _____
3. _____
4. _____
5. _____
- Other: _____
- Other: _____
- Other: _____

Decision Point #2

Comments on Deliverables met from Stage 1 (completed by Decision Maker(s)):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Stage 2

PRODUCT DEVELOPMENT AND TESTING

Record Activities to be carried out (completed by Project Manager):

1. _____
2. _____
3. _____
4. _____
5. _____
- Other: _____
- Other: _____
- Other: _____

Stage 2 Deliverables (completed by Project Manager):

1. _____
2. _____
3. _____
4. _____
5. _____
- Other: _____
- Other: _____
- Other: _____

New Product Development Worksheet (continued)

Decision Point #3

Comments on Deliverables met from Stage 2 (completed by Decision Maker(s)):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Stage 3

MARKET LAUNCH - FULL SCALE PRODUCTION

Record Activities to be carried out (completed by Project Manager):

1. _____
2. _____
3. _____
4. _____
5. _____
- Other: _____
- Other: _____
- Other: _____

Stage 3 Deliverables (completed by Project Manager):

1. _____
2. _____
3. _____
4. _____
5. _____
- Other: _____
- Other: _____
- Other: _____

Project review

PROJECT REVIEW (completed by Decision Maker(s))

Comments on Deliverables met from Stage 3 (completed by Decision Maker(s)):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Were sales projections met?

What could have been done differently?

3.5

New Product Development Timeline

The New Product Development Timeline is designed to help you organize your project. It is similar to a GANTT chart in that you identify particular tasks to be carried out, who is responsible for the task, the time frame and budget. You also have the option of scheduling decision point meetings. You are not expected to schedule all of the activities listed under each stage; however, some of them may apply to your project. You have the ability to add additional activities that have not been listed, but are appropriate for your project.

The New Product Development Timeline has been developed in an electronic form for use with this guide. The entrepreneur is strongly encouraged to download a copy of the document entitled “The New Product Development Timeline Worksheet” by visiting www.acoa.gc.ca/innovation/. Completing the timeline will assist the user in planning and organizing the innovation project and improve the chances of success.

New Product Development Timeline

ACOA Project Management Worksheet for New Product Commercialization

Project Title:		Responsible:
----------------	--	--------------

DECISION POINTS/ STAGES	TASKS	TIME PERIOD
		T
DECISION POINT 1	INITIAL SCREEN	
	MARKET RESEARCH AND TECHNICAL FEASIBILITY	
STAGE 1	Develop Commercialization Time Line	
	Assess competition and market share	
	Assess Customer Needs and Preferences	
	Identify Target market	
	Develop product mock up	
	Hold focus groups	
	Develop product definition	
	Assess technical feasibility of project	
	Assess manufacturing capabilities for project	
	Resort Project Team	
	Develop project plan	

3.6

New Product Development Commercialization Budget

Complete the Commercialization Budget selecting the appropriate line items that relate to your particular project. The budget is meant as a guide only, and several sections apply only to new business start-ups.

The Commercialization Budget has been developed in an electronic form for use with this guide. The entrepreneur is strongly encouraged to download a copy of the document entitled “The New Product Development Commercialization Budget Worksheet” by visiting www.acoa.gc.ca/innovation/. Completing this budget will assist the user in identifying all the costs and possible sources of funding for the innovation project.

New Product Development Commercialization Budget

ACOA Innovation Commercialization Budget

2 Year Financial Projections for Revenues, Start-Up Costs, Operating Expenses & Cash Flow

	Week:				
	1	2	3	4	5
REVENUES					
Investment receipts					
Loans					
Government funding					
License fees					
License royalties					
Product sales					
Product consulting revenues					
Product installation fees					
Customer training programs & materials sales					
Supplies & replacement parts sales					
Product maintenance revenues					
Interest on deposits					
Other					
	Total Revenues				

EXPENSES					
Start-up costs					
Operating expenses					
Interest on loans					
Other					
	Total Expenses				

3.7 Technical Budget Summary

This section relates to the Product Development and Testing portion of Section 3.6: New Product Development Commercialization Budget.

Description of Work

For each step of the product development and testing stage (where actual product development is occurring), present a detailed technical description of the work to be carried out and the objective to be achieved.

STEP	PERSON(S) RESPONSIBLE	COST	COMPLETION DATE	MILESTONE/ DELIVERABLE
No. 1 a) b) c)				
No. 2 a) b) c)				
No. 3 a) b) c)				
No. 4 a) b) c)				

Table Summarizing Project Costs

For each stage, specify the costs of labour, materials, equipment, consultants, subcontracting, patents, and so on.

STEP	LABOUR	MATERIALS	EQUIPMENT	SUBCONTRACTING	MISCELLANEOUS	TOTAL
No. 1						
No. 2						
No. 3						
No. 4						
Total						

Progress Chart (optional)

STEP	BUDGET		RESOURCE PERSONS		COMPLETION	
	TO DATE	SCHEDULED	TO DATE	SCHEDULED	% COMPLETED	
No. 1	\$		Days			
	%	100	%	100		
No. 2	\$		Days			
	%	100	%	100		
No. 3	\$		Days			
	%	100	%	100		
No. 4	\$		Days			
	%	100	%	100		

3.8 Conclusion

Innovation can be a complex process with significant rewards. This guide was designed to help businesses and entrepreneurs more successfully manage and demystify this process. Success in innovation is critical for any economy wishing to flourish in the 21st century. The Small and Medium Sized Enterprises of Atlantic Canada are key players in the region's innovation process. We hope this guide encourages them in their innovative endeavours. The **Acknowledgments** lists several individuals and organizations we would like to thank in the development of this guide. Many private sector firms and government departments have played an important part in bringing this work together.

A special note of thanks is extended to Hugh Hicks and the ACOA New Brunswick Corporate Programs team, who were instrumental in the development of this guide.

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Industry Canada for Technology Commercialization Toolbox

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