Leading Innovation, 2nd Edition

LEADING INNOVATION, 2ND EDITION

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CONTENTS

INTRODUCTION

Book Concept

Innovation today considers the economic, environmental, and/or social sustainability of an innovative initiative from its inception or idea generation through to its commercialization or implementation. This concept applies to many types of innovation such as products, processes, services, technologies, and business models. Companies use innovation as a means to gain competitive advantage and bring value to business stakeholders. This book introduces business innovation, from incremental innovation such as enhancing the performance of an existing product, service, or process, to radical or disruptive innovation such as one that has a significant impact on a market. Content examines how leaders foster a culture of innovation, how companies turn creativity into innovation, and how innovation transforms not only organizations, but economies as well.

Book Versions

Below is a record of edits and changes made to this book since its initial publication. Whenever edits or updates are made in the text, a record and description of those changes will be noted here. The edition number will only change when there is a major update to the book. The ancillary files (i.e., test bank, slides) that accompany this book always reflect the most recent version.

Table 0.1: Leading Innovation Book Versions

Date of Publication	Edition	Revisions
March 3, 2022	Leading Innovation, 1st Edition	• Original OER published with 10 chapters and accompanying chapter slides.
November 9, 2022	Leading Innovation, 1st Edition, Version 2	• New Test Bank with 58 multiple-choice questions and 15 short answer questions across 10 chapters. • Additional content was added to CH 5: Sustainable Innovation. • All chapters were modified as necessary to meet Web Content Accessibility Guidelines 2.0.
July 21, 2023	Leading Innovation, 2nd Edition	• Two New Chapters–CH 9: New Venture Innovation and CH 10: Technological Innovation. • New content was added to CH 7: Design Thinking which includes Design for Delight, Certiport Certification, and a new video with PDF transcript. • New content was added to CH 11: Innovation Risks which includes environmental scanning as a risk reduction tactic. • Some content was moved between CH 11: Innovation Risks and CH 12: Leading Innovation. • An additional 14 End-of-Chapter exercises were added throughout the chapters. • The test bank was updated for a total of 99 M/C questions and 28 short answer questions across 12 chapters. • All chapter slide decks were replaced with new slides. • All chapters were modified as necessary to meet Web Content Accessibility Guidelines 2.0. • Minor modifications were made within the remaining chapters which included additional content, updating broken URL links, and adding to the lists of additional resources.

Chapter Features and Bloom's Taxonomy

- Chapter Learning Outcomes — The learning outcomes listed within each chapter align with the lower levels of Bloom's Taxonomy of Educational Objectives for Knowledge-based goals (knowledge and comprehension) based on the activity of simply reading the chapter. Should readers complete the exercises within the chapters and at the end of the chapters, higher levels of Bloom's Taxonomy can be reached (application, analysis, synthesis, evaluation).
- Example-rich narrative

- Embedded videos with PDF transcripts
- Graphic elements which illustrate and reinforce concepts
- Self-assessments (e.g., quiz, game, or other H5P content)
- Explore the Concept and End-of-Chapter Exercises
- Key Takeaways
- Additional resource links and Chapter references for additional reading
- Embedded navigation and image alt-text for screen readers
- Free online, PDF, and various other book formats
- PowerPoint slides to support the presentation of chapter concepts
- Glossary of Terms
- Open license, Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License permits adoption, adaptation (customization), and sharing

Accessibility Statement

Every attempt has been made to make this OER accessible to all learners and compatible with assistive and adaptive technologies. The Pressbooks content management system was chosen for its commitment to built-in accessibility. The Web version of this resource has been designed to meet Web Content Accessibility Guidelines 2.0, level AA and follows all guidelines in Appendix A: Checklist for Accessibility of the Accessibility Toolkit – 2nd Edition. In addition to the web version, additional files are available in a number of file formats including PDF, EPUB (for eReaders), and Course Cartridge (for LMS).

If you are having problems accessing this resource, please contact kshields@centennialcollege.ca. Please include the following information: The location of the problem by providing a web address or page description. A description of the problem. The computer, software, browser, and any assistive technology you are using that can help us diagnose and solve your issue (e.g., Windows 10, Google Chrome (Version 65.0.3325.181), NVDA screen reader)

Each chapter has been evaluated using WAVE® and modified as needed to meet zero errors in accordance with WCAG AA. "WAVE® is a suite of evaluation tools that helps authors make their web content more accessible to individuals with disabilities. WAVE can identify many Web Content Accessibility Guideline (WCAG) errors, but also facilitates human evaluation of web content. Our philosophy is to focus on issues that we know impact end users, facilitate human evaluation, and to educate about web accessibility."[1]

- All images that convey information include alternative text (alt text) descriptions of the image's content or function. Graphs and charts also include contextual or supporting details in the text surrounding the image. Images do not rely on colour to convey information.

- All colours meet WCAG contrast requirements.
- Content is organized under headings and subheadings. Headings and subheadings are used sequentially (e.g., Heading 1, Heading 2).
- Embedded videos are from YouTube and do have closed captioning available, although many YouTube videos have captions that are auto-generated and these do not always translate correctly. To combat this issue, PDF (English) transcripts have been posted for download with each chapter video.
- Tables are used to structure information and not for layout. Tables include row and column headers. Row and column headers have the correct scope assigned. Tables include a caption. Tables avoid merged or split cells. Tables have adequate cell padding.
- The Microsoft Accessibility checker was run on PowerPoint slides that accompany the book. ALT tags were added to images, PDF (English) transcripts are posted with embedded videos, colour contrast was checked.
- All Web links describe the destination of the link and do not use generic text such as "click here" or "read more". If a link will open or download a file (e.g., PDF), a textual reference is included in the link information (e.g., [PDF–New Tab]).
- In-text citations are embedded using the Footnote feature of Pressbooks, therefore, footnotes appear as References at the end of each chapter with Web links to the original sources.
- Font size is 12 points or higher for body text in PDF documents. Font size can be enlarged to 200 percent in Webbook or eBook formats without needing to scroll side to side.
- An H5P element is included with each chapter as a quick review of the chapter's content. These are accessible based on the H5P type. The goal for the accessible content types is WCAG 2.1 AA support, so the content types have been tested against these criteria and more by the H5P.org developers. Refer to the accessible content types list for additional information.
- PowerPoint slides have been checked with the Microsoft Accessibility checker to ensure proper colour contrast. Images contain ALT text. Fonts are 24 points or larger. PDF Transcripts are linked with each embedded Video. PDF copies of each slide deck are also provided.

eCampus Ontario

eCampusOntario is a provincially-funded non-profit organization that leads a consortium of the province's publicly-funded colleges, universities, and indigenous institutes to develop and test online learning tools to advance the use of education technology and digital learning environments.[2] This textbook is part of the eCampusOntario open textbook library, which provides free learning resources in a wide range of subject areas. These open textbooks can be assigned by instructors for their classes and can be downloaded by learners to electronic devices. These educational resources are customizable to meet a wide range of learning needs.

Should you decide to adopt this book for a course or training program (or other) please report your adoption at www.openlibrary.ecampusontario.ca in order for eCampus to celebrate your support of students' savings.

Author Information

As a college professor, I have developed many courses and used creativity and innovative skills to develop projects and engaging content for students. What I have learned about innovation, is that it takes a lot of hard work and a little creativity to be innovative. I have built skills in researching, developing partnerships, networking, solving problems, and spotting opportunities to make changes and improvements. Some of my successful innovative ideas include: embedding industry certifications in courses to enable students to gain industry credentials, using open educational resources (OER) to reduce student fees, partnering with software vendors to embed current business technologies within courses to enable students to practice with current systems and prepare for the work world.

Prior to my career as a college professor, I worked in the human resource solutions industry and used creativity and innovative thinking to design corporate training modules that fit the unique needs of each client. Clients would have a need but often did not have a solution. My job was to identify the problem/need and recommend solutions, then apply creativity and innovation to implement the clients' vision. Win-win for everyone!

I hope you find the content in this book interesting and the lessons helpful. You may find some tips for improving your personal creative thinking skills as well as learn some of the important concepts pertaining to business innovation.

I will try my best to update the book content from time to time and check that videos or resources do not become obsolete or outdated.

Sincerely,

Kerri Shields

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

Notes

1. WAVE. (n.d.). *WAVE accessibility evaluation tool.* https://wave.webaim.org/

2. eCampus Ontario. (2021). *About.* https://www.ecampusontario.ca/about/#:~:text=eCampusOntario%20is%20a%20provincially-funded%20non-profit%20organization%20that%20leads,use%20of%20education%20technology%20and%20digital%20learning%20environments.

CHAPTER 1: BUSINESS INNOVATION FOUNDATIONS

Chapter 1 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Define business innovation.
2. Explain why businesses innovate.
3. Describe four (4) types of innovation.
4. List characteristics of innovative products and services.
5. Explain how the Systematic Inventive Thinking (SIT) methodology can be applied to help people think more creatively.

What is Business Innovation?

A century ago, Thomas Edison thought deeply about what drives invention or, as we call it today, innovation. One of his famous sayings, "Genius is 1 percent inspiration and 99 percent perspiration," stresses that innovation involves more than just great ideas. Edison knew from his own experience that the systematic hard work of trial-and-error experimentation paid off. His inventions, like the lightbulb and the phonograph, emerged through thousands of attempts as he refined the process step by step.[1]

There are many definitions for innovation and even the innovation experts in today's business world cannot agree on the definition of innovation. Below are definitions from 15 innovation experts.[2]

Explore the Concept – 15 Definitions of Innovation

Which do you think best defines the term "innovation"? Why?

1. Turning an idea into a solution that adds value from a customer's perspective. (Nick Skillicorn)
2. The application of IDEAS that are novel and useful. (David Burkus)
3. Staying relevant. (Stephen Shapiro)
4. A great idea, executed brilliantly, and communicated in a way that is both intuitive and fully celebrates the magic of the initial concept. (Pete Foley)
5. A feasible relevant offering such as a product, service, process, or experience with a viable business model that is perceived as new and is adopted by customers. (Gijs Van Wulfen)
6. Introduction of new products and services that add value to the organization. (Kevin McFarthing)
7. Any variation goes, as long as it includes "new" and it addresses customer needs and wants. (Robert Brands)
8. The fundamental way the company brings constant value to their customer's business or life, and consequently their shareholders and stakeholders. (Paul Hobcraft)
9. Work that delivers new goodness to new customers in new markets, and does it in a way that radically improves the profitability equation. (Mike Shipulski)
10. Creativity is thinking of something new. Innovation is the implementation of something new. (Paul Sloane)
11. The implementation of creative ideas in order to generate value, usually through increased revenues, reduced costs, or both. (Jeffrey Baumgartner)
12. I try not to define "innovation" as we should tone down our use of the work and term. (Stefan Lindegaard)
13. Anything that is new, useful, and surprising. (Drew Boyd)
14. New organic value creation by applying creativity, in-depth relationships with consumers and customers, and new thinking. (Michael Graber)
15. The future delivered. (Jorge Barba)

We might give business innovation a more encompassing definition. **Business Innovation** is "Executing an idea that addresses a specific challenge or opportunity and achieves value for both the company and its stake-

holders." Of course, stakeholders include customers, government, partners, suppliers, shareholders/owners, lenders, society, employees (and their families), and the community.

When we think of innovation in the great big world, including the innovations of organizations, we might define **Innovation** in more broad terms, such as, "Creating something new that serves people's needs or wants."

Why Do We Innovate?

Innovative ideas are envisioned by individuals, businesses, and governments because of the following reasons.

- Remain competitive and relevant and avoid obsoletion
- Keep up with customer demands, preferences, and trends
- Adapt to take advantage of changes in modern technology
- Reduce expenses
- Increase revenues
- Improve efficiency and/or effectiveness
- Improve company and/or brand image
- Expand market share
- Improve the quality of life
- Improve the standard of living
- Attract investors, employees, and partners
- Solve a problem
- Take advantage of an opportunity

A person wearing a prosthetic leg

As commonly said in business, "innovation is the only Imperative." In a world where everything changes rapidly, the field of business has been left with no other option but to keep pace. Whether the innovation is about making a product more user-friendly or creating a more efficient finance model, Innovation is bound to happen.

Why is Innovation Important?

From a macro perspective, the importance of innovation to our society is that it has become a significant way to combat critical social risks such as disease, hunger, and poverty. It provides access to education and communication. It creates economic growth which helps people get jobs which improves their standard of living.

From a micro perspective, the importance of innovation for an organization is that it can provide a competitive advantage in the marketplace, maximize return on investments, increase productivity, and has a positive impact on company culture.

"Today, we need innovators more than at any time before. Every organization and business is feeling the impact of globalization, migration, technological and knowledge revolutions, and climate change issues. Innovation will bring added value and widen the employment base. Innovation is imperative if the quality of life in these trying circumstances is to improve. Innovation will make the world a better place for the younger generation."[3]

> *What is the calculus of innovation? The calculus of innovation is quite simple: Knowledge drives Innovation, Innovation drives Productivity; Productivity drives Economic Growth. – William Brody[4]*

Where Do Good Ideas Come From?

Ideas often do not happen in a moment of inspiration, instead, they may take time to cultivate because good ideas often come from the collision of smaller ideas until they form something bigger than themselves. For example, the Internet took Tim Berners Lee ten years to invent because when he started he did not have a vision of what he was going to invent, and only after ten years did the full vision come into being. That is more often than not the way innovation happens.[5] [Transcript for "Where Good Ideas Come From" Video \[PDF--New Tab\].](#) Closed captioning is available on YouTube.

> One or more interactive elements has been excluded from this version of the text. You can view them online here: *https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=31#oembed-1*

What are the Types of Innovation?

We often see innovations in products and services being offered to customers, but there are many other types as well. Innovation can be classified based on the degree of innovation as well as the object of innovation.

Degree of Innovation

Incremental Innovation is the concept of growing or improving a company by making a succession of small-scale improvements to existing products, services, processes, and tools. Incremental innovation focuses on improving existing offerings to align with current consumer trends and is considered a relatively low-risk approach. This approach is the most common type of innovation and has helped many companies remain competitive for decades.

A few examples:

- Volkswagen (VW) releases a new Golf model every five years or so.
- Gillette uses incremental innovation each time it brings out the next generation of its razors.
- Microsoft innovates incrementally with each new Windows release (Win 3.1, Win XP, Win 7, Win 8, Windows 10).

Disruptive Innovation is the launch of a new business model, concept, product, or service that creates a new market segment and value drivers. Often, disruption comes from a new company, which eventually displaces established market leaders and products. This approach focuses on meeting consumer demands in ways that no other product or service has done before. Disruptive innovation often creates entirely new markets or a fundamental shift in how consumers interact with the current market after the disruptive product is introduced.

- There are quite a few examples of disruptive innovation, one of the more prominent being Apple's iPhone disruption of the mobile phone market. Prior to the iPhone, most popular phones relied on buttons, keypads, or scroll wheels for user input.
- Apple's iTunes and Spotify are streaming music platforms that made previous music formats obsolete. Do you know what a vinyl record is? How often do you see a physical music store? They used to exist. As each new technology became available it disrupted the music industry and made past formats obsolete. For example, we used to listen to music on vinyl records, then 8-track tapes and cassette tapes, then compact discs (CDs), then MP3 digital music (iPod craze), and more recently with iTunes and Spotify. Streaming music seems to be where it's at, for now!
- Netflix's business model is subscription-based. It is a streaming platform, which offers on-demand video.

The evolution of movie formats--8mm film to videocassettes (VHS, Beta) to CD, DVDs, and Blu-rays took home entertainment to the next level, then Netflix brought us movie streaming. Movie streaming has revolutionized the home entertainment experience. When Netflix began streaming movies, video rental companies such as Blockbuster went out of business and cinemas also saw reduced revenues. While Blockbuster clung to its business model of being a video rental company, Netflix constantly disrupted itself. Netflix went from a business model of being a DVD subscription rental service to streaming movies and TV series to being a creator of content.

Object of Innovation

Products and services are the most common objects to innovate, but there are many types of innovation and they are categorized in many ways.

Business Model innovation

Business Model Innovation is probably the most challenging of the innovation types as it will likely present an organization with major requirements for change. Often, the very capabilities or processes that have been optimized to make a company successful and profitable will become the targets for transformation. In some cases, these changes can threaten elements of the company's identity and come into conflict with brand expectations or promises.[6]

Whereas both product and process innovation can be incremental and moderate, business model innovation is almost always radical, risky, and transformative. When talking about business model innovation, without a doubt, names like Airbnb, Uber, or Spotify will come up. These are perfect examples of fast-moving companies that were able to disrupt age-old markets (hotel, taxi, music) by tweaking or inverting their industry's traditional business model.[7]

Social innovation

Social Innovation refers to a response to a social or environmental problem, which, once adopted, results in better solutions than existing approaches. Social innovations have a transformative impact and improve organizations, communities, regions, or systems.

Social innovation can include:

- new, more effective social programs
- the use of new technologies
- the growth of social enterprises

Social enterprises are businesses that pursue a social or environmental mission.[8]

In Canada, activity at the governmental level includes the government's launching of a Social Innovation and Social Finance Strategy to provide better support to community organizations working to tackle social challenges. The strategy includes a Co-Creation Steering Group made up of 16 leaders, practitioners, and experts from multiple fields, including the community, philanthropic, financial, and research sectors, and complemented with public consultation.[9]

Product innovation

When people think of innovation, often, they're thinking of product innovation. **Product Innovation** can come in three different forms. 1) The development of a new product, such as the Fitbit or Amazon's Kindle. 2) An improvement of the performance of the existing product, such as an increase in the digital camera resolution of the iPhone 11. 3) A new feature to an existing product, such as power windows to a car.[10]

Drivers of product innovation might be technological advancements, changes in customer requirements and demands, or outdated product design. Product innovation is generally visible to the customer and should result in a greater demand for a product.[11]

Service innovation

With the growing economic importance of the services sector, service innovation is playing an ever more significant role in driving growth in today's knowledge-intensive economy. **Service Innovations** ensure and enhance the utility, performance, and apparent value of an offering. Some offerings are purely service, such as getting a haircut, hiring someone to paint your house, or taking an Uber to your friend's place. These are services you may utilize throughout your lifetime. Other service innovations may be combined with product offerings, such as purchasing groceries (products) and having them delivered to your home (service), or buying a new television (product), and purchasing the warranty (service).

Service innovations may make a product easier to enjoy, reduce the risk associated with buying a product or may make a product more compelling to buy. Service innovations may simply make your life more enjoyable. Who doesn't enjoy a visit to the spa? According to SuperOffice, 86% of buyers will pay more for a great customer experience.[12]

Explore the Concept – Product and Service Innovation

Consider a business that you have been buying from for several years and answer the following questions.

- Which services have you noticed they offer today that they may not have offered in previous years? When you went for a hair cut were there any new service offerings at the salon? When you ordered online were there any new services? New service innovations may add some small service that enhances the customer experience or be fully new and something you have not seen in the past. During COVID many companies added new services in order to abide by isolation guidelines. For example, many businesses offered customers an opportunity to order online and have their products shipped to their homes, or customers could drive to the store, park, and have their order delivered to their vehicle in the parking lot.
- What service offerings do you enjoy most? Playing a game of paintball? Going to the Cinema? Taking dance lessons? Dining at a restaurant? Whatever it is, consider whether it is a service offering or a combination of service and product offering.
- What products have you been talking about with your friends lately--new shoes, new cell phones, or new restaurants? Many new products are simply incremental innovations but many customers are eagerly awaiting the next release of the iPhone or an Xbox or Wii game. What are you eagerly waiting for?

Process innovation

Process is the combination of facilities, skills, and technologies used to produce, deliver, and support a product or provide a service. Within these broad categories, there are countless ways process can improve. While product innovation is often visible to customers, a change in process is typically only seen and valued internally. Generally, changes in process reduce costs of production more often than they drive an increase in revenue. Of the three types of innovation, process is typically the lowest-risk.[13]

Process Innovation can include changes in the equipment and technology used in manufacturing (including the software used in product design and development), improvement in the tools, techniques, and software solutions used to help in supply chain and delivery system, changes in the tools used to sell and maintain goods, as well as methods used for accounting and customer service.[14]

Vehicle Assembly Line

One of the most famous and groundbreaking examples of process innovation is Henry Ford's invention of the world's first moving assembly line. This process change not only simplified vehicle assembly but shortened the time necessary to produce a single vehicle from 12 hours to 90 minutes.[15]
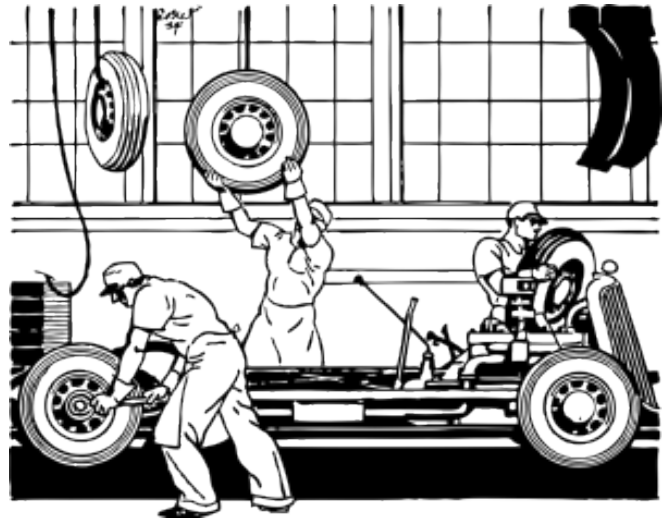
Technological Innovation

Technological Innovation focuses specifically on technology and how to embody it successfully in many types of innovations such as products, services, processes, profit models, channels, and customer service engagement innovations. Regardless of the industry or products, technology is likely to be a pillar for businesses because many innovations stem from advances in technology. By embracing AI, machine learning, data science, and automation, businesses can innovate in each of these areas to improve internal processes and external communications. Ultimately, these advances will positively impact productivity, sales, marketing, and customer service.[16]

Explore the Concept – Technology Innovation

Consider the following examples.

- Do you own an Internet of Things (IoT) device? These devices connect to the Internet. Have you heard of the refrigerator that automatically keeps track of what is put in and what is taken out? Samsung has a refrigerator with a feature called SmartThings Video that can dis-

play security camera footage.[17]

- Many people are talking about artificial intelligence these days. And yes, in many cases, the topic is covered with exaggerations and hype. Fortunately, the overall AI progress and the pace of the underlying technological innovation easily justify this hype. Consider the progress achieved in fields like Deep Learning and areas such as Computer Vision and Natural Language Processing.[18]
- Virtual reality (VR) technology is exploding. So are the opportunities for innovative experiences, use-cases, and products. Content creation for VR is a great opportunity with significant startup activity worldwide. VR startups are working across multiple domains and business scenarios, including E-commerce, gaming, social applications, learning and education, healthcare, online VR environments, and more. The next few years will bring impressive progress on all VR hardware, applications, and VR content.[19]
- Blockchain is one of the most disruptive technologies out there. Its distributed, decentralized, and immutable properties make it the ideal way to store and track data across numerous domains. In the years to come, we shall see new applications and novel scenarios beyond crypto-currencies and fin-tech. Startups are already working on novel concepts that make sense to leverage blockchain. Some of these will disrupt the social, government, and even political aspects of our world.[20]

Ten Types of Innovation® Framework

The Ten Types of Innovation® Framework is a great way to categorize innovation types. For many years, executives equated innovation with the development of new products. But creating new products is only one way to innovate, and on its own, it provides the lowest return on investment and the least competitive advantage. The Ten Types of Innovation® Framework (as shown below in Figure 1.1) provides a way to identify new opportunities beyond products and develop viable innovations.[21]
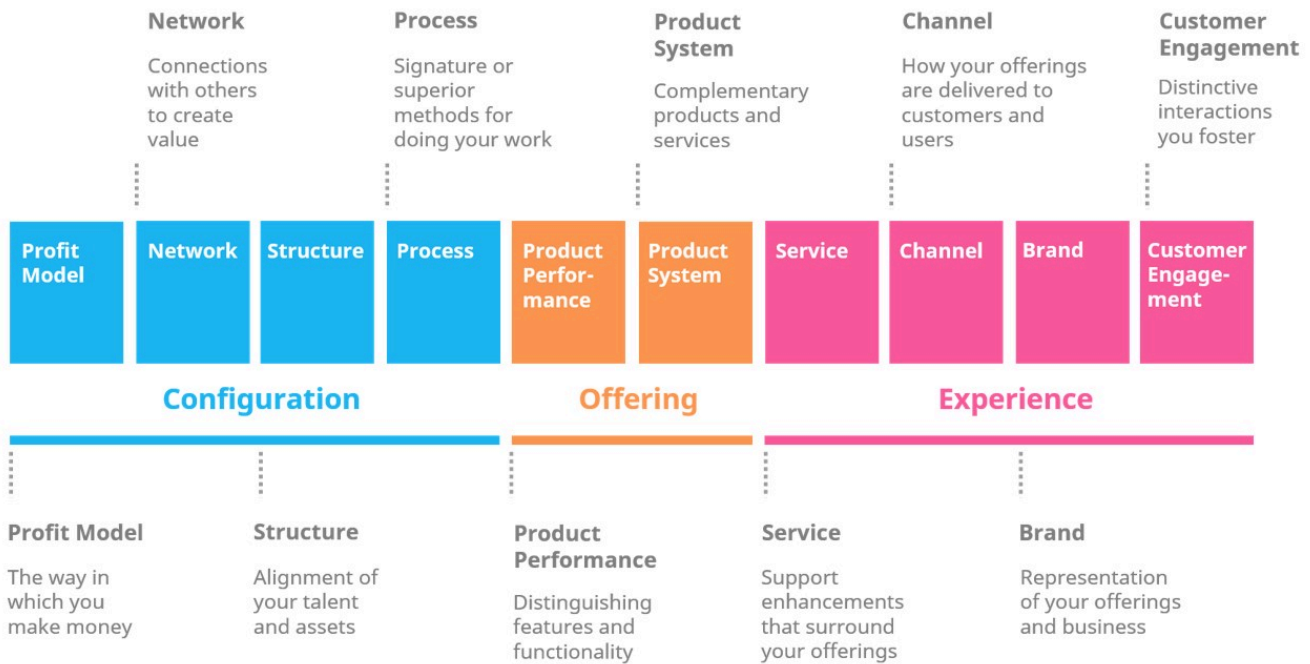
Figure 1.1 Ten Types of Innovation® Framework

What is Systematic Inventive Thinking (SIT)?

Systematic Inventive Thinking (SIT) is a thinking methodology where creativity takes center stage. It contains five thinking patterns that humans have used for thousands of years. It directly contradicts the principle of 'thinking outside the box' and uses 'thinking inside the box' as a guiding principle.[22]

Studies have found that the majority of new, inventive, and successful products result from only five patterns or templates, which form the basis of the innovation method called Systematic Inventive Thinking (SIT)-or inside-the-box thinking.[23]

Most innovators and creative people use patterns and structured thinking to innovate. Agatha Christie, for example, wrote over 60 novels and has sold more books than anyone. She did it by using a familiar template in each of her books. That template helped structure her thinking in a way that made her more creative.[24] This is the essence of a method called Systematic Inventive Thinking (SIT). With SIT, innovation follows a set of patterns that can be reapplied to any product, service, or process.

Cognitive Fixedness

SIT helps you overcome cognitive fixedness. **Cognitive Fixedness** is a state of mind in which you think of an object or situation in one specific way, to the exclusion of any alternative. SIT promotes thinking of objects in various situations and uses.

Two Principles

According to Drew Boyd, a global leader in creativity and innovation, using the five SIT patterns correctly relies on two key principles.

The first is the **Closed World Principle** is the notion that the best and fastest way to innovate is to look at resources close at hand. The famous architect Frank Lloyd Wright followed this principle when he created the spectacularly beautiful and unique home in Pennsylvania called Fallingwater. He used existing rocks, streams, and elements around the home as part of the building, visualizing all of the environmental components as part of the Closed World.[25]

With the second principle, **Function Follows Form Principle**, you begin with an abstract, conceptual solution and then work back to the problem that it solves. The Function Follows Form Principle is the opposite of the famous "form follows function" principle, which has been followed by many innovators throughout the past century. The Function Follows Form principle helps overcome the drawbacks of traditional research-led or design-based innovation.

Conventionally, product innovation begins with consumer need identification that's then translated into functions, therefore the form of the product is identified by the functions the product will be used for by consumers (form follows function). Most consumers however struggle to articulate unmet needs and would have difficulty imagining a new product that never existed before. For example, people most probably would not have thought of needing a car when horses and buggies were being used for locomotion. There is a famous quote from Henry Ford, "If I had asked people what they wanted, they would have said faster horses."[26]

Five Thinking Patterns

SIT applies a backward approach to innovation. Rather than starting with needs in the market, SIT would have you start by applying the five thinking patterns to existing products and services in order to ideate new products and services. After some ideas were generated you would evaluate whether or not these new innovative ideas will fill a need or want of consumers. If they will then you determine if developing these new ideas is feasible for the company (e.g., resources) and if the company can mitigate the risks involved.

Surprisingly, the majority of innovative products and services can be explained by just five patterns as listed in Table 1.1 below.[27]   Check out Drew Boyd's Pinterest page for multiple examples of each pattern.

Table 1.1 Systematic Inventive Thinking (SIT) - Five Patterns

Subtraction	Remove an essential component from a product and find a new arrangement of the existing components. Examples: Discount airlines subtracted the frills. Removing ear covers from traditional headphones resulted in earbuds. Dyson fan without blades.	
Task Unification	Assign a component of a product an additional job, one that it wasn't designed to do. Examples: Some facial creams moisturize and block the sun. The Fitbit tells you the time, how many steps you walked, and so much more.	
Multiplication	Take a component and copy it but change the component in some counterintuitive way. Examples: A bicycle may have training wheels added to the rear wheels for stability. Blenders with multiple-sized containers to blend different recipes.	
Division	Take a component or the product itself and divide it along some physical or functional line and then rearrange it back into the product. Examples: Single-serve size foods such as Cup-O-Soup. Cargo pants that zip apart to make shorts.	
Attribute Dependency	Two or more product attributes that previously seemed unrelated now correlate with one another. When one thing changes, something else changes. Examples: Windshield wipers that change speed as the amount of rain changes. The mood ring shows the mood of the user at any given time.	

Creative Constraint

SIT uses thinking inside the box as a guiding principle, which means using constraints to help you be more creative in solving problems. **Constraints** can foster innovation when they represent a motivating challenge and focus efforts on a more narrowly defined path. Having some constraints may incite big thinking, while having too many constraints may limit outcomes. Constraints may include limited time, money, or requiring results to include very specific needs.

Play "The Power of Creative Constraints" YouTube Video below to learn more about creative constraints.[28] [Transcript for "The Power of Creative Constraints" Video [PDF--New Tab]](). Closed captioning is available on YouTube.

> *One or more interactive elements has been excluded from this version of the text. You can view them online here:* *https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=31#oembed-2*

Key Takeaways

1. **Business Innovation** is "Executing an idea that addresses a specific challenge or opportunity and achieves value for both the company and its stakeholders." Of course, stakeholders include customers, government, partners, suppliers, shareholders/owners, lenders, society, employees (and their families), and the community.
2. When we think of innovation in the great big world, including the innovations of organizations, we might define **Innovation** in more broad terms, such as, "Creating something new that serves people's needs or wants."
3. Today, we need **innovators** more than at any time before. Every organization and business is feeling the impact of globalization, migration, technological and knowledge revolutions, and climate change issues. Innovation will bring added value and widen the employment base. Innovation is imperative if the quality of life in these trying circumstances is to improve.

Innovation will make the world a better place for the younger generation.

4. **Incremental Innovation** is the concept of growing or improving a company by making a succession of small-scale improvements to existing products, services, processes, and tools. Incremental innovation focuses on improving existing offerings to align with current consumer trends and is considered a relatively low-risk approach. This approach is the most common type of innovation and has helped many companies remain competitive for decades.

5. **Disruptive Innovation** is the launch of a new business model, concept, product, or service that creates a new market segment and value drivers. Often, disruption comes from a new company, which eventually displaces established market leaders and products.

6. **Business Model Innovation** is probably the most challenging of the innovation types as it will likely present an organization with major requirements for change.

7. **Social Innovation** refers to a response to a social or environmental problem, which, once adopted, results in better solutions than existing approaches. Social innovations have a transformative impact and improve organizations, communities, regions, or systems.

8. **Product Innovation** can come in three different forms. 1) The development of a new product, such as Fitbit or Amazon's Kindle. 2) An improvement of the performance of the existing product, such as an increase in the digital camera resolution of the iPhone 11. 3) A new feature to an existing product, such as power windows to a car.

9. **Service Innovations** ensure and enhance the utility, performance, and apparent value of an offering. Some offerings are purely service, such as getting a haircut, hiring someone to paint your house, or taking an Uber to your friend's place. These are services you may utilize throughout your lifetime. Other service innovations may be combined with product offerings, such as purchasing groceries (products) and having them delivered to your home (service), or buying a new television (product), and purchasing the warranty (service).

10. **Process Innovation** can include changes in the equipment and technology used in manufacturing (including the software used in product design and development), improvement in the tools, techniques, and software solutions used to help in supply chain and delivery system, changes in the tools used to sell and maintain goods, as well as methods used for accounting and customer service.

11. **Technological Innovation** focuses specifically on technology and how to embody it successfully in many types of innovations such as products, services, processes, profit models, channels, and customer service engagement innovations.

12. The **Ten Types of Innovation® Framework** is a great way to categorize innovation types.

13. **Systematic Inventive Thinking** (SIT) is a thinking methodology where creativity takes

center stage. It contains five thinking patterns that humans have used for thousands of years.

14. **Cognitive Fixedness** is a state of mind in which you think of an object or situation in one specific way, to the exclusion of any alternative.

15. The first is the **Closed World Principle** is the notion that the best and fastest way to innovate is to look at resources close at hand.

16. With the **Function Follows Form Principle** you begin with an abstract, conceptual solution and then work back to the problem that it solves. The Function Follows Form Principle is the opposite of the famous "form follows function" principle, which has been followed by most innovators over the past century.

17. Surprisingly, the majority of innovative products and services can be explained by just **five patterns**: Subtraction, Task Unification, Multiplication, Division, and Attribute Dependency.

18. **Constraints** can foster innovation when they represent a motivating challenge and focus efforts on a more narrowly defined path. Having some constraints may incite big thinking, while having too many constraints may limit outcomes. Constraints may include limited time, money, or requiring results to include very specific needs.

End-of-Chapter Exercises

1. **New Innovation Development.** Research one of these companies - Walmart, Lego, Coca-Cola, Ikea, Google - and find out what they are working on in the way of innovation then share your findings with the class and professor.

2. **Innovation Lab.** Enterprise companies across all industries, including Walmart, H&M, and Starbucks have opened innovation labs to help them fast-track new products, understand market trends, and develop solutions for customers. Find a company that has an Innovation Lab and research what it is all about and how it is used. Share your findings with the class and your professor.

3. **Technology Innovation.** Find a new Technology Innovation other than those mentioned

within the chapter. Research it. How will this technological innovation be used? Who will it help? What value does it bring? Provide an example of where it is used now (if it is already in production or prototype). Share your findings with your class and professor.

4. **Overcome Cognitive Fixedness.** Practice overcoming cognitive fixedness (thinking a product can only be used in a very specific way). Pick up a coffee mug. What would most people say it is used for? Apply SIT by applying each of the five patterns to this coffee mug. What did you invent by applying each pattern? Who would use your new innovations? What value would they bring? Compare your innovative ideas with a partner (another student). Did you derive similar results or were they very different? Discuss with your class and professor. This exercise can be done with just about any item you wish to start with.

5. **Practice SIT.** Practice applying the five thinking patterns and overcoming cognitive fixedness. Grab a cloth shopping bag, like the ones you might use to buy groceries. These bags are usually inexpensive and can be purchased at many retailers today. Your professor may assign a different item, or you may select a different item for this exercise. Apply SIT by applying each of the five patterns to this bag. What did you invent by applying each pattern? Who would use your new innovations? What value would they bring? Compare your innovative ideas with a partner (another student). Did you derive similar results or were they very different? Discuss with your class and professor.

6. **Non-polluting car.** Wouldn't it be great to have flying cars that ran on sunshine? Let's try an exercise in innovative thinking within the box (applying constraints). Discuss with a partner (another student) how you might create a car that would not pollute the environment, that would not make a lot of noise, that would not be too expensive for consumers, and that would be a car a person with a disability could drive. You may wish to work with one constraint at a time then try combining them. Apply SIT by applying each of the five patterns to this innovative problem. What ideas did you come up with? Are they feasible? Can they be developed in today's world or will they have to wait until some technological advancement is made in society? Discuss with your class and professor.

7. **Practice Constraints.** Scenario: You are asked to arrange a business luncheon for 10 managers at your school or workplace. Constraints include: a) it should be on-site, b) you have only $100 to spend, c) no meats or gluten or alcohol allowed, d) time for luncheon is 1 hour, f) the luncheon is happening one week from today, and e) guests should be seated comfortably and in a professional-looking space. Do some research on how you can pull this event together. What did you come up with? Does it meet each constraint? Share your innovative thoughts with your class and professor.

Self-Check Exercise – Matching Game - Ten Types of Innovation®

To complete this exercise you may need to do a little research on the Ten Types of Innovation® Framework first. Have fun testing your memory by matching image cards with text cards to pair each type of innovation.

Note: Cards have audio (please adjust audio settings on your device as desired).

> An interactive H5P element has been excluded from this version of the text. You can view it online here:
> *https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=31#h5p-1*

Additional Resources

1. 35 of the most revolutionary inventions that shaped our world
2. Top 10 Latest Technological Innovations
3. Think Inside the Box: The Power of Constraint. YouTube Video.
4. Ten Types of Innovation® Framework and How You Can Use It?

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation fea-

tures of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

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Notes

1. Otazo, K. (n.d.). *Innovation takes perspiration.* https://www.strategy-business.com/article/li00010
2. Idea to Value. (n.d.). *What is innovation? 15 experts share their innovation definition.* https://www.ideatovalue.com/inno/nickskillicorn/2016/03/innovation-15-experts-share-innovation-definition/
3. Shukla, A. (2009, May 30). *What is innovation? Why innovation is important?* https://www.paggu.com/getting-into-roots/what-is-innovation-why-innovation-is-important/
4. Everyday Power. (2021). *Innovation quotes to motivate you to create.* https://everydaypower.com/innovation-quotes/#:~:text=The%20calculus%20of%20innovation%20is%20really%20quite%20simple%3A,innova-tion%2C%20innovation%20drives%20productivity%2C%20productivity%20drives%20eco-nomic%20growth.%E2%80%9D
5. Johnson, S. (2010, September 17). *Where good ideas come from.* [Video]. YouTube. https://youtu.be/NugRZGDbPFU[/footnote

Innovation is the process of taking an idea and putting it into practice. Creativity, on the other hand, is what you do in your head to generate the idea. An innovative idea must be new, original, or improved, and must create value. Once a business has a creative idea it must determine if the idea is feasible to implement. Can it be done? Is it affordable? Are resources available or obtainable? Will it meet the needs of the target audience? Before spending time and money researching and developing a new product or changing a business model, companies must assess feasibility and risk.

Play the YouTube video below, "Where Good Ideas Come From" to learn about where you can find or how you can develop good ideas. [footnote]Johnson, S. (2010, September 17). *Where good ideas come from.* [Video]. YouTube. https://youtu.be/NugRZGDbPFU

6. Differential. (2020, March 20). *The three types of innovation: Product, process, business model.* https://www.differen-

tial.com/posts/the-3-types-of-innovation-product-process-business-model/

7. Differential. (2020, March 20). *The three types of innovation: Product, process, business model.* https://www.differen-tial.com/posts/the-3-types-of-innovation-product-process-business-model/

8. Government of Canada. (2021, August 12). *About the social innovation and social finance strategy.* https://www.canada.ca/en/employment-social-development/programs/social-innovation-social-finance.html

9. Leeuwen, M. (2018, October 31). *8 cool examples of social innovations in America.* Social Innovation Academy. http://www.socialinnovationacademy.eu/8-cool-examples-social-innovation-north-america/

10. Differential. (2020, March 20). *The three types of innovation: Product, process, business model.* https://www.differen-tial.com/posts/the-3-types-of-innovation-product-process-business-model/

11. Differential. (2020, March 20). *The three types of innovation: Product, process, business model.* https://www.differen-tial.com/posts/the-3-types-of-innovation-product-process-business-model/

12. Kulbyte, T. (2021, June 24). *37 customer experience statistics you need to know for 2022.* https://www.superoffice.com/blog/customer-experience-statistics/

13. Kulbyte, T. (2021, June 24). *37 customer experience statistics you need to know for 2022.* https://www.superoffice.com/blog/customer-experience-statistics/

14. Kulbyte, T. (2021, June 24). *37 customer experience statistics you need to know for 2022.* https://www.superoffice.com/blog/customer-experience-statistics/

15. Differential. (2020, March 20). *The three types of innovation: Product, process, business model.* https://www.differen-tial.com/posts/the-3-types-of-innovation-product-process-business-model/

16. Richards, R. (2021, September 1). *5 main types of innovation: Which is right for your business?* https://masschal-lenge.org/article/types-of-innovation

17. PYMNTS. (2020, January 2). *Samsung's new fridge uses AI to track food inventory.* https://www.pymnts.com/innova-tion/2020/samsung-fridge-uses-ai-to-track-food-inventory/

18. Krasadakis, G. (2017, November 27). *Technology innovations - Trends and opportunities.* https://medium.com/innova-tion-machine/2018-innovation-trends-and-opportunities-8a5d642fd661#:~:text=Technology%20Innova-tion%20%E2%80%94%20Trends%20and%20Opportunities%201%20Artificial,...%204%20Augmented%20Real-ity.%20...%20More%20items...%20

19. Krasadakis, G. (2017, November 27). *Technology innovations - Trends and opportunities.* https://medium.com/innova-tion-machine/2018-innovation-trends-and-opportunities-8a5d642fd661#:~:text=Technology%20Innova-tion%20%E2%80%94%20Trends%20and%20Opportunities%201%20Artificial,...%204%20Augmented%20Real-ity.%20...%20More%20items...%20

20. Krasadakis, G. (2017, November 27). *Technology innovations - Trends and opportunities.* https://medium.com/innova-tion-machine/2018-innovation-trends-and-opportunities-8a5d642fd661#:~:text=Technology%20Innova-tion%20%E2%80%94%20Trends%20and%20Opportunities%201%20Artificial,...%204%20Augmented%20Real-ity.%20...%20More%20items...%20

21. Nieminen, J. (2020, August 30). *The Ten Types of Innovation Framework explained.* https://www.viima.com/blog/ten-types-of-innovation

22. toolshero. (n.d.). *Systematic inventive thinking (SIT).* https://www.toolshero.com/problem-solving/systematic-inven-tive-thinking-sit/

23. Boyd Guitars. (2022). *The SIT method.* https://drewboydguitars.com/the-sit-method/

24. Boyd, D. (2014, July 3). *Business innovation foundations.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/business-innovation-foundations/what-is-innovation-introducing-systematic-inventive-thinking?context-tUrn=urn%3Ali%3AlearningCollection%3A6569259175287812096&u=2167290

25. Boyd Guitars. (2022). *The SIT method.* https://drewboydguitars.com/the-sit-method/

26. Vlaskovits, P. (2011, August 29). *Henry Ford, innovation, and that "faster horse" quote.* https://hbr.org/2011/08/

henry-ford-never-said-the-fast#:~:text=%E2%80%9CIf%20I%20had%20asked%20peo-ple%20what%20they%20wanted%2C,air%20of%20self-evidence.%20Battle%20lines%20are%20quickly%20drawn.

27. Boyd, D. (2014, July 3). *Business innovation foundations.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/business-innovation-foundations/what-is-innovation-introducing-systematic-inventive-thinking?contextUrn=urn%3Ali%3AlearningCollection%3A6569259175287812096&u=2167290

28. Rodriguez, B. (2010, September 17). *The power of creative constraints.* [Video]. YouTube. https://youtu.be/v5FL9VTBZzQ

CHAPTER 2: THINKING CREATIVELY

Chapter 2 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Identify eight creative thinking ideas to boost your personal creativity.
2. Explain three ways to enhance team collaboration and creativity.
3. Identify three threats to team creativity.
4. Describe the "shape of ideation" as it is graphed from a team ideation session.
5. Describe the SCAMPER technique for brainstorming.
6. List three barriers to creativity.
7. List three benefits of doing creativity exercises.
8. List ten reasons businesses nurture creativity and innovation.

Inspiration or Perspiration

A century ago, Thomas Edison thought deeply about what drives invention or, as we call it today, innovation. One of his famous sayings, "Genius is 1 percent inspiration and 99 percent perspiration," stresses that innovation involves more than just great ideas. Edison knew from his own experience that the systematic hard work of trial-and-error experimentation paid off. His inventions, like the lightbulb and the phonograph, emerged through thousands of attempts as he refined the process step by step ([1]).

Thomas Edison knew breakthroughs do not come from "lightbulb" moments (pun intended). His quote captures this concept perfectly.

> *"Genius is 1% inspiration and 99% perspiration"*
> *(Thomas Edison)*

Personal Creativity

Not everyone considers themselves creative, but most of us do have the ability to be creative. We use our creative minds more often than we think. Whenever you solve a problem, try something new, or give advice to a friend, you are probably using creative thought.

Just like doing physical exercise to work out your body, sometimes you need to do mental exercises in order to work out your mind. Play the video below to learn about the following eight creative thinking tips you can put into practice to help boost your creativity.

1. Schedule Creative Free Time
2. Set a Timer
3. Think Quantity Over Quality
4. Become an "Idea Machine"
5. Switch Up Your Routine
6. Look at Something Familiar Through a New Lens
7. Read More Often
8. Freewrite More Often

Play the "8 Creative Thinking Exercises to Boost Your Creativity" YouTube Video below to see if there is an exercise to boost your creative thinking.[2] Transcript for "8 Creative Thinking Exercises to Boost Your Creativity" Video [PDF–New Tab]. Closed captioning is available on YouTube.

> *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=36#oembed-1*

There is a misconception that creativity is this thing that happens in the shower, a strike of lightning that you

get out of nowhere, but the reality is creativity is not a moment in time, it's a process and it takes time to develop.

If you were to generate a list of possible solutions to any given problem you may notice that the first few on the list will be similar to ideas other people may also come up with, but as you get to the bottom of the list you may find your ideas become more unique. This is because we solve problems every day in our lives and we are good at it. If I asked you how you will get to work today since your car is being repaired at the service center, you might say, "I'll get a ride with a friend," or "I'll take the bus," or "My mechanic loaned me a vehicle." If I then asked you to think of some other ways you might get to work, I'm sure your ideas will become more novel as you provide additional possibilities. These novel ideas may not always be feasible, but while you are brainstorming new ideas, don't judge them for feasibility, just get the ideas first (quantity), then later evaluate each idea on how well it resolves the problem or takes advantage of the opportunity.

Commands for Being Creative

1. **Get Stupid!** Throw out what you know and start from somewhere new. Try drawing an image of a telephone. What did you draw? Something you have seen? Did you think to draw a phone that does not exist yet? Lose the concept of what you think a phone is and start thinking about what a phone might be in the future.
2. **Want the Box.** Constraints are necessary for creativity. The more boundaries you have the more creative you will be.
3. **Can the critic.** Don't listen to the critic inside you that always tells you, "that's a bad idea." Ignore this voice.

Explore the Concept – Personal Creativity Exercise – SIT Technique

Doing daily creative warm-up exercises may help you become a more flexible thinker in your job and help you approach work challenges with less fear and a more playful attitude.

1. Take any household product you use daily, such as a coffee cup, a hairbrush, a toothbrush, a pen, a notebook, a laptop, etc.
2. Use one of the following Systematic Inventive Thinking (SIT) innovation techniques to

change the product. You don't actually have to change the product but imagine it would be changed and this change you make will provide a new function or value to the user.

- Addition Technique: Add something to the product to change it. What can it now do or be used for?
- Subtraction Technique: Subtract or take away a part of the product. What can it now do or be used for?

3. Answer Example: For the addition technique, you might add another handle to a mug, making it easier to hold or making it into a sippy cup for toddlers (if you also added a lid). For the subtraction technique, you might subtract or remove the handle on the mug altogether turning it into a travel mug that will fit in a car cup holder.

SCAMPER Technique for Brainstorming

Creative thinking and problem-solving are essential parts of the design process to turn ideas into innovation and break the barriers against creativity. One of the successful methods used in creative thinking is the SCAMPER technique. While there are different creative thinking and problem-solving techniques such as reversed brainstorming, Hurson's thinking model, the Six Hats of critical thinking, and Lego Serious Play, SCAMPER is considered one of the easiest and most direct methods. The **SCAMPER technique** is based very simply on the idea that what is new is actually a modification of existing old things around us.[3]

What does the SCAMPER acronym stand for?

- S–Substitute (e.g., components, materials, people)
- C–Combine (e.g., mix, combine with other assemblies or services, integrate)
- A–Adapt (e.g., alter, change function, use part of another element)
- M–Modify/Magnify (e.g., increase or reduce in scale, change shape, modify attributes)
- P–Put to other uses (e.g., more than one way to use, more than one function)
- E–Eliminate (e.g., remove elements, simplify, reduce to core functionality)
- R–Rearrange/Reverse (e.g., turn inside out or upside down)[4]

Click on the information icon beside each of the letters below to learn more about SCAMPER.

Transcript for "SCAMPER" H5P [PDF–New Tab].

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=36#h5p-2

Benefits of Doing Creativity Exercises

Creativity exercises offer many benefits for individuals, groups, or companies who use them, including the following:[5]

- **Improved flexible thinking:** Creativity exercises improve your mental flexibility. You may see the possibility of small shifts or changes to a project that you didn't notice before.
- **Discovery of multi-dimensional ideas:** If you or your team have been working in the same field for a long time, you might use the same ideas repeatedly. Creativity exercises help you discover entirely new solutions to repetitive problems.
- **Embracing work challenges:** With enough practice, work challenges become something to look forward to as an opportunity to show and improve your mental creativity rather than a test delaying your progress.
- **Seeing new concepts:** Some creativity exercises help develop your creative vision, allowing you to see objects, ideas, and problems in a new way. This is highly beneficial when looking for a novel solution to a business challenge.
- **Improved teamwork:** Creativity exercises help individuals and groups improve teamwork skills like communication, problem-solving, and unity.

Team Creativity

Team creativity is based on having open debates, and a free flow of ideas**.** For that to happen, trust must exist among team members. Where trust is lacking–so will creativity. During brainstorming sessions, it is important to let everyone know that no idea is bad, no one will be judged, and all innovation comes with some risks. Listed below are a few ideas on how to enhance creativity and collaboration in teams, as well as a list of some of the threats that may impair team creativity.

Enhancing Creativity and Collaboration in Teams

1. **Complementary Skill Sets.** Collaboration works best when team members have complementary and diverse skill sets required to complete the project. Companies may also consider collaborating with customers, experts in the field, or experts in technical, design, marketing, and finance areas.[6]

2. **Appreciating Others**. Engaging in purposeful conversations and the ability to resolve conflicts are essential ingredients for collaboration. The team needs time to get to know each other not just as professionals, but as human beings, to build trust through informal social interaction.[7]

3. **Open Communication.** Encourage people to voice their ideas and opinions. Team members need to know it is okay to share their ideas and opinions, and that this is actually valued. When team members feel comfortable sharing their thoughts, it's more likely to foster the kinds of discussions required to generate creative solutions.[8]

4. **Facilitate Diverse Ways of Working.** People have their own ways of doing things. Some people like to work in teams; others prefer to work alone. Some enjoy using a pencil and notepad to jot down their thoughts, while others always make notes on their tablets or make voice recordings on their phones. Managers and team leaders need to allow people to choose how they work – as long as they do their jobs and do them well – they're happier, and that can prompt more creativity.[9]

5. **Prevent Internal Competition.** Competition for a promotion, pay raise, bonus, or anything else among team members has a negative effect on team creativity. Team members will try to promote their own ideas, or even not share ideas within the team, and rather share them outside the team with the team leader, or upper management. No internal competition among team members should exist.[10]

6. **Establish Ground Rules.** Include rules such as "nobody gets to monopolize the conversation," and "nobody gets to be quiet all the time." Establish what happens when someone is late to a meeting. Will you allow using computers and phones in the meeting (hint: do you want their full attention or not?) Make sure you keep a "parking lot" list of things so you do not forget any ideas.[11]

Threats to Team Creativity

Social Loafing: This is the tendency for group members to slack off. These members may think their ideas are dispensable or may see other members working hard, and believe they do not need to contribute.[12]

Conforming: Members may conform due to the desire to be liked. If they believe their teammates will be critical of their suggestions, they will be more likely to agree rather than disagree.[13]

Production Blocking: This can occur when members cannot express their ideas because others are expressing their own. When working alone, individuals can work without interruption of thought, whereas when working in a group, members may forget their ideas or may not get time to speak.[14]

Performance Matching: When working in a team for an excessive amount of time, members will start to develop the same tendencies. Members that achieve higher ideals than the group may lower their standards, whereas members that work at a slower pace may increase their efforts. Overall, the team will plateau and may find it more difficult to generate unique ideas over time.[15]

Team Ideation Session: Graphing the Process

What happens in our thinking process when we are given a problem to solve in a specific amount of time? As described by Stefan Mumaw in the LinkedIn Learning, Creativity Boot Camp course. If we graphed this ideation process for a group trying to solve a problem or take advantage of an opportunity, we would see a graph (refer to Figure 2.1 below) that at first has many ideas, but after a short period of time the group feels they have exhausted all the good ideas, and the ideas dwindle almost to a halt. What happens next, is that someone offers a different, silly, or absurd idea, then more ideas come from that idea and the tide has turned. These ideas are more unique and are often the best ideas that get generated during the session and they appear on the graph after initial ideas have dwindled. The graph resembles the letter "M" with the first arc being higher than the second arc. This graph shape is known as the **shape of ideation** because it consistently reveals itself this way.[16]

Shape of Ideation

Quantity and Quality of Ideas

Common
Ideas

Unique
Ideas

Ideas
Dwindle

Time
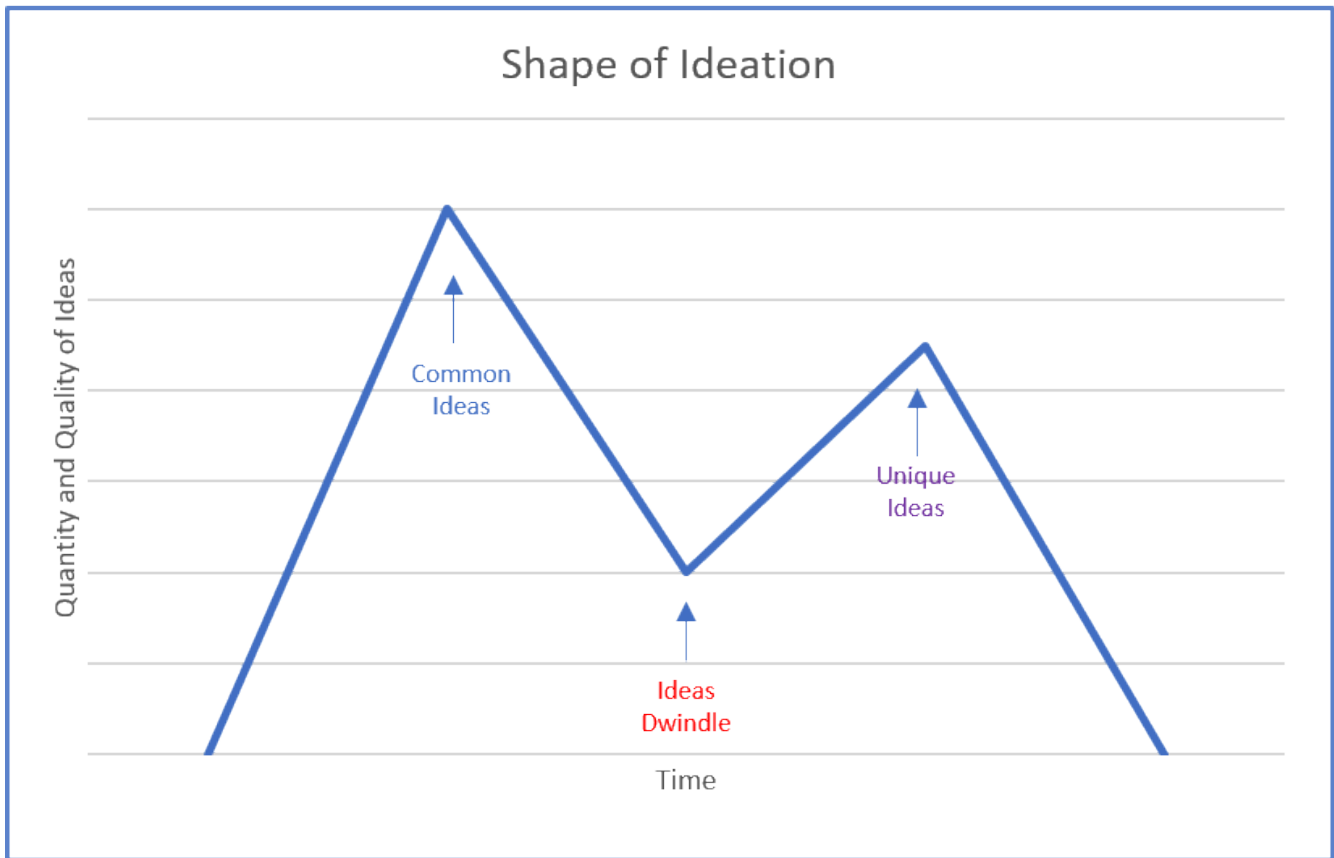
The Shape of Ideation

Explore the Concept – Team Creativity Exercise – Telephone Pictionary

In every creative team, it is essential to have a little bit of abstract thinking. The team-building exercise of telephone Pictionary does just that and it can be played in larger groups or small ones. Sometimes, interpreting those you work with can be a real challenge. This game deals with this issue in a fun and enlightening way.

Use strips of paper with song titles or lyrics written on them, such as "Ice, Ice Baby," "Singing in the Rain" or famous quotes, like "Crying over spilled milk," "A Pinch to Grow an Inch" or movie titles or

phrases, like "There's No Place Like Home," "May the Force Be With You." Each team member starts with their phrase. They write it out on the first page of their notebook as best they can.

All notebooks are passed to the left after 30 seconds. That person then has 30 seconds to interpret the drawing and, on the next page in the notebook, write down what they think the drawing is depicting. The next person draws what the last person wrote (without looking back at the drawings in the notebook). The notebook gets passed again and again until it makes it back to the original owner. Once each notebook is back where it started, the owner of the notebook shows each page to the group to see how the original phrase got interpreted down the line.

This exercise really demonstrates how meaning can get misconstrued and the importance of explaining things with other people's sensibilities taken into account.[17]

Barriers to Creativity

Below is a list of some of the things that can be barriers to personal, team, and organizational creativity.[18]

1. **Functional fixedness**. You see objects, components, and things around you, and you can't imagine them doing different functions than what they're designed to do.[19]
2. **Structural fixedness**. You find it really hard to imagine objects having a different structure than what you're used to.[20]
3. **Relational fixedness**. You find it very hard to imagine two objects having a relationship that wasn't there before.[21]
4. **Self-censorship.** Get the critic out of your mind. Stop telling yourself your ideas are not good enough.
5. **Micro-Management.** Micro-Management stifles a person's ability to be creative as micromanagers provide too much detail related to how a particular task or problem should be tackled. This reduces the ability for the person to think for themselves and add their own creative flair.
6. **Overthinking.** Overthinking about a problem or task uses the logical conscious side of our mind. Often creativity comes from the subconscious mind so rather than overthinking it might be wise to go for a walk or simply start daydreaming.
7. **Concerns about Image.** Image risks are where people worry about the impression that people will have of them after suggesting an idea.
8. **Lack of Time.** Lack of time and/or opportunity. People often feel that they are too busy with their day-to-day efforts to have time to focus on being creative. Resolve this by setting some planned time aside each and every day for creative efforts.
9. **Lack of Sleep.** Lack of sleep not only forms barriers to creativity but to most other things too! Try and

lead a healthy well-balanced life with lots of exercise and water and healthy nutrition.

10. **Criticism.** Criticism from others can off-put you from proceeding any further with your ideas. Try and dismiss negative thinkers or win them over by demonstrating the validity of your idea with a prototype.

11. **Rules, Policies, and Procedures.** If the organization that you work in has lots of rules, policies, and procedures then these can sometimes stifle creativity due to the bureaucracy that they create. If you can't advance your project forward without five signatures then you will find it difficult to maintain momentum.

12. **Fear of Rejection.** Just having that underlying fear that others will reject your ideas can be a barrier to creativity. Work with your passions, enjoy your creative moments, and don't let others put you off.

13. **Stress.** Stress is not only a distraction that drains the energy we might channel into being creative, it is also very bad for our health and concentration.

14. **Lack of Motivation**, commitment, skills to perform creative tasks, or employee preparation to persist.

15. **Lack of organizational or managerial support** or sufficient resources for creative work.

Importance of Creativity and Innovation to Business

Creativity fuels innovation. Creativity is a thought process, while innovation is an action. For a business to survive it needs both. Some of the top reasons businesses nurture creativity and innovation include:

1. Innovation helps organizations grow.
2. Innovation keeps organizations relevant.
3. Innovation helps organizations differentiate themselves.
4. Innovation increases productivity in the workplace by sparking excitement and feelings of purpose in employees.
5. Innovation improves a team's problem-solving skills by challenging the team to dive deeper and develop novel solutions.
6. Innovation helps organizations position themselves as innovators in the marketplace.
7. Innovation helps organizations generate more profits.
8. Innovation helps organizations reduce expenses.
9. Innovation helps organizations attract employees, investors, partners, and contractors.
10. Innovation helps organizations gain a competitive advantage.

Key Takeaways

1. **Eight creative thinking tips** you can try any time. Schedule creative free time, Set a timer, Think quantity over quality, Become an "Idea Machine," Switch up your routine, Look at something familiar through a new lens, Read more often, and Freewrite more often.

2. **Commands for being creative.** Get stupid! Want the box. Can the critic.

3. The **SCAMPER** technique for brainstorming is based very simply on the idea that what is new is actually a modification of existing old things around us

4. **Benefits of doing creativity exercises.** Improved flexible thinking, Discovery of multi-dimensional ideas, Embracing work challenges, Seeing new concepts, and Improved team-work.

5. **Team creativity** is based on having open debates, and a free flow of ideas**.**

6. **Enhancing creativity and collaboration in teams.** Collaboration works best when team members have complementary skill sets required to complete the project. Engaging in purposeful conversations and the ability to resolve conflicts are essential ingredients for collaboration. Open communication must be there. Facilitate diverse ways of working. Establish ground rules for working together.

7. **Threats to team creativity.** Social loafing, Conformity, Production blocking, and Performance matching.

8. **Team ideation session: Graphing the process.** When given a problem to solve in a specific amount of time what happens in our thinking process? If we graphed this ideation process we would see a graph that at first has many ideas, but after a short period of time the group feels they have exhausted all the good ideas, and the ideas stall. What happens next, is that someone offers a different, silly, or absurd idea, then more ideas come from that idea and the tide has turned. The best ideas often come after this turn in the graph. This is known as the **shape of ideation** because it consistently reveals itself this way.[22]

9. **Barriers to creativity.** Functional, structural, and relational fixedness; self-censorship; micro-management; overthinking; concerns about image; lack of time; lack of sleep; criticism; rules, policies, and procedures; fear of rejection; stress; lack of motivation; and lack of organizational or managerial support.

10. **Importance of Creativity and Innovation to Business.**

- Innovation helps organizations grow.
- Innovation keeps organizations relevant.
- Innovation helps organizations differentiate themselves.
- Innovation increases productivity in the workplace by sparking excitement and feelings of purpose in employees.
- Innovation improves a team's problem-solving skills by challenging the team to dive deeper and develop novel solutions.
- Innovation helps organizations position themselves as innovators in the marketplace.
- Innovation helps organizations generate more growth and profits.
- Innovation helps organizations reduce expenses.
- Innovation helps organizations attract employees, investors, partners, and contractors.
- Innovation helps organizations gain a competitive advantage.

End-of-Chapter Exercises

1. **Take a Quiz to See How Creative You Are.** Complete one or more of the following quizzes. Huffpost How Creative Are You?, What Percent Creative Are You?, What's Your Creative Type?, MindTools How Creative Are You?, Are You In The Top 10% of the Most Creative People in the World?, and Are You Actually Creative?. Did you learn anything new about yourself or were the results what you expected?

2. **Wild Westios.** Most people think of the Wild West as a uniquely American era in history. However, during the same time, Canada was also expanding westward. With this expansion came a collection of interesting personalities, including brave lawmen, tricky outlaws, and proud, hard-working cowboys.

   - Grab a partner to try this creative exercise. Together you are going to write down as many cereal box toys as you can think of if boxes of cereal were around during the days of the wild, wild, west. You have three minutes to compile one list together;

write down as many ideas as you can.

- ◦ Compare Groups. How many ideas did you and your partner come up with in three minutes? Sometimes people say they don't have time to come up with more ideas, but as you can see given only three minutes you and your partner were able to come up with some ideas. So time is not a problem, motivation may be an issue when it comes to thinking creatively. For this exercise you may have been motivated because the exercise was silly and fun, you had a partner to work with, maybe your professor was observing you, and you only had three minutes to finish the task. This exercise is adapted from one called Wild Westios shared in the LinkedIn Learning, Creativity Boot Camp module.

3. **Ultimate Desk.** You have been sitting behind a desk of some form for almost your entire professional life. It's time to retire whatever weak desk you've been using and come up with the most awesome desk ever devised by humankind. Money is not an issue, design is no issue, and materials are not an issue. There is only one rule and it is that the desk you create must actually perform the function of a desk in some way.

   - ◦ Grab a partner. You have five minutes to create the ultimate desk. Discuss and sketch it out.
   - ◦ Compare Groups. How many desks had a beverage dispenser? How many desks were mobile, roll or fly? How many desks have some sort of water feature? How many desks come with some sort of extra person, such as a chef or masseuse? How many desks have a large flat surface? Why a large flat surface? Because that is what you know. We start with what we know a desk to be. We attach ideas to what we know, so we become improvers. We have to stop starting with other people's solutions and we have to ask questions. What is a desk and what does a desk need to do? We insert restrictions that are not really there. This exercise is adapted from one called Ultimate Desk shared in the LinkedIn Learning, Creativity Boot Camp module.

4. **Squiggles.** This exercise should take you five minutes. Take a sheet of paper and draw 5 to 10 squiggles in different shapes and sizes. Now turn your squiggles into birds. Think about the main characteristics of a bird (beak, tail, legs) and start adding them. First, draw a beak which is a simple triangle – make variations in size and position. Then, do the same with the tale, which is also a triangle. Finally, add legs that are made out of sticks. That is how simple it is! Take a look at the drawings and spend a minute considering how easily the brain finds patterns.[23]

5. **Write a Six-Word Story.** Ernest Hemingway, one of the greatest authors of all

time, was once challenged to write a complete story in just six words. Never one to shy from a challenge, he wrote: "For sale: baby shoes, never worn." What would your complete six-word story be?[24]

6. **Packaging Yourself.** If you were a product, available for sale at your favourite retail store, what store would you be sold in? What would the packaging look like? What would your catchy product title be? What would it say on the box? This is not just an exercise in creative thinking, but of establishing your own personal brand in a fun and inventive way.[25]

7. **Find Creative Uses for Everyday Objects.** A pen is just a pen...or is it? What do you have around you right now that could be used for something completely different? Alton Brown, the chef who knows his science, refuses to buy objects that have just one use. He finds ways to use kitchen tools in the most inventive ways. So what can you do with that stapler, the pair of scissors, or that old bookend? [26]

Self-Check Exercise – Quiz – Thinking Creativity

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=36#h5p-3

Additional Resources

1. LinkedIn Learning [Creativity Bootcamp Training](#)
2. [50 Fun Creativity Exercises](#) to Boost the Power of Your Creative Mind
3. [21 Ways to Boost Your Personal Creativity](#)
4. [5 Team Building Exercises Guaranteed to Spark Creativity](#)
5. [Business Innovation – Canada Periodical Fund – Canada.ca](#)
6. [Innovation Canada (ic.gc.ca)](#)
7. [MaRS Discovery District](#)

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

Media Attributions

Notes

1. Otazo, K. (n.d.). *Innovation takes perspiration.* https://www.strategy-business.com/article/li00010
2. Johnson, S. (2010, September 17). *8 creative thinking exercises to boost your creativity.* [Video]. YouTube. https://youtu.be/pfg9a9diN40
3. Elmansy, R. (n.d.). *A guide to SCAMPER technique for creative thinking.* https://www.designorate.com/a-guide-to-the-scamper-technique-for-creative-thinking/
4. Serrat, O. (2009, February 31). *The SCAMPER technique.* https://www.adb.org/sites/default/files/publication/27643/scamper-technique.pdf

5. Indeed. (2021, March 19). *18 creativity exercises to improve creative thinking and problem-solving at work.* https://www.indeed.com/career-advice/career-development/creativity-exercise

6. Creativity at Work. (n.d.). *12 ways to enhance creativity and collaboration in teams.* https://www.creativityatwork.com/12-ways-to-enhance-creativity-and-collaboration-in-teams/

7. Creativity at Work. (n.d.). *12 ways to enhance creativity and collaboration in teams.* https://www.creativityatwork.com/12-ways-to-enhance-creativity-and-collaboration-in-teams/

8. Kelly. (2019, August 22). *Four strategies to enhance your team's creativity.* https://www.creativityatwork.com/12-ways-to-enhance-creativity-and-collaboration-in-teams/

9. Kelly. (2019, August 22). *Four strategies to enhance your team's creativity.* https://www.creativityatwork.com/12-ways-to-enhance-creativity-and-collaboration-in-teams/

10. Solomon, Y. (n.d.). *How to build a brilliantly creative team.* https://www.inc.com/yoram-solomon/8-steps-to-build-superior-team-creativity.html

11. Solomon, Y. (n.d.). *How to build a brilliantly creative team.* https://www.inc.com/yoram-solomon/8-steps-to-build-superior-team-creativity.html

12. Kaur, S. (n.d.). *Team making portfolio: Teach creativity.* https://sandeepartly.wordpress.com/team-creativity/

13. Kaur, S. (n.d.). *Team making portfolio: Teach creativity.* https://sandeepartly.wordpress.com/team-creativity/

14. Kaur, S. (n.d.). *Team making portfolio: Teach creativity.* https://sandeepartly.wordpress.com/team-creativity/

15. Kaur, S. (n.d.). *Team making portfolio: Teach creativity.* https://sandeepartly.wordpress.com/team-creativity/

16. Mumaw, S. (2014, November 19). *Creativity boot camp.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/creativity-boot-camp?u=2167290

17. Merritt, J. (2022, June 7). *The 30 most effective team building activities for creative teams.* https://www.getrodeo.io/blog/team-building-activities

18. Innovation-Creativity. (n.d.). *Creativity barriers.* https://www.innovation-creativity.com/barriers-to-creativity/#:~:text=Barriers%20To%20Creativity%20Include%3A%201%20Functional%20fixedness.%20Functional,creativity%20but%20to%20most%20other%20things%20too%21%20

19. Ozment, D. (2020, September 22). *Fixedness: Your main barrier to creative thinking.* https://drewboyd.com/fixedness-your-main-barrier-to-creative-thinking/

20. Ozment, D. (2020, September 22). *Fixedness: Your main barrier to creative thinking.* https://drewboyd.com/fixedness-your-main-barrier-to-creative-thinking/

21. Ozment, D. (2020, September 22). *Fixedness: Your main barrier to creative thinking.* https://drewboyd.com/fixedness-your-main-barrier-to-creative-thinking/

22. Mumaw, S. (2014, November 19). *Creativity boot camp.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/creativity-boot-camp?u=2167290

23. Strimaityte, A. (2019, November 26). *We might think creativity is a talent and not something everyone can have, but luckily that is not true. Creativity is a muscle that you can train.* https://innovationlab.net/blog/9-best-exercises-to-spark-creativity-in-ideation/

24. Sugget, P. (2020, February 6). *Creative exercises to get the wheels turning.* https://www.thebalancecareers.com/creative-brain-exercises-39352

25. Sugget, P. (2020, February 6). *Creative exercises to get the wheels turning.* https://www.thebalancecareers.com/creative-brain-exercises-39352

26. Sugget, P. (2020, February 6). *Creative exercises to get the wheels turning.* https://www.thebalancecareers.com/creative-brain-exercises-39352

CHAPTER 3: SERVICE INNOVATION

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Chapter 3 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Define "service innovation".
2. Explain four evolving trends in service innovation.
3. Discuss how service attributes, benefits, and values are connected.
4. List five things businesses can do to increase customer value.
5. Explain the importance of considering the user, buyer, and payer when innovating.
6. Discuss the Customer Star Framework for aligning service innovations.

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The New Service Landscape

Service innovations take place across all industries and around the world. Of course, this involves service firms, but product-based companies can also develop service innovations. A **service innovation** changes the way customers are served to create value for customers and revenue for the company. Through a new service innovation, a company may increase its revenue due to existing customers spending more, improved positive company image, referrals, etc.

"Innovation of any kind is important as it is a significant step forward. Without innovation, all businesses and processes would be stagnant. Innovative services help businesses have the edge over their competitors and, thus, gain a higher market share. This leads to higher profits and a loyal customer base."[1] Many service innovations involve employing digital and technological innovations to offer a satisfactory customer experience, or they aim to simplify existing customer processes to enhance ease and speed. Service innovations might also offer customers added value through designing new services or programs, or through coupling services with product

purchases. An interesting thing about service innovations is that they are often combined with other types of innovations (e.g., product and technological).

The service sector accounts for 75% of Canadian jobs and 78% of the country's GDP. The sector includes the following sectors; transportation, economic, health care, construction, banking, communication, retail, tourism, and government. As a vital part of the Canadian economy, the most popular sector is retail with some big franchise names including Walmart and Future Shop. In recent years, the financial services, real estate, and communications industries have grown exponentially, especially in the business hubs of Vancouver, Montreal, and Toronto.[2]

> *A service innovation changes the way customers are served to create value for customers and revenue for the company.*

Four Evolving Trends in Service

The nature of services and the pace of change have shifted dramatically in recent years, and mastering the traditional aspects of service delivery will no longer be enough. To seize the opportunities, companies must learn to tap the potential for service innovation made possible by four evolving trends.[3]

1. **Higher customer expectations.** More than ever, consumers demand greater involvement, customization, personalization, and mobility from services—with immediate results. When they see cutting-edge service innovations in one industry, they expect to find them in others as well; witness the spread of self-service kiosks from airline check-ins to the retailing and hospitality industries.
2. **The rise of the mobile Internet.** Just about everyone has a cell phone today and the number of apps is extensive. The resulting mobile and self-service possibilities are transforming service delivery. Uber's disruption of the taxi business is just one prominent example. Advances in digital payments are increasingly spurring mobile commerce, with far-reaching implications in financial services and retailing. Remote access and monitoring in healthcare are also potential game-changers made possible by increased connectivity. The proliferation of smart devices unlocks growth opportunities, reduces the cost to develop services, and dramatically lowers barriers to entry.
3. **Big data and advanced analytics.** Companies such as Amazon and Harrah's are known for using customer data to personalize and tailor their services. Continued advances in analytic capabilities allow

companies to draw insights from massive, previously untapped sources, leading to new service possibilities.

4. **The Internet of Things (IoT).** The prevalence of connected devices opens up possibilities for proactive, even "touchless" service, as well as new commercial models quite unlike the traditional fee-for-service one.

Service Innovation Examples

Listed below are a few examples of service innovations. Can you think of others?

1. **Passenger Transportation.** Uber and Zipcar are disrupting the passenger transportation industry. Uber says, "In addition to helping riders find a way to go from point A to point B, we're helping people order food quickly and affordably, removing barriers to healthcare, creating new freight-booking solutions, and helping companies provide a seamless employee travel experience. And always helping drivers and couriers earn."[4] "Zipcar is a car sharing service that Antje Danielson and Robin Chase founded in 2000 in Cambridge, Massachusetts. Members of the service can rent cars by the hour or day, accessing the vehicles using a special card (called a "Zipcard") or the company's mobile app."[5]

2. **Improved Customer Experience**. Tim Hortons and many other companies provide loyalty programs to their consumers. When the customer places an order they gain loyalty points and when they get enough points they can use them to purchase products. The app is a service innovation for customers as it improves the customer experience and adds value to their transactions. The app is also a technological innovation as well as a process innovation because when customers use the points program it changes the payment process for customers and employees, and the technology integrates with the payment system which allows the company to gather data about consumer purchases and preferences.

3. **Personalized Hotels.** Airbnb's business is primarily based on making connections between buyers and sellers. They partner with people providing accommodations and they sell their services under the Airbnb brand. This creative entrepreneurial innovation allows people to travel and stay at different host locations, connecting them in advance. Airbnb is giving tough competition to the hotels in the hospitality industry, thus disrupting the industry, and forcing the existing way of doing things to evolve and the existing companies to innovate to keep up.

4. **Personalized Entertainment.** Netflix produced a series of disruptive innovations that revolutionized how people get their daily dose of entertainment at cheap prices. "Everything Netflix does is driven by data and powered by smart AI algorithms. The company is always brainstorming and testing ideas to ensure that whatever is disseminated on its platform matches the exact thought process of its users. And, its efforts are pretty much evident."[6]

5. **Two Services in One.** Need a snack on the go? Forgot your toothbrush or charger? It's not a problem, some taxi companies in the United States, China, and India are installing in-car mini-convenience

stores.[7] "Cargo in the US started providing snacks on Uber in 2016. In China, two companies —
Mobile Go and GoGo+ — are spreading the business across the country."[8] The simple solution shows
that innovative ideas don't need to be flashy as long as they meet customers' needs. Providing items to
customers when they need them most solves a major pain point.[9]

6. **Personal Shopper with Delivery.** A decade ago, Instacart introduced a new model for online grocery
   shopping and convenient home delivery. Today, the company provides service for more than 1,100 retail
   banners across more than 80,000 locations. Instacart's intuitive, simple solutions for retailers, customers,
   brands, and shoppers are transforming how the world shops, eats, and lives.[10] You might be able to
   think of a few other companies that offer similar services. Many retailers and restaurants provide online
   ordering with delivery, and this may be a new service for some, but online ordering with delivery has
   been around for many years. Online shopping came about in the late 1990s with Amazon and Barnes &
   Noble both emerging as early leaders in the marketplace.

7. **Mobile Personal Service.** Pet grooming is a mobile service for your pets. "VIPets is a full-service spa on
   wheels. We offer the ultimate convenience: grooming at your doorstep. No more crating and waiting for
   your cat or dog. Our experienced groomers will come to your home and give your pet a caring, stress
   free, cage free pampering experience with one-on-one attention."[11] "Tesla literally meets customers
   where they're at by going to the customer's home and fixing issues on their car. It's convenient for the
   customer because they don't have to sit around a repair shop and it can be scheduled on their own time.
   This is an example of excellent customer service."[12] You might envision how mobile services could work
   in many fields, for example, doctor service in your home, personal chef, house cleaning, yard mainte-
   nance, hair styling in your home, and so many other others. Mobile services can be critical for those peo-
   ple who may be housebound.

Discover What Customers Want

Many companies start their service innovation journey at the wrong end. They look at their existing ser-
vices and try to find ways to improve them. For a more promising approach through service innovation, they
should begin by asking the following questions.

1. How can we **relieve** customers from activities they do not like to perform?
2. How can we **enable** customers to perform activities they cannot do without our service?
3. How can we make it **easier** for customers to do what they need or want to do?

In order to create break-thru innovations, a company must do more than just add an element or a single
attribute to an existing service or product. Unfortunately, most of the customer surveys businesses use today
are trying to do just that, evaluate customer satisfaction based on current attributes. When you ask a customer
what they want from their car mechanic they might say, "to pay less," "to know my car is repaired and safe to

drive, peace of mind," or "to be quick and save me time by getting me back on the road again." In order to successfully innovate, a business must have a very clear and systematic understanding of what they do and how the customer benefits from it. For example, if the bank offers a drive-through ATM, which is an attribute, the benefit to the customer might be that the bank helps them to save time. If the bank stays open until 10 p.m. they are meeting the customer's need for convenient hours of service. There is often more than one relationship between the attributes and the benefits. For example, a drive-through ATM may not only offer time savings but also safety, or it increases personal mobility and freedom for handicapped customers who cannot walk to the bank. When you meet with customers to find out what they really want it is helpful to take notes, ask questions, and separate attributes from benefits.[13] If an attribute is not a benefit to customers then you may need to consider removing it.

Link Attributes to Benefits

Linking (also known as laddering) product or service attributes to benefits and benefits to customer values helps companies sell products and services to customers. Customers seek attributes in products and services that bring them the benefits they value, and they will not pay for attributes that do not bring them the benefits they value. The formula for **customer value** can be written as (Total Customer Benefits – Total Customer Costs) = Customer Value, or (B – C = CV). Refer to Figure 3.1 below for a list of customer-perceived benefits and customer costs.

Increase Customer Value

Below is a list of five tips for how organizations can increase value for their customers.[14]

1. **Evaluate your customer experience.** Make it convenient for the customer to buy, and provide options in how the customer wants to buy and pay.
2. **Focus on more than price.** Reduce the price, or don't, but provide something extra over the competition (this could be improved service, better attention, community, improved quality, warranties, and other add-ons to the product or service).
3. **Collect customer data.** Consider surveys, focus groups, observation, trends analysis, buying behaviour, needs/wants, and preference history.
4. **Target your most loyal customers.** Keep these customers by providing the benefits that bring them value.
5. **Segment your customer base.** Different segments have different needs for different benefits.

CUSTOMER PERCEIVED VALUE

CUSTOMER BENEFITS   CUSTOMER COSTS

SAVE TIME
SAVE MONEY
SOLVE A PROBLEM
EASE OF USE
PRESTIGE
PEACE OF MIND

MONETARY COST
EMOTIONAL COST
ENERGY COST
TIME COST

Figure 3.1 Customer Benefits versus Customer Costs

Explore the Concept – Attributes, Benefits, Values

If you were to purchase a pair of new running shoes, which attributes would bring you benefits that you consider of value? Refer to Figure 3.2 below for a list of running shoe attributes that may bring customers value.

Product and service benefits are the features that are most important to the customer. More often than not these are conceptual and change according to the individual shopper or customer segment. Different types of customers will find different attributes valuable. Some may like the no-tie laces (maybe they have problems with dexterity), while others may be more enticed to buy because of the recycled soles (maybe they have a concern for the environment). A company will segment its customers and devise promotions to emphasize the benefits that may be of value to specific target groups. For example, an older adult may like the extra cushioning and water-repellent attributes, and they may also hope to find arch support. A business can create a customer segment for persons 60 years and older and survey these customers or potential customers to determine which attributes would bring benefits of value to that customer segment, then design products and services to provide those benefits. Offering products or services customers do not need or want will mean the innovation will probably not be successful.

Water Repellent

No-Tie Elastic Shoe Laces

Breathable Fabric

Hemp Canvas

Insole Extra Cushioning

Outsole 30% recycled water bottles

Figure 3.2 Running Shoe Attributes

Now imagine that this same company also offers three services with the purchase of this running shoe: 1) As a customer of the company you can join a loyalty program to collect points and when you have a certain number of points you will receive a discount on your next purchase. 2) This company also offers a running club for customers, in which customers join the group and go running with other avid runners each week. 3) There is a warranty for one year that covers any product defects or issues such as not fitting well or sole wearing out too quickly and they will repair the shoe for free.

Which of the above service attributes would be a benefit to you? Which brings you added value? Which of these services would you consider of no benefit or value to you? Why? Can you think of someone else who might enjoy the benefit of these services?

The Customer: The User, The Buyer, The Payer

First, you need to understand the customer roles – user, buyer, and payer. The user, buyer, and payer may not always be the same customer. When you go to the store and buy groceries, you are the user, the buyer, and the payer because you will use the groceries, you selected the store to shop at, and used your credit card to pay. Now imagine that you are buying groceries for your grandmother who asked you to purchase a few items on a list at a grocery store, and she gave you her credit card to pay for the items. In this scenario, she is the user and the payer, and you are the buyer as you selected the grocery store to shop at. If she had sent you to a specific grocery store then she would also be the buyer, and you would be the lovable delivery person.

If you attend a marketing convention out of town as approved by your manager, the payer of the hotel room is your employer, the user of the hotel room is you, and the buyer of the hotel room is the marketing association since it determined where the conference would be and which hotels would hold rooms for convention attendees.

Another example; if you work in the procurement department at a hospital, your job would be to buy the materials needed by surgeons to conduct surgeries. The surgeons are the users, and the payer is the hospital department that Accounting charges when the invoice is paid.

A deep understanding of the three roles is crucial for innovation success. The user, needs the right materials, in the right place, at the right time. They need the materials to do the job they are supposed to do. The buyer requires a catalogue of all the materials the supplier provides, the prices, and the uses of each product or service. They need to know about warranties, inventory in and out, repair or replacement options, time for delivery, etc. They must also understand the needs of the users and communicate with them. The payer needs to know what was ordered and if the full order was delivered and which department is paying for the order. They also need to know the budget maximum and communicate this information to the buyer.

When a business tries to understand the customer's needs they must be specific–they must understand the user's needs, the buyer's needs, and the payer's needs since they might be quite different. When a company defines a new service innovation the best innovations are those that simultaneously improve the job to be done for the user, the buyer, and the payer.

Aligning Service Innovations

Organizations must align service innovations with the company mission, vision, values and goals as well as with customer expectations. The Customer Star framework (below) helps executives and entrepreneurs align their decisions and actions around what customers really want.

Align with Company Brand

Companies need to align service innovations with the company's mission, vision, values, and goals to retain existing customers and obtain new customers. Sharing with customers the company mission, vision, values, and goals will help set customer expectations around product and service offerings and attract customers that want the company offerings. There is not much sense in offering a sauna at a fitness center if the customers would not use it or if the mission of the fitness center is to offer a quick workout at a low price. Adding a sauna might be expensive and there would be considerations around safety and hygiene, so not a cheap innovation to implement. Adding a sauna would probably not bring the benefits the fitness center customers would want; therefore, they would not pay extra to use it, so the company may lose money on this innovation. If the fitness center is a place that promotes luxury and various spa treatments as service offerings after a workout, then a sauna may be right in line with the company's mission and vision, and it would bring added value to the customer segment that frequents the fitness center.

To confirm this assumption, the fitness center would need to conduct research through customer surveys or focus groups, for example, in order to gather customer feedback. **Psychographics** are all about understanding customers' lifestyles, values, beliefs, and optimizing marketing to demonstrate to customers how the company can fulfill these psychographic variables by providing the benefits sought thus providing customers value.

The fitness center would also conduct a competitive analysis to see if saunas are offered at competitor locations in the area. The company would examine costs and expected returns on investment as well as internal and external strengths and weaknesses, opportunities, and threats (SWOT). The company might conduct a PEST analysis as well to determine if this innovative idea for a new service offering will be successful. After the research is complete and the results analyzed the company management team would decide if this new service innovation is feasible.

Align with Evolving Customer Expectations

Key areas of customer service have evolved, including the emergence of analytics, personalization, and employee engagement. Companies that thrive in an era of rapidly evolving customer expectations need to align their initiatives accordingly. It's about going beyond short-term goals to building a self-sustaining customer-centric organization. The companies below are not only part of the service industry — they are also shaping its future. By extension, these and other companies like them are changing the way we live our lives.[15]

1. **Facebook, Twitter, Yelp, et al.** Social media sites should be recognized for their role in changing the service industry. Customers are increasingly turning to online outlets to share reviews, ask questions, and solicit feedback from brands that play a role in their lives. These interactions provide companies with an opportunity to learn more about their customers so they can better tailor their services to con-

sumers' needs.

2. **Motif Investing.** The personal finance industry doesn't exactly have a reputation for innovation. Motif Investing is the exception that proves the rule. The company is making investments accessible to a broad segment of the population by creating an investment structure that is affordable and easy to understand.

3. **Noma.** The restaurant has both driven innovations in the food industry and capitalized on them. Led by world-renowned chef René Redzepi, Noma embodies the farm-to-table movement by utilizing local and wildly sourced ingredients, avoiding GMOs, and emphasizing quality at all costs. In the process, it's put Nordic cuisine on the international map.

4. **City CoPilot.** More and more individuals and companies are enlisting personalized service from concierge companies—and not just when they're staying in a hotel. City CoPilot and other innovative concierge companies have moved these services beyond the hotel lobby. Whether clients need assistance with luggage storage and delivery, package acceptance, airport transportation, finding discounted tickets to tours and attractions, or something else entirely, this new brand of concierge is here to make people's lives easier at all times.

5. **UberEATS.** Uber has already transformed the service industry with its innovative approach to transportation, but the company isn't stopping there. It's now attempting to disrupt the food delivery market with UberEATS. The company has more opportunities for distribution than any other business in the market, and thanks to its pre-existing name recognition, they have had an easy time identifying partners in the restaurant industry. It's a winning combination that's threatening even the companies that have long sat at the top of the food delivery chain.

The service industry entails a vast variety of services ranging from food delivery to digital investing tools. Still, these companies all share something in common. They're innovating existing services and transforming the country's economy in the process.

Alignment Tool: The Customer Star Framework

The Customer Star framework created by Stefan Michel helps executives and entrepreneurs align their decisions and actions around what customers really want. In order to successfully implement any service innovation, a firm must make choices in regard to each point of the customer star. Those choices must then align and support each other. When you apply the Customer Star Framework you can begin with any of its points. Service innovations may fail when the eight dimensions of the customer star are not in alignment. [16] Refer to Figure 3.3 for an example of the Customer Star Framework.

When using the Customer Star Framework to check service innovation alignment, a company must ask the following questions about the eight dimensions.

1. **Customer Segments.** Which current and future segments can we identify in our market? Which of these segments are we interested in? How do we serve different segments differently?
2. **Positioning.** What does our brand stand for?
3. **People.** What are the employee skills required? What is the leadership style and how does it shape the culture in the organization?

Figure 3.3 Customer Star Framework by Stefan Michel

4. **Information/IT.** How do we use the Internet and other IT systems for gathering, storing, and disseminating data? Which analytics do we use to convert data to insights?
5. **Products.** How do we innovate, manufacture, and distribute our products? How do we customize our products to each customer's needs? How do we bundle our products with services?
6. **Operations.** How do we design and manage our processes in all phases of the customer relationship? How do we link customer-facing processes with back-office work? How do we handle variability in terms of customer needs and demand/supply cycles?
7. **Partners.** In addition to suppliers and distributors, which partners are essential to serve your customers? What is our organization's role in providing customer value in the partnership?
8. **Profit Model.** What are our major revenue drivers, and what are our major cost drivers? How sensitive is the profit model with respect to fluctuating demand and costs?
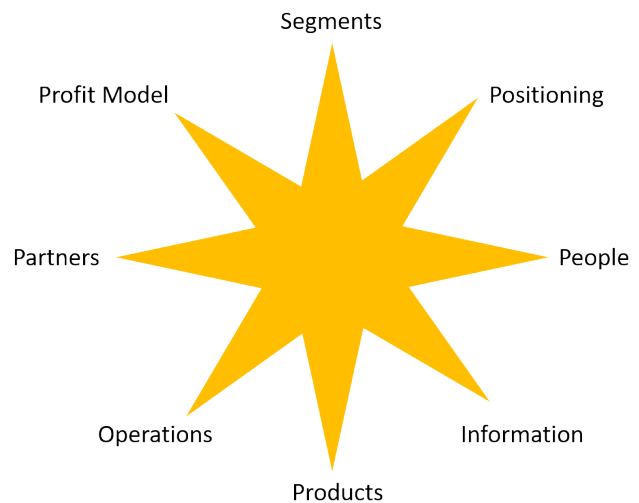
For example, if you operate a 4-star resort then you need to be sure that your products are of high quality, your employees understand how to provide excellent customer service, and the services you offer at the resort are what your target customers want, thus, will pay for. If you put a fast-food restaurant in a prestigious, high-class resort, the customers may frown upon it, as they want fine dining and they have expensive tastes. You may need to go back and determine your resort's positioning dimension. If you position the company as prestigious then you need the other dimensions to align with that in order to obtain and retain the customers in the segment you are seeking. Some brands that are thought of as prestige or luxury brands include Apple, BMW, Gucci, Ritz-Carlton, Tiffany, Rolex, and Cartier. If your resort is to be considered a luxury or prestige resort then you would want to align the eight dimensions accordingly, otherwise, your service innovation may fail to meet customer needs and expectations. On the other hand, if you operate a resort that is considered a fair-price, economy-class resort, then you would position your resort that way in your marketing efforts and

you would serve the needs of the customer segment who would be spending their money in this type of resort.

Issues Outside The Company

Business challenges and customer dissatisfaction are often due to problems, for which the company is NOT responsible, and to solve them, managers will need to think beyond the firm. Organizations may need to partner with external firms to solve problems stemming from the external environment, they may need to adapt processes to meet new government regulations, or they may need to change their business model in order to remain relevant to changing social trends and customer buying behaviours.

For example, many international students who wish to attend college or university in Canada are told by recruiters from their home country that they can come to Canada and work at the same time they attend school. When the students arrive they find that it is very difficult to be successful in their studies when they are working 30, 40, or 60 hours per week. Many need the income to pay the bills, they may not have a place to stay, or even understand how much living in Canada costs. Students end up failing many courses due to a lack of time to commit to schoolwork, becoming depressed, and some end up spending far more money than they budgeted for on college course fees when they have to retake courses they failed. While this may not be an issue directly related to the specific Canadian college they attend, it is probably an issue the Canadian colleges and universities need to address with the recruiting agencies in foreign countries. What might the colleges do to improve this situation? The colleges might implement an orientation course that all international students must take before they arrive in Canada or before they enroll and pay fees at a Canadian institution. This would set the expectations for students before they spend their money as well as acclimatize students to Canadian culture and Canadian college expectations. Can you think of other possible solutions?

Another example might be a retailer that is always out of stock with specific items. Customers may become upset or dissatisfied with the retailer when the items are not in stock. This problem may be an internal issue pertaining to incorrect ordering, but what if the issue is with the supplier? The retailer will have to decide if they need to switch suppliers, but what if they are locked into a contract, what then? During COVID many products were in short supply, including bicycles, toilet paper, hand sanitizer, refrigerators, and kayaks. Production shutdowns sent the price of lumber sky-high. Months spent quarantining led homeowners to spend more time outdoors, some taking on more do-it-yourself (DIY) renovation projects. And the fear of the unknown led to hoarding and stockpiling.[17]

Nearly two years after the pandemic began, the global supply chain mostly stabilized, but there was still one industry where shortages continue to abound: semiconductor chip manufacturing in the auto industry was one of the hardest hit. A semiconductor chip, also called a microchip, serves as the "brain" of modern electronics. With every new model, cars and trucks feature bigger infotainment systems and a host of other high-

tech car safety features. Each of these technology-packed features relies on semiconductor chips. Building semiconductor chips is an extremely complex, expensive, and time-consuming process. For that reason, there are only a handful of chip manufacturers in the world, and all of those manufacturers were currently operating at full capacity.[18]

You may have found it hard to visit your favourite retailer, see a doctor, or get into a restaurant during COVID. This was not the organization's fault or problem, but a larger national and global problem. Retailers, restaurants, and other service companies must abide by government health regulations and they took the health safety actions they were told to take. Some retailers and restaurants began offering services such as pickup, delivery, and online ordering with pickup in the parking lot. You could order groceries and pull up to the grocer's location and the staff would load your groceries into the trunk of your vehicle. Some companies already had those services in place which made it easier and quicker for them to adapt to COVID health regulations. These were some of the service solutions retailers came up with while they were NOT allowed to serve customers in-store or in-person or were restricted on the number of patrons they could have in the physical store at one time.

Key Takeaways

1. A **service innovation** changes the way customers are served to create value for customers and revenue for the company.

2. Companies must learn to tap the potential for service innovation made possible by **four evolving trends**: Higher customer expectations, the rise of the mobile Internet, Big data and advanced analytics, and the Internet of Things (IoT).

3. For a more promising approach through service innovation, companies should begin by asking the following questions.

   ◦ How can we **relieve** customers from activities they do not like to perform?
   ◦ How can we **enable** customers to perform activities they cannot do without our service?
   ◦ How can we make it **easier** for customers to do what they need or want to do?

4. Customers will often not pay more for attributes that do not bring them benefits, as from the customers' perspective this would not be of value. The formula for customer value can be written as **(Total Customer Benefits – Total Customer Costs) = Customer Value, or (B – C = CV)**

5. Tips for businesses to **Increase Customer Value**: Evaluate your customer experience, Focus on more than price, Collect customer data, Target your most loyal customers, and Segment your customer base.

6. When a company defines a new service innovation the best innovations are those that simultaneously improve the job to be done for **the user, the buyer, and the payer** because each may have different needs.

7. **Psychographics** are all about understanding customers' lifestyles, values, beliefs, and optimizing marketing to demonstrate to customers how the company can fulfill these psychographic variables by providing the benefits sought thus providing customers value.

8. Companies that thrive in an era of rapidly evolving customer expectations need to align their initiatives accordingly. The **Customer Star framework** created by Stefan Michel helps executives and entrepreneurs align their decisions and actions around what customers really want.

9. Business challenges and customer dissatisfaction are often due to problems, for which your company is NOT responsible, and to solve them, you will need to **think beyond your firm**.

End-of-Chapter Exercises

1. **Changes Impacting the Service Sector.** Research one of these companies and explain how this company is addressing the changes impacting the service sector: Bank of Nova Scotia, Canadian Tire, PepsiCo, McDonald's, or IKEA. Does the research relate to this chapter's content? If so, what does it say?

2. **Service Innovation Examples.** Reflect on the statement, "Many service innovations involve employing digital and technological innovations to offer a satisfactory customer

experience, or they aim to simplify existing customer processes to enhance ease and speed. Service innovations might also offer customers added value through designing brand new services or programs, or through coupling services with product purchases." Use the Internet to locate examples of each of the four types of service innovations mentioned in this statement. Share your findings with your class and professor.

3. **Walmart Service Innovation.** Conceptualize five ways in which Walmart could innovate its customer service offerings. Share your thoughts with the class and/or professor. Do your ideas align with Walmart's mission, vision, values, and goals? Do your ideas align with the customer segment that shops at Walmart? Do you think your ideas will be successful? Why or why not?

4. **Nordstrom Customer Insights.** Nordstrom is known for customer support excellence. Search the Internet to find information about how the business is using AI-powered analytics and customer insights to transform its digital approach. Discuss your findings with the class and/or professor.

5. **McDonald's Customer Star Framework.** Try applying the Customer Star Framework for McDonald's and start with Products=Fast Food and Profit Model=Franchised and Labour Costs=Low. Fill in the other points on the Customer Star Framework as you can and determine with a partner, your class, and/or professor. Determine if the Customer Star dimensions are aligned. You may wish to review the [LinkedIn Learning module, Service Innovation](#) by Stefan Michel who created the Customer Star Framework (you may require a subscription).

6. **User, Buyer, Payer Scenarios**. Come up with three (3) different sales scenarios, one where you are the user, buyer, and payer. One in which you are only the payer and someone else is the user and buyer. One in which you are the user and someone else is the buyer and payer. Share these scenarios with your class and professor and see if they agree with your user, buyer, and payer assignments within each scenario.

7. **Debate Service Safety.** Read [this article](#) about how there may be safety issues with taxi cab drivers operating mini-convenience stores within their cabs. Discuss with a partner whether or not you agree with the issues identified in the article. Should there be regulation on this service? Why might this be dangerous? How might this bring added value to customers? Would you want this service if you were paying for a taxi cab ride home from a night out? Share a brief summary of your discussion with your class and professor.

8. **Services Customers Value.** Assume you own a Hair Salon, besides cutting hair, what other services could you offer customers that would be a benefit they would value? Consider the value for different customer segments. Discuss with the class and/or professor.

Hair Salon

Self-Check Exercise – Dialog Cards – Service Innovation

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=42#h5p-4

Additional Resources

1. 20 Fresh Examples of [Customer Experience Innovation](#)
2. The [30 Things Your Customers Value Most](#)
3. A list of [Innovative Customer Service Ideas to Create Happier Customers](#)
4. [105 Service Businesses](#) to Start Today
5. 145 Service [Business Ideas](#)

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

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Notes

1. Wallstreetmojo Team. (n.d.). *Service innovation.* https://www.wallstreetmojo.com/service-innovation/
2. Canadian Visa. (n.d.). *Service industry.* https://canadianvisa.org/life-in-canada/key-industries/service-industry
3. McKinsey Quarterly. (2015, February 1). *Service innovation in a digital world.* https://www.mckinsey.com/business-functions/operations/our-insights/service-innovation-in-a-digital-world

4.   Uber. (n.d.). *About us.* https://www.uber.com/ca/en/about/?uclick_id=fd39501f-4872-46a5-842e-d17ac3fe26c3

5.   Helling, B. (2023, March 19). *How does Zipcar work? A comprehensive guide to your first rental.* https://www.ridester.com/how-does-zipcar-work/

6.   Khandelwal, A. (2023, July 13). *How does Amazon & Netflix personalization work?* https://vwo.com/blog/deliver-personalized-recommendations-the-amazon-netflix-way/

7.   Suprbag. (2021, October 22). *SuprBag: the in-cab convenience store.* https://www.linkedin.com/pulse/suprbag-in-cab-convenience-store-suprbagindia/

8.   Lingchao, X. (2018, May 15). *Taxis become convenience stores.* https://www.shine.cn/news/metro/1805154615/#:~:text=Transforming%20taxis%20into%20convenience%20stores%20is%20not%20new.,only%20Wangwang%20and%20Haibo%20are%20in%20the%20business.

9.   Morgan, B. (2019, October 21). 20 *fresh examples of customer experience innovation.* https://www.forbes.com/sites/blakemorgan/2019/10/21/20-fresh-examples-of-customer-experience-innovation/?sh=7f23d80c7c41

10.   Instacart. (n.d.). *About us.* https://www.instacart.com/company/about-us

11.   VIPets. (n.d.). *About us.* http://www.vip-pets.ca/

12.   Kaemingk, D. (2022, November 8). *11 great customer service examples in 2023.* https://www.qualtrics.com/blog/customer-service-examples/

13.   Michel, S. (2020, June 4). *Service innovation.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/service-innovation/innovation-and-value?autoAdvance=true&autoSkip=false&autoplay=true&resume=false&u=2167290

14.   Fontanella, C. (n.d.). *What is customer value?* https://blog.hubspot.com/service/customer-value

15.   Scalco, D. (2017, February 19). *5 companies innovating the service industry.* https://www.entrepreneur.com/article/287093

16.   Michel, S. (2020, June 4). *Service innovation.* https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Fservice-innovation%3Ftrk%3Dshare_ent_url%26shareId%3DRwn1bJZ8RrWHRQ%252FYPDxqjg%253D%253D

17.   Metz, J. (2021, October 22). *Car chip shortage 2021: What's going on?* https://www.erieinsurance.com/blog/car-chip-shortage-2021

18.   Metz, J. (2021, October 22). *Car chip shortage 2021: What's going on?* https://www.erieinsurance.com/blog/car-chip-shortage-2021

CHAPTER 4: PROCESS INNOVATION

Chapter 4 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. List the five requirements for creating a good business process.
2. Explain four reasons why bad business processes exist.
3. Explain why employees may choose to follow what is known as a business process "cow path".
4. Explain what it means to measure the right things when improving processes.
5. Explain how to implement a process improvement plan.
6. Describe what a BPMN diagram is and who benefits from it.

Business Process Improvement

Process innovation is probably the least attractive form of innovation. It is the combination of facilities, skills, and technologies used to produce, deliver, and support a product or provide a service. There are many ways business processes can be designed or improved. Process innovation can include changes in the equipment and technology used in manufacturing (including the software used in product design and development), improvement in the tools, techniques, and software solutions used to help in the supply chain and delivery system, changes in the tools used to sell and maintain goods, as well as methods used for accounting and customer service.[1]

Good business processes enable companies to satisfy both customers and employees. Good business processes can drive reliable and consistent results and support company growth. A **business process** is a sequence of steps progressing toward a business goal. This sequence of steps can be clearly depicted using a flowchart and may also be referred to as a business method. Developing and implementing business processes can help a

company improve efficiency, consistency, and quality. It can also reduce costs and risks. Business processes occur at all organizational levels and some are visible to customers, while others are not.

Types of Business Processes

1. **Management Processes**: The processes that plan, organize, coordinate, and control all the functions of the business.
2. **Operational Processes**: The processes that constitute the core business of the organization and create the primary value stream.
3. **Supporting Processes**: The processes that support the core processes. They help the business create an environment where the core processes can work better. Examples include accounting and technical support.

Processes are created to support a company's brand, function, values, and objectives, and may contain sub-process (such as a procedure or checklist). A **business procedure** is like a step-by-step recipe for how to complete a task and may be considered a simple type of process. A complex process can contain multiple procedures. For example, a procedure for showing a guest to their hotel room is part of the larger check-in process. Companies train their employees to follow processes and apply procedures so as to create high-quality and consistent outcomes for customers. An excellent example of a company using processes to streamline operations and maintain consistency and quality is McDonald's fast-food restaurant. McDonald's operating processes would include taking orders, making food, and serving it to the customers. The processes for making fries, burgers, and pies are each documented, and employees are trained on these processes. There are specific, documented, procedures for cooking food items. Machines are used to cook and warm food items and timers are used to enable employees to cook each burger or Egg McMuffin exactly the same way, each time, for every customer.

A simple business process might include the steps an employee follows to take a pizza order over the phone or the steps a college registrar's office takes to enroll an existing student in a 2nd-semester course. More complex processes might include the steps required to purchase new medical equipment for a hospital, especially if a new vendor must be contracted, or the steps the Human Resources department takes to hire new employees, which can include multiple steps such as accepting the offer, completing online forms, and reviewing the forms. Human Resources (HR) processes include several different processes and procedures, such as human resources planning, recruitment and selection, hiring and onboarding, performance management, employee development, managing employee leave and holiday requests, compliance with HR regulations, developing HR policies and procedures and disciplinary processes, succession planning, employee offboarding, and redundancy. Most businesses also have a customer success process which may include a customer onboarding process, a customer problem-solving process, and a customer feedback process. Businesses have many more

processes throughout their organizations such as sales and marketing processes, business operational processes, business finance and accounting processes, and more.

McDonald's is one example of a company that has automated its operational processes, as we can observe in its food preparation processes. **Business process automation** is a technology-driven strategy to automate a business process in order to accomplish it with minimum cost and in a shorter time. It is extremely useful for both simple and complex business processes.[2]

Some of the benefits of business process automation are:[3]

- Achieving greater efficiency
- Reducing human error
- Adapting to changing business needs
- Clarifying job roles and responsibilities

New employees have a good chance of job success once they learn the business processes. Processes in the kitchen at a restaurant might utilize ingredients, utensils, cooking equipment, recipes, etc. Processes in an office might utilize computers, software, office space, people, documents, etc. Processes in a paper factory might utilize people, machines, safety equipment and procedures, raw materials such as pulp/paper, etc. Most big companies have hundreds of interconnected business processes. Knowing how to design, manage, and improve business processes gives companies the power to manage and grow the business.

Good business processes can improve customer satisfaction while missing or badly designed processes can have a negative effect on customer satisfaction. Assume you are a student at a college and you wish to add another course to your schedule, which includes paying additional fees. If there is a good process in place, all employees and computer systems you interact with consistently guide you in the same direction in order for you to complete the process of adding and paying for an additional course. If the process is not clearly designed or it is missing, then employees will be confused and may

Students may be frustrated when processes are not clearly defined

have their own personal way of doing tasks and systems may not be designed for self-service tasks that enable you to add a course to your timetable.

Business Process Requirements

A good business process meets the following requirements. [4]

1. Provides clear instruction
2. Answers frequently asked questions
3. Teaches new things
4. Measures success
5. Provides corrective actions

Why do bad business processes exist?

1. **Assumptions.** Often companies assume they know what customers want. It is important to challenge these assumptions through research and analysis.
2. **Ambiguity.** Employees are uncertain of the process. Maybe the process needs more clarification.
3. **Miscommunication.** The process may not be communicated to employees and employees develop their own processes.
4. **Misalignment.** Advertising and actions are not aligned with the goals of the process.

Since processes are interrelated, each process should consider its relationships with other processes. Good business processes always need to be looking forward and require periodic review and revision to keep up with changes in the internal and external business environments. If a company experiences massive growth, will the processes still be effective and efficient? If a process is good at supporting 20 customers, does it still work when supporting 200 customers? Some processes cannot be changed significantly due to a lack of availability of technology and tools. Maybe the steps in the process are not the problem, perhaps the company tools and technology need to be improved. Companies need to ensure their processes are built for both present demand and future growth; that processes are scalable.

Lack of a good process can lead to inconsistency, time loss, employee frustration, customer frustration and dissatisfaction, lost revenue, etc. So you can see why it is important to have good processes in place and ensure staff understands these processes and apply them consistently. Without a good business process company growth and success are difficult to achieve.

Not only is it important to have processes but it is also equally important that these processes be effective and efficient in reaching the goal. If the goal is to add a course to your college timetable, then the process and procedures you follow to do that should help you obtain that goal (effective) and should do it in a timely and user-friendly way (efficient). When processes are created with these things in mind, they increase employee effectiveness and efficiency, maintain consistency and quality, and improve customer satisfaction. Customers

continue to shop with a business because of reliability in product or service quality, price, design, etc. Employees become good at their jobs because they follow the business process they were given. Once good processes are established at one business location, the organization can adopt the same processes at multiple locations (just like McDonald's does).

Explore the Concept – Review an Amazon.com Process

Business Process Requirements

Does the following Amazon.com Seller process meet the following business requirements for processes?

1. Provides clear instruction
2. Answers frequently asked questions
3. Teaches new things
4. Measures success
5. Provides corrective actions

Amazon.com Seller: Print a packing slip process

Use **Manage Orders** to print a packing slip for each individual order.

To print a packing slip for an order:

1. Click **Orders**>**Manage Orders**.
2. In your list of orders, find the order, and then click the **Print packing slip** button. A print dialog box and your packing slip will appear.
3. In the print dialog box, click **OK** to print the packing slip.
4. Put the packing slip in the box with the items you are sending, then seal the box.

You can reprint a packing slip for an order using these steps at any time.

Tip: To print multiple packing slips at the same time, select the check box in the upper-left corner of the list, choose **Print packing slip for selected orders** from the drop-down menu, and then click **Go**.

Need some **help?** See more on Seller Central

Cow Path Theory

The **Cow Path Theory** is a theory that many organizations have processes they have been following for years and may not notice that these existing processes may no longer be efficient or effective. New employees follow the processes they are told to follow and often without questioning them because new employees don't want to make a fuss or they feel the process must be right because someone in the company developed it and everyone has been following it for years. Existing employees may continue to follow the old, outdated processes because they are used to them and don't wish to put in the effort to learn something new, or they don't feel it is their job to question the processes that have been in place for many years. Refer to Figure 4.1 to see how a new path much be a more efficient path for employees to take.

Basically, when leaders follow the cow path they are just doing things the way they have always been done without making changes to it. But there are exceptions to this rule. Just because something has always been done a certain way doesn't mean that it can't be improved upon or even replaced with

Figure 4.1 Employees follow the Cow Path when they should be creating a new, more efficient path

something better. Think about how many times you've ordered a pizza. It's not as though the process of ordering one has changed much in recent years, but it is now more efficient and effective than ever before. A problem with "cow paths" is that they are so common that no one notices them. The more common something is, the less likely it is that anyone will notice when it's being done wrong. This means that people who are in a position to change things have little incentive to do so. Cow paths are the result of an unhealthy work environment, where there is no accountability for poor results, and where people are rewarded for failure. Cow paths are usually difficult to detect because they tend to be systemic and non-discriminatory. "Don't pave the cow path" often refers specifically to businesses that create their own way of doing things in order to innovate and improve on what has been done before. [5]
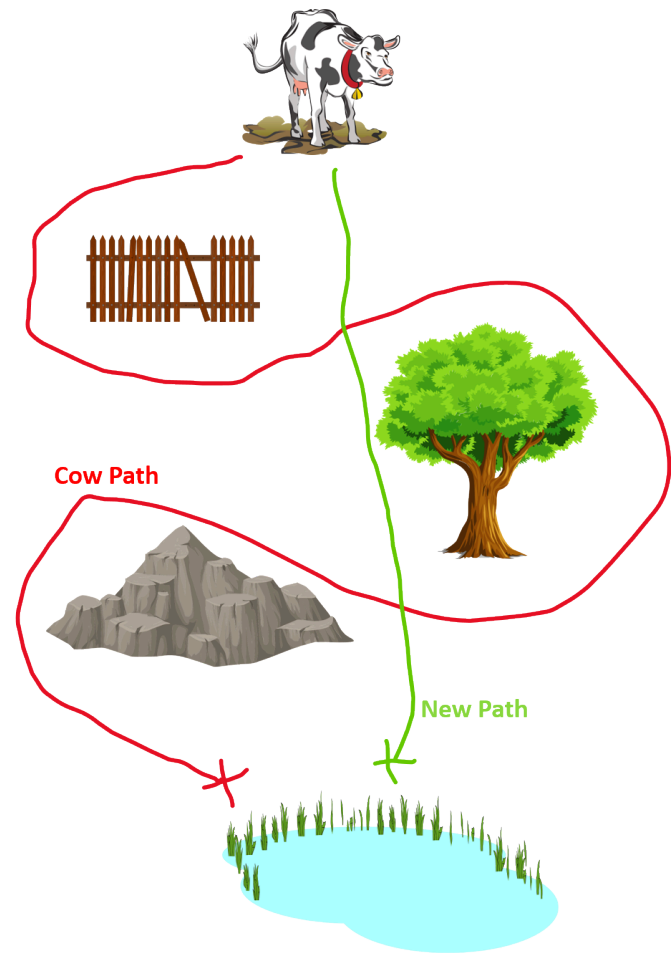
Process Improvement Steps

The first step in improving any process is setting a goal, then the next step is measuring your progress toward that goal. If there is an existing process in place then you must ask the following questions. Is the business process currently effective in achieving the goal it was designed to do? Is the original goal still the goal to achieve now? Is the original goal efficient? If the answer to any of these questions is "no" then there may be an opportunity to improve the business process.

Play the "Business Process Improvement Tutorial for Beginners" YouTube video below for an introduction to business process improvement.[6] Transcript for "Business Process Improvement Tutorial for Beginners" Video [PDF–New Tab]. Closed captioning is available on YouTube.

> 🖼 *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=48#oembed-1*

Measure the Right Things

Before a process can be improved it must be measured so the company will know if the changes have made a difference. For instance, you will want to know if the changes in results were due to something you did, or something else, or just pure chance. There is a 50/50 chance that this year will be better than last year even if you make no changes.[7]

Most process improvements have one or more of the following goals: improve quality, decrease lead time (the time between the initiation and completion of a production process), or decrease costs. Should each goal be measured? Which goal should get priority? It is difficult to achieve all three goals at the same time. For example, if a company reduces costs, that may also reduce quality or something else that is important. If time is reduced, that may increase costs. A company can reduce costs by reducing quality, while higher quality products may take a longer time to produce.

Never try to measure just one number without context. For example, if sales revenue has gone up, that seems good, but what else is happening? Was there a sale, were employees reducing prices so they could sell more and gain higher commissions, or has something else affected revenue? If customer complaints have increased, at first this seems bad, but what if employees have just gotten better at listening to customers and reporting complaints, or maybe you implemented an online complaint process that has resulted in customers being able to submit complaints more easily and this has contributed to the rise in complaints. So never measure just one number.

If you find out that your school's student satisfaction score is 5% worse than another school you must question what "worse" really means, and whether or not 5% is really significant. Maybe your school is better at other things and worse at one thing. Maybe it is just that this year your school was under construction and that affected student satisfaction negatively, but usually your school has much higher scores. Take measurements as a starting point to asking the question "Why?" (Why are these numbers as they are?). This will help you understand the causes of the lower numbers or scores so you can begin to take action.[8]

Implement a Process Improvement Plan

Given how process improvements deliver a range of organizational benefits from better communication to increased profitability, it's essential to know how to implement a process improvement plan. Listed below are the steps to do so. [9]

1. **Identify the improvement opportunity.** Map the current process. Identify the pain points (things that are not working well).
2. **Obtain stakeholder buy-in.** Clarify stakeholders' roles and degree of involvement with the process change. Explain the rationale for change.
3. **Design the process improvement plan.** Determine the changes required to improve the process and decide how you will measure the effectiveness of the changes, evaluate any risks, and identify how the changes will affect the customer experience; for example, introducing a technical solution to streamline the workflow helps, particularly if the solution automates many of the process steps. Transforming processes affects an organization to varying degrees depending on the extent of the changes. If the process improvement is larger than small adjustments affecting a single team, project planning may be needed with a full project plan incorporating the five project management process groups. This includes identifying budgets to cover costs like training and any additional resource requirements needed to execute the changes.
4. **Test the changes.** Often when designing new processes a company might test in a single department at a single location before implementing the changes in all departments at multiple locations, or before integrating a new technology system with an old technology system. Take time to test thoroughly and compile measurable results for analysis. Make adjustments as needed, then when you are sure the new process works according to plan then you can roll it out across the organization.
5. **Monitor and optimize.** Even after thorough testing, process improvements require daily monitoring in the early weeks of a rollout to catch any issues that may have been missed during the test phase. The monitoring should compare the results of the improved process against the goals identified at the start of the project. Collect more feedback from stakeholders and continue to optimize until you have met or exceeded all benchmarks for the process.

Once a company improves a process, the reality is that it must review the process again in the future. Business goals, market forces, and new technologies evolve, making established processes and procedures inefficient or obsolete. Rather than execute a big project whenever a change is required, most organizations adopt an approach of small, iterative, improvements that happen routinely over time.

Tools and Techniques for Improving Processes

The tools and techniques most commonly used in process improvement are:

- Problem-solving methodology, such as DRIVE
- Process mapping
- Process flowcharting
- Force field analysis
- Cause & effect diagrams
- CEDAC
- Brainstorming
- Pareto analysis
- Statistical process control (SPC)
- Control charts
- Check sheets
- Block Diagrams
- Flowcharts
- Bar charts
- Scatter diagrams
- Matrix analysis
- Dot plot or tally chart
- Histograms

The most commonly used business process diagramming tools are Business Process Modeling Notation (BPMN), Data Flow Diagram (DFD), and the Unified Modeling Language (UML). **BPMN (Business Process Modeling Notation)** is a graphical method of representing business processes within a business process diagram. BPMN diagrams help the whole team see the flow of the process. For example, the process improvement team may be a cross-functional team consisting of various stakeholders, such as technical personnel who manage Information technology, managers responsible for the process as well as managers of other departments who may be affected by the process change, employees who apply the process, and possibly users (customers, clients, students).

Review Figure 4.2 below of a partial BPMN diagram for a Fast Food Restaurant, Customer Order Process.
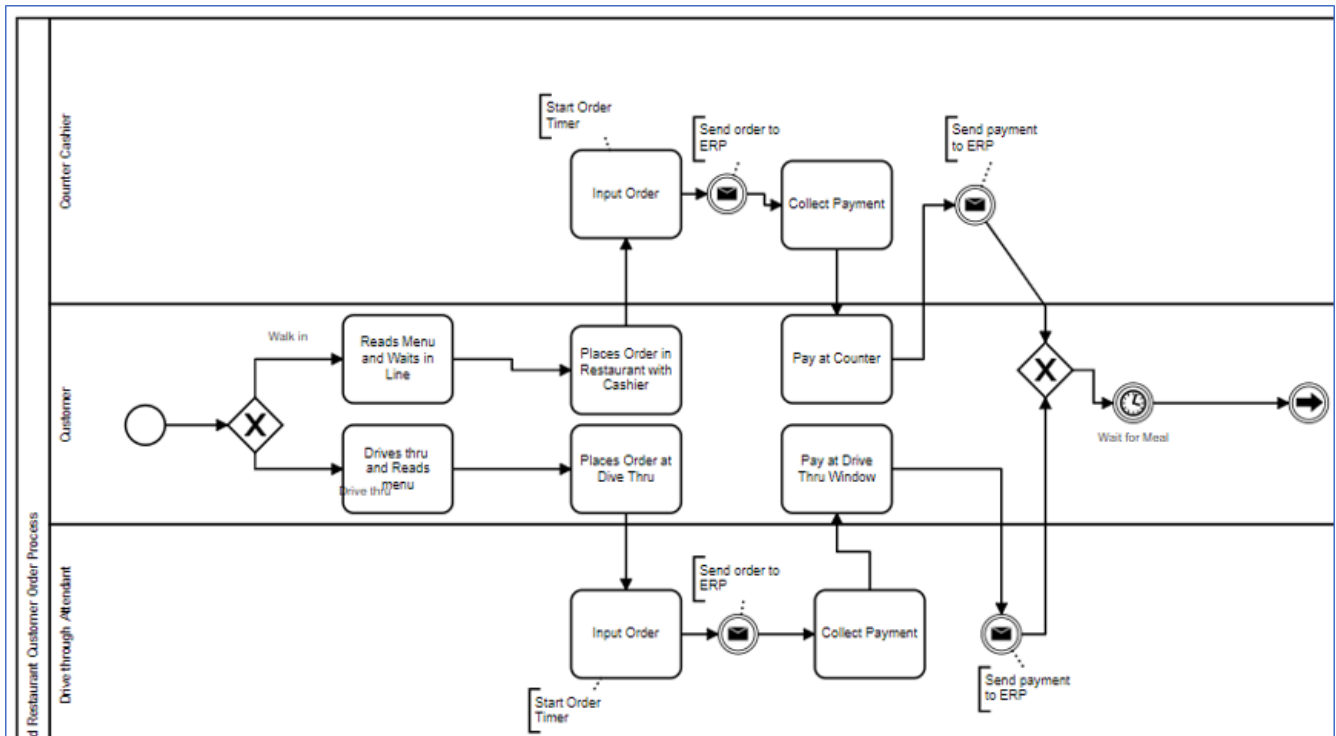

Figure 4.2 Partial BPMN Diagram Fast Food Order Process

The BPMN above diagrams the process for the current way the customer order process happens (current state). There are many ways to create this diagram and before starting to diagram the business analyst must first gather information from the stakeholders who implemented, manage, and use the process so as to gain an understanding of who does what, when things get done, how things get done, what is necessary to do and when one step depends upon another (triggers). Once that information has been gathered and analyzed, the business analyst diagrams the process and then gains confirmation and approval from the stakeholders that the diagram does indeed reflect what is currently happening.

After diagramming and gaining an understanding of the current state of the process (the way things are done), the business analyst will analyze the process to determine if improvements could be made. They will question the stakeholders on pain points, what works, and what doesn't, and ask them to share their goals for improvements. The business analyst will then diagram a future state process (what the process will be after the improvements are implemented) and again, gain approval for the proposed changes. Then the changes are implemented, first on a small scale or in one location only, to ensure all works as planned. Maybe a few adjustments are made, then the new process is implemented fully.

In the example above you see the partial process you see is diagrammed in a pool called "Fast Food Restaurant

Customer Order Process" Each role gets its own lane (swimlane) and each role is an actor (person or system that is part of the process). The customer can be diagrammed in their own pool or within the company pool. If we follow the process flow we see that the process begins with the customer (start symbol), then the customer makes a decision (Xor gateway) to either use the drive-thru or go into the restaurant to eat. After that, the order is placed with the corresponding actor (employee) who then enters the order into the enterprise resource system (ERP) and collects the payment from the customer. The order and the payment details are sent to the ERP (diagrammed in its own lane (swimlane)). After that, the process flow comes back together (convergent gateway) and the customer waits for their meal (timer). What do you think the next step would be? That's sort of a trick question because many things are happening while the customer waits. There are actually quite a few more steps because the kitchen staff would need to prepare the meal, a staff member would get the drinks/fries, a staff member would package the meal, and a staff member would deliver the order to the customer either at the drive-thru or front counter. These tasks may be done by the same staff member or several staff members. You see there are lots of things to think about when diagramming a business process. Learning how to diagram processes is a course in itself, but don't let that stop you from giving it a try. Check out the chapter exercises below for some ideas.

Process Improvement Methodologies

Process improvement is so important to business success that a number of methodologies have developed over time to address this key concept. Listed below are some of the most common process improvement models.[10]

1. **Six Sigma.** One of the most famous process improvement frameworks is Six Sigma. It is a set of techniques designed to make business processes more effective and efficient. In addition to establishing a culture dedicated to continuous process improvement, Six Sigma offers tools and techniques that reduce variance, eliminate defects, and help identify the root causes of errors, allowing organizations to create better products and services for consumers. General Electric, one of the most successful companies implementing Six Sigma, has estimated benefits on the order of $10 billion during the first five years of implementation. GE first began Six Sigma in 1995 after Motorola and Allied Signal blazed the Six Sigma trail. Since then, thousands of companies around the world have discovered the far-reaching benefits of Six Sigma.[11]

2. **Kaizen.** When applied to the workplace KAIZEN™ means continuing improvement involving everyone – managers and workers alike. This methodology originated in Japan, and aims to eliminate all waste from process flows to achieve a high level of efficiency and productivity. Kaizen is known for its team approach where everyone in the organization shares ideas and works together to keep improving every area of a business. If mistakes occur, the goal is to learn from them as part of the cycle of continuous improvement.

3. **PDCA** (plan-do-check-act). Plan-do-check-act (PDCA) outlines a four-step scientific approach spelled

out in its name. First, identify the problem or opportunity and the improvements you hope to achieve. Once a potential solution is identified, test it safely with a small-scale pilot project. Then, analyze if the changes had the desired impact. Finally, you take action based on your data analysis.

4. **BPR.** Business process re-engineering (BPR) is a framework that tackles process improvement at scale. Rather than address a small component of an overall workflow, BPR attempts to address issues and eliminate unnecessary steps by holistically redesigning an entire process from end to end. The changes can be so substantial that a change management plantypically accompanies the use of BPR.[12]

5. **Gap Analysis.** A gap is a problem, issue, or challenge, and could be an opportunity for improvement. Gap analysis compares two different states of something, the current state, and the desired state. It is mainly used to assess where a company or process is today (current state), where it needs to be in the future (future state), and how the gap between current and future states can be closed. Gap analysis is also known as need analysis or needs assessment. You can implement this methodology to confront many types of gaps such as gaps in operational processes, product features, profitability, and labour shortages.

6. **Process Mapping.** A useful approach that applies careful analysis and a visualization tool to address process issues — or to create a new workflow from scratch — is process mapping. In this method, you create a document that details the steps in a procedure, usually captured in a flowchart. The document allows you to see the entire process and identify areas to change. It then serves as a reference tool for subsequent process changes, or for writing a runbook.[13]

Key Takeaways

1. A **business process** is a sequence of steps progressing toward a business goal. This sequence of steps can be clearly depicted using a flowchart and may also be referred to as a business method. Developing and implementing business processes can help a company **improve efficiency, consistency, and quality.** It can also reduce costs and risks. Business processes occur at all organizational levels and some are visible to customers, while others are not.

2. **Good business processes** can improve customer satisfaction while missing or badly designed processes can have a negative effect on customer satisfaction. A good business process meets the following requirements: Provides clear instruction, Answers frequently

asked questions, Teaches new things, Measures success, and Provides corrective actions.

3. Why do **bad business processes** exist? Because of assumptions, ambiguity, miscommunication, and misalignment.

4. The **Cow Path Theory** is a theory that many organizations have processes they have been following for years and may not notice that these old processes may no longer be efficient or effective.

5. The **first step** in improving any process is setting a goal, then the next step is measuring your progress toward that goal. Most process improvements attempt to do one or more of the following: improve quality, decrease lead time (the time between the initiation and completion of a production process), or decrease costs. Never try to measure just one number without context. Ask the question "why" one number is up and another is down. Compare changes in different measurements.

6. Given how process improvements deliver a range of organizational benefits from better communication to increased profitability, it's essential to know how to implement a **process improvement plan**. Below are the steps to do so.

   - Identify the improvement opportunity
   - Obtain stakeholder buy-in
   - Design the process improvement plan
   - Test the changes
   - Monitor and optimize

7. The most commonly used **business process diagramming tools** are Business Process Modeling Notation (BPMN), Data Flow Diagram (DFD), and the Unified Modeling Language (UML).

8. Process improvement is so important to business success that a number of **methodologies** have developed over time to address this key concept. Some of the most common process improvement models include Six Sigma, Kaizen, PDCA, BPR, Gap Analysis, and Process Mapping.

End-of-Chapter Exercises

1. **Procedure.** A procedure is like a step-by-step recipe for how to complete a task. Procedures are often written down and are part of a larger process. For example, If you are a student who wants to change your timetable, there is a process for that, and the first step would be to log in to the computer system. What are the steps involved (the procedure) in logging into the computer system?

2. **Order Process.** Review the "Order Process" from [Amazon Seller Central, The Order Process](#). Consider the following questions. What suggestions might you make to improve the process? What procedures do you think are involved in specific steps of the process? For example, when an order is canceled what procedure(s) occurs? Discuss with a partner, the class, and/or your professor whether or not this order process meets the business process requirements provided in this chapter.

3. **Automated Process.** Search the Internet to find information on any company that has automated one or more of its business processes. What prompted the company to automate? What benefits have the company and its customers experienced due to the automation process? Share your findings with your class and professor.

4. **Daily Process.** Think about a process you do each day, getting dressed, going to work, making breakfast, etc. Write down the steps (the process) you take to complete the objective (goal). Share your process with a partner, the class, and/or your professor, and together, consider how you might improve the process for better efficiency and/or effectiveness.

5. **BPMN Diagram.** Assume you are helping your friend prepare for a dinner party. You need to help make fish tacos for the party. Use a BPMN diagramming tool to diagram the "Make Fish Taco" process. Assume two roles (actors): a stationary assembler in the kitchen and a runner who gets items from different spots in the kitchen. Tip: To begin write on a piece of paper a sequential list of activities needed to make a fish taco. Use a free diagramming tool such as [Draw.IO](#) and select new swimlane diagram, OR use [Camunda](#) which can be downloaded or used online and provides a [free tutorial](#).

Self-Check Exercise – Quiz – Process Innovation

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=48#h5p-5

Additional Resources

1. What is a Business Process?
2. LinkedIn Learning Business Process Improvement Training video
3. BPMN 2.0 Tutorial: Get started with Process Modeling – Camunda
4. What is Business Process Innovation and How Can It Improve Organization and Efficiency?
5. Kaizen methodology tutorial for continuous improvement – YouTube video
6. The Beginners Guide to Business Process Management (BPM)
7. What is Business Process Analysis?
8. The Extensive Guide to Business Processes
9. Business Process Example: 35 Processes That Businesses Need
10. 8 Types of Business Processes

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation fea-

tures of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

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Notes

1. Differential, (2020, March 20). *Three types of innovation: Product, process, and business model.* https://www.differential.com/posts/the-3-types-of-innovation-product-process-business-model/

2. kissflow. (2023, July 12). *The extensive guide to business processes for 2024.* https://kissflow.com/workflow/bpm/business-process/

3. kissflow. (2023, July 12). *The extensive guide to business processes for 2024.* https://kissflow.com/workflow/bpm/business-process/

4. Davila, E. (2019, February 25). *Business process improvement.* [Video]. LinkedIn Learning. [https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Fbusiness-process-improvement%3Ftrk%3Dshare_ent_url%26shareId%3D8zimyiAZQOqi27vc6W5bzA%253D%253D](https://www.linkedin.com/)

5. Narayanamurthi, (2021, September 30). *Paving the cow path: Why you shouldn't pave the cow path in your business.* [https://agileseeds.com/paving-cow-path/#:~:text=Cow%20Path%20Theory%20The%20Cow%20Path%20Theory%20is,if%20it%20may%20not%20be%20the%20best%20option.](https://agileseeds.com/paving-cow-path/)

6. Invensis Learning. (2021, February 25). *Business process improvement tutorial for beginners.* [Video]. YouTube. https://youtu.be/creyvNYr-e4

7. Croft, C. (2020, January 9). *Business improvement* foundations. [Video]. LinkedIn Learning. [https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Fprocess-improvement-foundations%3Ftrk%3Dshare_ent_url%26shareId%3DAyJebGv3QFGaHiNzNhjo2A%253D%253D](https://www.linkedin.com/)

8. Croft, C. (2020, January 9). *Business improvement foundations.* [Video]. LinkedIn Learning. [https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Fprocess-improvement-foundations%3Ftrk%3Dshare_ent_url%26shareId%3DAyJebGv3QFGaHiNzNhjo2A%253D%253D](https://www.linkedin.com/)

9. Izquierdo, R. (2020, November 17). *How to implement process improvements for your small business.* [https://www.fool.com/the-blueprint/process-improvement/#:~:text=%20Process%20improvement%20steps%20%201%20Step%201%3A,real%20life.%20Because%20modifying%20a%20process...%20More%20](https://www.fool.com/the-blueprint/process-improvement/)

10. Izquierdo, R. (2020, November 17). *How to implement process improvements for your small business.* [https://www.fool.com/the-blueprint/process-improvement/#:~:text=%20Process%20improvement%20steps%20%201%20Step%201%3A,real%20life.%20Because%20modifying%20a%20process...%20More%20](https://www.fool.com/the-blueprint/process-improvement/)

11. ISIXSIGMA, (n.d.). *What is Six Sigma?* https://www.isixsigma.com/new-to-six-sigma/getting-started/what-six-sigma/

12. Izquierdo, R. (2020, November 17). *How to implement process improvements for your small business.* https://www.fool.com/the-blueprint/process-improvement/#:~:text=%20Process%20improvement%20steps%20%201%20Step%201%3A,real%20life.%20Because%20modifying%20a%20process...%20More%20

13. Izquierdo, R. (2020, November 17). *How to implement process improvements for your small business.* https://www.fool.com/the-blueprint/process-improvement/#:~:text=%20Process%20improvement%20steps%20%201%20Step%201%3A,real%20life.%20Because%20modifying%20a%20process...%20More%20

CHAPTER 5: SUSTAINABLE INNOVATION

Chapter 5 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Define "sustainable innovation".
2. Discuss the United Nations Sustainable Development Goals.
3. List three differences between sustainable innovation and traditional innovation.
4. Discuss the five approaches used by organizations to facilitate change through sustainable innovation design.
5. Explain what is meant by "Circular Economy".

Definition of Sustainable Innovation

What is meant by sustainable innovation? **Sustainability** is the capacity to endure in a relatively ongoing way. **Sustainable innovation** means that companies seek out ways in which to sustain continuous innovation/improvement for company growth, competitive advantage, increased market share, etc. The right company structure can help make innovation a sustainable practice. Organizations cannot afford to put resources (time, people, money) into innovating only to have these innovations fail. Companies structure for innovation to help sustain, or maintain, ongoing innovation in an effort to stay competitive in their markets. Allocating resources appropriately, ensuring feasibility, and reporting a return on investment are important steps in creating a sustainable innovative business environment.

The term sustainability is also used to refer to environmental sustainability. **Environmental sustainability** focuses on acting in a way that ensures future generations have the natural resources available to live an equal, if not better, way of life as current generations. Many innovations today are focused on solving environmental issues. The Sustainable Development Goals (SDGs) of the United Nations are broad and ambitious, calling

on all countries to make tangible improvements to the lives of their citizens. The goals (shown below in Figure 5.1) encompass social, environmental, and economic aspects.

Figure 5.1 United Nations Sustainable Development Goals

Our world has grown increasingly complex, and it's no longer enough for individual organizations, companies, or even governments to apply superficial fixes of their own making to chronic problems. Solutions that are not inclusive or do not consider root causes are by definition short-sighted. Short-sighted solutions may not continue to work over time. Societal issues like poverty, social inequality, racial injustice, and food insecurity, to name a few, require a new kind of collaboration between the business, the nonprofit, and the government sectors.[1]

The world is facing a number of environmental, economic, and social challenges. Our future depends on sustainable solutions that improve our lives, without adversely affecting our neighbors or our ecosystems.

Consumers today care about the world they live in and the people of the earth and businesses need to care as well. The term, **Triple Bottom Line** is often used to refer to the concept that businesses need to not only be

concerned with making a profit but also be concerned about the manner in which they do so. The three parts of the Triple Bottom Line include considering the impact that business operations and innovation have on societal, environmental, and financial well-being; in other words, people, planet, and profit (respectively). Consumers put pressure on companies to do good; good for their customers, communities, and investors; good for the planet by reducing pollution or innovating to support the environment and communities; and after doing these things, consumers feel that it is then acceptable for the company to make a profit. Some business leaders think this is a terrible idea often because operating a business with sustainability in mind usually increases costs. With that said, many consumers are willing to pay a little more for pet-friendly, environment-friendly, and people-friendly products and services. You may have noticed that many innovations that are good for the environment are also good for people and therefore are supported by the people and will generate a profit for the business in the long run.

Sustainable Innovation Collaboration

The Ivey Innovation Learning Lab is a new approach to learning that builds unique insights from leading academic thinking and peer-to-peer dialogue with fellow leaders. Participants come from business, government, and academia. The Lab consortium knows that the way in which people live and work is being profoundly disrupted. The knowledge and tools of the past will not necessarily help navigate the future, nor solve the urgent and complex challenges facing society and business.

Play the "Shaping the Future of Innovation", Ivey Business School YouTube video below to learn about the Ivey Centre for Building Sustainable Innovations.[2] [Transcript for "Shaping the Future of Innovation" Video [PDF–New Tab]](). Closed captioning is available on YouTube.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=54#oembed-1

Difference Between Sustainable Innovation and Traditional Innovation

Both traditional and sustainable innovation involves developing new products, services, or processes. Three core features set sustainable innovation apart.

1. **Sustainable Business.** Sustainable innovation intentionally aims to "meet the needs of present genera-

tions without compromising the needs of future generations." It requires businesses to actively incorporate issues such as those defined by the United Nations Sustainability Goals. Companies that engage in sustainable innovation think long-term, about aligning with consumer demands for fair working conditions, environmentally friendly processes and products, improvements in communities, etc. These companies understand that consumers evaluate how ethical and sustainable an organization is, and base their decisions on whether or not to support a business on these evaluations.[3]

2. **Corporate Culture.** Unlike traditional innovations that are mostly performed within a separate R&D department or unit, sustainable innovations are likely to be more successful when they are deeply embedded in the firm's culture. When sustainability is not part of the corporate culture, the pursuit of short-term profits will suppress sustainability-oriented creative ideas without giving them sufficient time to mature. Sustainable innovation is disruptive because it can result in better business models, improved processes, streamlined resource flows, reduced waste and cost, and create new market segments entirely, making it harder for corporations to defend the status quo.[4]

3. **Systems Thinking.** Sustainable innovation is more collaborative because it is a cross-discipline concept. Companies must reach out across industries to unlock the value of sustainable innovations. It changes the corporate "value chain" to more of a "value web." Companies consider how their innovations affect various stakeholders, the environment, and society.[5]

Facilitating Change Through Sustainable Innovation Design

Approaches to Sustainability

The Institute for Manufacturing at the University of Cambridge crafted a chart of increasingly complex approaches to sustainability for designers.[6]

1. **Green Design.** Green design is the most basic level as it describes design efforts that optimize individual aspects of product design, for example, replacing virgin plastics with recycled plastics.
2. **Eco-Design.** The next level is eco-design because it goes beyond single materials and focuses on the life cycle of the entire product. For example, selecting low-impact material choices, optimized manufacturing, efficient distribution, and optimized product lifetime.
3. **Sustainable Product Design.** This approach added aspects of social fairness to the design equation, so it is only at this point that design can be considered to address the triple bottom line.
4. **Design for Sustainability.** This is the point where design no longer focuses only on design for products but rather a systemic lens is being applied. Design for sustainability includes four domains: design for symbolic and visual communications, design for material objects, design of activities and organized services, and design for complex systems or environments for living, working, playing, and learning.

Issues of democracy and justice are also incorporated into this lens.

5. **Transformative Design.** Includes all of the above and adds the design of entirely new ways of thinking about the human experience in the future. This is often achieved through creating solutions that highlight future ways of living.

Examples of Sustainable Innovations

Eco-friendly Biofuel. Through sustainable innovation, companies can invent and offer novel products or services that directly contribute to achieving sustainability. For example, Bio-bean, a British startup, developed an eco-friendly biofuel made from coffee waste to help power London's double-decker buses. Bio-bean also upcycles spent coffee grounds into eco-friendly products such as coffee logs and coffee pellets—alternatives to carbon-heavy fuels such as coal briquettes and imported wood logs. Bio-bean is using material previously considered waste, contributing to a circular economy while generating approximately $10 million (USD) in annual revenue in 2020.[7]

Fairly-sourced Smartphones. Sustainable innovation is not only about inventing novel products or services. Firms can also innovate sustainably while offering existing products or services when they change their processes. Process changes can occur in many areas, e.g. design, production, marketing, and even HR. For example, Fairphone, a Dutch social enterprise, offers consumers fairly-sourced smartphones. Unlike bio-bean, which created novel products (i.e., logs and pellets made out of coffee waste), Fairphone products do not have any new technical features. Instead, Fairphone dramatically changed the smartphone production process to make it more responsible and sustainable. They use recycled and responsibly mined materials and provide their workers with fair wages and good labor conditions. Because approximately 80% of the emissions of a smartphone come from its production, Fairphone designs its phones to last. They have a modular design which makes repairs and upgrades easier, thereby significantly reducing e-waste.[8]

Smog Vacuum Cleaner. Daan Roosegaarde is the mastermind behind the world's first smog vacuum cleaner. The Smog Free Tower measures almost 23 feet high (7 meters) and sucks in polluted air, cleaning it through a process of ionization before releasing it again. At its peak performance, the tower cleans 30,000 m3 of air per hour. Thanks to Roosegaarde's design, you can even wear rings made from the compressed smog particles collected from the tower. By buying and wearing a Smog Free Ring, you're contributing to over 10,700 square feet (1000 square meters) of clean air. The project has garnered a lot of attention since its inception, winning multiple awards. Recent tower campaigns have been launched in South Korea, China, the Netherlands, Mexico, and Poland.[9]

Solar Glass. Solar glass could change the way we create homes and commercial buildings. Researchers at the University of Michigan are developing solar glass, a sustainable engineering project that has generated a lot of buzz in recent years. Just as the name implies, solar glass would be able to capture and store solar energy.

According to the research team, 5 to 7 billion square meters of usable window space exists, enough to power a full 40% of US energy needs using solar glass.[10]

Edible Cutlery. A green alternative to plastic cutlery, Bakey's edible alternative comes in three different flavors—plain, savory, and sweet. They're 100% natural and will biodegrade if not consumed.[11]

Edible spoons

Green Buildings. Leadership in Energy and Environmental Design or LEED® is an international symbol of sustainability excellence and green building leadership. LEED's proven and holistic approach helps virtually all building types lower carbon emissions, conserve resources, and reduce operating costs by prioritizing sustainable practices. Canada is one of the top territories in the world for LEED certification. Did you know that buildings generate nearly 30% of all greenhouse gases, and 35% of landfill waste, while consuming up to 70% of municipal water?[12]

Sustainable design continues to evolve with new technology and understanding. Architects and designers are thinking into the future and creating buildings based on a broader concept of sustainability; one that embraces more than improved energy performance. With building design having a profound impact on the environment, its occupants, and the economy, architects and designers have a unique ability to impart real positive change.[13]

The green building movement is challenging our community, architects, engineers, building owners, lenders, appraisers, and others, to think differently from their predecessors, or even from themselves. In less than a decade, the green building movement changed the entire building industry and manufacturing industry for construction products and equipment. With the increased demand for green and healthy materials, efficient equipment, and fixtures, green buildings became cost-effective and achievable.[14]

Water Capture. Some innovations are the result of using nature as a design mentor (biomimicry), for example, recent advancements in fog catchers or netting systems in arid climates help communities capture water from the morning fog and were modeled on an understanding of how the texture on the Namibian Desert Beetle's forewings captures moisture so efficiently. The Biomimicry Institute provides learning journals that can help designers create a strong foundation for further learning. They have also created an amazing website called "Ask Nature".[15]

Sanitized Toilets. Almost half the world's population, 3.5 billion people, have no choice but to use unsafe sanitation facilities. "As a result, half a million children under age 5 perish every year from diseases like typhoid, diarrhea, and cholera. Many more people become sick, resulting in an estimated US$223 billion a year in health costs and lost productivity. Today, over 25 of the breakthrough waste-processing core technologies that make

up a reinvented toilet, all developed in the past decade, are being licensed to more than two dozen companies for production, testing, and commercialization. Among them are reinvented toilet designs by the Swiss engineering firm Helbling and the Nano Membrane toilet developed at Cranfield University. The Omni Processor has been tested in the field in Senegal, China, and India, and there should be at least six similar systems operating in these countries by the end of the year. Pilots for reinvented toilets are also underway in South Africa and soon in China to test and refine their service and business models."[16]

Circular Economy

Modern society has become very good at creating linear systems of production, the take-make-waste process. In these systems, we extract raw materials and put them through a process of manufacturing that includes intensive material and energy input as well as a lot of transportation from one manufacturing plant to another. This is considered the upstream phase because it occurs on the way to the user. Consumers then use the products until they become obsolete which can mean everything from being no longer in style, to breaking, to requiring replacement upgrades. Much of this obsolescence is actually built into the design in order to generate profits for companies, but this is a narrow way of thinking about long-term business success. Finally, once a user is done with a product, they discard it. This end-of-life phase is considered the downstream phase. This linear system results in significant damage to the natural systems that support us. So, design for sustainability involves transforming linear thinking into cyclical thinking. In nature, there is no such thing as waste. **Cyclical thinking** is not merely recycling. It's designing products to be easily disassembled in combination with designing new take-back systems and infrastructure that make it easier and less expensive for companies to collect the materials they will use in one generation of products in order to manufacture the next generation of products. This regenerative approach to design has taken many forms over the last several decades as we move towards establishing a circular economy.[17]

The **circular economy** is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. There is a lot of waste in our current system. According to the World Resources Institute, over 100 billion tons of resources flow every year and 60% end up as waste or greenhouse emissions. Similarly, we waste approximately a third of all food produced. The circular economy offers a system where waste and pollution are reduced through product design. Importantly, 80% of environmental impacts are determined during the design stage. With a change in mindset, waste becomes a design flaw instead of being an inherent byproduct of everyday consumption.[18]

The overexploitation of natural resources required to achieve economic growth and development has negatively impacted the environment and adversely affected their availability and cost. So, it is easy to see why the idea of a circular economy, which offers new ways to create a more sustainable economic growth model, is taking hold across the globe.[19]

Play the "Creating a Circular Economy for Fashion", YouTube video below to learn about the innovations in the fashion industry that may just help save our world.[20] Transcript for "Creating a Circular Economy for Fashion" Video [PDF–New Tab]. Closed captioning is available on YouTube.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=54#oembed-2

Key Takeaways

1. **Sustainable innovation** means that companies seek out ways in which to sustain continuous innovation/improvement for company growth, competitive advantage, increased market share, etc.
2. **Sustainability** is the capacity to endure in a relatively ongoing way. The term sustainability is sometimes also used to refer to environmental sustainability.
3. **Environmental sustainability** focuses on acting in a way that ensures future generations have the natural resources available to live an equal, if not better, way of life as current generations.
4. The **Sustainable Development Goals** (SDGs) of the United Nations are broad and ambitious, calling on all countries to make tangible improvements to the lives of their citizens. The goals encompass social, environmental, and economic aspects.
5. The term, **Triple Bottom Line** is often used to refer to the concept that businesses need to not only be concerned with making a profit but also be concerned about the manner in which they do so. The three parts of the Triple Bottom Line include considering the impact that business operations and innovation have on societal, environmental, and financial well-being; in other words, people, planet, and profit (respectively).
6. The **Ivey Innovation Learning Lab** is a new approach to learning that builds unique insights from leading academic thinking and peer-to-peer dialogue with fellow leaders. Participants come from business, government, and academia. The Lab consortium knows that

the way in which people live and work is being profoundly disrupted. The knowledge and tools of the past will not necessarily help navigate the future, nor solve the urgent and complex challenges facing society and business.

7. Both traditional and sustainable innovation involves developing new products, services, or processes. **Three core features** set sustainable innovation apart–sustainable business, corporate culture, and systems thinking.

8. The Institute for Manufacturing at the University of Cambridge crafted a chart of increasingly **complex approaches to sustainability** for designers: Green Design, Eco-Design, Sustainable Product Design, Design for Sustainability, and Transformative Design.

9. Modern society has become very good at creating **linear systems of production**, the take-make-waste process. This linear system results in significant damage to the natural systems that support us. So, design for sustainability involves transforming linear thinking into **cyclical thinking**. The regenerative approach to cyclical design has taken many forms over the last several decades as we move towards establishing a circular economy.

10. The **circular economy** is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. There is a lot of waste in our current system.

End-of-Chapter Exercises

1. **Environmental Sustainability.** Search the Internet and see if you can find at least one exciting and recent "environmentally sustainable" (improving the planet) innovation that aligns with one or more of the United Nations Sustainability Goals. Share your findings with your professor and/or class.

2. **Social Sustainability.** Search the Internet and see if you can find at least one exciting and recent "socially sustainable" (improving the lives of people) innovation that aligns with one or more of the United Nations Sustainability Goals. Share your findings with your professor and/or class.

3. **Carbon Footprint.** Search the Internet to learn more about "carbon footprint". With a part-

ner discuss ways in which you currently are reducing your carbon footprint. For example, do you remember to turn out the lights when you leave the house? Identify additional ways in which you can further reduce your carbon footprint. On a larger scale, how might companies or countries begin to reduce their carbon footprint? Why is it important for individuals as well as businesses to reduce their carbon footprints? Share your thoughts and findings with your professor and/or class.

4. **Innovation Lab.** Search the Internet to find one company that has developed an Innovation Lab of its own. What is the company currently innovating? Does this company consider "design for sustainability" or "transformative design" approaches when innovating? Explain by sharing your findings with your professor and/or class.

5. **Debate Global Warming.** Search the Internet to learn about the causes of global warming and its ramifications. Do you believe it's really happening? Why or why not? What might happen in 50, 100, or 200 years if nothing changes? You may not be around in 100 years but your grandchildren might be. Debate with the class whether or not global warming is real and what should be done about it, if anything!

6. **Water Shortages.** It's been said that by 2025, two-thirds of the world's population may face water shortages. Search the Internet to learn more about this problem. What is being done to help? Discuss with a partner, class, or professor.

7. **Clean Water.** In some areas of the world, people do not have clean drinking water. Search the Internet to learn more about this problem. What is being done to help? Discuss with a partner, class, or professor.

8. **Canadian Government Sustainability Goals.** Visit the website [Explore 17 Goals](#) and review how the Canadian Government is supporting these goals. Select two goals you feel are most important or that affect you personally. What is the government doing to reach these goals? Is it enough? Discuss your thoughts with a partner, class, or professor.

9. **The World's Most Sustainable Countries.** Review the rankings of the world's most sustainable countries at [The World's Most Sustainable Countries – WorldAtlas](#). Does anything surprise you? Why are the top three countries at the top? Do you think all countries could work toward getting to the top of the list? Why or why not? Discuss with a partner, class, or professor.

10. **Biomimicry.** Search the Internet to find an innovation that was designed with nature as a mentor. The innovation should mimic something in nature. Share your findings with your partner, class, or professor.

Self-Check Exercise – Dialog Cards – Sustainable Innovation

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=54#h5p-6

Self-Check Exercise – Drag-and-Drop – Sustainable Development Goals

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=54#h5p-7

Additional Resources

1. World Atlas, [The World's Most Sustainable Countries](#)
2. 21 Sustainability Innovations [Changing the World](#)
3. Social Sustainability [Everything You need to know](#)
4. The 35 Easiest Ways to Reduce [Your Carbon Footprint](#)
5. Government of Canada [Explore our 17 Goals](#)
6. [5 Surprising Ways](#) to Increase Living Standards Sustainably
7. What is a [Circular Economy](#) and How Does it Work?
8. The [Triple Bottom Line](#)
9. [Waterloo Institute](#) for Social Innovation and Resilience
10. [5 Inventions](#) that Could Transform the Health of Our Oceans

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

Media Attributions

Notes

1. Boylston, F. (2023, January 25). *Learning design for sustainability.* [Video]. LinkedIn Learning. [https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Flearning-design-for-sustainability%3Ftrk%3Dshare_ent_url%26shareId%3DSKC%252F6lEoTJ2amKNoc6mu3g%253D%253D](#)

2. Ivey Business School. (2019, November 4). *Shaping the future of innovation.* [Video]. YouTube. https://youtu.be/yHr1QAQycIE

3. Day, J. (n.d.). *Sustainable innovation: Explanation and examples.* https://ideascale.com/what-is-sustainable-innovation/

4. Lee, J. Y. (2021, October 19). *What is sustainable innovation?* https://www.nbs.net/articles/what-is-sustainable-innovation-and-how-to-make-innovation-sustainable#_ftn1=

5. Day, J. (n.d.). *Sustainable innovation: Explanation and examples.* https://ideascale.com/what-is-sustainable-innovation/

6. Boylston, S (2023, January 25). *Learning design for sustainability.* [Video]. LinkedIn Learning.https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Flearning-design-for-sustainability%3Ftrk%3Dshare_ent_url%26shareId%3DSKC%252F6lEoTJ2amKNoc6mu3g%253D%253D

7. Lee, J. Y. (2021, October 19). *What is sustainable innovation?* https://www.nbs.net/articles/what-is-sustainable-innovation-and-how-to-make-innovation-sustainable#_ftn1=

8. Lee, J. Y. (2021, October 19). *What is sustainable innovation?* https://www.nbs.net/articles/what-is-sustainable-innovation-and-how-to-make-innovation-sustainable#_ftn1=

9. Alexander, D. (2020, November 26). *21 sustainability innovations that might just change the world.* https://interestingengineering.com/21-sustainability-innovations-that-might-just-change-the-world

10. Alexander, D. (2020, November 26). *21 sustainability innovations that might just change the world.* https://interestingengineering.com/21-sustainability-innovations-that-might-just-change-the-world

11. Mishra, A. (2017, January 15). *Bakeys editable cutlery--an Indian innovation. https://www.foodandwine.com/grains/wheat/we-tried-3-edible-cutlery-brands-heres-what-we-found*

12. Musni, L. (2022, June 8). *We tried 3 edible cutlery brands — Here's what we found.* https://www.cagbc.org/our-work/certification/leed/

13. Terramai. (n.d.). *6 famous architects share their top sustainable design tips.* https://www.terramai.com/blog/6-famous-architects-share-their-top-sustainable-design-tips/

14. Gin, F. (2018, May 4). *Green building concepts foundation.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Fgreen-building-concepts-foundations%2Fleadership-and-innovation%3Ftrk%3Dshare_video_url%26shareId%3DJ6cZhMC3S3SiPtAfLeJSwQ%253D%253D

15. Boylston, S (2023, January 25). *Learning design for sustainability.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Flearning-design-for-sustainability%3Ftrk%3Dshare_ent_url%26shareId%3DSKC%252F6lEoTJ2amKNoc6mu3g%253D%253D

16. Kone, D. (2021, July 29). *The future of sanitation: 10 years of reinventing the toilet.* https://www.gatesfoundation.org/ideas/articles/sanitation-reinvent-toilet

17. Boylston, S (2023, January 25). *Learning design for sustainability.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Flearning-design-for-sustainability%3Ftrk%3Dshare_ent_url%26shareId%3DSKC%252F6lEoTJ2amKNoc6mu3g%253D%253D

18. Management Consulted. (2022, March 14). *Circular economy: What is it? Definition, examples & model.* https://managementconsulted.com/circular-economy/

19. University of Cambridge. (n.d.). *Circular economy and sustainability strategies. https://online.em.jbs.cam.ac.uk/circular-economy-sustainability-strategies?utm_source=Bing&utm_medium=c&utm_term=circular%20economy%20model&utm_location=5125&utm_campaign=B-365D_WW_BG_SE_CCES_ROW&utm_content=CCES_P1_All&msclkid=a25de266f3d014992bea813196e66851*

20. Financial Times. (2020, January 28). *Creating a circular economy for fashion.* [Video]. YouTube. https://youtu.be/y78UVWd5PHE

CHAPTER 6: GROWTH STRATEGY

Chapter 6 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Explain why it is important for leaders to align innovation strategy to corporate strategy.
2. Describe the Ansoff Matrix and the amount of risk associated with each growth strategy.
3. Describe five of the Ten Types of Innovation®.
4. Explain why the alignment between innovation strategy and corporate strategy may break down.
5. Discuss three ways to discover opportunities for innovation.
6. List the five steps in the innovation process.
7. Explain why it is important to do market research during the first step of the innovation process.

Innovation Strategy

Align Innovation Strategy with Corporate Strategy

Innovation strategy is about mapping an organization's mission, vision, and value proposition for defined customer markets. It sets boundaries for innovation performance expectations by simplifying and structuring the innovation work to achieve the best possible outcome. For a business to thrive in today's world of intensified competition it is critical that innovation initiatives are aligned with corporate strategy; initiatives must align to the company mission, business targets, and measurable KPIs. For this to happen, company executives need to take a leadership role in implementing innovation initiatives. To add value to the innovation process, leaders need to stay ahead of the curve by monitoring trends in the marketplace. For example, when other

companies begin to change what they do, or government regulations change opening doors for opportunities, then a leader may need to take action in order to stay competitive.

Organizational leaders determine what direction the company will take in the competitive environment. Strategy is the method they will use to get there. In order to align innovation with strategy, leaders need to review and analyze how well the company is meeting its strategic objectives. Firstly, leaders need to attend to the current needs of the company and its present performance, optimize current business, and build within its core. This might include taking current products to new markets, adding new models to refresh existing product lines, or improving margins on best-selling products/services. Secondly, leaders need to think about the future. Thinking about the future means developing entirely new avenues for growth that are often outside the current business, building beyond its core. Activities here might include, launching products or services that are unprecedented in the company or perhaps even unprecedented in the market.[1]

Below is a short list of how a few companies strategically innovate for growth.

1. "IKEA's strategic innovation is focused on providing affordable and well-designed furniture and home products. By adopting a flat-pack, self-assembly model, IKEA revolutionized the furniture industry and created a unique shopping experience through its vast showroom-style stores. IKEA's sustainable innovation initiatives, such as offering energy-efficient products and promoting recycling, further contribute to its strategic innovation efforts."[2]
2. Amazon continually innovates its core retail business, such as launching AmazonBasics, its privately labeled line of essential products. But, at the same time, they are also exploring well beyond their core. The Amazon Echo is a good example of this. Taking them into the consumer Internet of Things (IoT) and artificial intelligence (AI) arenas, and pretty far from their original retail business.[3]
3. "Tesla's strategic innovation lies in its development and commercialization of electric vehicles (EVs) that offer long-range capabilities, superior performance, and cutting-edge technology. By focusing on sustainable and disruptive innovation in the traditional automotive industry, Tesla has transformed the perception of EVs and has become a leader in the electric vehicle market."[4]
4. "Google's strategic innovation is evident in its search engine technology and its continuous innovation of products and services. Google's search algorithm revolutionized online search, providing highly relevant and accurate results. Google's expansion into various areas such as online advertising (Google Ads), email services (Gmail), mobile operating systems (Android), and cloud computing (Google Cloud) showcases its commitment to strategic innovation."[5]

Play the "Innovation Strategy" YouTube video by Kuczmarski below to learn more about innovation strategy. You may be surprised to learn that many companies do not have an innovation strategy because they have not taken the time to figure out what strategic role they are trying to fill by pursuing new innovations. Learn about the four key components of an innovation strategy: 1) What is the Innovation vision? 2) What is the

financial revenue gap the company is trying to fill? 3) How to screen one new idea from the next? 4) What is the investment level the company is willing to make toward innovation? [6] [Transcript for "Innovation Strategy" Video [PDF–New Tab]](). Closed captioning is available on YouTube.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=61#oembed-1

Use the Ansoff Matrix for Strategic Planning

The **Ansoff Matrix** is a strategic planning tool that organizations use to plan and analyze strategies for growth. Each strategy for growth carries a different level of potential risk. Each strategy is determined by focusing on whether the products are new or existing and whether the market is new or existing. Each quadrant corresponds to a different product-market strategy. Refer to Figure 6.1 below for a graphical representation of the Ansoff Matrix.

When a company seeks to grow using its existing offerings in its existing markets, the company is pursuing a market penetration strategy. An example of this would be the introduction of the Kindle Fire. It was a new generation of products in a category where Amazon had already established the original Kindle line.

When a company seeks to grow using its existing offerings in a market that the company is not currently in, the company is pursuing a market development strategy. This is actually how Amazon began, by developing the market for online book sales. Others were already doing this, simply not with the scale or scope envisioned by Bezos.

When a company seeks to grow using new offerings in its existing markets, the company is pursuing a product development strategy. This is where AmazonBasics would fall.

Finally, when a company seeks to grow by presenting new offerings in a market the company is not currently in, the company is pursuing a diversification strategy. This is the highest-risk option, as it requires both product and market development. This is where Amazon web services would be placed. Other companies were already providing these services in a variety of ways, but it was both a new market and a new service for Amazon to address.

Below are some examples from [Indeed]() of how a company might achieve each of the four growth strategies.[7]

1. A business may achieve market penetration by:

- Increasing their promotional efforts

- Decreasing their pricing

- Running sales and specials to get new customers

- Merging with or acquiring a competing business in the same market

- Making product improvements to appeal more to consumers

- Refining their distribution process

2. With market development, a business may:

- Establish different segments of its customer base

- Appeal to foreign markets

- Expand its customer base to include a different part of the market previously not used, such as expanding from B2C to B2B

- Partner with another company to offer an additional product or to increase distribution

- Buy the rights from a company to produce and sell their product

- Use budget dollars to research what the market needs and develop products that will fill a void in their customers' lives

3. As part of their product development plan, a business may:

- Partner with another company to offer an additional product or to increase distribution

- Buy the rights from a company to produce and sell their product

- Use budget dollars to research what the market needs and develop products that will fill a void in their customers' lives

4. There are two types of diversification:

- Related diversification: Related diversification is when a company's new offerings complement the prod-

ucts they already produce or at least exist in the same sphere. For example, a company that builds comput-
ers may then make a device that hides computer cords from sight.

- Unrelated diversification: Unrelated diversification is when a company's new offerings are outside of its
  known capabilities. For example, if a company has been making notepads and pens for 10 years but then
  decides to delve into producing reusable water bottles.

The pace and impacts of technology have grown tremendously since the Ansoff Matrix was first devised so an
expanded matrix was created. The expanded Ansoff matrix delineates new growth strategies beyond market
development to market innovation and beyond product development to product innovation. It also gives us
advanced diversification, where we are combining both development and innovation, and outright industry
disruption where we are innovating deeply on both market and offering. Amazon's original launch of the
Kindle ebook and store qualifies as an industry disruption. Whereas, subsequent incremental Kindle launches
do not. The Echo represents product innovation in a market that is new to Amazon, so it would land in
advanced diversification.[8]
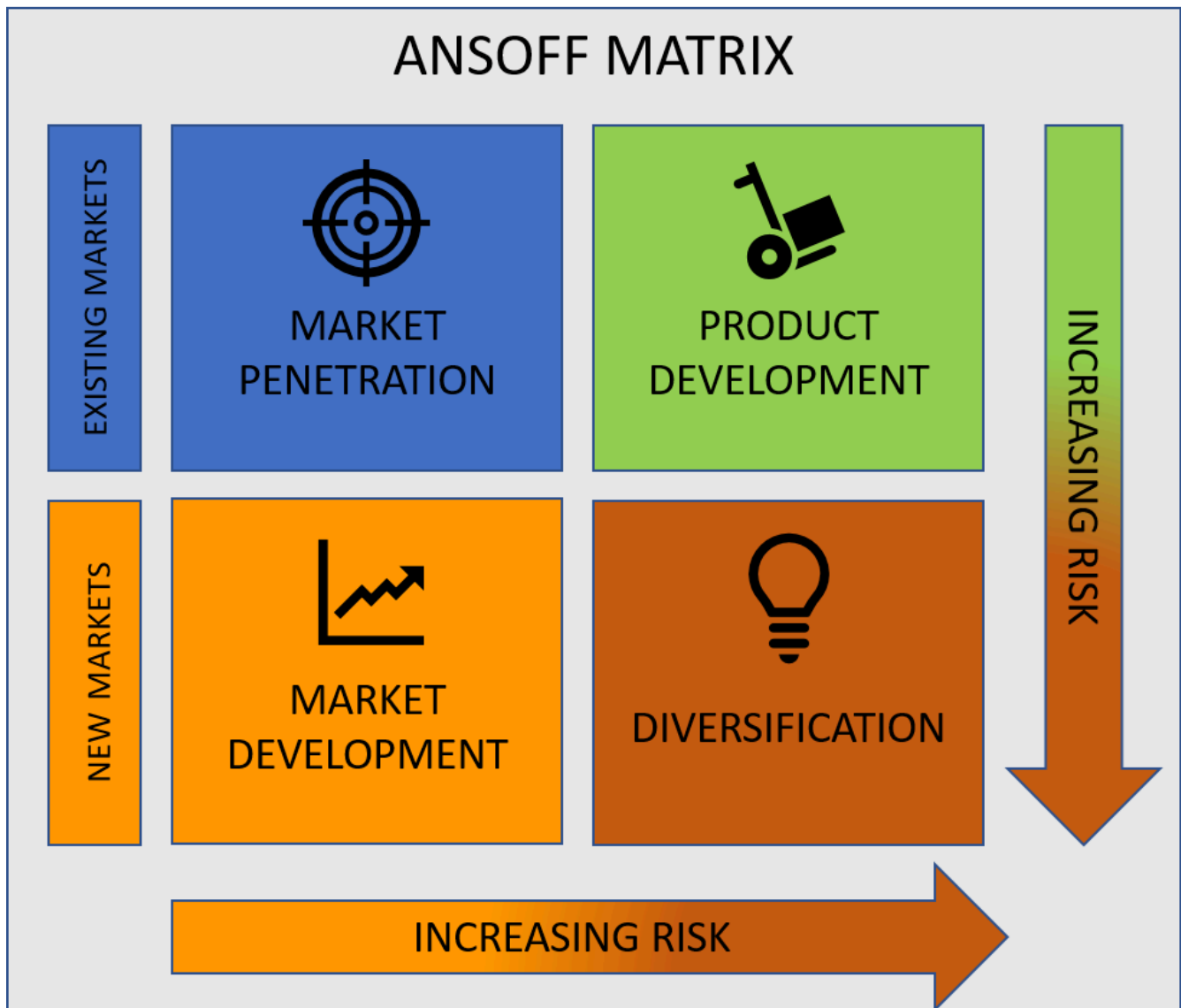
Figure 6.1 Ansoff Matrix for Strategic Planning

Consider Various Types of Innovation

There are many reasons companies innovate, some of which include reducing costs, increasing profits, staying ahead of the competition, attracting talent, creating a leadership image, attracting investors/funding, and more. Innovation is all about coming up with new things that create value for your customers, and the organization. There are many degrees and types of innovation, although when we hear about a company innovating we often hear about new products, services, or processes. The real problem with innovation is that people think too incrementally and often too exclusively about products and services and do not consider the many targets for innovation that are all around us. Pursuing various degrees and types of innovation will help an organization maintain a balanced innovation portfolio and remain competitive in the market.

Companies can use the Ten Types of Innovation® Framework to help their innovation efforts in many ways. It can be a diagnostic tool to assess how the business is approaching innovation internally, it can help the company analyze the competitive environment, and it can reveal gaps and potential opportunities for doing something different and upending in the market.[9] Ten Types of Innovation® Framework captures the entire innovation ecosystem, from essential organizational structures and processes to critical aspects of the product or service being introduced.

Ten Types of Innovation® analyzes 10 key areas to consider when you are innovating:

1. Profit Model
2. Network
3. Structure
4. Process
5. Product Performance
6. Product System
7. Service
8. Channel
9. Brand
10. Customer Engagement

Play this 3-minute video by MindTools explaining the Ten Types of Innovation® Framework.[10] Transcript for "Doblin's 10 Types of Innovation® Video [PDF–New Tab]. Closed captioning is available on YouTube.

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Avoid Breakdowns Between Corporate Strategy and Innovation

Why does the alignment between corporate strategy and innovation break down?

Below are five reasons misalignment might occur.

1. **Exploring solutions for the wrong reasons** – Such as innovation not being aligned with corporate strategy.
2. **Changes in leadership** – This may bring changes in goals.
3. **Poor communication of corporate vision and strategy** – "Strategic clarity accounts for 31% of the

difference between high and low performing organizations in terms of revenue growth, profitability, customer satisfaction, and employee engagement."[11]

4. **Poor communication of innovation strategy** – Goals, outcomes, and expectations with regard to innovation are not clear. 70% of employees don't even know or understand corporate vision, and feel so disconnected from it that they can't explain how it relates to their job.[12]

5. **Context** – Dissolving projects prematurely because they may not appear, at first, to fit with business goals and strategy.

How can companies avoid these breakdowns?

In order to ensure that strategic alignment is occurring across all innovation projects, organizations must continually work to do the following:[13]

- **Understand Customer Pains** – Pursuing solutions based on new technologies or deciding to discontinue a product are decisions that need to be made based on customer evidence. Relentlessly seeking to understand the customer will help innovation teams better align innovation strategy with corporate strategy in the long run.

- **Create a Feedback Loop** – The corporate strategy should inform the innovation strategy and vice versa. Keeping these two engines running simultaneously and continuously feeding both sides with key learnings will ensure that they are working in harmony.

- **Communicate Vision and Strategy Clearly** – It is important for management to ensure everyone is on the same page with regard to company vision and strategy by taking as much time as needed to explain these concepts. Leaders should connect regularly with team members to make sure everyone is still aligned and focused on big-picture goals.

- **Consider the Context** – Not all innovation projects that are misaligned today will be misaligned in the future. There are times when innovation projects should be left alone and given time to develop. Ending projects too early can lead an organization away from true innovation and keep it from producing high-impact projects that help the company reach its goals.

Innovation Process

The **Innovation Process** is the translation of an idea into goods or services that create value. The method chosen to do this should be systematic, predictable, and measurable. The number of steps in the process varies depending on who you ask. It may involve three steps: discovery, development, and commercialization, or it may be divided into five steps: idea generation and mobilization, advocacy and screening, experimentation, commercialization, and diffusion and implementation. The Design Thinking Methodology is a mindset and approach to problem-solving and innovation anchored around human-centered design, and has five stages:

Empathize, Define, Ideate, Prototype, and Test. The chapter entitled, "Design Thinking" explains the Design Thinking Methodology in more detail.

Regardless of which innovation process a company adopts, most innovation processes follow a similar pattern which begins with market, consumer, competitor, and company research and analysis. Then the company determines which opportunities are best aligned with corporate strategy and selects one or more to pursue. Finally, the innovations are designed, tested, and launched.

Every organization is nothing more than a series of processes. How a product is designed, is a process. How it's manufactured is another process. How it's shipped around the world, is yet another process. If a company can make its processes work faster, cost less, and/or result in a higher quality product/service most likely that company will see higher profits and increasingly happy customers.

According to Kuczmarski Innovation, a premier innovation consulting firm that works with clients across the world to help them develop and exceed their innovation goals, the following five steps comprise the innovation process.[14]

1. Conduct Market Research
2. Generate Ideas for Solutions
3. Business Case Development (figure out how to monetize the innovation and prototype)
4. Scale-up (take the idea and get it ready for launch)
5. Launch (into the marketplace)

Play the "Innovation Process" YouTube video by Kuczmarski below to learn more about how the innovation process should be systematic and predictable.[15] [Transcript for "Innovation Process" Video \[PDF–New Tab\]]. Closed captioning is available on YouTube.

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Spot Opportunities for Innovation

To identify opportunities for innovation, managers and employees first need to understand the company and how it works. Whether you are the CEO or an employee working the front line (directly with customers/clients), you can spot opportunities for improvement by learning about the company's problems and goals. This may mean reviewing company policies and values/mission/vision, talking with other department man-

agers and employees, gathering customer feedback as well as spotting trends in customer complaints. Ask yourself if there are processes that take a long time, and if so, could they be automated for improvement? Are employees or customers complaining about specific systems, communication, or processes, and do these need to be given more thought in how they could be made more efficient and/or effective? Also, consider what works well and can be replicated in other areas. It is important to understand who the company's target customers are and always be thinking about how the company can better help them. Focus groups, mystery shoppers, buyer personas, and observing the customer journey from the pre-sale stage to the sale stage and into the after-sale stage can help companies better understand customer needs and wants. Identify what is working well and what is not working well, and consider how things might be improved.

A great way to look for opportunities is by conducting an environment scan of the business and industry environment. Using research and analysis tools such as a SWOT analysis, Competitor Analysis, PESTLE analysis, Porter's Five Forces competitive landscape analysis, Ansoff's Matrix for strategic planning, Innovation Matrix for innovation planning, and more, leaders can look for opportunities, identify external threats, identify company strengths and weaknesses, then make informed decisions about where to, and how to, innovate. The chapter entitled, "Innovation Risks" explains a few of these analysis tools in more detail.

Many companies come up with great ideas simply by taking ideas from one aspect of the business and applying it to another. Often creativity is simply a mix of disciplines. Companies create cross-departmental teams, teams that mix employees with customers or partners, and teams that include experts in the field or various fields in order to get a wide variety of ideas from various stakeholder perspectives.

These seven sources of innovative opportunity were listed by Peter Drucker in his book "Innovation and Entrepreneurship. If you are unaware, Peter Drucker is considered one of the truly great management consultants. He wrote 39 books and is considered a seminal thinker in the field of management.[16]

Unexpected Success and Failures

The marketplace is the number one area to look for opportunities. A good manager should be studying the market, observing consumer and competitor trends, and looking for innovation successes or failures that maybe were not expected to occur. They should consider if a particular product or service is in greater or lesser demand than anticipated, and if so what is the reason. For example: If a competitor is having unexpected success in a particular market segment, management must find out why this is

A person looking for opportunities

happening. They must ask themselves what it would mean to their company if they exploited the same opportunity. They must consider what has to happen to convert this opportunity into a success.

Incongruity Between What Is and What Should Be

One of the best places to look for incongruity is through the customers' voices. Their complaints and unmet wants are all the hints a company needs to determine if there is a discrepancy between what is and what should be. Identifying incongruity is key to developing wildly successful businesses, but it's tricky. Facebook is a company that got it right. Prior to the social network's prolific rise, Myspace was the dominant player, but it had its downfalls. Facebook wisely noted what Myspace was versus what it should be and then built a better platform. The end result is that many people don't even remember Myspace, but most of the world knows and uses Facebook.

Process Need

Process need involves identifying the company's process weak spots and correcting or redesigning them. This source of innovation comes from the company's existing capabilities and ways of doing business. An example might be a restaurant that identifies that people wait too long for their entrees and so decides to hire another chef to speed up creation times. Essentially, a company will want to look for all weak links and eliminate them.

Industry and Market Structure Change

The industry and the market are in continual flux. Regulations change and some product lines expand while others shrink, firms should be regularly monitoring these changes. For example, when the government changes regulations to open a previously regulated industry, there is historical precedence for companies that enter early to be very successful. Other things to monitor are the convergence of multiple technologies and organizational structural problems that occur from time to time (often immediately following an industry boom).

Demographics

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

Changes in Perception, Meaning, and Mood

Over time populations and people change. The way they view life changes, where they take their meaning from, and how they feel about things change over time and smart companies must pay attention to this in order to capitalize (and avoid becoming forgotten, a relic of ages past). For example, a principle called "down

aging" refers to people who look at 50 as being the new 40. Industries have responded to this, most notably in the cosmetic and personal care industry which provides plenty of solutions to help these people look younger. Full industries are creeping up that make people feel younger. Have you spotted any lately?

New Knowledge

As the speed of the technological revolution increases, there will be an ever-increasing number of opportunities that open up. The internet has been the most notable one in the last couple of decades but there have been a plethora of other industries and opportunities that have popped up as a result of this technological revolution. New knowledge is about more than just technology though, it's about finding better ways of doing things and improving processes. Companies should look to this new knowledge for ways to make incremental improvements. Intel does this continuously, and it's a major part of why the company is the leading processor manufacturer today. By paying attention to the latest in academic research and investing heavily in its own R&D, the company has managed to find continual sources of innovation.

Evaluate, Design, and Test the Innovation

After researching the market, analyzing company strengths and weaknesses, and identifying a few opportunities for innovation, the company must focus on a few ideas that best align with company goals, strategies, and resources, and support a balanced innovation portfolio. Once ideas have been evaluated, each feasible idea should be reviewed for ways to reduce risks. Develop a rough strategy. What needs to happen before the next thing can happen? Which paths are not obvious? Are there skills or resources the team already possesses that can help execute the innovation vision? Consider who can help the team put ideas into action. Do experts need to be included? Trouble-shoot with the team.

If the idea is for a new product, for example, the company will create a prototype and run a pilot (test-run) implementation to show others that implementing this innovation is possible. Try it on a small scale first to see how it works. Gather input from others and make adjustments as needed. Refine and get the details right. Bring in others to help finalize the innovative concept and put it into action. Partners should contribute in ways the team cannot.

Launch the Innovation

After the team has refined drafts and prototypes, it's time to get this innovation out to the world. Consider how the company will release this new product, process, service, business model, etc. Does the company have a way to build hype and anticipation? What tools and channels will be used to share it? Who does the company want to see/use it? Plan the rollout strategy and then execute it. If that plan starts to look too compli-

cated, simplify. Getting the company's innovation out to the world as something tangible or experiential is ultimately proof-positive of the company's ability to be creative and competitive.

Steps for a successful launch of an innovation program:[17]

1. Understand the current state of your business
2. Align with corporate strategy and objectives
3. Pilot with excited ones
4. Seek commitment from managers
5. Integrate with existing processes
6. Create motivation to participate
7. Plan
8. Launch
9. Lead with example
10. Make decisions
11. Communicate, communicate, communicate
12. Monitor and develop

Key Takeaways

1. **Innovation strategy** should align with corporate strategy. It is about mapping an organization's mission, vision, and value proposition for defined customer markets. It sets boundaries to innovation performance expectations by simplifying and structuring the innovation work to achieve the best possible outcome.

2. The **Ansoff Matrix** is a strategic planning tool that organizations use to plan and analyze strategies for growth. Each strategy for growth carries a different level of potential risk.

3. **Ten Types of Innovation® Framework** analyzes 10 key areas to consider when you are innovating:

   ◦ Business Model

- Network and Alliances
- Enabling Process
- Core Process
- Product Performance
- Product System
- Customer Service
- Channel
- Brand
- Customer Experience

4. There are a number of reasons for **breakdowns between corporate strategy and innovation strategy**, including Exploring solutions for the wrong reasons, Changes in leadership, Poor communication of corporate vision and strategy, Poor communication of innovation strategy, and Context.

5. In order to **avoid breakdowns** between strategic alignment across all innovation projects, organizations must constantly work to Understand Customer Pains, Create a Feedback Loop, Communicate Vision and Strategy Clearly, and Consider the Context.

6. The **innovation process** should be systematic and predictable. The first step of the process is doing market research, the second step is generating ideas for innovation, the third step is business case development (figuring out how to monetize the innovation), the fourth step is to scale up (get it ready to be launched), and the last step is to launch the innovation in the marketplace.

7. The **seven sources of innovative opportunity** according to Peter Drucker include Unexpected success and failures, Incongruity between what is and what should be, Process need, Industry and market structure change, Demographics, Changes in perception/meaning/mood, and New knowledge.

8. After researching the market, analyzing company strengths and weaknesses, and identifying a few opportunities for innovation, the company must focus on a few ideas that best align with company goals, strategies, and resources, and support a balanced innovation portfolio. These ideas are then **evaluated, designed, and tested**.

9. After testing an innovation, a company plans for and **launches** the new innovation by getting it out to the world as something tangible or experiential. This is ultimately proof-positive of the company's ability to be creative and competitive.

End-of-Chapter Exercises

1. **Expanded Ansoff Matrix.** Search the Internet to locate information on the Expanded Ansoff Matrix. This extends the base matrix so that there are nine strategies instead of four for growth opportunities. Discuss these additional five strategies and research an example that would fit into each of these five strategies. Share your findings with the class and/or professor.

2. **Failed Diversification.** Search the Internet to locate companies that failed at diversification. What did they try to do and why did they fail? Share your findings with your class and/or professor.

3. **Successful Diversification.** Search the Internet to locate companies that were successful in implementing a diversification strategy. Why were they successful? Share your findings with your class and/or professor.

4. **Ten Types of Innovation®.** Search the Internet to read more about the Ten Types of Innovation® Framework then locate an innovation for each of the ten types. Which companies have innovated in which of the ten types of innovation? Share your findings with the class and/or professor.

5. **Failed Innovations**. Search the Internet to locate one (or more) of the ten types of innovations that have failed. Why did the innovation fail? What could have been done differently? Discuss these findings and remedies with your class and/or professor.

6. **Spot Innovation Opportunity.** Can you spot an opportunity for innovation? Think about your college or university, or your place of employment. Are there things that could be better, such as products, processes, or services? Discuss with a partner the opportunities you spotted and brainstorm some things that could be done to make improvements. Share your thoughts with the class and/or professor.

7. **New Launch.** Search the Internet to locate a newly launched product or service. How did the company introduce this new product or service to the world? Which channels were used? Which customers were targeted? How well did customers receive this new product or service? Share your findings with your class and professor.

Self-Check Exercise – Quiz – Ansoff Matrix Growth Strategies

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=61#h5p-8

Additional Resources

1. What is innovation strategy? [Discover best practices, definitions, tools, and examples](#)
2. Innovation Strategy [Examples](#)
3. Business Innovation Strategy: [9 Key Pillars for Success](#)
4. Business Diversification: [The Best Examples](#)
5. What are innovation strategies? [Plus types and examples](#)

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

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Notes

1. Imboden, E. (2016, December 6). *Aligning Innovation to Growth Strategy.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/design-thinking-venture-design/aligning-innovation-to-growth-strategy?u=2167290

2. Jain, N. (n.d.). *What is strategic innovation? Definition, process, examples and management.* https://ideascale.com/blog/what-is-strategic-innovation/

3. Imboden, E. (2016, December 6). *Aligning Innovation to Growth Strategy.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/design-thinking-venture-design/aligning-innovation-to-growth-strategy?u=2167290

4. Jain, N. (n.d.). *What is strategic innovation? Definition, process, examples and management.* https://ideascale.com/blog/what-is-strategic-innovation/

5. Jain, N. (n.d.). *What is strategic innovation? Definition, process, examples and management.* https://ideascale.com/blog/what-is-strategic-innovation/

6. Kuczmarski Innovation. (2016, March 17). *Innovation strategy.* [Video]. YouTube. https://www.youtube.com/watch?v=B-tY6citUHw

7. Indeed Editorial Team. (2022, February 11). *Ansoff matrix: Definition, strategies, and how to use.* https://www.indeed.com/career-advice/career-development/ansoff-matrix

8. Imboden, E. (2016, December 6). *Aligning innovation to growth strategy.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/design-thinking-venture-design/aligning-innovation-to-growth-strategy?autoAdvance=true&autoSkip=false&autoplay=true&contextUrn=urn%3Ali%3Al

9. Deloitte Digital. (n.d.). *Ten types of innovation.* https://www.deloittedigital.com/us/en/offerings/customer-led-marketing/customer-strategy-and-applied-design/applied-design-and-innovation/ten-types.html#:~:text=You%20can%20use%20the%20Ten%20Types%20to%20help,for%20doing%20something%20different%20and%20upending%20the%20market.

10. MindToolsVideos. (2018, February 9). *Doblin's 10 types of innovation.* [Video]. YouTube. https://www.youtube.com/watch?v=Q3sfmDkrAI0

11. Cooper, B. (2019, January 21). *The importance of aligning innovation strategy with business goals.* https://movestheneedle.com/leadership/the-importance-of-aligning-innovation-strategy-with-business-goals/

12. Cooper, B. (2019, January 21). *The importance of aligning innovation strategy with business goals.* https://movestheneedle.com/leadership/the-importance-of-aligning-innovation-strategy-with-business-goals/

13. Cooper, B. (2019, January 21). *The importance of aligning innovation strategy with business goals.* https://movestheneedle.com/leadership/the-importance-of-aligning-innovation-strategy-with-business-goals/

14. Kuczmarkski Innovation. (2016, May 17). *Innovation process.* [Video]. YouTube. https://www.youtube.com/watch?v=L1mDi3NIZ18

15. Kuczmarkski Innovation. (2016, May 17). *Innovation strategy.* [Video]. YouTube. https://www.youtube.com/

watch?v=L1mDi3NIZ18

16. Incremental Innovation. (n.d.). *The 7 sources of innovative opportunity.* http://www.incrementalinnovation.com/innovation-management-development/7-sources-innovative-opportunity#:~:text=%20The%207%20Sources%20Of%20Innovative%20Opportunity%20,continual%20flux.%20Regulations%20change%20and%20some...%20More%20

17. Halme, J. (2022, July 21). *How to launch your innovation program? - 12 steps guide.* https://info.orchidea.dev/innovation-blog/how-to-launch-your-innovation-program#:~:text=How%20to%20Launch%20Your%20Innovation%20Program%3F%20-%2012,Plan%20...%208%208.%20Launch%20...%20More%20items

CHAPTER 7: DESIGN THINKING

Chapter 7 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Define "Design Thinking".
2. Describe how a company might implement a design thinking approach to innovation.
3. Provide examples of innovative products being designed today using Design Thinking.
4. Discuss the importance of prototyping fast and often.
5. Explain how to design parts for prototyping using 3D Print software.
6. Explain the 3D printing process.
7. Provide examples of innovative products being designed today using 3D printing technology.

What is Design Thinking?

Design thinking encourages organizations to keep the user at the center of everything. The core of design thinking is about asking questions differently—a new way to look at problems. Play this brief introduction to design thinking from IDEO U.[1] <u>Transcript for "What is Design Thinking?" Video [PDF–New Tab]</u>. Closed captioning is available on YouTube.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=67#oembed-1

The Five Stages of Design Thinking

As the world is changing at an accelerated rate, organizations look for solutions to grow with their customers or users, to do new things in better ways to improve their practices, retain and grow their customers, and expand their business. Innovation is a must for these organizations. **Design thinking** is one of several approaches to innovation and is a process for creative problem-solving. Design thinking has a human-centered core. It encourages organizations to focus on the people they are creating for, which in turn leads to better products, services, and processes. The design thinking framework helps inspire creative thinking and strategies that lead designers to create user-friendly products that solve real problems.

There are five stages to the design thinking process, shown below in Figure 7.1, which include empathizing, defining, ideating, prototyping, and testing. They are not always completed in a linear fashion. They can be done in any order, and then redone as needed. Different stages might spark new ideas or showcase new findings in the user journey that will inspire new iterations of phases that have already been completed.
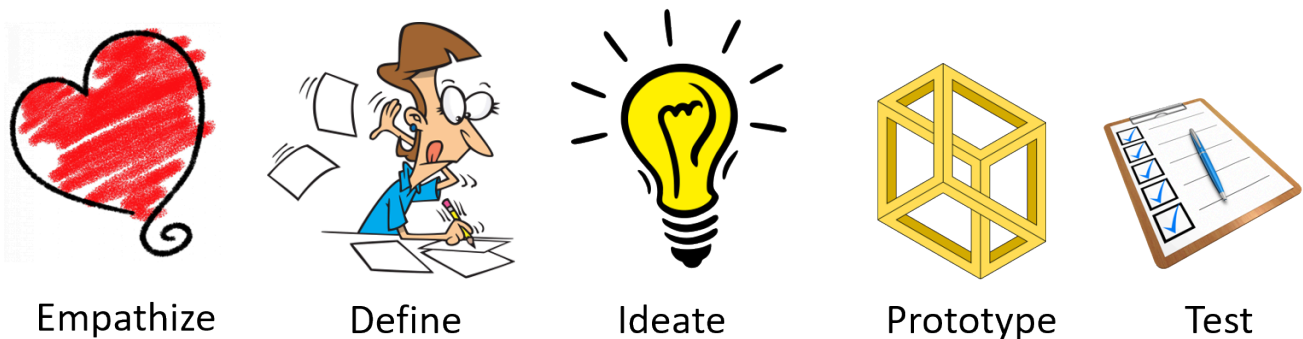

| Empathize | Define | Ideate | Prototype | Test |

Figure 7.1 Five Stages of Design Thinking

Empathize

In order to deliver innovative, customer-centric solutions that customers want and will buy, begin with empathy. Put yourself in your customer's shoes and try to imagine what the customer might be thinking or feeling, what needs they may have, and what their desires are. To do this you might observe the customer, interview the customer, and put yourself in the customer's shoes. How do they want this product to work? As designers (or design thinkers), we should always do our best to leave our own assumptions and experiences behind when making observations. Our life experiences create assumptions within us, which we use to explain and make sense of the world around us. However, this very process affects our ability to empathize in a real way with the people we observe. Since completely letting go of our assumptions is impossible, we should continuously and consciously remind ourselves to assume a beginner's mindset. It's helpful if you often remind your-

self never to judge what you observe, but to question *everything*—even if you think you know the answer—and to *really* listen to what others are saying.[2]

Define

Designers will analyze their observations completed throughout the empathy stage, and work on synthesizing that information. Forming a problem statement that is succinct is an important part of this phase that ensures a human-centered approach by focusing on the end-user. A problem statement is important to a Design Thinking project because it will guide you and your team and provide a focus on the specific needs that you have uncovered. A good problem statement should thus have the following traits. It should be human-centered, broad enough for creative freedom, and narrow enough to make it manageable.[3]

Ideate

The solution-finding stage is where the team comes together to brainstorm creative solutions to solve the defined problem(s). When facilitated in a successful way, Ideation is an exciting process. The goal is to generate a large number of ideas — ideas that potentially inspire newer, better ideas — that the team can then evaluate and reduce into the best, most practical, and innovative ones.

Ideation Will Help You:

- Ask the right questions and innovate.
- Step beyond the obvious solutions and therefore increase the innovation potential of your solution.
- Bring together perspectives and strengths of team members.
- Uncover unexpected areas of innovation.
- Create volume and variety in your innovation options.
- Get obvious solutions out of your heads, and drive your team beyond them.

In Ideation sessions, it's important to create the right type of environment to help create a creative work culture with a curious, courageous, and concentrated atmosphere. Instead of using a boardroom with the CEO sitting at the head of the table, Design Thinking and Ideation sessions require a space in which everyone is equal. There are hundreds of ideation methods used to spark innovative ideas. Some methods are merely renamed or slightly adapted versions of more foundational techniques. Here you'll get a brief overview of some of the best methods:[4]

- Brainstorm
- Braindump
- Brainwrite

- Brainwalk
- Challenge Assumptions
- SCAMPER
- Mindmap
- Sketch or Sketchstorm
- Storyboard
- Analogies
- Provocation
- Movement
- Bodystorm
- Gamestorming
- Cheatstorm
- Crowdstorm
- Co-Creation Workshops
- Prototype
- Creative Pause

Prototype

Without testing a new idea, designers would have a tough time actually solving the problem comprehensively. At this stage, small-scale, inexpensive versions of the product are required. This sets the stage for decision-making conversations around what works and what doesn't. Prototypes can be sketches, models, or digital renders of an idea. These scaled-down prototypes can then be used in order to observe, record, judge, and measure user performance levels based on specific elements, or the users' general behaviour, interactions, and reactions to the overall design. For instance, when developing software, a design team may produce a number of paper prototypes that the user can gradually work through in order to demonstrate to the design team or evaluators how they may tackle certain tasks or problems. When developing tangible devices, such as the computer mouse, designers may use a number of different materials to enable them to test the basic technology underlying the product. With advances in 3D printing technology, producing prototypes is now often a more instant and low-cost process, and as a result, this has allowed designers to provide stakeholders with accurate and testable/useable replica models before settling upon a particular design.[5]

Test

Gather feedback from real users. Because design thinking is iterative, many designers roll out multiple prototypes to test different change factors within their idea. Designers should expect to go through a series of changes, edits, and refinements during the testing stage. It is not uncommon for the testing phase to "restart"

some other design thinking processes such as ideation or additional testing or an entirely fresh approach. In order to achieve the best learning results from each test, here are some areas of a test that you should take into consideration:[6]

- **The prototype**
  Remember that you are testing the prototype, not the user. Your prototype should be designed with a central question in mind — a question that you will put to the test in the testing stage.
- **Context and scenario**
  As much as possible, try to recreate the scenario in which your users are most likely to be using the product. This way, you can learn more about the interaction (or disruptions) between the user, the prototype, and the environment, as well as how problems might arise as a result of that interaction.
- **How you interact with the user**
  Make sure your users know what the prototype and test are about, but do not over-explain how the prototype works.
- **How you observe and capture feedback**
  While collecting feedback, make sure you are not disrupting the user's interaction with the prototype. Find a way to collect feedback in a way that freely allows you to observe what is happening (for example, by having a partner in the test, or by recording an audio or video of the test).

Play the YouTube video below for an explanation of the five stages of the Design Thinking process.[7] Transcript for "5 Stages of Design Thinking Process" Video [PDF–New Tab]. Closed captioning is available on YouTube.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=67#oembed-2

Products Created Using Design Thinking

Can you think of a few products you enjoy using that most probably were created using the design thinking methodology? Here are a few examples: shoelaces that don't need to be tied (great for kids), velcro closures instead of buttons or laces (great for anyone, but specifically for older adults who may have difficulty with buttons or laces), and what about gel pads that are placed inside shoes (great for anyone with sore feet or people that stand for long hours in the workplace).

IDEO, lists 11 of their favorite products and services created with design thinking:[8]

- Pillpack, a prescription home delivery system
- Airbnb, the online platform that lets you stay anywhere
- Willow, the first wearable breast pump
- Uber Eats, an app that is redefining food delivery
- Pay It Plan It from American Express, a feature to manage your money
- Project Bloks, a Google project that helps kids learn to code
- Besider, a birth control support network for women
- Braun, Oral-B electric toothbrush, a better brushing experience
- Moonrise, a platform that connects people with on-demand work
- LA County Voting System, an intuitive and accessible voting device
- Bendable, a community learning program for South Bend

Design for Delight

How do the best product managers build ideal solutions for their customers' pain points? Intuit Inc. has crafted the Design for Delight (D4D) and Customer-Driven Innovation (CDI) principles to center customer empathy to build the best solutions for their customers. "Customer-Driven Innovation is the lens through which we make decisions on what to pursue, and Design for Delight is our framework for determining how to pursue it."[9] Intuit Inc. is an American business software company that specializes in financial software. The company is headquartered in Mountain View, California, and the CEO is Sasan Goodarzi. Intuit's products include the tax preparation application TurboTax, the personal finance app Mint, and the small business accounting program QuickBooks.

Play the YouTube video below to see how a university taught their students the Design for Delight methodology in a two-day bootcamp.[10] [Transcript for "Marshal University Design for Delight Bootcamp with Intuit" Video [PDF–New Tab]](). Closed captioning is available on YouTube.

> One or more interactive elements has been excluded from this version of the text. You can view them online here: *https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=67#oembed-3*

Design for Delight Course

Intuit offers a free course for students who may wish to learn the [Design for Delight]() design thinking methodology.

The methodology focuses on the following three key concepts:

1. Deep Customer Empathy
2. Go Broad to Go Narrow
3. Perform Rapid Customer Experiments

Design for Delight Innovator Certification

Through Certiport.com students may complete a certification exam for Design for Delight (there is an exam fee for this exam). The Intuit Design for Delight Innovator certification helps individuals validate their knowledge of design thinking principles and the tools needed to identify problems, gain customer empathy, brainstorm solutions, run experiments, test assumptions, pivot, and much more. This type of thinking promotes creativity, critical thinking, complex problem solving, and other skills that are much needed and valued in today's workforce. [11]

Design for Delight
Certification Badge

Prototyping and 3D Printing

Prototyping

As mentioned above, a **prototype** is a mini design of the actual product. It can be a sketch, a low-quality, or a high-quality copy depicting what the real product will look like. It is important for companies to prototype fast and often in order to produce innovations at the right times–when customers demand them and before competitors beat them to market. The main benefit of prototyping is that it results in a faster and more effective design cycle (accelerated development). Because prototypes allow companies to test their design in the "real-world" environment, it is easier to identify potential problems and prevent costly mistakes down the road (better products). [12]

Play the YouTube video below for an explanation of how Intuit Inc. builds prototypes. [13] Building Prototypes Ready to Test with Customers Transcript. [PDF–New Tab]. Closed captioning is available on YouTube.

> *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=67#oembed-4*

3D Printing

3D printing is an inexpensive way to make a prototype. Today 3D printing, or additive processing for manufacturing, has become a standard. In previous years many manufacturers, automakers, jewelry makers, sculptures, etc., were using a subtractive processing method. With subtractive manufacturing, there is much waste. Think about sculpting a statue out of a tree, you would whittle away the parts of the tree you don't need to make the statue appear. With additive manufacturing, there is little waste because the statue would be built layer upon layer from the ground up in the exact shape and design you specify.

Acumen Research and Consulting forecasts the global 3D printing market to reach $41 billion by 2026. The adoption of 3D printing is ever expanding and companies who have yet to integrate additive manufacturing somewhere in their supply chain are now part of an ever-shrinking minority. Where 3D printing was only suitable for prototyping and one-off manufacturing in the early stages, it is now rapidly transforming into a production technology. Most of the current demand for 3D printing is industrial in nature. As it evolves, 3D printing technology is destined to transform almost every major industry and change the way we live, work, and play in the future.[14]

A few examples of 3D printing used in various industries:

- consumer products (eyewear, footwear, design, furniture)
- industrial products (manufacturing tools, prototypes, functional end-use parts)
- dental products
- medical and health products

Play this YouTube video from Mashable, "What is 3D Printing and How It Works?", to learn more about the 3D Printing process.[15] Transcript for "What is 3D Printing and How Does it Work? Video [PDF–New Tab]. Closed captioning is available on YouTube.

> 📽 *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=67#oembed-5*

Key Takeaways

1. **Design thinking** is one of several approaches to innovation and is a process for creative problem-solving. Design thinking has a human-centered core. It encourages organizations to focus on the people they are creating for, which leads to better products, services, and internal processes. The design thinking framework helps inspire creative thinking and strategies that lead designers to create user-friendly products that help solve a particular problem.

2. There are **five stages** to the design thinking process which include empathizing, defining, ideating, prototyping, and testing.

3. There are hundreds of **ideation methods** used to spark innovative ideas.

4. There are **many products** created using design thinking such as shoelaces that don't need to be tied (great for kids), velcro closures instead of buttons or laces (great for anyone, but specifically for older adults who may have difficulty with buttons or laces), and what about gel pads that are placed inside shoes (great for anyone with sore feet or people that stand for long hours in the workplace).

5. How do the best product managers build ideal solutions for their customers' pain points? Intuit Inc. has crafted the **Design for Delight** (D4D) and Customer-Driven Innovation (CDI) principles to center customer empathy to build the best solutions for their customers.

6. The Intuit **Design for Delight Innovator certification** helps individuals validate their knowledge of design thinking principles and the tools needed to identify problems, gain customer empathy, brainstorm solutions, run experiments, test assumptions, pivot, and much more.

7. A **prototype** is a mini design of the actual product. It can be a sketch, a low-quality, or a high-quality copy depicting what the real product will look like. It is important for companies to prototype fast and often in order to produce innovations at the right times–when customers demand them and before competitors beat them to market.

8. **3D printing** is an inexpensive way to make a prototype. Today 3D printing, or additive processing for manufacturing, has become a standard.

End-of-Chapter Exercises

1. **Design Thinking Innovations.** Search the Internet to locate a company that is using design thinking to develop new innovations. Share your findings with the class and/or professor.

2. **Ideation Methods.** Search the Internet to research one of the many ideation methods. Describe how it is done and the benefits of this method. Share your findings with the class and/or professor.

3. **Ideation Session.** In a group or with a partner use one of the ideation methods listed in this chapter to ideate some innovative concepts. The problem you are trying to solve is for older adults. Foot problems are common in older people, for a variety of reasons. Feet lose cushioning as they age, and the skin and nails can grow dry and brittle. Many older adults have poor circulation, and this can slow the healing of foot sores. Older adults often have very dry feet with cracked heels, an inability to reach their feet to apply needed lotions, and stubborn athlete's foot. When feet are very dry and cracking, they can be painful to walk on and are more likely to get infected. They may have bunions, toenail issues, corns, and calluses on their feet. So what ideas can you and your team come up with during an ideation session that might help reduce or solve these problems associated with aging feet? After your ideation session make some notes and share them with the class and/or professor.

4. **Practice Writing a Customer Problem Statement.** Review Intuit's Design for Delight video, Choosing the Right Problem to Solve with the Customer Problem Statement. In a group or with a partner consider a problem you have observed or experienced as a student, an employee, or a customer. Is there something at your school that could be improved? Is there something at your place of employment that can be improved? Have you had a negative experience when interacting with a company? You might come up with a new or improved product, service, or process. If you have observed more than one problem, then write a specific customer problem statement for each one. Alternatively, your professor may choose to assign a specific problem or opportunity to your group. Use the model and technique shown in the Intuit video above. Optionally, if assigned or desired, your group might try using the MURAL free online collaboration tool to support your team in writing a customer problem statement (as shown in the Intuit video). Share your problem statement with your class and/or professor.

5. **Practice Storyboarding.** Review Intuit's Design for Delight video, Aligning Your Team with

Collaborative Storyboarding. In a group or with a partner consider a problem you have observed or experienced as a student, an employee, or a customer. Write a problem statement or use one from the previous exercise. Brainstorm with your team to come up with a solution you would consider testing. You might come up with a new or improved product, service, or process. Alternatively, your professor may choose to assign a specific solution to your group. Using the model and technique shown in the Intuit video above, diagram a simple storyboard that answers key questions about how your idea works in the real world, such as how customers engage with your idea, how it works technically, and what the key moments are in the experience. Optionally, if assigned or desired, your group might try using the MURAL free online collaboration tool to support your team in storyboarding a potential solution (as shown in the Intuit video). Share your storyboard with your class and/or professor.

6. **Hands-on 3D Print.** Try creating a 3D printed object. You can use TinkerCad, a free software tool online, used to design 3D print objects. You can view other people's objects as well both at TinkerCad and Thingiverse, and you can reuse many of these designs. Choose either someone else's design to start with then modify it by adding your initials to the design, or create an object from scratch. You will end up with an STL file type. This file can be sent to any 3D printing shop to get a physical copy. Many libraries offer 3D printing services now and they are not very expensive. Share your TinkerCad editing screen as well as your printed 3D model with the class and/or professor and describe the experience, the difficult parts, and the rewarding parts.

7. **3D Printed Products**. Search the Internet to discover what things can be 3D printed. Can a car be 3D printed? Can a house be 3D printed? Can teeth be 3D printed? Can body limbs be 3D printed? Can food be 3D printed? What other products did you discover can be 3D printed? Share your findings with the class and/or professor.

8. **New 3D Print Businesses.** Search the Internet to find new businesses that are now offering 3D Print services for individual consumers. Were there many? What services do they offer? How do they create 3D objects (e.g. software CAD or photo scanning, etc.)? What material(s) are used to create these 3D printed objects (e.g., metal, plastic, food, etc.)? Share your findings with the class and/or professor.

9. **Personal 3D Printer.** Search the Internet to find the most commonly used type of 3D printer for home use. How much does it cost? Do you foresee 3D printing becoming a common thing used by individual consumers? Why or why not? Share your findings with the class and/or professor.

Self-Check Exercise – Drag the Words – Design Thinking Innovations

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=67#h5p-9

Additional Resources

1. Stage 1 in the Design Thinking Process: Empathy
2. Stage 2 in the Design Thinking Process: Define
3. Stage 3 in the Design Thinking Process: Ideate
4. Stage 4 in the Design Thinking Process: Prototype
5. Stage 5 in the Design Thinking Process: Test
6. 5 Game-Changing Design Thinking Examples to Learn From
7. 12 Great Design Thinking Examples You Can Use to Seek Inspiration
8. Game Storming for Innovative Ideas
9. Intuit: Designing for Delight in Product Management – YouTube video
10. Intuit: Online Course
11. History of 3D Printing: It's Older Thank You Think
12. 20 Products That Are Now Being Made Using 3D Printing

13. The Importance of Prototyping in [UX Designing](#)
14. 3D Printing History and Overview – [Wikipedia](#)
15. 56+ [Coolest Things](#) to 3D Print

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

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Notes

1. IDEO U. (2021, May 26). *What is design thinking?* [Video]. YouTube. https://www.youtube.com/watch?v=QWdgc-pAHRlM&t=37s
2. Mortensen, D. (2020). *Stage 1 in the design thinking process: Empathize with your users.* https://www.interaction-design.org/literature/article/stage-1-in-the-design-thinking-process-empathise-with-your-users
3. Dam, R. & Siang, T. (2021). *Stage 2 in the design thinking process: Define the problem and interpret the results.* https://www.interaction-design.org/literature/article/stage-2-in-the-design-thinking-process-define-the-problem-and-interpret-the-results
4. Dam, R. & Siang T. (2020). *Stage 3 of the design thinking process: Ideate.* https://www.interaction-design.org/literature/article/stage-3-in-the-design-thinking-process-ideate
5. Dam, R. & Siang T. (2021). *Stage 4 of the design thinking process: Prototype.* https://www.interaction-design.org/literature/article/stage-4-in-the-design-thinking-process-prototype
6. Dam, R. & Siang, T. (2021). *Stage 5 in the design thinking process: Test.* https://www.interaction-design.org/literature/article/stage-5-in-the-design-thinking-process-test
7. InVision. (2020, January 29). *The 5 stages of design thinking.* [Video]. YouTube. https://www.youtube.com/watch?v=-ySx-S5FcCI
8. IDEO U. (n.d.). *11 products & services made using design thinking.* https://www.ideou.com/blogs/inspiration/11-products-made-using-design-thinking#:~:text=Here%20are%20some%20of%20our%20favorite%20exam-

ples%20of,to%20take%20medications%20can%20be%20challenging%20and%20time-consuming

9. Intuit. (2023, February 16). *Designing for delight in product management.* [Video]. YouTube. https://www.youtube.com/watch?v=7ZHtIYaKokI

10. Intuit Labs. (2017, December 22). *Marshall University Design for Delight Bootcamp with Intuit.* [Video]. YouTube. https://youtu.be/ybswFQex6vQ

11. Certiport. (2023). *Intuit design for delight innovator certification.* https://certiport.pearsonvue.com/Certifications/Intuit/Certifications/Certify/Design-for-Delight

12. Erickson, A. (2019, May 14). *The importance of prototyping.* https://www.cati.com/blog/2019/05/the-importance-of-prototyping/#:~:text=The%20main%20benefit%20of%20prototyping%20is%20that%20it,problems%20and%20prevent%20costly%20

13. Intuit. (2022, February 11). *Building prototypes ready to test with customers.* [Video]. YouTube. https://www.youtube.com/watch?v=-ySx-S5FcCI

14. 3Dprinting.com. (n.d.). *What is 3D printing?* https://3dprinting.com/what-is-3d-printing/#:~:text=Examples%20of%203D%20Printing%201%20Rapid%20Prototyping%20%26,Consumer%20Products%20...%206%20Healthcare%20...%207%20Food

15. Kwestyon. (2014, May 8). *What is 3D printing and how does it work?* [Video]. YouTube. https://youtu.be/Vx0Z6LplaMU

CHAPTER 8: PRODUCT INNOVATION

Chapter 8 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Explain the difference between radical and incremental product innovation.
2. List three benefits companies gain from product innovation.
3. Explain what happens at each of the seven stages of new product development.
4. Discuss the factors that influence the success of new product development.
5. Explain how combining different types of innovation into a new offering often results in greater returns.

What is Product Innovation?

"When people think of innovation, often, they're thinking of product innovation. **Product Innovation** is the process of creating a new product—or improving an existing one—to meet customers' needs in a novel way.[1] Product innovation can come in three different forms. 1) The development of a new product, such as the Fitbit or Amazon's Kindle. 2) An improvement of the performance of the existing product, such as an increase in the digital camera resolution of the iPhone 11. 3) A new feature to an existing product, such as power windows to a car."[2]

Incremental innovation, the least risky and most frequently seen, is the improvement of existing products. An example of this is the development of the first Walkman, a personal music player released by Sony in 1979. It combined an audio cassette player and headphones. As the story goes the Sony chairman wanted a way to listen to his opera music on a long international flight. His request was sent to a Sony designer who proto-typed something by working with an existing Sony product, a bulky tape player popular with journalists. But the designer modified it to be a playback-only version that could be used with headphones. He rigged up a

prototype in time for the chairman's next flight and the Sony Walkman was born. This wasn't a technological breakthrough, but compared to previous products it was a breakthrough in imagination in incremental product innovation.[3]

Radical innovation is the creation of a whole new product. This category is riskier than incremental innovation and can disrupt entire markets. One famous example is the launch of the Apple iPod. It not only served as an improvement to portable music players but also made digital music more popular and introduced access to the Apple App Store. It disrupted the music industry and created a whole new ecosystem. Today's product managers are like mini CEOs of their products. They own the decisions about what gets built and influence aspects of how it's launched. But the product managers aren't the actual CEOs and they don't have direct authority over most of the things required for product innovation. They arm themselves with the vision and influence and focus on leading teams with the company's strategy in hand. Product leaders innovate by leveraging collaboration, bringing together the best people and ideas, and setting the stage for innovation.[4]

Why is Product Innovation Important?

Product innovation aids companies in doing the following:

1. Gaining a Competitive Advantage (e.g., increasing profits)
2. Expanding Market Share (e.g., entering global markets)
3. Meeting Sustainability Goals/Requirements (e.g., keeping up with trends, changing values and beliefs, meeting regulations)
4. Recovering Losses (e.g., from product failures)
5. Improving Company Image (e.g., becoming an innovative leader)
6. Growing the Business (e.g., expansion through new fields explored, new ideas, new brands, attracting more customers)

Where should the responsibility for innovation lie? Companies need to create an organizational structure to drive innovation; there are many variations and approaches. A product innovator must recognize the company's innovative business structure and its inherent roadblocks and then determine how to overcome them. The most common approaches companies use for innovation include components of [design thinking](), [rapid prototyping](), [lean innovation](), and [open innovation](). Design thinking is a process that brings together what is desirable from a human point of view with what is technologically feasible, and economically viable. The design thinking process starts with a deep understanding and empathy for the customers' needs. Then, it goes through the steps of defining the problem, ideating the solutions, prototyping the ideas, and testing the ideas. IBM developed an internal framework for innovation, naming it IBM Design Thinking.[5]

What are the Seven Stages of Product Development?

The **product life cycle** attempts to describe the stages a product goes through from launch to discontinuation, which typically includes introduction, growth, maturity, and decline. "The **product development life cycle** explains how new ideas are brought to the market. From concept to commercialization, it guides aspiring builders through the process of product development in a way that's intended to reduce risk and maximize the odds of finding traction. In relation to the product life cycle, it's like a prequel to the introduction phase. There are a few different ways to categorize the steps in the product development life cycle. What's most important, however, is for companies to lead a lean, user-driven operation. That way, they can deliver a minimum viable product (MVP), gather customer feedback, and generate revenue as quickly as possible."[6]

Person generating ideas

New product development teams often consist of top management, and specialists from sales and marketing, research and development, manufacturing, and finance. This team will conduct market research and gather customer and employee feedback to consider when formulating ideas for new products. The team will also evaluate the feasibility of ideas, consider the resources available, and identify risks. This group considers and plans new and improved products following seven stages, as listed below.

1. Idea Generation (Idea formulation)
2. Idea Evaluation (Screening)
3. Concept Testing
4. Product Development
5. Testing and Execution
6. Post Development (Commercialization, Market Introduction)
7. Support and Maintenance

The most innovative organizations rely on systems of individuals and teams working across functions in their organizations. Innovation isn't the work of only scientists, engineers, or marketers; it's the work of an entire business and its leadership.[7]

Play the YouTube video below, "Product Development Process: 7 Essential Stages", to learn more about each stage in the new product development process.[8][/footnote] Transcript for "Product Development Process: 7 Essential Stages" Video [PDF–New Tab]. Closed captioning is available on YouTube.

> One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=72#oembed-1

What are the Success Factors for Product Development?

There are different factors that influence the success of new product development. For instance, the entire team needs to be competent and committed to the success of the product. The product designer will be responsible for utility and usability, but there are a number of factors that are beyond the control of the designer. An effective new product development (NPD) function is supported by the right tools and the right business culture; it depends on teamwork underpinned by organizational knowledge and strong strategic direction from above. But it is also characterized by systems and processes that are agile, adaptable, and repeatable. Businesses should carefully consider how they can develop the precise mix of culture, people, and digital infrastructure to meet these demands in the most efficient and competitive way possible.[9]

The following eight factors will influence the success of new product development.[10]

1. Top Management Support

The support of top management is essential, without it the project will not get the resources and financial budget to implement the development phases. The design team must learn to convince top management to support the project, or the entire project collapses. Creating a culture that values innovation and encourages it at every level has been found in countless studies to be one of the key indicators of success in this area. The focus, resources, and respect that your organization channels towards NPD will reflect the priority it is given in the minds of those who can influence its direction the most. Steve Jobs, for example, based the leadership culture of the Apple Company on brand fanaticism and radical customer devotion and propelled the organization into a new and unprecedented era of innovation.

Manager supporting employee

2. Market Orientation

Market orientation analysis should guide the team on how to meet the needs and wants of customers. Investopedia defines market orientation as follows: "**Market orientation** is a company philosophy focused on discovering and meeting the needs and desires of its customers through its product mix." It seems reasonable to suggest that while a design team does not have control over company philosophy it should be in a good position to influence this. Conducting user research and where appropriate market research – two fundamentals of developing high-quality user experiences; will enable the discovery of customer/user needs and how to meet them.

3. Technology

Ensure the technology being used to introduce the product to the market is compatible with the market. It is imperative to use a technology the market can resonate with. For instance, a multi-million dollar software or hardware requirement may make the product inaccessible to small consumers.

4. Knowledge Management

The company should ensure data and information are accessible to all. A digital document management system can act as a repository of information vital for the success of new product development (NPD) initiatives. It can give teams a firm grasp of project progress, deliverables, and dependencies. It can facilitate easy access to the documentation they need to complete tasks. It can allow different teams to work on and suggest changes to those documents. It can give overall governance of a project to a nominated individual, who can use its publishing and curation tools to keep projects well managed and on track. Good knowledge sharing capabilities reduce mistakes, increase the speed of delivery of goals, and build closer more aligned teams.[11]

5. New Product Development Strategies

The responsibility for drafting and implementing strategies is a shared goal between the development, design, and management teams. These parties should coordinate their activities to ensure there is uniformity in their decisions. Having clear processes for design and development is essential. While these may be tailored to fit specific circumstances – a methodology for working that is clearly understood and agreed to by all members of the product development team is highly likely to produce better results than those created with no formal process.

Responsibility for new product development strategies is likely to be shared between design, product management, and development. This means that the design team will have some input into the strategies chosen and

will be able to influence these strategies with their user research to guide the strategy to fit the needs of their users. It is probably fair to say that product management will normally have the final say on a strategic direction but designers have plenty of room to negotiate with product managers to ensure better outcomes.

6. New Product Development Speed

Speed to market is a critical factor in success. If the new product development process takes five years but a competitor's process takes only two years – it is likely that no matter how good the team's designs are; they will have been eclipsed by the time they get to market. Refining the design process to maximize speed whilst protecting the user experience is a delicate balancing act. Designing for a great user experience is within the design team's control, however, the development process speed is much less likely to be within the design team's control and their ability to influence that speed may be minimal.

7. New Product Development Process

Having clear processes for design and development is essential. While these may be tailored to fit specific circumstances – a methodology for working that is clearly understood and agreed to by all members of the product development team is highly likely to produce better results than those created with no formal process. The design team will, normally, have some input into these processes and be able to negotiate modifications to processes when they fail to produce optimal results. There is little control for the design team over the way other teams execute these processes. Failure in execution, from other teams, is one of the few areas where it is reasonable to say that failure was completely outside of the design team's control.

8. New Product Development Team

New product development normally brings together teams of diverse people from all across an enterprise. It is strongly suggested that these diverse teams tend to be highly creative and more successful than teams of a more standardized nature. The way teams work together is a critical factor in their success and designers operating as part of such a team have their part to play in this. Professionalism and leadership can be displayed by any member of a team (including those without official leadership and management roles) and while one team member cannot be responsible for the actions of others within a team – they are fully responsible for their own actions. As Michael Jordan, the world-famous athlete and basketball superstar says; "Talent wins games, but teamwork and intelligence wins championships."[12]

How Can Product Innovation Be Combined with Other Innovation Types?

When a company works to combine multiple types of innovations, they often produce powerful results. Top innovators (those repeatedly launching successful offerings) integrate twice as many types of innovation as the average innovators.[13]

> "Almost all of the enterprises that we celebrate as leading innovators routinely use multiple types of innovation – and handily outperform the average firms that innovate more naively ... Significantly, the top innovators outperform the S&P 500. Integrating more types of innovation can help deliver superior financial returns."[14]

Many firms are trying to mix products with services in an effort to boost revenue and balance cash flows. Hybrid solutions—products and services combined into innovative offerings—can help companies attract new customers and increase demand among existing ones by providing superior value. Such offerings are commonplace—think Apple (the iPod product combined with the iTunes service) and Xerox (copiers and printers bundled with maintenance or customer support services). For these and many other companies, hybrid solutions have spurred growth or helped reverse market share or profit decline.[15]
Developing hybrid solutions can be tricky because various combinations may have potential. A hybrid offering is most likely to yield sustainable returns if the dependence between the product and the service can be increased and if the offering is scalable.[16]

Example: Combining Innovation Types – Nike Company

Let's look at how Nike combines the Ten Types of Innovation® to delight customers and stay ahead of the competition.[17]

"A **Product Performance** company at its core, Nike has made leading sportswear and equipment for decades. In 1985 they made a remarkable innovation, by signing then-rookie basketball star

Michael Jordan to endorse the Nike brand. This trend of sports star endorsements continues strongly today, to help the likes of Nike and Adidas maintain market dominance.

In 1990, Niketown was launched – a **Channel** innovation, to present 'retail as theatre'. The flagship stores cost millions and were clearly never going to produce a return on investment by selling goods in-store. Instead, the initiative was funded by the advertising budget; the stores could do more to build **Brand** innovation than any ad campaign.

In recent times Nike has launched Nike+, a leading **Product System** that is integrated into the sportswear range and allows runners and athletes to track their movements. It also integrated with Apple products in a **Network** innovation. These steps alone touch on half of the ten types, and as a result, Nike is consistently one of the leading brand names in the world."[18]

Example: Combining Innovation Types – Method Company

Let's look at how the Method company combines the Ten Types of Innovation® to delight customers and stay ahead of the competition.[19]

The product called "method" is a non-toxic line of natural home care products. The various offerings are sold in more than 40,000 retailers worldwide, including Target, Whole Foods, and Kroger. Method's cleaning bottles are made from 100% post-consumer recycled plastic while the company itself is a "[Cradle to Cradle](#)" endorsed company; more than 60 of its products are certified with the C2C stamp of environmentally friendly approval. Internally, Method practices what it preaches: it offsets its carbon emissions, works within a LEED-certified sustainable office, and does not test its products on animals.

The company "method" combined five types of innovation in the following way:

1. **Structure** – Method outsourced production to more than 50 separate subcontractors to develop a nimble and flexible manufacturing process.
2. **Process** – In a process the company calls "greensourcing," Method worked with suppliers

and manufacturers to track the environmental impact of making its products. It also identified best practices to improve the water, energy, and material efficiency of its manufacturing processes.

3. **Product Performance** – Method's product not only kills germs and grime, it was also developed without toxic chemicals or destructive production practices. The company adhered to "the precautionary principle," meaning that if there was a chance that an ingredient wasn't safe, it didn't use it.

4. **Brand** – With its readily identifiable, bright, and colorful packaging (originally created by industrial designer Karim Rashid), Method built a big following in home décor and design blogs, and its bottles have prompted instant on-shelf recognition.

5. **Customer Engagement** – Method (soap company) created a community called "People Against Dirty" that offered perks, deals, and early looks at new products for customers. However, to broaden the brand's appeal, they opened the community beyond customers and invited anyone interested in making the planet a cleaner place; a tactic that advanced the company's brand promise and extended its reach to potential customers.[20]

Key Takeaways

1. **Product Innovation** is the development of new goods or services to be launched in the market. It can also be an improvement in the functions and assignments of an existing product. If a company's product or solution is innovative, there is a much higher chance to survive and thrive.

2. **Incremental innovation**, the less risky and most frequently seen, is the improvement of existing products.

3. **Radical innovation** is the creation of a whole new product. This category is riskier and can disrupt entire markets.

4. **Product innovation aids companies** by helping the company gain a competitive advan-

tage, expand its market share, meet sustainability goals/requirements, recover losses due to product failures, improve company image, and grow the business.

5. **New product development** is the function of top management, specialists from sales and marketing, research and development, manufacturing, and finance. This group considers and plans new and improved products in **seven different phases**, as follows: idea generation, screening of ideas, concept testing, business analysis, product development, test marketing, and finally, commercialization.

6. The following **eight factors will influence the success of a new product:** Top Management Support, Market Orientation, Technology, Knowledge Management, New Product Development Strategies, New Product Development Speed, New Product Development Process, and New Product Development Team.

7. When a company works to **combine multiple types of innovations**, they often produce powerful results.

End-of-Chapter Exercises

1. **Unintended Product Development.** Many people have heard the story of how post-it notes were invented. A chemist at the 3M company was working on developing an ultra-strong adhesive for use in aircraft construction. Instead, a mistake led to the new adhesive called acrylate co-polymer microspheres, which is a weak, pressure-sensitive adhesive. Eventually, the designers determined this weak adhesive would work on paper and post-it notes were invented and became a big success. Search the Internet to find similar stories of products that were developed unintentionally and yet became successful. Share your findings with your class and/or professor.

2. **New Product Failure.** Search the Internet to discover reasons why new products fail. What did the company do wrong? Share your findings with your class and/or professor.

3. **Consider Product Success.** Consider one of the following products you use: your cell phone, your vehicle, your computer device (e.g., tablet, laptop, computer), or another. Consider why you use it. Consider how satisfied you are with it. Search the Internet to find out

how popular this product is. Do consumers like it? How does it rate against competing products? Which target market was this product developed for? Do you think it is meeting the needs/wants of this target market? Have there been previous versions/releases of this product? Does each version/release get better at meeting the needs/wants of customers? Do you think there will be future new versions/releases of this product? Why or why not? Share your findings and analysis with your class and/or professor.

4. **Dragons' Den.** Search the Internet to explore opportunities the Dragons passed on investing in, which later became successful. What did the Dragons miss? Share your findings with your class and/or professor.

5. **Most Successful Companies.** Search the Internet to find the most successful innovative companies. Which companies are known for producing the best innovative products, services, or other types of innovations? How are they structured? Do they mention innovation in their mission, vision, or values? Do they have an innovation lab? Do they provide employees time to innovate? Share your findings with your class and/or professor.

6. **Innovation Types Combined.** Search the Internet to find a product that is a result of combining different types of innovation from the [Ten Types of Innovation® Framework](#). You may even have some of these combined innovation products right in your home. Do these products bring added value to customers? How? Share your findings with your class and/or professor.

Self-Check Exercise – Flashcards – Type of Innovation

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=72#h5p-10

Additional Resources

1. 15 of the [Best New Products](#) You Need to Know About
2. [7 Successful Product Launch Examples](#) that will Inspire You
3. [5 Most Successful Products Ever](#) and What Small Business Can Learn From Them
4. [Lean Innovation](#) – What is it and How can it Impact Your Business?
5. [Open Innovation](#) – Definition, Benefits, and Examples
6. [Rapid Prototyping](#)
7. What is [Design Thinking](#)?
8. [A Practical Guide](#) to Combining Products and Services

References

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Notes

1. Cote, M. (2020, March 24). *Product innovation: What business leaders need to know.* https://online.hbs.edu/blog/post/product-innovation
2. Differential. (2020, March 20). *The 3 types of innovation: Product, process, & business model.* https://www.differen-

tial.com/posts/the-3-types-of-innovation-product-process-business-model/

3.   Holst, K. (2018, June 29). *Product innovation for product managers.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/product-innovation-for-product-managers/what-product-innovation-is-and-isnt?autoAdvance=true&autoSkip=false&autoplay=true&resume=false&u=2167290

4.   Holst, K. (2018, June 29). *Product innovation for product managers.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/product-innovation-for-product-managers/what-product-innovation-is-and-isnt?autoAdvance=true&autoSkip=false&autoplay=true&resume=false&u=2167290

5.   Holst, K. (2018, June 29). *Product innovation for product managers.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning/product-innovation-for-product-managers/what-product-innovation-is-and-isnt?autoAdvance=true&autoSkip=false&autoplay=true&resume=false&u=2167290

6.   Anderson, D. (2022, October 27). *7 key stages of product development life cycle.* https://zapier.com/blog/product-development-life-cycle/

7.   Woods, T. (2015, December 7). The Ten Types of Innovation® Framework - and how to use it. Hype. https://blog.hypeinnovation.com/using-the-ten-types-of-innovation-framework

8.   Jelvix. (2020, June 24). Product development process: 7 essential stages. [Video]. YouTube. https://www.youtube.com/watch?v=k9qOo09KG_I

9.   Interactive Design Foundation. (2021). *An overview of the factors of success for new product development.* https://www.interaction-design.org/literature/article/an-overview-of-the-factors-of-success-for-new-product-development

10.   Interactive Design Foundation. (2021). *An overview of the factors of success for new product development.* https://www.interaction-design.org/literature/article/an-overview-of-the-factors-of-success-for-new-product-development

11.   Byrne, J. (n.d.). *5 critical success factors for a new product development process.* https://www.cognidox.com/blog/new-product-development-process

12.   Interactive Design Foundation. (2021). *An overview of the factors of success for new product development.* https://www.interaction-design.org/literature/article/an-overview-of-the-factors-of-success-for-new-product-development

13.   Woods, T. (2015, December 7). *The ten types of innovation framework - and how to use it.* Hype. https://blog.hypeinnovation.com/using-the-ten-types-of-innovation-framework

14.   Woods, T. (2015, December 7). *The ten types of innovation framework - and how to use it.* Hype. https://blog.hypeinnovation.com/using-the-ten-types-of-innovation-framework

15.   Shankar, V., Berry, L. & Dotzel, T. (n.d.). *A practical guide to combining products and services.* https://hbr.org/2009/11/a-practical-guide-to-combining-products-and-services#:~:text=Hybrid%20solutions%E2%80%94products%20and%20services%20combined%20into%20innovative%20offerings%E2%80%94can,demand%20among%20existing%20ones%20by%20providing%20superior%20value

16.   Shankar, V., Berry, L. & Dotzel, T. (n.d.). *A practical guide to combining products and services.* https://hbr.org/2009/11/a-practical-guide-to-combining-products-and-services#:~:text=Hybrid%20solutions%E2%80%94products%20and%20services%20combined%20into%20innovative%20offerings%E2%80%94can,demand%20among%20existing%20ones%20by%20providing%20superior%20value

17.   Woods, T. (2015, December 7). *The ten types of innovation framework - and how to use it.* Hype. https://blog.hypeinnovation.com/using-the-ten-types-of-innovation-framework

18.   Woods, T. (2015, December 7). *The ten types of innovation framework - and how to use it.* Hype. https://blog.hypeinnovation.com/using-the-ten-types-of-innovation-framework

19.   Deloitte Digital. *Ten types of innovation.* https://www.deloittedigital.com/us/en/offerings/customer-led-marketing/customer-strategy-and-applied-design/applied-design-and-innovation/ten-types.html

20. Deloitte Digital. *Ten types of innovation.* https://www.deloittedigital.com/us/en/offerings/customer-led-marketing/customer-strategy-and-applied-design/applied-design-and-innovation/ten-types.html

CHAPTER 9: NEW VENTURE INNOVATION

Chapter 9 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Discuss why entrepreneurship is important to society.
2. Define the term "entrepreneur".
3. List four characteristics or traits an entrepreneur should have.
4. Explain the difference between a social entrepreneur, a necessity entrepreneur, and an opportunity entrepreneur.
5. Explain what a business plan is and how it is used.
6. Explain how the business model canvas is used.
7. Discuss three types of support an entrepreneur might obtain for starting a new business.

Importance of Entrepreneurship

Entrepreneurship is important for economic growth. New companies create employment, contribute to a nation's GDP, and bring new and innovative products and services to consumers.

"A society becomes greater if the employment base is large and diversified. It brings about changes in society and promotes facilities like higher expenditure on education, better sanitation, fewer slums, a higher level of homeownership."[1]

"Entrepreneurship increases income levels, therefore improving standards of living. Entrepreneurs identify challenges in the lives of customers and provide appropriate business solutions. Additionally, they hire new employees who receive remuneration and this income gets circulated in the economy. All of the spending and salaries generate incremental wealth, therefore improving standards of living."[2]

"Entrepreneurs again play a key role in increasing the standard of living in a community. They do this not just by creating jobs, but also by developing and adopting innovations that lead to improvements in the quality of life of their employees, customers, and other stakeholders in the community. New and improved products, services or technology from entrepreneurs enable new markets to be developed and new wealth to be created. Additionally, increased employment and higher earnings contribute to better national income in the form of higher tax revenue and higher government spending."[3]

Entrepreneurial Traits

An **entrepreneur** is someone who starts, owns and operates a business. It is difficult to generalize about the kind of people attracted to the idea of starting their own business because entrepreneurs are increasingly diverse. An interesting portrait of Canadian entrepreneurs emerged from a 2019 BDC survey of 1,025 Canadian business owners. Among the findings:[4]

- Twenty-eight percent were women, up from 11% 40 years ago.
- Newcomers to Canada were twice as likely to start a business as their Canadian-born counterparts.
- The number of Canadians under 35 who started a business increased by 80% between 2014 and 2018.

Key Traits

While entrepreneurs do require many skills and abilities, they may not have all the skills they need to run a business successfully. In these cases, an entrepreneur might hire a consultant, a contract employee, or a full-time employee to support the business tasks for which the entrepreneur is lacking skills or may not have the time to focus on. For example, as an entrepreneur, if accounting is your weakness you might hire an accountant, payroll service, or bookkeeper. If sales or marketing are not skills you have developed you might hire a salesperson or contract a marketing company to help you build marketing campaigns. While hiring consultants, services, or employees does cost money, you can rest assured it is being done accurately, and the investment should pay off.

Some of the key traits found in entrepreneurs include the following.

1. **Passion.** "Work ethic and passion go hand in hand. It takes work ethic to keep the business strong, and it takes passion to feel motivated enough to maintain a good worth ethic. That feeling of success is priceless, and it's how entrepreneurs feel when they see great outcomes from the effort they put into their work."[5]
2. **Risk Tolerance. "**Taking risks helps businesses find new ways to differentiate themselves from the competition, which is especially helpful in saturated markets. In the event the risk doesn't have the intended

result, the entrepreneur can still apply the valuable lessons learned to future business decisions. Microsoft's Bill Gates is credited with the quote, 'To win big, you sometimes have to take big risks.' Gates certainly took risks throughout the history of Microsoft, but perhaps his most notable risk was leaving Harvard during his sophomore year in 1975 to found the company. His vision was 'a computer on every desk and in every home,' which was something no one could have conceived of at the time. The risk he took to make that vision a reality paid off."[6]

3. **Persistence.** "While many successful entrepreneurs are comfortable with the possibility of failing, it doesn't mean they give up easily. Rather, they see failure as an opportunity to learn and grow. Throughout the entrepreneurial process, many hypotheses turn out to be wrong, and some ventures fail altogether. Part of what makes an entrepreneur successful is their willingness to learn from mistakes, continue to ask questions, and persist until they reach their goal."[7]

4. **Innovative.** "Innovation is a characteristic some, but not all, entrepreneurs possess. Fortunately, it's a type of strategic mindset that can be cultivated. Some of the most successful startups have taken existing products or services and drastically improved them to meet the changing needs of the market."[8] "Companies that thrive are often built from the wild creativity of their creators. With aggressive competition these days, entrepreneurs are forced to come up with original ideas that differentiate their companies from others. Creative entrepreneurs consider the possibility that the traditional solution isn't good enough."[9]

Motivational Factors

There are some common motivational factors identified in many entrepreneurs. For instance, entrepreneurs are often motivated by much more than money and most start their business to become their own boss. In BDC's survey, when asked why they became an entrepreneur, the most popular answer—cited by 70%—was independence, autonomy, and flexibility. About one in two mentioned passion or self-fulfillment and one third cited financial reasons.[10] Refer to Figure 9.1 below to view survey results for motivational factors that influence entrepreneurial success.
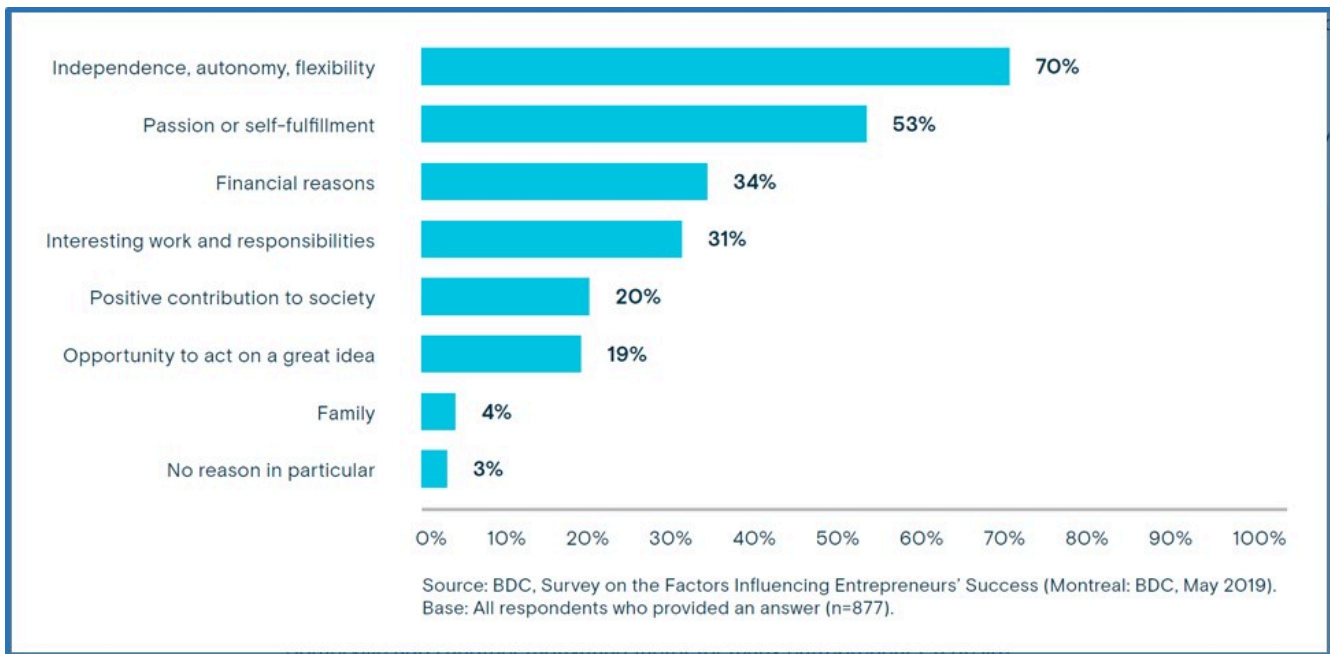
Figure 9.1 Motivational Factors Influencing Entrepreneurs' Success (2019) BDC Survey Results Chart

"The 2019 BDC survey of business owners sheds additional light on what makes Canadian entrepreneurs tick. Three in four said they had to deal with financial insecurity, significant stress, and a lack of benefits. Yet, 90% were professionally satisfied."[11]

Types of Entrepreneurs

There are many types of entrepreneurs and depending on which website you read, you may see a list of five to fifteen types of entrepreneurs. The type of entrepreneur you are depends on your goals and personal characteristics (e.g., skills, knowledge, creativity, interests, preferences, situation in life, drive, determination, etc.).

The Indeed Editorial Team (2023) provides the following list of nine different types of entrepreneurship.[12]

Ben & Jerry's Ice Cream

1. **Small business entrepreneurship.** People interested in this category are probably interested in making a profit that supports their family and a modest lifestyle. They often run the business and work in it. They hire local employees and family members. Local grocery stores, hairdressers, small restaurants,

small boutiques, consultants, plumbers, and accountants are a part of this category.

2. **Large company entrepreneurship.** People in this category are often in a team of executives who know how to sustain innovation. Small business entrepreneurship can turn into large company entrepreneurship when the company grows quickly or when a large company acquires a small business. Microsoft, Google, and Disney are examples of this category.

3. **Scalable startup entrepreneurship.** People in this category look for things that are missing in the market and create solutions for them. Many of these types of businesses start in Silicon Valley and are technology-focused. They seek rapid expansion and big profit returns. Examples include Facebook, Instagram, and Uber.

4. **Social entrepreneurship.** People in this category want to solve social problems with their products and services. Their main goal is to make the world a better place and so they are not concerned with making big profits.

5. **Innovative entrepreneurship.** People in this category aim to change the way people live for the better. Innovators tend to be very motivated and passionate people. They look for ways to make their products and services stand out from other things on the market. People like Steve Jobs and Bill Gates are examples of innovative entrepreneurs.

6. **Hustler entrepreneurship.** People who are willing to work hard and put in constant effort are considered hustler entrepreneurs. Their aspirations are what motivates them and they are willing to do what it takes to achieve their goals. They have drive and determination and do not give up easily.

7. **Imitator entrepreneurship.** People in this category use other people's business ideas but work to improve them. They seek to make certain products and services better and more profitable. They have a lot of self-confidence and determination. They learn from other's mistakes.

8. **Researcher entrepreneurship.** People in this category like to do as much research as possible before starting a business. They believe that with the right preparation and information, they have a higher chance of being successful. They tend to rely on facts, data, and logic rather than their intuition.

9. **Buyer entrepreneurship.** People in this category use their wealth to fuel their business ventures usually through purchasing well-established businesses that they think will be successful. Their goal is to grow the business they acquire and expand their profits.

Social Entrepreneur

Some people start businesses in order to help society, people, and communities. A **social entrepreneur** does not start a company with their main goal being to make a profit, instead, their goal is to make positive change in the world. Their goals often align with the United Nations Sustainable Development Goals (as shown in Figure 9.2 below) and their efforts may have a local, national, or global impact. "Whether it's reducing poverty, ending homelessness, or fighting climate change—social entrepreneurs are, first and foremost, committed to

a cause. While starting a business to support a worthy cause is admirable, the venture still requires focus and serious processes to be sustainable and reach the desired social or environmental impact."[13]

Figure 9.2 United Nations Sustainable Goals

"These entrepreneurs might be for-profit or non-profit, and they operate under the umbrella of social enterprise or entrepreneurship. It recognizes societal issues, donates profits or uses grants or raises, and mobilizes resources for the greater good. Poverty reduction, child rights restoration, access to health care and financial services, women empowerment, and community development are the most common issues these entrepreneurs address. They often persuade societies, large organizations, and governments to encourage social transformation by addressing unmet needs and social issues."[14]

Example: Mark Marsolais-Nahwegahbow (Ojibwe) – Social Entrepreneur

"Entrepreneur Mark Marsolais-Nahwegahbow brought his background in Indigenous law, business, and education to the founding of the Birch Bark Coffee Company on Birch Island in the District of Manitoulin Island. The company offers organic, fair trade, and small-producers-certified coffee. He is bringing sustainable revenue and a more secure future to his community with a larger goal of improving Indigenous lives across Canada. He has pledged, for instance, to devote a portion of company profits to purchase certified water purifiers for those on every reserve without access to clean drinking water. Through his example and speaking engagements, Mark seeks to inspire young Indigenous people to respect tradition and, possibly through entrepreneurship of their own, build a better future for themselves and their communities."[15]

Play the YouTube video below, "What is Social Innovation? How do you actually DO it (and change the world)?", to learn more about the steps involved in creating a social innovation. Amber Melanie Smith provides a specific example of a social innovation related to food insecurity and applies the design thinking methodology to step through the stages of identifying the problem, empathizing, defining the problem, ideating, prototyping, and testing the solution.[16] [Transcript for "What is Social Innovation? How do you actually DO it (and change the world)?" Video [PDF–New Tab]](). Closed captioning is available on YouTube.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=170#oembed-1

Necessity Entrepreneur

A **necessity entrepreneur** is someone who starts a business based on a need for income, out of necessity, because they cannot find employment, have lost their job, need to supplement their income, or require flexibility to attend to other demands in their lives. Some necessity entrepreneurs find business ideas to pursue after

retirement or after being downsized. "A typical necessity entrepreneur is over 50 years of age, has been unemployed for over a year, and sees the possibility of finding full-time employment dwindling."[17]

"A business started out of necessity is usually initiated through some sort of bad luck, i.e. a job loss, redundancy, or even ill health. These entrepreneurs are hesitant because, in all honesty, they would rather be working for a large corporation with the guarantee of a monthly income, however for whatever reason, that is not an option. As with all entrepreneurs, be they averse to starting a business of not, they have a particular knowledge or know a specific product that they think is of value to others. To be able to share this knowledge/product with the world is all they know so, if the only way to be able to use these specialities is to create their own business that's what they do."[18] An example of this might include, a parent with an autistic child who finds it difficult to work a full-time job and still provide the care and attention required to support their child. This parent decides to stay home to take care of their child because they feel they are the best person to do so. The parent then starts to receive many questions from friends and family about autism, and they realize that there may be a need for this type of service. They decide to obtain formal credentials and they complete an online program in the field of autism and behavioural science. Once formally qualified, they start a business providing advice to families about autism as a fee-based service. This works well for the necessity entrepreneur because they can now earn an income by providing a needed service and still take care of their child.

Opportunity Entrepreneur

An **opportunity entrepreneur** is someone who sees an opportunity to make money, gets involved at the right time, and aims for business growth and economic development. For example, "Matt Horan started Rollasole after his girlfriend always complained of walking home in High Heels. With his first entrepreneurial venture he created the first vended shoe, launching Rollasole in his local nightclub. From his hometown, word spread and he built up his business selling his shoes online, in stores and in vending machines. Soon the bright lights of Vegas came calling and after a chance meeting with Ashley Ross an unlikely partnership was formed to bring Rollasole into the States."[19] Sometimes one great idea acts as a catalyst for other great ideas and today we can find vending machines dispensing sneakers, dress shoes, "emergency" shoes, and "flip flops" for beach wear or when you need a pair of shoes to enter a restaurant. So many great ideas!

Another example of an opportunity entrepreneur is Tim Horton, who was a Canadian hockey player, and In 1964 he founded the first Tim Horton doughnut shop in Hamilton, Ontario, which later grew into a chain of franchises across Canada and eventually the United States. Burger King purchased Tim Hortons in 2014 and the two brands became subsidiaries of Restaurant Brands International Inc. (RBI). As of August 2022, RBI is one of the world's largest quick-service restaurant companies with over $35 billion in annual system-wide sales and over 29,000 restaurants in more than 100 countries.[20]

Sometimes a potential entrepreneur identifies an opportunity to make a new product or start a new business which may be a combination of a profit-making business idea that also supports a socially sustainable goal or a business created out of necessity that not only makes a profit but also supports a socially sustainable goal.

Tim Hortons

A good example of a social and profit-making business is 31 Bits. During a trip to Uganda, marketing and international development college student, Kallie Dovel, realized that many of the uneducated single mothers she had met during her trip had exceptional skills and resourcefulness in making jewelry out of old posters. Kallie identified an opportunity to sell this jewelry so she partnered with a few of her college peers and formed the company 31 Bits. The company employs artisans, women from Uganda, with these exceptional skills and ensures they are paid a fair wage. The company also promotes ethical sourcing by allowing for family time, providing dignified careers, and preserving culture. The mission statement for the company is "We use fashion and design to drive positive change in the world by providing artisans with dignified opportunities and inspiring customers to live meaningful lives."[21] Nearly a decade later, 31 Bits can be found in hundreds of stores and has been endorsed by celebrities like Sophia Bush, Candace Cameron Bure, and Jessica Alba, and has been written about by Forbes, Harper's Bazaar, and Elle. Most importantly, hundreds of artisans' lives have been changed forever.[22]

Steps to Creating a New Business

The Business Development Bank of Canada (BDC) provides an ultimate guide to starting a business in Canada. This step-by-step guide provides resources and answers to many questions an entrepreneur may need when considering starting a new business.

1. **Identify a Business Opportunity.** You may find an opportunity for a new product or business by identifying a need for something that is currently missing, or identifying a problem that is occurring and contemplating a way to fix it. Before you start spending money on an idea, it's essential to ensure your business idea has the potential to be successful. Conduct research into what other companies are doing that may be similar to your business concept. Ask yourself these questions. How will your company stand out from the crowd? Who are your target customers? Will they want your service or product? How much money will you need and where will you get it?

2. **Choose a Business Structure.** In Canada, there are three common types of business structures, sole proprietorship, partnership, or corporation and each has its own [pros and cons].[23]

3. **Choose a Business Name.** "Selecting a name for your business is not a task to be taken lightly. In fact, it may prove more difficult than you expect. Your name must be accurate, catchy and, most importantly, available. Your name will often create your company's first impression on customers, so choose it with care. Ask yourself the following questions. Does the name reflect my business and what I sell? Can it be easily remembered? Is it unique and distinctive?"[24]

4. **Create a Business Plan.** Often a **business plan** is used to help secure funding, validate a business idea, grow an existing business, buy a business, sell a business, or advise clients. It legitimizes a business idea, shows the results of research, provides product and customer information, and includes operational and strategic goals. "A business plan is a document that explains how your business operates. It summarizes your business structure, objectives, milestones, and financial performance. It's a guide that helps you, and anyone else, better understand how your business will succeed."[25] Additional information on business plans is below.

5. **Obtain Business Financing.** There are many ways to finance a new venture, and depending on the size of your startup you might use personal funds or apply for a bank loan (debt financing). Other options include government grants and subsidies, asking family and friends, crowdfunding, developing partnerships, business incubators or accelerators, and inviting venture capitalists or angel investors who may be willing to invest in your business for partial ownership or participation in business decision-making (equity financing).

6. **Choose a Commercial Space.** Your choices here will vary. You may not need a physical location if you are selling online and working from your home, although if selling products you will need to consider suppliers and shipping. If you operate a mobile hotdog cart you will want to setup in locations where your customers are. Some mobile food trucks/carts/stands obtain permission to set up outside specific retail stores. Some food truck owners obtain contracts with various organizations and they move from company to company during lunch hours selling lunch products to employees. If you are going to sell products or services in a brick-and-mortar store, then you want to consider buying or leasing a space, the costs of each, and finding a location either near your target market (make more sales near potential customers) or near your supplier (reduce costs). There may also be licenses required, for example, if you sell liquor or food products. You may also require insurance.

7. **Hire Employees.** Whether or not you hire employees will depend on the size of your business. For example, if you are opening a hot dog stand, then you may be the only employee you have. If you are opening a small bakery you might start out hiring friends and family, although, that can be a sticky situation if you have disagreements. Although, some entrepreneurs open restaurants or retail businesses specifically to start a family-owned business and create jobs and income for their family members. As your business grows you may need to hire employees. Take time to do a thorough job search so you can find the right-fit employees, otherwise, you may end up with a lot of headaches and wasted time by hiring the wrong people. To save time, and depending on the number and type of employees you need, you might use a recruiting firm to vet potential candidates for you. While there is usually a cost for this service, it saves you time (and money) in not having to recruit and select employees yourself.

8. **Grow Your Business.** "Getting your business up and running is only the start of your business journey. Your first year will be one of your most challenging. It's when many businesses fail. You will have to keep your eye not only on your day-to-day operations but also planning for your company's future growth. The difference between the two is often described as working in the business versus working on the business. Visit the Business Development Canada (BDC) [manage your growth](#) hub for more tips on how best to move your business forward in the early months."[26]

Business Plan

A business plan may change as your business grows or pivots in a new direction, so you will find the business plan is not fixed but flexible and needs to be revised from time to time. Any new or existing business can and should make use of a business plan. "In its simplest form, a business plan is a guide that outlines goals for your business and how you plan to reach them. It contains an overview of your business strategy, milestones to track tasks and responsibilities, and the basic financial projections you need to forecast your sales, expenses, and cash flow."[27] "The primary purpose of a business plan is to help you understand the direction of your business and the steps it will take to get there. Having a solid business plan can help you grow up to 30% faster and according to our own 2021 Small Business research working on a business plan increases confidence regarding business health—even in the midst of a crisis."[28] There is no one right way to write a business plan, your approach depends on your

A person holding a light bulb sign

industry, and who is reading your plan. Ensure you include all the important information any lender or investor will want to see before they go into business with you.

Below is a brief description of the sections of a traditional business plan.

1. **Executive Summary.** "This is an essential part of a successful business plan that often takes the most time to complete. It's also one that you may consider completing last, even though it's usually the first thing that the reader sees. An executive summary is the definitive recap of all of the information that you include in the business plan. Most commonly, this section doesn't exceed two full pages. This is because the executive summary aims to present the essence of the business and its goals. It serves as an elevator pitch that may help you convince someone to invest in the business."[29]

2. **Company Description.** "A List of the goods and services the company will provide, the market it will serve, short- and long-term goals for growth and a brief history of the company's formation and past performance."[30]

3. **Market Analysis.** "The market analysis section details the target market for the company's product offerings. This section confirms that the company understands the market and that it has already analyzed the existing market to determine that there is adequate demand to support its proposed business model. Market analysis includes information about the target market's demographics, geographical location, consumer behavior, and market needs. The company can present numbers and sources to give an overview of the target market size."

4. **Competitive Analysis.** "A competitive analysis is a strategy that involves researching major competitors to gain insight into their products, sales, and marketing tactics. Implementing stronger business strategies, warding off competitors, and capturing market share are just a few benefits of conducting a competitive market analysis.[31]

5. **Management Plan.** "The management plan provides an outline of the company's legal structure, its management team, and internal and external human resource requirements. It should list the number of employees that will be needed and the remuneration to be paid to each of the employees. Any external professionals, such as lawyers, valuers, architects, and consultants, that the company will need should also be included. If the company intends to use the business plan to source funding from investors, it should list the members of the executive team, as well as the members of the advisory board."[32]

6. **Operating Plan.** "The operating plan provides an overview of the company's physical requirements, such as office space, machinery, labor, supplies, and inventory. For a business that requires custom warehouses and specialized equipment, the operating plan will be more detailed, as compared to, say, a home-based consulting business. If the business plan is for a manufacturing company, it will include information on raw material requirements and the supply chain."[33]

7. **Sales and Marketing Plan.** "This section of the plan defines what you plan to do to promote and sell the company's products or services. Consider including your pricing plans here and mention the organization's unique selling proposal. You may also list important communication channels for the business.

For example, if you're about to launch a retail company, you may explain which social media channels you'd use to promote the products through paid and organic advertisements. Other elements to include here are your email, influencer and content marketing strategies."[34]

8. **Financial Plan and Projections**. "This section should include a company's financial planning and projections. Every company needs to have a budget in place. This section should include costs related to staffing, development, manufacturing, marketing, and any other expenses related to the business. Financial statements, balance sheets, and other financial information may be included for established businesses. New businesses will include targets and estimates for the first few years plus a description of potential investors."[35]

9. **Appendix.** "The final section of a business plan usually includes any additional information or appendices that support the claims and ideas you present in previous sections. You may consider adding attachments that exhibit the viability of your business plan, for example, financial statements or external market reports that you used to analyze competition or target audience."[36]

Play the YouTube video below, "What is a Business Plan? – BPlans Explains Everything", to learn about what a business plan is and why and how you should use one.[37] [Transcript for "What is a Business Plan?" Video](#) [PDF–New Tab]. Closed captioning is available on YouTube.

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Business Model Canvas

The **business model canvas** is a strategic planning tool used by managers to illustrate and develop their business model. The business model canvas template clearly identifies the key elements that make up a business. Additionally, it simplifies a business plan into a condensed form. In this way, the business model canvas template acts as an executive summary for the business plan.[38] The typical use for this tool is to outline the fundamental building blocks of a business, but it can be used effectively for individual products as well. It can be used to identify potential opportunities for growth and expansion, or areas that need improvement. The components may vary but typically the business model canvas includes the following nine building blocks and each is represented by a rectangle in the model diagram.

1. Customer segments
2. Value proposition
3. Channels

4. Customer relationships
5. Key activities
6. Revenue streams
7. Key resources
8. Key partnerships
9. Cost structure

Play the YouTube video below, "Introduction to the Business Model Canvas", to learn about what a business model canvas is and why and how you should use one. [39] [Transcript for "Introduction to the Business Model Canvas" Video [PDF–New Tab]](). Closed captioning is available on YouTube.

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Support and Education for Entrepreneurs

The University of Toronto Open Learning Series

The University of Toronto, The Bridge, Scarborough Campus, offers a free entrepreneurship course within its open learning series. "We welcome students, staff, faculty, alumni, and local and international community of emerging entrepreneurs to enhance your learning of entrepreneurship through the award-winning Entrepreneurship Open Learning Series. Start your entrepreneurship journey by completing [training modules]() that teach you core management principles to help perfect your business plans and pitches."[40]

After you complete the entrepreneurship course within the open learning series you will be able to do the following:[41]

- Explain value proposition and utility to help focus on specific motivations for a specific product.
- Define the target market and describe value specific for a target market to help demonstrate the value built into a product.
- Evaluate the utility and value of a product within an industry using market research.
- Design a usage scenario for a product.
- Discuss software design principles to help the development of a product.

"The BRIDGE is a joint venture between UTSC's Department of Management and the UTSC Library. It is where business, research, and innovation converge, delivering extraordinary student experiences through entrepreneurship, research, advanced training programs, and work-integrated learning. Our state-of-the-art facility includes a business research library, data lab, and collaboration lounge. We are a U of T accelerator focused on student formation and a pathway for industry and community partnerships."[42]

Open Courses

There are many free online courses in entrepreneurship and many other subjects. These courses are offered by various education providers, often in addition to their fee-based courses, and include [Massachusetts Institute of Technology (MIT)](), INSEAD, [University of Toronto](), McMaster University, University of Michigan, Stanford Online, Open Yale Courses, [Harvard University](), [LinkedIn Learning](), FutureLearn, [Coursera](), Edx, Udacity, edX, [Khan Academy](), YouTube, and more. Some courses are referred to as MOOCs, Open Courses, and Free Trials or Demos.

OER (Free) Books, Video Tutorials, Case Studies, and More

"The Recommendation on Open Educational Resources (OER), adopted by UNESCO's General Conference at its 40th session on 25 November 2019, is the first international normative instrument to embrace the field of openly licensed educational materials and technologies in education. OER are defined in this Recommendation as learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others."[43]

There are many free ebooks, case studies, video tutorials, and lessons on many subjects, including entrepreneurship, available from [eCampus Ontario](), [BCCampus](), [OpenStax](), [OER Commons](), Saylor Academy, Khan Academy, MERLOT, Directory of Open Access Journals (DOAJ), Open Textbook Library, OASIS, and more.

Incubators and Accelerators

"A **business incubator** is a specialized program designed as a space for new businesses to learn and grow. The programs provide services for entrepreneurs and startups while offering reduced rates for supplies and workspace. Typically, young businesses must apply for a position and commit to a certain amount of time in the

program. While in a business incubator, companies can more thoroughly plan their business, learn from other individuals and save money."[44]

"A **business accelerator** is a program designed to help established startups scale quickly, and often provide funding in exchange for equity in the business. Accelerators often require startups to already have a minimum viable product or a fixed team before they can apply. Once admitted, startups go through an intense period of growth and development, often over the course of three to six months."[45]

Below are a few examples of business incubators and accelerators, and remember to check with your own college or university to determine if there is an incubator or accelerator on campus.

Seneca College

Seneca College has [HELIX](). "HELIX's Innovation and Entrepreneurship Incubator has a process that provides future entrepreneurs with resources and support to help develop their innovation mindset and grow their new ventures from ideation to launch and scaling. The process involves two stages or 'strands' – the INNOVATION Strand and the ACCELERATION Strand. Those who want to enter the ACCELERATION Strand of HELIX must complete all six workshops of the INNOVATION Strand and deliver a pitch of their proposed venture idea."[46]

MIT

The MIT [delta v accelerator]() is the capstone entrepreneurial experience for students at MIT.[47] [MIT REAP]() is a dynamic global initiative with two programs – Global and Focus – that engages with communities around the world to strengthen innovation-driven entrepreneurial ecosystems and transform economies.[48]

MaRS

MaRS Discovery District innovation hub works with business startups to scale-ups. MaRS offers a range of services and a [Start-up toolkit]() that help tech founders grow their companies and create meaningful innovation: solving real problems for real people. MaRS works with hundreds of companies across the country, turning breakthrough ideas into products and services with global impact.[49]

District 3

"At District 3 we work with founders and their startup teams to help them validate their business and get to scaling it, faster and better. As a founder, you'll be receiving tons of information and opinions about what you need to do run your startup successfully and you'll have to learn to select what to follow. This takes time and

experience, and while there is no real way to teach it, there are tools and organizations out there that can make it easier for you—like this library!

Futurepreneur

"Futurpreneur has been fueling the entrepreneurial passions of Canada's young enterprise for over two decades. We are the only national, non-profit organization that provides financing, mentoring and support tools to aspiring business owners aged 18-39. Our internationally recognized mentoring program hand matches young entrepreneurs with a business expert from a network of more than 2,600 volunteer mentors."[50]

BDC

The Business Development Bank of Canada (BDC) offers many tools and resources, as well as advice, to entrepreneurs and business owners. "We support small and medium-sized businesses in all industries and at every stage of growth with money and advice. We are the Business Development Bank of Canada."[51]

Government Support

The Government of Canada and many chambers of commerce have mentoring programs designed to facilitate contact between business leaders and budding entrepreneurs. Local economic development centers and some business leaders' associations offer similar programs. The Government of Canada, Starting a Business website, also provides information for registering a business, getting business support and financing, choosing a business name, applying for business permits and licenses, and tax help. The Canadian Government's Business Grants and Financing website provides information on Government financing programs, loans and capital investments, wage subsidies, grants, tax credits, and managing your business finances. Some grant and loan programs in Canada include Business Start Program (BSP) in Manitoba, Youth Entrepreneurship Partnership Program in Ontario, Jeunes Promoteurs in Quebec, and Canada Small Business Financing Program.

Governments in countries other than Canada may also offer incentives for new business start-ups. Some government programs specifically offer support to young entrepreneurs, entrepreneurs starting businesses within specific industries in which the government may be trying to grow the economy, and entrepreneurs who are part of specific minority groups. For example, The U.S. Small Business Administration (SBA) is a federal agency that provides assistance to current and prospective small business owners.[52]. There are also several federal entrepreneur programs for immigrants, such as the Microenterprise Development Program and the Minority Business Development Agency Business Centers[53].

Crowd Funding

"**Crowdfunding** is a kind of crowdsourcing and alternative financing by which people, via the Internet, can contribute money to a person, cause, event, or business venture. This method has been used to fund startup businesses, help communities suffering from a natural disaster, and aid families and individuals in financial need due to a medical emergency or a death. Crowdfunding is now a common method for connecting entrepreneurs and investors—offering an alternative to bank loans or venture capitalists—and it is now a popular way of supporting cultural institutions, such as art organizations and charities. Billions of dollars are raised annually via this fundraising method. A high-profile example of crowdfunding is Oculus VR, now part of Meta (the parent company of Facebook). It produces virtual reality headsets and other hardware and software. The firm's founder, Palmer Luckey, used Kickstarter to raise $2.4 million (U.S.) in 2012, vastly exceeding its crowdfunding goal of $250,000. Facebook purchased the company for $2 billion in cash and stock in 2014."[54]

Key Takeaways

1. Entrepreneurship is **important** for economic growth. New companies create employment, contribute to a nation's GDP, and bring new and innovative products and services to consumers.
2. An **entrepreneur** is someone who starts, owns and operates a business. It is difficult to generalize about the kind of people attracted to the idea of starting their own business because entrepreneurs are increasingly diverse.
3. Some of the **key traits** or characteristics found in entrepreneurs include passion, risk tolerance, persistence, and an innovative mindset.
4. Entrepreneurs are **motivated** by much more than money and most start their business to become their own boss.
5. The **type of entrepreneur** one is depends on their goals and personal characteristics (e.g., skills, knowledge, creativity, interests, preferences, situation in life, drive, determination, etc.).
6. A **necessity entrepreneur** is someone who starts a business based on a need for income, out of necessity, because they cannot find employment, have lost their job, need to supplement their income, or require flexibility to attend to other demands in their lives.

7. An **opportunity entrepreneur** is someone who sees an opportunity to make money, gets involved at the right time, and aims for business growth and economic development.

8. **Social entrepreneurs** don't start companies with their main goal being to make a profit, instead, their goal is to make positive change in the world.

9. **Steps to creating a new business:** Identify a business opportunity, choose a business structure, choose a business name, create a business plan, obtain business financing, choose a commercial space, hire employees, and grow your business.

10. Often a **business plan** is used to help secure funding, validate a business idea, grow an existing business, buy a business, sell a business, or advise clients. It legitimizes a business idea, shows the results of research, provides product and customer information, and includes operational and strategic goals.

11. The **business model canvas** is a strategic planning tool used by managers to illustrate and develop their business model. The business model canvas template clearly identifies the key elements that make up a business. Additionally, it simplifies a business plan into a condensed form. In this way, the business model canvas template acts as an executive summary for the business plan.

12. **Support and Education for Entrepreneurs**: The University of Toronto Open Learning Series, open courses, OER resources, Incubators and Accelerators, Government support, and Crowdfunding.

End-of-Chapter Exercises

1. **Entrepreneurial Potential.** Take this Self-Assessment to help you identify your entrepreneurial potential.

2. **Entrepreneurial Characteristics.** Search the Internet to find entrepreneurial traits or characteristics that most entrepreneurs need to be successful (not already listed in this chapter). Which three traits or characteristics do you feel you possess? Prove it by providing an example of when you have applied these characteristics. Share your three traits using examples with your class or professor.

3. **Startup Entrepreneur Competency Model.** Jane Somerville, Director General, Division Services at the National Research Council of Canada, Industrial Research Assistance Program, Canada's leading innovation assistance program for small and medium-sized businesses, and former Managing Director of District 3, a startup incubator at Concordia University in Montreal, developed the Startup Entrepreneur Competency Model, a basic entrepreneur self-assessment while running District 3. This self-assessment includes seven competencies which are roughly divided into two phases. Use the [Startup Entrepreneur Competency Model](#) to help you understand and evaluate your readiness to lead your startup business. Determine your levels of competency and identify where you may need additional training, skills, and knowledge. Share your results with your professor.

4. **Incubator.** Search the Internet to find one business incubator (not already listed in this chapter) that supports entrepreneurs in developing new business ventures. What does this incubator do? What services are offered? Do you think these services would be helpful to an entrepreneur? Share your findings with your partner, class, or professor.

5. **Expand Your Network.** Visit the [Business Development Bank of Canada (BDC)](#) and discover effective strategies for expanding your network. You may use alternate resources that discuss how to expand your professional network (as determined by your professor). Put one of these suggestions into action over the next week. Consider what happened, anything, nothing? Were you surprised at anything you read or tried? What did you find challenging? Share your thoughts with your partner, class, or professor.

6. **Naming a Company.** Search the Internet to find some rules for naming a new company. Consider the rules for naming proprietorships, partnerships, and corporations. For example, an entrepreneur starting a corporation might visit [NUANS](#), which is the Government of Canada's combined search tool for business names and trademarks. Share your findings with your partner, class, or professor.

7. **Social Entrepreneurship.** Consider the [United Nations Sustainable Development Goals](#) and consider the community you live in, is there a need for improvement in one or more of these 17 goals? Have you observed a need for more efficient use of energy, more responsible consumption and production, or more homes for people living on the streets? Maybe you can identify another area for improvement? Choose one improvement you assume is needed based on your observations. Then, search the Internet to find facts that support your assumption for this need. Is anyone or any company already trying to address this need? Discuss your findings with your class or professor.

8. **Standard of Living/Quality of Life.** [Standard of living and quality of life](#) utilize some of the same data, but "standard of living" represents a more physical aspect of life while "quality of

life" represents the more intangible aspects. Search the Internet to find an example of a specific entrepreneurial endeavour that changed the standard of living or quality of life for a specific group of people. Consider how this type of entrepreneur, and the goals they pursued, relate to the content in this chapter. Share your findings with your class or professor.

9. **Great Entrepreneur.** Use the Internet to find a great entrepreneur. Read about their story. What key characteristics do they have that helped them achieve success? What major decisions did they have to make along the way to becoming a successful entrepreneur? Write a brief summary of who this entrepreneur is, what business or invention they created and its impact, and the major decisions they had to make along the way to achieving success. Share this story with your class and professor.

10. **Hire an Employee.** Review the information on the [Business Development Canada (BDC)](#) website about hiring employees. Assume you just opened a small bakery in your community and you need an employee to work at the front counter serving customers because you plan to be helping in the kitchen and managing operations. Write a list of five competencies and/ or qualifications you will be looking for in your new hire. Why did you select each of these? Share this list and your rationale with your class and professor.

11. **Number of Business Startups.** Search the Internet to find comparisons between two countries on the number of new business startups. You may choose any two countries, or these may be assigned by your professor. A good place to start is locating some world statistics or national government statistics. Identify the number of new business startups within a specific country over a specific time frame. Then identify the number that are not-for-profit social enterprises, for-profit social enterprises, or not social enterprises at all. Are you surprised by the number of social enterprise start-ups? Why might one country have more new business start-ups than another? Share your findings with your class and professor.

12. **New Startup Research.** Assume you are planning to open a coffee shop in your community. Use the Internet to conduct a competitive analysis. Determine who your competitors are. Visit a coffee shop for an hour, order something, and observe the types of customers that visit and what they purchase. Take note of the menu items and services the location offers. List three things the company does well that bring value to customers. List three things you will do in your coffee shop that differs from your competitors in order to be unique and bring value to customers. Share your lists with your class and professor.

Self-Check Exercise – Flash Cards – Type of Business Structure

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=170#h5p-13

Self-Check Exercise – Drag-the-Words – Business Plan

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=170#h5p-14

Additional Resources

1. [13 Types of Entrepreneurs](#) with Examples
2. [University of Toronto Entrepreneurship](#) Open Learning Series
3. 500+ [Free Business Plan Examples](#)
4. [Business Resources](#) for Indigenous Entrepreneurs
5. Business Model [Canvas Explained](#)
6. [17 Canadian Entrepreneurs](#) Who Will Inspire You
7. [Entrepreneurship Indicators](#) of Canadian Enterprises, 2020, StatsCan
8. [Key Small Business Statistics](#), 2021, Government of Canada
9. 50 [Social Impact Innovations](#) that Might Save the World
10. [Forbes 30 under 30 List](#), Young Entrepreneurs 2021
11. [Indigenous Entrepreneurship](#) May Be the Driver of Social Innovation
12. 21 Groundbreaking [Canadian Entrepreneur Statistics](#)
13. [Entrepreneurship and Innovation Toolkit](#), OER eCampus
14. Download your [free business plan template](#) to start drafting your own plan

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

Media Attributions

Notes

1. ByJus. (n.d.). *Entrepreneurship--Types of entrepreneurship.* https://byjus.com/commerce/what-is-entrepreneurship/

2. Harappa. (2021, April 19). *What is entrepreneurship? – Meaning, features, need & examples.* https://harappa.education/harappa-diaries/meaning-examples-and-role-of-entrepreneurship/

3. FastAdvices. (2020, July 10). *How entrepreneurship affects the standard of living?* https://yourfastadvices.com/how-entrepreneurship-affects-the-standard-of-living/

4. BDC. (n.d.). *How to become an entrepreneur.* https://www.bdc.ca/en/articles-tools/start-buy-business/start-business/how-become-entrepreneur

5. Walker, B. (2020, May 11). *Six personality traits of successful entrepreneurs.* https://www.forbes.com/sites/theyec/2020/05/11/six-personality-traits-of-successful-entrepreneurs/?sh=319450e070ba

6. Alfred, L. (n.d.). *12 characteristics & personality traits great entrepreneurs share.* https://blog.hubspot.com/sales/entrepreneur-personality-traits

7. Miller, K. (2020, July 7). *10 characteristics of successful entrepreneurs.* Business Insights. https://online.hbs.edu/blog/post/characteristics-of-successful-entrepreneurs

8. Miller, K. (2020, July 7). *10 characteristics of successful entrepreneurs.* Business Insights. https://online.hbs.edu/blog/post/characteristics-of-successful-entrepreneurs

9. Walker, B. (2020, May 11). *Six personality traits of successful entrepreneurs.* https://www.forbes.com/sites/theyec/2020/05/11/six-personality-traits-of-successful-entrepreneurs/?sh=319450e070ba

10. BDC. (n.d.). *How to become an entrepreneur.* https://www.bdc.ca/en/articles-tools/start-buy-business/start-business/how-become-entrepreneur

11. BDC. (n.d.). *How to become an entrepreneur.* https://www.bdc.ca/en/articles-tools/start-buy-business/start-business/how-become-entrepreneur

12. Indeed Editorial Team. (2023, March 10). *The 9 different types of entrepreneurship (with examples).* https://www.indeed.com/career-advice/career-development/types-of-entrepreneurship

13. Wirth, K. (2022, August 30). *12 Most Common Types of Entrepreneurs Explained.* https://www.liveplan.com/blog/types-of-entrepreneurs/

14. Wallstreetmojo Team. (n.d.). *Social entrepreneur.* https://www.wallstreetmojo.com/social-entrepreneur/#:~:text=Types%20Of%20Social%20Entrepreneurship%201%20%231%20%E2%80%93%20Trading,Charities%20...%204%20%234%20%E2%80%93%20Community-Oriented%20Organizations%20

15. Boyko, J. (2022, April 7). *Notable Indigenous entrepreneurs in Canada.* https://www.thecanadianencyclopedia.ca/en/article/notable-indigenous-entrepreneurs

16. Smith, M. A. (2022, June 19). *What is Social Innovation? How do you actually DO it (and change the world)?* [Video]. YouTube. https://youtu.be/7G20_sPzR4g

17. CareerPivot. (n.d.). *The necessity entrepreneur – A path to freedom [updated].* https://careerpivot.com/2020/necessity-entrepreneur-buying-job/

18. Incomeholic. (n.d.). *What does it mean to start a business out of necessity?* https://incomeholic.com/what-does-it-mean-to-start-a-business-out-of-necessity/#:~:text=A%20business%20started%20out%20of%20necessity%20is%20usually,for%20whatever%20reason%2C%20that%20is%20not%20an%20option.

19. Rollasole. *About us.* https://www.rollasole.com/pages/about-us

20. Restaurant Brands International. (2022, August 4). *Restaurant Brands International Inc. report second quarter 2022 results.* https://www.rbi.com/English/news/news-details/2022/Restaurant-Brands-International-Inc.-Reports-Second-Quarter-2022-Results/default.aspx

21. Thirty One Bits. (n.d.). *Our mission.* https://31bits.com/pages/our-mission

22. Thirty One Bits. (n.d.). *Our story.* https://31bits.com/pages/our-story

23. BDC. (n.d.). *Your ultimate guide to starting a business in Canada.* https://www.bdc.ca/en/articles-tools/start-buy-business/start-business/how-start-business-canada

24. BDC. (n.d.). *Your ultimate guide to starting a business in Canada.* [Video]. YouTube. https://www.bdc.ca/en/articles-tools/start-buy-business/start-business/how-start-business-canada

25. Wirth, K. (2022, February 21). *What is a business plan? Definition and planning essentials explained.* https://www.live-plan.com/blog/business-plan-definition-explained/

26. BDC. (n.d.). *Your ultimate guide to starting a business in Canada.* [Video]. YouTube. https://www.bdc.ca/en/articles-tools/start-buy-business/start-business/how-start-business-canada

27. BPlans. (2016, March 17). *What is a business plan?* [Video]. YouTube. https://youtu.be/FIoGLHT4wGE

28. Wirth, K. (2022, February 21). *What is a business plan? Definition and planning essentials explained.* https://www.live-plan.com/blog/business-plan-definition-explained/

29. Indeed Editorial Team. (2023, March 20). *10 key business plan sections and why they're important.* https://uk.indeed.com/career-advice/career-development/business-plan-sections

30. Ferriolo, J. (2021, August 27). *Seven sections your business plan should have.* https://www.forbes.com/sites/forbesbusinessdevelopmentcouncil/2021/08/27/seven-sections-your-business-plan-should-have/?sh=6c8a168c1310

31. *White, C. (2022, November 10). What's a competitive analysis & how do you conduct one? https://blog.hubspot.com/marketing/competitive-analysis-kit*

32. *CFI Team. (2023, April 25). Business plan example and template. https://corporatefinanceinstitute.com/resources/management/business-plan-example-and-template/*

33. *CFI Team. (2023, April 25). Business plan example and template. https://corporatefinanceinstitute.com/resources/management/business-plan-example-and-template/*

34. *Indeed Editorial Team. (2023, March 20). 10 key business plan sections and why they're important. https://uk.indeed.com/career-advice/career-development/business-plan-sections*

35. *Hayes, A. (2023, March 30). Business plan: What it is, what's included, and how to write one. https://www.investopedia.com/terms/b/business-plan.asp*

36. *Indeed Editorial Team. (2023, March 20). 10 key business plan sections and why they're important. https://uk.indeed.com/career-advice/career-development/business-plan-sections*

37. *BPlans. (2016, March 17). What is a business plan? [Video]. YouTube. https://youtu.be/FIoGLHT4wGE*

38. *CFI Team. (2023, July 7). Business model canvas template. https://corporatefinanceinstitute.com/resources/management/business-model-canvas-template/*

39. *Optima Training (UK) Limited. (2021, July 29). Introduction to the business model canvas. [Video]. YouTube. https://youtu.be/I8nwNcCfyig*

40. *University of Toronto. (n.d.). The bridge: Entrepreneurship open learning series. https://www.utsc.utoronto.ca/thebridge/entrepreneurship-open-learning-series*

41. *University of Toronto. (n.d.). The bridge: Entrepreneurship open learning series. https://www.utsc.utoronto.ca/thebridge/entrepreneurship-open-learning-series*

42. *University of Toronto. (n.d.). The bridge. https://www.utsc.utoronto.ca/thebridge/*

43. *UNESCO. (2023, April 20). UNESCO's mandate in OER. https://www.unesco.org/en/open-educational-resources/mandate*

44. *Harper, J. (2023, July 3). What Is a business incubator and how does it work? https://www.indeed.com/career-advice/career-development/what-is-business-incubator#What%20Is%20A%20Business%20Incubator?*

45. *Hotspot for Startups. (2023, January 16). What is a business accelerator? Everything you need to know.* https://www.hub-spot.com/startups/resources/what-is-an-accelerator

46. *Seneca. (n.d.). HELIX: Innovation and entrepreneurship incubator.* https://theservicehub.senecacollege.ca/s/article/HELIX-Innovation-and-Entrepreneurship-Incubator

47. *Center for MIT Entrepreneurship. (n.d.). MIT delta v.* https://entrepreneurship.mit.edu/accelerator/program/

48. *MIT REAP. (n.d.). Innovation is a global game.* https://mitsloan.mit.edu/regional-entrepreneurship-acceleration-program-reap

49. *MaRS. (n.d.). We help high-impact Canadian tech ventures succeed.* https://www.marsdd.com/startup-services/

50. *Futurepreneur. (n.d.). About.* https://www.futurpreneur.ca/en/about/

51. *BDC. (n.d.). About.* https://www.bdc.ca/en/about

52. *U.S. Department of Labor. (n.d.). Self-employment & entrepreneurship.* https://www.dol.gov/agencies/odep/program-areas/employers/self-employment-entrepreneurship

53. *Remitly. (2023). 15 Federal and State Programs for Immigrant Business Owners in the U.S.* https://blog.remitly.com/immigration/federal-and-state-programs-for-immigrant-business-owners/

54. *Costa, D. (2022, November 15). Entrepreneurship. Encyclopedia Britannica.* https://www.britannica.com/topic/crowd-funding

CHAPTER 10: TECHNOLOGICAL INNOVATION

Chapter 10 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Define "Technological Innovation".
2. Discuss the importance of technological innovation.
3. Provide three examples of technological innovations emerging today.
4. Provide three examples of technological innovations of the future.
5. Explain the main issues surrounding the regulation of technological innovation.

Definition of Technological Innovation

Technological innovation *focuses specifically on technology and how to embody it successfully in many types of innovations such as products, services, processes, profit models, channels, and customer service engagement innovations. Technological innovation can be a source of competitive advantage for organizations that seek to create value in the market. Examples of technological innovation include the Internet, quantum computing, computers, and smartphones. "Not all innovation is technological innovation, though it might seem like it at times. Many companies innovate using their existing resources and you don't need to invent a revolutionary technology to be considered an innovator. Much innovation comes from organizational innovation and creating new business models to challenge established companies and make headway in competitive markets. Many innovative companies also pursue process innovation using existing technologies, or establish themselves as early adopters of new technologies that streamline their business."*[1]

Example of Technological Innovation in Services

An example of technological innovation in the service is SATMAP which is a software solution that uses advanced analytics to improve service in call centers. It helps companies match callers to service agents with appropriate personalities, resulting in higher rates of customer satisfaction and service-to-sales conversion.[2]

Example of Technological Innovation in Products

The creation of the digital camera, capable of taking photographs with superior image quality and without the need for film or the need to develop film, is an example of technological innovation in products. "Apple's innovation strategy involves introducing exciting new products and improvements (iPod, iPhone, iPad, and iTunes) and using innovative business models for maximum product success. It utilizes both radical and incremental innovation to its advantage and focuses on product design and functionality."[3]

Example of Technological Innovation in Processes

The development of robots for stock logistics, which are able to identify the items of an order and remove them on the corresponding shelves, as is currently done in Amazon warehouses, is an example of technological innovation in processes.[4]

Importance of Technological Innovation

Technological innovation is important because it touches each of our lives bringing us a higher standard of living and a better quality of life. It allows us access to global communications, e-commerce, finance and trade, and so much more. Some form of technology is used by most people in the world today.

"While less than 7% of the world was online in 2000, today over half the global population has access to the internet. Similar trends can be seen in cellphone use. At the start of the 2000s, there were 740 million cell phone subscriptions worldwide. Two decades later, that number has surpassed 8 billion, meaning there are now more cellphones in the world than people. Apple sold its first iPod in 2001, and six years later it introduced the iPhone, which ushered in a new era of personal technology. These changes led to a world in which technology touches nearly everything we do."[5]

Students sitting on a bench each using a cell phone

"We are living in a time of exciting technological innovations. Digital technologies are driving transformative change. Economic paradigms are shifting. The new technologies are reshaping product and factor markets and profoundly altering business and work. The latest advances in artificial intelligence and related innovations are expanding the frontiers of the digital revolution. Digital transformation is accelerating in the wake of the COVID-19 pandemic. The future is arriving faster than expected."[6]

Current Technological Innovations

"Digital technologies have advanced more rapidly than any innovation in our history – reaching around 50 percent of the developing world's population in only two decades and transforming societies. In the health sector, for instance, AI-enabled frontier technologies are helping to save lives, diagnose diseases and extend life expectancy. In education, virtual learning environments and distance learning have opened up programmes to students who would otherwise be excluded. Public services are also becoming more accessible and accountable through blockchain-powered systems, and less bureaucratically burdensome as a result of AI assistance. Big data can also support more responsive and accurate policies and programmes."[7]

Below is a list of a few of the technological innovations emerging today.

1. **AI.** *"In 1958, Lisp programming language appeared, which became the standard for AI systems. In 1959, Arthur Samuel, an MIT engineer, used the term "machine learning" for the first time. Today, we find artificial intelligence applied in several ways: virtual assistants like Alexa and Siri, autonomous vehicles, and intelligent houses, among others."*[8] *"The wide range of AI innovations is expected to impact people and processes within and outside an enterprise context, making them important to understand for many stakeholders, from business leaders to the enterprise engineering teams*

A child making friends with a robot

tasked with deploying and operationalizing AI systems. There are four main categories: Data-centric AI, Model-centric AI, Applications-centric AI, and Human-centric AI."[9]

2. **Extended Reality (XR).** *"Extended Reality (XR) is the combination of human & computer-generated graphics interaction, which is in reality as well as the virtual environment. In basic terms, Extended Reality is a superset of Augmented Reality (AR), Virtual Reality (VR) & Mixed Reality (MR). Applications for XR can be found in the entertainment industry, sales and marketing, housing and real estate, education and training, and work from home for remote areas. There are three major challenges with XR: cost, hard-*

ware, and privacy."[10]

3. **Breath Testing for Disease Control.** *Beyond delivering results far faster than a blood draw, breath testing for infectious diseases and cancer detection could streamline medical diagnostics by providing a non-invasive way to collect critical health data.*[11]

4. **Generative AI.** *"Generative AI, or generative artificial intelligence, is a form of machine learning that is able to produce text, video, images, and other types of content. ChatGPT, DALL-E, and Bard are examples of generative AI applications that produce text or images based on user-given prompts or dialogue. Generative AI is used in everything from creative to academic writing and translation; composing, dubbing, and sound editing; infographics, image editing, and architectural rendering; and in industries from automotive to media/entertainment to healthcare and scientific research. There are wide-ranging concerns about generative AI that touch upon legal, ethical, political, ecological, social, and economic issues."*[12] *Some limitations of today's generative AI*
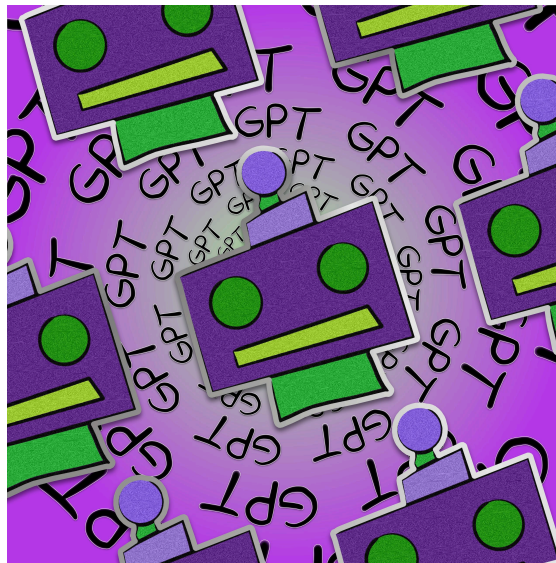
ChatGPT Generative AI

include the following. Limited creativity and originality, as it can only create new data based on existing patterns. Bias, if the data it was trained on is biased or incomplete. Ethical concerns, such as the potential for misuse, plagiarism, or deception. "Workers across industries, from marketers and developers to product designers, have been discovering the ways in which generative AI can help them do their jobs better. This could mean creating extraordinary content in a fraction of the time, accelerating IT coding and testing processes, optimizing product simulations and design for much higher quality. In short, generative AI can give them 'superpowers.' In McKinsey & Company's report, 'The economic potential of generative AI: The next productivity frontier,' the firm's researchers also project that generative AI can add the equivalent of $2.6 trillion to $4.4 trillion to the economy annually."[13]

5. **Lithium-metal Batteries.** *"Electric vehicles come with a tough sales pitch; they're relatively expensive, and you can drive them only a few hundred miles before they need to recharge—which takes far longer than stopping for gas. All these drawbacks have to do with the limitations of lithium-ion batteries. A well-funded Silicon Valley startup now says it has a battery that will make electric vehicles far more palatable for the mass consumer. It's called a lithium-metal battery and is being developed by QuantumScape. According to early test results, the battery could boost the range of an EV by 80% and can be rapidly recharged. The startup has a deal with VW, which says it will be selling EVs with the new type of battery by 2025."*[14]

6. **3D Printed Homes.** *Using massively scaled 3D printers, homes can be made. We already see this deployed in the U.S. and other developed nations. "In the developing world, where limited infrastructure makes shipping in materials a challenge, recent demonstrations using 3D printers take a leap ahead by*

employing locally sourced materials, clay, sand, and local fibers to print structures—eliminating roughly 95% of material requiring transport to a building site. This emerging technology could provide rugged shelters in remote regions, where housing needs are dire and no viable transport networks exist. The result could be a game changer for nations that are often otherwise left behind."[15]

7. **Green Hydrogen.** *"Hydrogen has always been an intriguing possible replacement for fossil fuels. It burns cleanly, emitting no carbon dioxide; it's energy dense, so it's a good way to store power from on-and-off renewable sources; and you can make liquid synthetic fuels that are drop-in replacements for gasoline or diesel. But most hydrogen up to now has been made from natural gas; the process is dirty and energy intensive. The rapidly dropping cost of solar and wind power means green hydrogen is now cheap enough to be practical. Simply zap water with electricity, and presto, you've got hydrogen. Europe is leading the way, beginning to build the needed infrastructure.*"[16]

8. **Agricultural Drones**. *"Farmers have begun to use agricultural drones adorned with cameras to improve the treatment of their crops. The drones allow farmers a unique perspective that previously-used satellite imagery could not provide. They help to expose issues with irrigation treatment, soil variation, and distressed plants at a much lower cost than methods like crop imaging with a manned aircraft. The success of the drones is made possible by technological advances in GPS modules, digital radios, and small MEMS sensors. Together, these*

A Drone flying over crops

advances allow farmers to bring greater precision to their craft in order to reap greater rewards."[17]

9. **Genome Editing.** *Scientists have the technology to edit the human genome. But when should they, and who contributes to these decisions? "CRISPR/Cas9 genome editing is an inexpensive and efficient tool to introduce changes in DNA. Its ease of use sets virtually no limits on potential scientific and clinical applications. Prospects include correcting congenital monogenic disorders, targeting disease-causing molecular lesions, and even altering multiple genetic loci at the same time. Beyond therapeutic applications, there is at least in principle the possibility that CRISPR/Cas9 can be used to enhance human traits, such as resistance to infectious diseases, strength, or cognitive capacity. Such interventions can target somatic cells in adults or be employed in embryos during early development. Genome editing at the beginning of embryonic life means that any genomic alteration introduced will pass on to the germline and propagate through future generations. These possibilities have sparked considerable debate about germline genome editing ethics, governance, and the scope of responsible use of germline interventions."*[18] *"Researchers in China created a pair of monkeys with specific genetic mutations. This innovation has great implications for the field of biomedicine. The ability to alter DNA at specific locations on chromosomes makes it easier to study diseases. Researchers at MIT have expressed interest in studying brain disorders like autism and Alzheimer's dis-*

ease. CRISPR has the potential to aid researchers studying such ailments, allowing them to identify what genetic mutations actually cause the disorders."[19]

There are many concerns around the ethical use of CRISPR and the differences in regulation among the countries of the world. Four main concerns have surfaced and include the following. **Safety.** *Due to the possibility of off-target effects (edits in the wrong place) and mosaicism (when some cells carry the edit but others do not), safety is of primary concern. Some researchers argue that there may never be a time when genome editing in embryos will offer a*

DNA Analysis

benefit greater than that of existing technologies today. **Informed Consent.** *Some people worry that it is impossible to obtain informed consent for germline therapy because the patients affected by the edits are the embryo and future generations. The counterargument is that parents already make many decisions that affect their future children, including similarly complicated decisions such as PGD with IVF. Researchers and bioethicists also worry about the possibility of obtaining truly informed consent from prospective parents as long as the risks of germline therapy are unknown.* **Justice and Equity.** *As with many new technologies, there is concern that genome editing will only be accessible to the wealthy and will increase existing disparities in access to health care and other interventions. Some worry that taken to its extreme, germline editing could create classes of individuals defined by the quality of their engineered genome.* **Morality.** *Some people have moral and religious objections to the use of human embryos for research. Federal funds cannot be used for any research that creates or destroys embryos.[20]*

10. **Smart Wind and Solar Power.** *"SMART is an acronym for 'System Management of Atmospheric Resource through Technology'. SMART wind is a combination of wind turbine siting and management technologies which could create nearly $150 billion in electric sector cost savings within thirty years of their implementation."[21] "One barrier to mainstream use of renewables is integrating sustainable energy sources into the current power grid. Big data and artificial intelligence have made it easier to predict how much power wind turbines will produce. Anticipating power fluctuations is key to developing technologies for integrating wind and solar into the power grid."[22]*

Future Technological Innovations

Below is a list of a few of the technological innovations that we may see emerging in the near future.

1. **Necrobotics.** *"Sometimes new future technologies can offer amazing development, with the possibility of changing the future... while also being incredibly creepy. This is one way to describe the idea of necrobotics*

which, as the name suggests, involves turning dead things into robots. While this sounds like a plot to a creepy horror film, this is a technology being explored at Rice University. A team of researchers turned a dead spider into a robot-like gripper, given the ability to pick up other objects. To achieve this, they take a spider and inject it with air. This works because spiders use hydraulics to force their version of blood (haemolymph) into their limbs, making them extend. Right now this concept is in its infant stages, but it could mean a future where dead animals are used to further science... it all feels very Frankenstein-like!"[23]

2. ***E-skin.*** *"While modern technology allows us to communicate verbally and visually almost anywhere in the world, there is currently no reliable method of sharing the sense of touch across long distances. Now, a wireless soft e-skin developed by engineers at the City University of Hong Kong could one day make giving and receiving hugs over the internet a reality. The e-skin is studded with flexible actuators that sense the wearer's movements and convert them into electrical signals. These signals can then be sent to another e-skin system via Bluetooth, where the actuators convert them into mechanical vibrations that mimic the initial movements. The system could be used to allow friends and family to 'feel' each other over long distances, the researchers say."*[24]

3. ***Xenotransplantation.*** *"The procedure of transplanting, implementing or infusing a human with cells, tissues or organs from an animal source – has the potential to revolutionize surgery. One of the most common procedures performed so far is the insertion of a pig's heart into a human. This has now successfully happened twice. However, one of the patients was only alive for a few months, and the second is still being observed. In these surgeries, the heart cannot be instantly put into a human, gene-editing needs to take place first. Certain genes need to be knocked out of the heart and human genes need to be added, mainly around immune acceptance and genes to prevent excessive growth of heart tissue. Right now, these surgeries are risky and there is no certainty around success. However, in the near future, we could see xenotransplants happening on a regular basis, providing hearts or tissues from animals to humans in need of it."*[25]

4. ***3D Printed Bones.*** *"3D printing is an industry promising everything from cheap house building through to affordable rugged armour, but one of the most interesting uses of the technology is the building of 3D printed bones. The company, Ossiform, specializes in medical 3D printing, creating patient-specific replacements of different bones from tricalcium phosphate – a material with similar properties to human bones. Using these 3D printed bones is surprisingly easy. A hospital can perform an MRI which is then sent to Ossiform who create a 3D model of the patient-specific implant that is needed. The surgeon accepts the design and then once it is printed, it can be used in surgery. What is special about these 3D printed bones is that because of the use of tricalcium phosphate, the body will remodel the implants into vascularized bone. That means they will enable the full restoration of function that the bone it is replacing had. To achieve the best integration possible, the implants are of a porous structure and feature large pores and canals for cells to attach to and reform bone."*[26]

5. ***3D Printed Organs.*** *"Your skin is your body's largest organ. It protects your innards, holds you together, and regulates your body's temperature. However, since skin doesn't perform any complex chemical-sorting or blood-pumping activities, the skin is one of the simplest organs to replicate. In theory, this should make it the easiest organ to 3D bioprint. This new research could provide the base for future effective 3D printed skin treatments to minimize the long-term and permanent damage done in burn victims."*[27]

Body organs

6. ***Energy Storing Bricks.*** *"Scientists have found a way to store energy in the red bricks that are used to build houses. Researchers led by Washington University in St Louis, in Missouri, US, have developed a method that can turn the cheap and widely available building material into "smart bricks" that can store energy like a battery.*

Although the research is still in the proof-of-concept stage, the scientists claim that walls made of these bricks 'could store a substantial amount of energy' and can 'be recharged hundreds of thousands of times within an hour'. The researchers developed a method to convert red bricks into a type of energy storage device called a supercapacitor. This involved putting a conducting coating, known as Pedot, onto brick samples, which then seeped through the fired bricks' porous structure, converting them into 'energy storing electrodes'."[28]

7. ***Arc Hotel.*** *A futuristic massive dome hotel created by the Russian architectural firm, Remy Studio, will be half immersed in water and built to withstand floods, tidal waves, rising water, earthquakes, tsunamis, and just about any natural disaster there is. It is also built to be completely sustainable. It will gather energy through solar cells and it will have a rainwater collection system. The Arc Hotel is only on paper for now, but in the future, it will be a 151 thousand square foot establishment. Sounds exciting, but we may have to wait a few years before we can book a room at this hotel.*[29]

8. ***Hyperloop Trains.*** *You know of the fast magnetic trains of Japan, well, a company named Virgin Hyperloop is trying to push things even further. The hyperloop train may be able to send people shooting across tubes at a rate of about 600 miles per hour through a low-pressure tube using electric propulsion. The vehicle floats above the track using magnetic levitation and glides at airline speeds for long distances due to ultra-low aerodynamic drag. Science fiction? Hardly, in fact, the first vehicle of the Hyperloop has already been tested and proven, and some larger tests are being scheduled for the next few years. Not only that, but the tubes are built underground so as to not disturb wildlife, and they will be made so there are no carbon emissions. Sounds promising!*[30]

Explore the Concept – Regulating Technological Innovation

"Sweeping technological advancements are creating a sea change in today's regulatory environment, posing significant challenges for regulators who strive to maintain a balance between fostering innovation, protecting consumers, and addressing the potential unintended consequences of disruption. Emerging technologies such as artificial intelligence (AI), machine learning, big data analytics, distributed ledger technology, and the Internet of Things (IoT) are creating new ways for consumers to interact—and disrupting traditional business models. It's an era in which machines teach themselves to learn; autonomous vehicles communicate with one other and the transportation infrastructure; and smart devices respond to and anticipate consumer needs."[31]

Regulatory leaders are faced with some key challenges in figuring out how to best protect citizens, ensure fair markets, and enforce regulations while allowing these new technologies and businesses to flourish, and resisting the urge to over-regulate. "Existing regulatory structures are often slow to adapt to changing societal and economic circumstances, and regulatory agencies generally are risk-averse. Rapid adaptation to emerging technology, therefore, poses significant hurdles—and, in turn, to the technology industries, where change occurs at a rapid rate."[32]

Technologies can help make our world fairer, more peaceful, and more just. Digital advances can support and accelerate the achievement of each of the 17 Sustainable Development Goals – from ending extreme poverty to reducing maternal and infant mortality, promoting sustainable farming and decent work, and achieving universal literacy. But technologies can also threaten privacy, erode security, and fuel inequality. Technologies have implications for human rights and human agency. Like generations before, we – governments, businesses, and individuals – have a choice to make in how we harness and manage new technologies.[33]

Technology can be used for positive outcomes such as overcoming some of the greatest challenges our society faces, including climate change, famine, and disease. Technological

A person using future technology

advances can help to advance economic development and lead to a better quality of life. "But it can also be a tool of tremendous fear and oppression, embedding biases in automated decision-making processes and information-processing algorithms, exacerbating economic and social inequalities within and between countries to a staggering degree, or creating new weapons and avenues for attack unlike any we have had to face in the past."[34]

"Understanding technology and how we can make better decisions about designing, deploying, and refining it requires capturing that nuance and complexity through in-depth analysis of the impacts of different technological advancements and the ways they have played out in all their complicated and controversial messiness across the world. These impacts are often unpredictable as technologies are adopted in new contexts and come to be used in ways that sometimes diverge significantly from the use cases envisioned by their designers. The internet, designed to help transmit information between computer networks, became a crucial vehicle for commerce, introducing unexpected avenues for crime and financial fraud. Social media platforms like Facebook and Twitter, designed to connect friends and families through sharing photographs and life updates, became focal points of election controversies and political influence. Cryptocurrencies, originally intended as a means of decentralized digital cash, have become a significant environmental hazard as more and more computing resources are devoted to mining these forms of virtual money. One of the crucial challenges

in this area is therefore recognizing, documenting, and even anticipating some of these unexpected consequences and providing mechanisms to technologists for how to think through the impacts of their work, as well as possible other paths to different outcomes."[35]

"Many reforms are stimulated by technology developments which have changed the underlying cost and competitive structure in industries ranging from telecommunications to banking to biotechnology. At the same time, regulatory reform is a powerful stimulus to further innovation. Competition-enhancing reforms in both the manufacturing and service sectors have been essential to the development and diffusion of new technologies, such as the Internet, automatic teller machines, and optical scanners in supermarkets."[36]

"Organizations like the International Organization for Standardization, the World Intellectual Property Organization, the United Nations Industrial Development Organization, and many others have tried to harmonize these policies and protocols across different countries for years, but have met with limited success when it comes to resolving the issues of greatest tension and disagreement among nations. For technology to operate in a global environ-

Flags of countries in front of the United Nations

ment, there is a need for a much greater degree of coordination among countries and the development of common standards and norms, but governments continue to struggle to agree not just on those norms themselves but even on the appropriate venue and processes for developing them."[37]

Without greater global cooperation, is it possible to maintain a global network like the Internet or to promote the spread of new technologies around the world to address the challenges of sustainability? What might help incentivize that cooperation moving forward, and what could new structures and processes for the governance of global technologies look like? Why has the tech industry's self-regulation culture persisted?[38]

The growing use of smartphones, connected devices, and sensors has created a vast digital footprint in consumers' lives—a trend that will only accelerate. From a regulatory perspective, one important question is who owns all this data—the user or the service provider who stores it? If the service provider owns the information, what obligation does it have to store and protect it? And to what extent can data be shared with third parties? Can a car manufacturer charge a higher price to car owners who refuse the right to share their private data and less to those willing to share their

data? With no single global agreement on data protection, regulators around the world are taking different positions on these issues.[39]

Answering these questions in order to understand these processes requires synthesizing knowledge from a range of different fields, including sociology, political science, economics, and history, as well as technical fields such as engineering, climate science, and computer science. "A crucial part of understanding how technology has created global change and, in turn, how global changes have influenced the development of new technologies is understanding the technologies themselves in all their richness and complexity—how they work, the limits of what they can do, what they were designed to do, how they are actually used. Just as technologies themselves are becoming more complicated, so are their embeddings and relationships to the larger social, political, and legal contexts in which they exist."[40]

For technological innovation, regulation can be a catalyst or a hindrance. As emerging technologies evolve, regulators from around the world are rethinking their approaches, adopting models that are agile, iterative, and collaborative to face the challenges posed by emerging technologies and the fourth Industrial Revolution.[41]

Key Takeaways

1. **Technological innovation** focuses specifically on technology and how to embody it successfully in many types of innovations such as products, services, processes, profit models, channels, and customer service engagement innovations.

2. Technological innovation is **important** because it touches each of our lives bringing us a higher standard of living and a better quality of life. It allows us access to global communications, e-commerce, finance and trade, and so much more. Some form of technology is used by most people in the world today.

3. Digital technologies have **advanced more rapidly** than any innovation in our history –

reaching around 50 percent of the developing world's population in only two decades and transforming societies.

4. Today, we find **artificial intelligence** applied in several ways: virtual assistants like Alexa and Siri, autonomous vehicles, and intelligent houses, among others.

5. Workers across industries, from marketers and developers to product designers, have been discovering the ways in which **generative AI** can help them do their jobs better.

6. Beyond delivering results far faster than a blood draw, **breath testing** for infectious diseases and cancer detection could streamline medical diagnostics by providing a non-invasive way to collect critical health data.

7. Using massively scaled **3D printers**, homes can be made.

8. A well-funded Silicon Valley startup now says it has a battery that will make electric vehicles far more palatable for the mass consumer. It's called a **lithium-metal battery** and is being developed by QuantumScape.

9. The rapidly dropping cost of solar and wind power means **green hydrogen** is now cheap enough to be practical.

10. Farmers have begun to use **agricultural drones** adorned with cameras to improve the treatment of their crops.

11. Scientists have found a way to **store energy** in the red bricks that are used to build houses.

12. A futuristic massive dome hotel called the **Arc Hotel** created by the Russian architectural firm, Remy Studio, will be half immersed in water and built to withstand floods, tidal waves, rising water, earthquakes, tsunamis, and just about any natural disaster there is.

13. The **Hyperloop train** may be able to send people shooting across tubes at a rate of about 600 miles per hour through a low-pressure tube using electric propulsion.

14. The idea of **necrobotics** involves turning dead things into robots.

15. A wireless soft **e-skin** developed by engineers at the City University of Hong Kong could one day make giving and receiving hugs over the internet a reality.

16. The procedure of transplanting, implementing, or infusing a human with cells, tissues, or organs from an animal source, known as **xenotransplantation** – has the potential to revolutionize surgery.

17. The company, Ossiform, specializes in medical 3D printing, creating patient-specific replacements of different **bones** from tricalcium phosphate – a material with similar properties to human bones.

18. Since **skin** doesn't perform any complex chemical-sorting or blood-pumping activities, the skin is one of the simplest organs to replicate. In theory, this should make it the easiest organ to 3D bioprint.

19. Researchers in China created a pair of monkeys with specific genetic mutations. The scientists used a new method of DNA engineering known as CRISPR. CRISPR allows scientists to modify fertilized eggs (**genome editing**). This innovation has great implications for the field of biomedicine.

20. Big data and artificial intelligence have made it easier to predict how much power wind turbines will produce. Anticipating power fluctuations is key to developing technologies for integrating **wind and solar** into the power grid.

21. **Extended Reality** is a superset of Augmented Reality (AR), Virtual Reality (VR) & Mixed Reality (MR). Applications for XR can be found in the entertainment industry, sales and marketing, housing and real estate, education, and training, and work from home for remote areas.

22. Sweeping technological advancements are creating a sea change in today's **regulatory environment,** posing significant challenges for regulators who strive to maintain a balance between fostering innovation, protecting consumers, and addressing the potential unintended consequences of disruption.

End-of-Chapter Exercises

1. **New Technological Innovations.** Search YouTube to find a video that shares new technological innovations. Locate an innovation that you personally (or your family) might use. Is it available for sale at this point in time? Do you think other people would want to buy it? Why or why not? Share your findings with your class and professor.

2. **Generative AI Research.** Search the Internet to find information on various generative AI tools. ChatGPT is a popular tool, but you may select any tool (e.g., Copy.ai, Murf.ai, Designs.ai, Synthesia, Descript). Research how the AI tool works, how accurate it is, what it is currently being used for, and whether or not there are any issues around intellectual property rights. Share your findings with your class and/or professor.

3. **ChatGPT Practice.** Read the McKinsey & Company report on [Generative AI can give you](#)

"superpowers". Do you agree with what you have read? Have you used an AI tool such as ChatGPT? Give it a try. Go to https://chat.openai.com/ or chat.openai.com/auth/login and sign up. Using ChatGPT can you generate the lyrics to a song about how much you love your family? Using ChatGPT can you generate a resume to apply for a retail customer service position (or any other position)? Review what ChatGPT generated. Are there errors or omissions? Are there things you would change? Share your experience with your class and/or professor.

4. **Genome Editing.** Search the Internet to explore the advances being made with genome editing. Can we correct people's eyesight? Can we create a baby that has a specific eye colour or hair colour? Can we regrow an adult tooth if we lose one? Can we clone a person? What is actually possible at this point in time? Choose a question to focus on and conduct your research. Consider the ethics pertaining to genome editing as you do your research. Share your findings with your class and professor.

5. **Future Innovation.** Search the Internet to find innovations being worked on today that we might see in our future (do not use examples provided in the chapter). Your professor may assign a specific topic or field of study. Find some innovation you feel strongly about, read about it, then share what you learned with your class and professor.

6. **Extended Reality.** Search the Internet to find a specific example of how extended reality is being used in one of these specific areas: the entertainment industry, sales and marketing, housing and real estate, education and training, and work from home for remote areas. Share this specific example of how extended reality is being applied in the industry you selected to research with your class and professor.

7. **Technology and Privacy.** Are you worried about the technologies you use and the idea that you may be being observed through these technologies? Maybe you have never thought of that, but some people do worry about this very thing. Search the Internet to read about concerns people may have about using cell phones, laptop webcams, home systems such as Alexa or Google Assistant, and other Smart Home technologies. What do you think? Should you be concerned? What do you do, or what can you do, to ensure you not compromising your privacy? Share your findings and conclusions with your class and professor.

8. **Technology and Equity.** Search the Internet to explore the ways in which innovations are being created to support developing countries where populations may not have the same access to technologies that North Americans have. Which parts of the world have access to cell phones and the Internet, and which parts do not? Which organizations are helping to support equity and access across the globe? Share your findings with your class and profes-

sor.

9. **Regulatory Challenges.** Search the Internet to find information on technological innovation regulatory challenges. Locate one specific challenge government(s) are having and how they are working to combat it. Share your findings with your class and professor.

10. **Data Ownership.** Search the Internet to find an example of a company that either lost customer data, sold it, or says they own it. What are the issues around this situation? Share your findings with your class and professor.

11. **Innovation Regulation Podcast.** Listen to one of the podcasts at [Alliance for Innovation Regulation](#) and write a brief summary of what you learned. Report back to your class and professor.

Self-Check Exercise – Dialog Cards – Sci-Fi Movie Game

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=452#h5p-15

Additional Resources

1. 11 Successful Products Originally [Invented for Something Else](#)

2. [ChatGPT is Great](), You are Just Using it Wrong
3. How Good is ChatGPT at [Diagnosing Disease]()
4. AI by McKinsey, [Generative AI]()
5. How has [technology changed]() – and changed us – in the past 20 years?
6. [13 Amazing Inventions]() You Should See, YouTube Video
7. [11 Technologies]() We Are Still Waiting For
8. Top [10 Emerging Technologies]() in 2023
9. Impact of [Voluntary Environmental Regulation]() on Green Technological Innovation: Evidence From Chinese Manufacturing Enterprises
10. How [Regulatory Frameworks]() Drive Technological Innovations

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

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Notes

1. *The MBA.com Team. (2022, November 27). The four types of innovation – And where to study them at business school. https://www.mba.com/business-school-and-careers/why-business-school/four-types-of-innovation*

2. D'Emidio, T., Dorton, D. & Duncan, E. (2015, February 1). Service innovation in a digital world. https://www.mckinsey.com/capabilities/operations/our-insights/service-innovation-in-a-digital-world

3. paddle. (n.d.). Product innovation strategy: Types, benefits, and processes (w. examples). https://www.paddle.com/resources/product-innovation

4. Edwards, A. (2019, June 22). What is technological innovation? https://hofstradrc.org/what-is-technological-innovation/

5. Hillyer, M. (2020, November 18). How has technology changed - and changed us - in the past 20 years? https://www.weforum.org/agenda/2020/11/heres-how-technology-has-changed-and-changed-us-over-the-past-20-years/

6. Qureshi, Z. (2022, January 18). How digital transformation is driving economic change. https://www.brookings.edu/articles/how-digital-transformation-is-driving-economic-change/

7. United Nations. (n.d.). UN75 2020 and beyond: The impact of digital technologies. https://www.un.org/en/un75/impact-digital-technologies

8. Edwards, A. (2019, June 19). What is technological innovation? https://hofstradrc.org/what-is-technological-innovation/

9. Wiles, J. (2022, September 15). What's new in artificial intelligence from the 2022 Gartner hype cycle. https://www.gartner.com/en/articles/what-s-new-in-artificial-intelligence-from-the-2022-gartner-hype-cycle

10. SagarBopodara. (n.d.). What is extended reality? https://www.geeksforgeeks.org/what-is-extended-reality/

11. Breathonix. (n.d.). Breathonix diagnostics reimagined. https://breathonix.com/

12. Bell, E. (2023, May 26). Generative AI: How it works, history, and pros and cons. https://www.investopedia.com/generative-ai-7497939

13. McKinsey & Company. (2023, July 6). Generative AI can give you "superpowers," new McKinsey research finds. https://www.mckinsey.com/about-us/new-at-mckinsey-blog/generative-ai-can-give-you-superpowers-new-mckinsey-research-finds

14. MIT Technology Review. (2021, February 24). 10 breakthrough technologies 2021. https://www.technologyreview.com/2021/02/24/1014369/10-breakthrough-technologies-2021/

15. DiChristina, M. & Myerson, B. (2021, November 16). These are the top 10 emerging technologies of 2021. https://www.weforum.org/agenda/2021/11/these-are-the-top-10-emerging-technologies-of-2021/

16. MIT Technology Review. (2021, February 24). 10 breakthrough technologies 2021. https://www.technologyreview.com/2021/02/24/1014369/10-breakthrough-technologies-2021/

17. Bleiberg, J. & Schaub, H. (2014, June 10). 10 New Innovations That Could Change the World. https://www.brookings.edu/articles/10-new-innovations-that-could-change-the-world/#:~:text=10%20New%20Innovations%20That%20Could%20Change%20the%20World,Collaboration%20...%208%20Oculus%20Rift%20...%20More%20items

18. McConnell, S. C., and Blasimme, A. (2019, December). Ethics, values, and responsibility in human genome editing. https://journalofethics.ama-assn.org/article/ethics-values-and-responsibility-human-genome-editing/2019-12

19. Bleiberg, J. & Schaub, H. (2014, June 10). 10 New Innovations That Could Change the World. https://www.brookings.edu/articles/10-new-innovations-that-could-change-the-world/#:~:text=10%20New%20Innovations%20That%20Could%20Change%20the%20World,Collaboration%20...%208%20Oculus%20Rift%20...%20More%20items

20. National Human Genome Institute. (2017, August 3). What are the ethical concerns of genome editing? https://www.genome.gov/about-genomics/policy-issues/Genome-Editing/ethical-concerns

21. Whittemore, S. (2019, March 26). A SMART way to enhance the generation capabilities of wind power plants. https://www.theenergy.coop/blog/smart-wind/#:~:text=%E2%80%9CSMART%E2%80%9D%20is%20an%20acronym%20for%20%E2%80%9CSystem%20Management%20of,cost%20savings%20within%20thirty%20years%20of%20their%20implementation.

22. Bleiberg, J. & Schaub, H. (2014, June 10). 10 New Innovations That Could Change the World. https://www.brookings.edu/articles/10-new-innovations-that-could-change-the-world/#:~:text=10%20New%20Innova-

tions%20That%20Could%20Change%20the%20World,Collaboration%20...%208%20Ocu-
lus%20Rift%20...%20More%20items

23. Science Focus. (2023, July 7). *Future technology: 22 ideas about to change our world.* https://www.sciencefocus.com/future-technology/future-technology-22-ideas-about-to-change-our-world/

24. Science Focus. (2023, July 7). *Future technology: 22 ideas about to change our world.* https://www.sciencefocus.com/future-technology/future-technology-22-ideas-about-to-change-our-world/

25. Science Focus. (2023, July 7). *Future technology: 22 ideas about to change our world.* https://www.sciencefocus.com/future-technology/future-technology-22-ideas-about-to-change-our-world/

26. Science Focus. (2023, July 7). *Future technology: 22 ideas about to change our world.* https://www.sciencefocus.com/future-technology/future-technology-22-ideas-about-to-change-our-world/

27. 3DSourced. (2023, July 12). *6 exciting 3D printed organs & 3D bioprinting projects.* https://www.3dsourced.com/guides/3d-printed-organs-bioprinting/

28. Science Focus. (2023, July 7). *Future technology: 22 ideas about to change our world.* https://www.sciencefocus.com/future-technology/future-technology-22-ideas-about-to-change-our-world/

29. Top Generality. (2023, February 27). *15 emerging technologies that will change the world #2.* [Video]. YouTube. https://youtu.be/y6IpTExIiSg

30. Insane Curiosity. (2020, February 27). *The world in 2050: Future technology.* [Video]. YouTube. https://youtu.be/Oa9aWdcCC4o

31. Eggers, W. D., Turley, M., & Klshnanl, P. K. (2018, June 19). *The future of regulation: Principles for regulating emerging technologies.* https://www2.deloitte.com/us/en/insights/industry/public-sector/future-of-regulation/regulating-emerging-technology.html

32. Eggers, W. D., Turley, M., & Klshnanl, P. K. (2018, June 19). *The future of regulation: Principles for regulating emerging technologies.* https://www2.deloitte.com/us/en/insights/industry/public-sector/future-of-regulation/regulating-emerging-technology.html

33. United Nations. (n.d.). *UN75 2020 and beyond: The impact of digital technologies.* https://www.un.org/en/un75/impact-digital-technologies

34. Wolff, J. (2021). *How is technology changing the world, and how should the world change technology?* https://online.ucpress.edu/gp/article/2/1/27353/118411/How-Is-Technology-Changing-the-World-and-How

35. Wolff, J. (2021). *How is technology changing the world, and how should the world change technology?* https://online.ucpress.edu/gp/article/2/1/27353/118411/How-Is-Technology-Changing-the-World-and-How

36. OECD. (n.d.). *Regulatory reform and innovation.* https://www.oecd.org/sti/inno/2102514.pdf

37. Wolff, J. (2021). *How is technology changing the world, and how should the world change technology?* https://online.ucpress.edu/gp/article/2/1/27353/118411/How-Is-Technology-Changing-the-World-and-How

38. Wolff, J. (2021). *How is technology changing the world, and how should the world change technology?* https://online.ucpress.edu/gp/article/2/1/27353/118411/How-Is-Technology-Changing-the-World-and-How

39. Eggers, W. D., Turley, M., & Klshnanl, P. K. (2018, June 19). *The future of regulation: Principles for regulating emerging technologies.* https://www2.deloitte.com/us/en/insights/industry/public-sector/future-of-regulation/regulating-emerging-technology.html

40. Wolff, J. (2021). *How is technology changing the world, and how should the world change technology?* https://online.ucpress.edu/gp/article/2/1/27353/118411/How-Is-Technology-Changing-the-World-and-How

41. Eggers, W. D., Turley, M., & Klshnanl, P. K. (2018, June 19). *The future of regulation: Principles for regulating emerging technologies.* https://www2.deloitte.com/us/en/insights/industry/public-sector/future-of-regulation/regulating-emerging-technology.html

CHAPTER 11: INNOVATION RISKS

Chapter 11 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Describe how a company can create a balanced innovation portfolio to help reduce risk.
2. Discuss how and why a company should scan the environment.
3. Explain how using metrics for innovation will help reduce risk.
4. Discuss how managers might deal with employees' resistance to change.
5. Explain what is meant by "Build the Right Team" for an innovation project.
6. List four ways in which a company can safeguard its intellectual property.
7. Explain why innovation project failure is acceptable.

Reduce Risk by Creating a Balanced Innovation Portfolio

In today's rapidly transforming business world, it seems the only thing that is constant is change. Companies that cannot keep up with the pace of change and adapt to [disruptive innovation](#) *often find themselves struggling. There are quite a few companies that failed to innovate and were either forced to declare bankruptcy, merge with another organization, or fell from the top of the Fortune 500 companies rankings–* [88% of the Fortune 500](#) *firms that existed in 1955 are gone.[1] Every new ground-breaking product and service, in the end, will become obsolete, commoditized, and outcompeted by new and better solutions, products, and companies.[2] This may be best epitomized by Kodak, Blockbuster, Polaroid, Pan Am, Sears, Compaq, Nokia, Yahoo, and Blackberry.[3] To secure healthy revenue streams and long-term survival, organizations need to have a balanced innovation portfolio. An* **innovation portfolio** *is a collection of innovation projects, ideas, and programs that the company manages to reduce potential risks associated with innovation. These projects usually span time, ranging from short-term (core), to mid-term (adjacent), to long-term (transformational) initiatives.*

A well-balanced innovation portfolio has a mix of high-risk game-changers and low-risk incremental innovations. Portfolio balancing is a technique used by the world's best innovators to analyze the long- and short-term risks of innovation projects in the company's pipeline. No organization can afford to risk its business on one big idea. Likewise, developing a bunch of small, incremental projects won't deliver a big win either.[4]

*The **Innovation Ambition Matrix**, as featured in the Harvard Business Review (May 2012) and diagrammed in Figure 10.1 below, is a classic model that helps companies decide how to fund different growth initiatives. Few organizations think about the best level of innovation to target, and even fewer manage to achieve it. According to Nagji and Tuff, the best approach to innovation is to think in terms of managing an integrated, balanced 'portfolio' of innovation initiatives which are divided into three types: Core, Adjacent, and Transformational.[5]*

- *__Core Innovation__ – These include initiatives that are incremental such as enhancements to core offerings (e.g., line extension, refreshing, or improving the performance of an existing product). This is an area of automatic renewal or sustaining innovations that help the company stay current and competitive. These are fairly safe initiatives where risk is concerned.*
- *__Adjacent Innovation__ – These expand the existing organization by leveraging what is already going very well (part core innovation) into adjacent new places or collaborative ventures. Adjacent innovation usually involves slightly larger risks and additional maintenance.*
- *__Transformative Innovation__ – These initiatives represent those viewed as breakthroughs, radical, or disruptive innovations and are creations of entirely new offerings or initiatives, and usually involve even higher risk to accomplish.[6]*

A general rule that many companies follow is to have 70% of the investments in core innovations, 20% in adjacent innovations, and only 10% in transformative innovations. In terms of value creation potential, however, the ratios are inverted: core innovation efforts typically contribute 10% of the long-term cumulative return on innovation investment, adjacent initiatives contribute 20%, and transformational projects yield a huge 70%. The right balance of innovation investment will vary from company to company according to particular factors like the age of the company, its competitive position in the market, and characteristics of the industry served (e.g. number of suppliers, market growth, and regulatory patterns). Most companies tend to be heavily oriented toward just core innovation and while this is understandable in terms of avoiding the greater risks and uncertainties associated with adjacent and transformational initiatives, the result will be a steady, long-term decline in business and attractiveness to customers if a company never tries some adjacent or transformational projects.[7]

For many companies, innovation is a sprawling collection of initiatives, energetic but uncoordinated, and managed with fluctuating strategies. For steady, above-average returns, firms need a balanced innovation portfolio and the ability to approach it as an integrated whole. The ideal balance will differ from industry to industry and company to company, but one thing is constant: Companies must execute at all three levels of ambition and

manage total innovation deliberately and closely. In particular, they must develop the unique capacities needed for transformational innovation. This means finding the talent required for breakthrough efforts and ensuring enough separation from the core business; creating an appropriate (and often very different) funding structure; departing from a pipeline management approach, and using noneconomic and internal metrics to assess early efforts.[8]
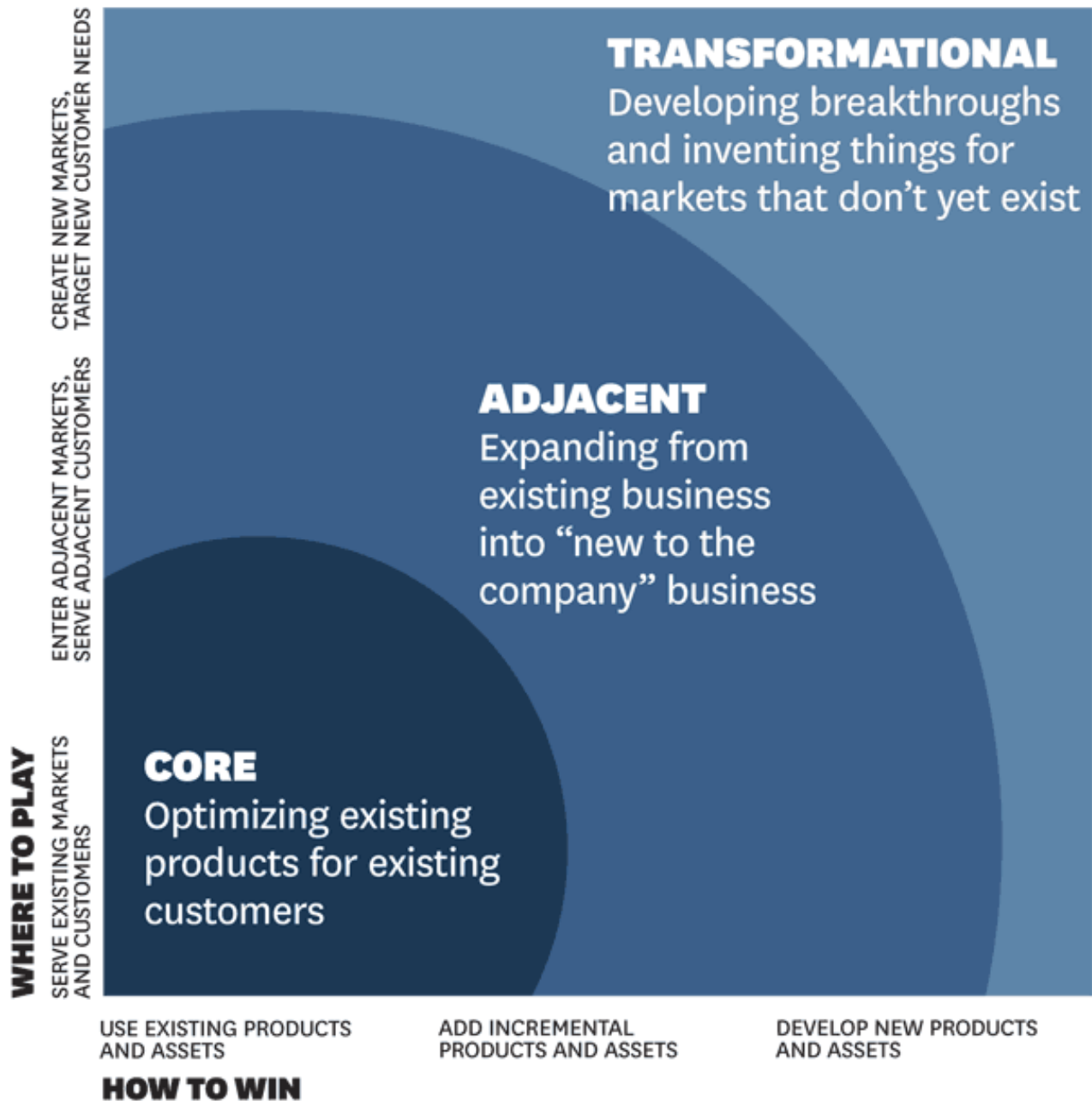

Figure 10.1 Innovation Ambition Matrix, Nagji, B. & Tuff, G., Harvard Business Review

Reduce Risk by Performing Environmental Scans

Finding a creative idea is only the first step in every innovation process, understanding the business environment and forecasting both internal and external factors that may affect it is critical before releasing innovations to the market. At this point, tools like the PESTLE analysis and SWOT analysis come into action. The frequency of environmental scanning depends on the purpose of the scan. It can range from once a year to once a month. Leaders should conduct environmental scans once a year to review shifts that can and will impact business performance.[9]

PEST Analysis

A major source of business uncertainty is change in the environment in which an organization operates. The environment is constantly changing; environmental scanning will, to the extent possible, help leaders identify changes in terms of events, issues, trends, and deviations from the norm. **Environmental scanning** *is about understanding the world and context in which the business operates. It is a process for monitoring both the internal and external environments for clues to existing circumstances and changes that could bring about risk or opportunities. The purpose of environmental scanning is to find and retain information in order to inform decision-making at a certain point in time.*

The first step in the risk management process is gaining a well-rounded understanding of the organization's external and internal environment. **Risk** *refers to the effect of uncertainty on objectives and outcomes at different levels of the organization. Knowing the environment and the direction of current and future shifts will help leaders identify and understand possible drivers and sources of risk that could affect the achievement of company objectives. Therefore, scanning activities should include a wide range of facts, trends, and time horizons.*[10]

A **PEST analysis** *is one way to scan the external environment for opportunities and risks. Traditionally, the framework was referred to as a PEST analysis, which was an acronym for Political, Economic, Social, and Technological; in more recent history, the framework was extended to include Legal, Environmental, and Ethical factors. Common acronyms include PEST, PESTLE, PESTEL, SLEPT, STEPE, and STEEPLE (the extra 'E' stands for Ethics) and it does not matter which acronym you choose because each of them describes the macro-environmental factors that can affect the performance of an organization. Using a PEST analysis acronym, managers would include ethics under the social or political factors, legal under the economic or political factors, and environmental sustainability under the social or political factors. Therefore, PEST is all you really need. After completing a PEST analysis, organizations are in a better position to plan an effective strategy to meet their objectives and minimize risks. PEST factors are considered when assessing the impact of external factors on a company's profitability.*

Example: PEST analysis for an international airline

Here is a **PEST analysis** shared by the Indeed Team that uses a fictitious international airline company as an example.[11]

Axis Airways is an international airline that holds bi-annual PEST analysis to stay competitive as a low-cost carrier. Based in Orlando, Florida, it flies to 10 countries and expects to double its fleet size, destinations and profit earnings within the next five years.

Through an interdepartmental project management team and a consulting expert, here are some of Axis Airways Unlimited's insights and concerns discovered through PEST analysis:

Political: Plans to launch an international route from Florida to a specific island country destination prove challenging because of governmental policies and the adverse international relations between the two countries. It will be a costly investment if the airline wants to proceed, and there is a risk that either government may change its travel allowances or restrictions, affecting the ability to sell fares and fly leisure customers to and from the other nation.

Economic: A review of a declining competitor reveals an opportunity to buy 10 used airplanes, boosting Axis Airways' ability to increase revenue through adding hundreds of available seats and reducing lease percentage rates by buying the planes outright. With an upturn in the national economy, the business traveler market reveals a 10% increase in revenue, projected to last through at least the next three quarters.

Social: With an increase in international travel, the leisure market is growing steadily. Expanding to new Caribbean destination projects will likely add millions of dollars annually as society trends show vacationing and travel experiences as a top item for consumer spending.

Technological: Axis Airways performed several improvement studies to reduce the time an airplane stays on the ground between flights, invested in pilot automation software and upgraded its online booking and reservations systems, leading to an increase in rankings on surveys by employees and customers.

What is your analysis of this environmental scan? Can you identify the company's strengths and weaknesses?

Competitive Analysis

Competitive analysis (sometimes called a competitor analysis or competition analysis) is exactly what it sounds like, a structured approach to identifying and analyzing a company's competitors. More concretely, it's an assessment of the competition's offerings, strategy, strengths, and weaknesses.[12]

Competitive analysis helps leaders answer questions such as:

Which other companies are providing a solution similar to ours?

What are the ideal customer's minimum expectations?

What are they currently not getting from our product with regard to those expectations?

What barriers do competitors in the market face?

What should we avoid introducing in our product?

What price are customers willing to pay for our product?

What value do we need to provide to make our product stand out in the market?

What trends are happening and how might they change the playing field?

How to do a Competitive Analysis:[13]

1. Determine who your competitors are.
2. Determine what products your competitors offer.
3. Research your competitors' sales tactics and results.
4. Take a look at your competitors' pricing, as well as any perks they offer.
5. Ensure you're meeting competitive shipping costs.
6. Analyze how your competitors market their products.
7. Take note of your competition's content strategy.
8. Learn what technologies your competitors use.
9. Analyze the level of engagement on your competitors' content.
10. Observe how they promote marketing content.
11. Look at their social media presence, strategies, and go-to platforms.
12. Perform a SWOT Analysis to learn their strengths, weaknesses, opportunities, and threats.

SWOT Analysis

A **SWOT** (strengths, weaknesses, opportunities, and threats) analysis is a framework used to evaluate a company's competitive position and to develop strategic planning. SWOT analysis assesses internal and external factors, as well as current and future potential.[14]

Every SWOT analysis will include the following four categories. Though the elements and discoveries within these categories will vary from company to company, a SWOT analysis is not complete without each of these elements:[15]

- *Strengths describe what an organization excels at and what separates it from the competition: a strong brand, a loyal customer base, a strong balance sheet, unique technology, and so on.*
- *Weaknesses stop an organization from performing at its optimum level. They are areas where the business needs to improve to remain competitive: a weak brand, higher-than-average turnover, high levels of debt, an inadequate supply chain, or lack of capital.*
- *Opportunities refer to favorable external factors that could give an organization a competitive advantage. For example, if a country cuts tariffs, a car manufacturer can export its cars into a new market, increasing sales and market share.*
- *Threats refer to factors that have the potential to harm an organization. For example, a drought is a threat to a wheat-producing company, as it may destroy or reduce crop yield. Other common threats include things like rising costs for materials, increasing competition, tight labor supply, and so on.*

Reduce Risk by Using Metrics

Metrics *are measures of quantitative assessments commonly used for assessing, comparing, and tracking performance or production. Metrics used on innovation projects are a good way to monitor return on investment. Not all metrics work for every company or every project. There are, however, certain types of metrics that every innovation team should pay attention to, including:*

- *Number of new ideas in the pipeline*
- *Number of innovation projects started*
- *R&D spent as a percentage of sales*
- *Revenue/profit/growth from new innovations*
- *Number of new innovations launched in a specific amount of time*

The list below provides a few reasons that companies should use innovation metrics.[16]

- *Provide strategic direction by signaling shifts in priorities*
- *Guide resource (re)allocations*
- *Assess the effectiveness of innovation spending*
- *Hold managers accountable and link incentives to reach targets*
- *Diagnose and improve innovation performance*
- *Mitigate risk*

Measure progress and success

There are many risks associated with innovation such as the loss of money, the loss of time, the loss of company reputation, and the loss of potential. Due to the fact that there is only a limited number of company resources, businesses cannot pursue all the innovative projects they may wish to at one time and must budget for the most promising projects. **Opportunity costs** *are the potential benefits a business misses out on when choosing one alternative over another. Because opportunity costs are unseen by definition, they can be easily overlooked. Managers can make better decisions when choosing which innovation projects to pursue by understanding the potential missed opportunities when choosing one investment over another.*

"Regardless of how funding is established—or the size of the budget itself—it is critical to measure how much money was spent at each stage of the process: preparation (i.e. percentage of capital budget allocated to innovation projects), development (i.e. R&D spending at each phase of development the innovation process), and results (i.e. percentage of sales from innovation projects). As with the portfolio approach to general innovation metrics, the use of financial metrics across the innovation lifecycle reduces the focus on ROI, and too much focus on ROI can cripple innovative projects in the early stages."[17] *The chapter entitled, "Leading Innovation" discusses funding and budgeting for innovation in more detail.*

Businesses can measure innovation by using the following metrics.[18]

- *Timesheet metrics*
- *New product or service metrics*
- *Financial metrics*
- *Training and staff competency metrics*
- *Management and leadership metrics*

Input Metrics

Input metrics measure how well the company is gauging input and effort into the innovation project. These metrics measure things like the number of ideas generated by each employee, time spent by top management on innovation activities, and the percent of capital allocated to innovation projects.

Development Metrics

Development metrics gauge the company's progress, process, and pipeline of innovations. These metrics measure things like the amount of R&D spend on each phase of development, the number of projects in the pipeline, and time spent on each phase of idea management.

Output Metrics

Output metrics measure the end or results of the company's efforts. These metrics measure things like the number of products launched on an annual basis, the number of patents awarded, and the percentage of revenue from new offerings.

Metrics offer guideposts for improvements and progress, they calibrate the company's efforts and show a clear path for remedy. Companies can determine from metrics what is working and what is not working and how to modify the project from start to finish.

Common Flaws With Measurements

The list below provides a few common flaws with using measurements.[19]

- *Encouraging incremental innovation over disruptive innovation*
- *Having too few metrics, or too many*
- *Measuring what is available versus what is needed*
- *Placing too much emphasis on output measures over process effectiveness*

Play this YouTube video "Innovation QuickWin: Innovation Metrics" to learn about the major metrics that companies need to set to monitor and track innovation success.[20] *[Transcript for "Innovation Quickwin: Innovation Metrics" Video [PDF–New Tab]](). Closed captioning is available on YouTube.*
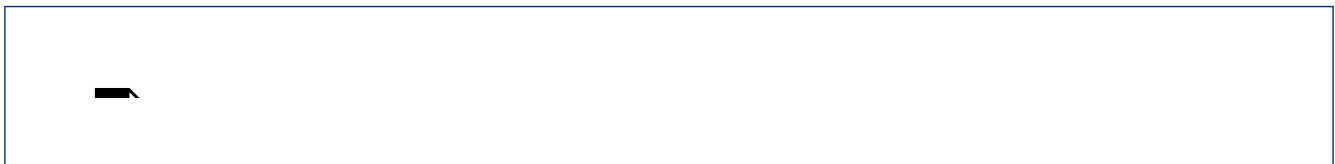
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Reduce Risk by Reducing Resistance to Change

Innovation creates change, whether that is a new process or technology being implemented in the workplace or a new radical product being developed that creates change within the organization. There will always be employees and other stakeholders that are resistant to change and this may hinder or put up roadblocks for the innovation project to succeed.

Below is a list of ten reasons people resist change along with some strategies management can use to overcome resistance to change.[21]

1. **Loss of Job Security or Control.** *They fear they may lose their jobs, or not have input into how their job is done. Management communication and employee training may help reduce their resistance.*
2. **Shock and Fear of the Unknown.** *People will usually move forward if they feel the risk of standing still outweighs the risk of moving forward. The change should be communicated early and the need for change should be convincing–the less employees know about the change and how it will affect them, the more fearful they will become.*
3. **Lack of Confidence.** *They fear they will not be able to learn new systems/processes or perform to their best ability. Management should help employees build their competencies to increase their confidence.*
4. **Poor Timing.** *Too much change all at once can cause employee resistance. People should feel the benefits of previous change efforts to help them buy-in to the next change.*
5. **Lack of Rewards.** *Employees will resist change when they do not see anything in it for them in terms of rewards. Management needs to explain the tangible short-term and long-term benefits to employees.*
6. **Office Politics.** *Some employees resist change to prove to management that the decision is wrong or that the person leading the change is not capable of this initiative. Others may resist change because they may lose power in the organizational structure. When teams are united and working toward a new initiative, employees will accept the decisions of the leaders.*
7. **Loss of Support System.** *Employees get comfortable with who they work with, their team, their managers and have built a predictable support system. It is human nature to avoid the unfamiliar, but on the other hand, most people enjoy adventures. Management should communicate how the new support system will work.*
8. **Former Change Experience.** *If employees have experienced poor change management in the past, they*

tend to resist new change even more. Management should talk about previous change initiatives and highlight their benefits.

9. **Lack of Trust and Support.** *Change does not happen well in an atmosphere of mistrust. Communication must be and actions must be trustworthy in order for employees to build faith in the intentions of management/leaders.*

10. **Peer Pressure.** *Organizational stakeholders will resist change to protect the interest of a group. People are willing to change if the promise of the future is better than the realities of the present.*

Play this YouTube video "Ten Reasons Why People Resist Change in the Workplace" to learn more about why employees resist change and how companies can reduce this resistance.[22] [*Transcript for "Ten Reasons Why People Resist Change in the Workplace" Video [PDF–New Tab]*](#). *Closed captioning is available on YouTube.*

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=79#oembed-2

Reduce Risk by Building the Right Team

An important component of innovation project success is building the right team. Companies may have employees with the right skill sets or they may need to hire externally. When the right talent for an innovation project is not available within the company, training to advance internal candidates may be an option. If training is not available, too costly, or will take too long, then companies might consider either outsourcing parts of the project development to experts in the field, for example, small companies that focus on a niche area, or hiring new employees, either on a full-time, if feasible, or part-time, or contract basis. If this is a one-time need or a need that occurs seldom, hiring a full-time employee may be too costly, therefore, not feasible. It may be feasible though to hire a contract worker who can work on-site for the time frame needed with no long-term expectations of becoming a full-time company employee. Below are a few key points to remember about building the right team.[23]

- *Innovating for short-term versus long-term initiatives (ten years in the future) demands very different skills.*
- *Innovation teams should be staffed with people that represent different stakeholders and interests in the organization.*
- *Innovation teams should have one or a few influential "champions" with the ability to convince other members of the organizations to get on board.*
- *It is vital to bring in highly talented outsiders that will look at innovation projects without the lens of the*

organization to get a fresh perspective.

Part of building the right team may mean collaborating with other companies (even competitors), the government, consultants, or customers on innovative projects. Forming partnerships with other organizations to create a new innovation is often a great idea since it will reduce the risks of innovating for each company because each partner shares in the risks. With that said, each collaborating organization will also share in the rewards. An organization that may be weak in some areas may be able to offset those weaknesses by partnering with another company that is strong in those areas. For example, if the company has determined it is too expensive to purchase new technology, or too difficult to obtain patents, they might gain strengths in partnering with a company that has the technology or patent that is needed. Companies may take advantage of collaborating with the [Government of Canada](#) which provides funding and advisory support for research and development (R&D), innovation, and commercialization projects. Collaborating and listening to employees is a good way to help ensure the company is creating products and services that customers want because employees often interact with customers, solve customer problems, and gather feedback from customers and are able to bring these insights to the innovation project. The chapter entitled, "Leading Innovation" discusses in some detail several types of collaborations that leaders can pursue in order to nurture innovation.

Reduce Risk by Safeguarding Intellectual Property

*In general terms, **intellectual property** is any product of the human intellect that the law protects from unauthorized use by others. The concept of intellectual property relates to the fact that some intangible assets, products of the human intellect, should have the same protective rights as physical property (tangible assets). For some innovations, a company may require a patent or copyright to protect its intellectual property from competitors and help the company keep its competitive advantage. Although, a competitive advantage does have a time limit that runs out when legal rights expire or when competitors catch up (or surpass) with their own innovations.*

The main types of intellectual property include the following.

- *__Patents.__ Legal rights that allow the inventor exclusive rights to the invention, which could be a design, process, improvement, or physical invention. Patents protect inventions from being copied or used by others without permission.*
- *__Trademarks.__ Distinctive signs, symbols, or phrases that are recognizable and represent a product that legally separates it from other products. Trademarks identify the source or quality of goods or services and are often associated with a company's brand.*
- *__Copyrights.__ Legal rights that protect original works of authorship, such as books, music, films, etc. Copyrights also state that the original creator may grant anyone authorization through a licensing agreement to use the work.*

- **Trade secrets.** *Confidential information that gives a business an advantage over its competitors. A trade secret is a company's process, recipe, formula, or practice that is not public information and provides a monetary benefit to the holder of the trade secret. KFC's original recipe was a trade secret and only a few employees knew the recipe and were bound by confidentiality agreements to not disclose or share the recipe.*[24]

This video explains the primary methods of protecting intellectual property (patents, copyrights, trademarks, trade secrets), including the qualifications for using them, and when an organization might opt to not protect its IP.[25] [Transcript for "Innovation Strategy: Intellectual Property" Video \[PDF–New Tab\]](#). Closed captioning is available on YouTube.

📄 *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=79#oembed-3*

Reduce Risk by Studying Innovation Failures

No one likes to fail and most of us try very hard not to fail, but failure is about learning, and it is absolutely necessary to learn in order to succeed at innovation. For every innovation leader out there like Google, Microsoft, or Amazon, there are hundreds of competitors that never quite make it out of the gate. For growing startups looking to establish themselves, it's always helpful to try and understand why this happens, although, innovation failure is not something that only happens to small companies; even market leaders like Coca-Cola, Samsung, and Nintendo can still have plenty of bad days. Just check out the sad history of the Nintendo [Virtual Boy](#).[26] Despite the negative energy it comes with, failure has its positive side. Experiencing failure can teach you lessons that you wouldn't have learned otherwise. Actually, some of the most successful people in the world were only able to attain success because of the lessons they learned from their previous failures.[27]

To reduce the chance of failure companies should study their own past failures as well as those of their competitors. Learn from failure. What worked? What did not? Failure is not something to be afraid of or viewed negatively within the company–it is a learning curve from trial and error. Businesses that reflect on past failures often discover that the failures of the past brought them to the successes they now enjoy. "The most important goal of innovation is to gain a competitive advantage by increasing the speed and effectiveness with which your company learns—and acts on that learning. Innovation is about experimentation—failing early and often."[28]

Here are a few tips for teams to learn from innovation project failures:

1. *Know it is OK to fail because a new route is created from failure.*

2. *Realize experience is the best teacher because the team learns what works and what doesn't.*
3. *Allow the team the freedom to fail because if they are too cautious they will not take risks.*
4. *Failure helps the team gain new knowledge in their work and resets their focus.*
5. *Let the fear of failure help motivate the team to succeed, failure leads to mastery.*
6. *Welcome failure because the faster the team fails, the faster they will succeed.*
7. *Failure makes people stronger, making them better prepared to tackle the next challenge.*
8. *Keep records of your company's and competitors' failures and successes to refer back upon "lessons learned" when working on future innovation projects.*

Key Takeaways

1. Companies that cannot keep up with the **pace of change** and adapt to disruptive innovation often find themselves struggling. There are quite a few companies, that failed to innovate and were either forced to declare bankruptcy, merge with another organization, or fell from the top Fortune 500 companies rankings– 88% of the Fortune 500 firms that existed in 1955 are gone.

2. **Balanced Innovation Portfolio.** Search the Internet to look for examples of frugal innovation. Which companies are doing this? Why? What is the return on investment for these types of innovations? Do you feel this is something most companies should be doing? Why or why not? Discuss your findings with your class and/or professor.

3. The **innovation ambition matrix**, as featured in the Harvard Business Review (May 2012), is a classic model that helps companies decide how to fund different growth initiatives. Few organizations think about the best level of innovation to target, and even fewer manage to achieve it. According to Nagji and Tuff, the best approach to innovation is to think in terms of managing an integrated, balanced 'portfolio' of innovation initiatives which are divided into three types: Core, Adjacent, and Transformational. A well-balanced innovation portfolio has a mix of high-risk game-changers and low-risk incremental innovations.

4. A **PEST analysis** is one way to scan the external environment for opportunities and risks. Traditionally, the framework was referred to as a PEST analysis, which was an acronym for Political, Economic, Social, and Technological; in more recent history, the framework was extended to include Legal, Environmental, and Ethical factors. After completing a PEST analysis, organizations are in a better position to plan an effective strategy to meet their

objectives and minimize risks. PEST factors are considered when assessing the impact of external factors on a company's profitability.

5. **Competitive analysis** (sometimes called a competitor analysis or competition analysis) is exactly what it sounds like, a structured approach to identifying and analyzing a company's competitors. More concretely, it's an assessment of the competition's offerings, strategy, strengths, and weaknesses.

6. A **SWOT** (strengths, weaknesses, opportunities, and threats) analysis is a framework used to evaluate a company's competitive position and to develop strategic planning. SWOT analysis assesses internal and external factors, as well as current and future potential.

7. There are various **collaborations** a company can pursue to help reduce the risks associated with innovation. For example, companies might collaborate with other companies in order to share the risks of new innovations.

8. It is critical to **measure** how much money was spent at each stage of the process. The use of financial metrics across the innovation lifecycle reduces the focus on ROI, and too much focus on ROI can cripple innovative projects in the early stages.

9. Using **metrics** to compare and track performance and progress on innovation projects is a good way to monitor return on investment. Input metrics measure how well the company is gauging input and effort into the innovation project. Development metrics gauge the company's progress, process, and pipeline of innovations. Output metrics measure the end or results of the company's efforts.

10. Innovation creates change, whether that is a new process or technology being implemented in the workplace or a new radical product being developed that creates change within the organization. There will always be employees and other stakeholders that are **resistant to change** and this may hinder or put up roadblocks for the innovation project to succeed.

11. **Ten reasons people resist change** include loss of job security or control, shock and fear of the unknown, lack of confidence, poor timing, lack of rewards, office politics, loss of support system, former change experience, lack of trust and support, and peer pressure.

12. An important component of innovation project success is to build the **right team**. Companies must select, hire, collaborate with, and outsource the right talent (people).

13. There are various **collaborations** a company can pursue to help reduce the risks associated with innovation.

14. For some innovations, a company may require a patent or copyright to protect its **intellectual property** from competitors and help the company keep its competitive advantage, for a while at least.

15. No one likes to fail and most of us try very hard not to fail, but **failure is about learning**,

and it is absolutely necessary to learn in order to succeed at innovation. To reduce the chance of failure companies should study their own past failures as well as those of their competitors.

End-of-Chapter Exercises

1. **Types of Innovation.** Search the Internet for information on the differences between radical, breakthrough, and disruptive innovation. Are there differences or are the three terms used interchangeably? Discuss your findings with your class and/or professor.

2. **Matrix Comparison.** Overlay the Innovation Ambition Matrix on the Ansoff Matrix (Discussed in the chapter entitled, "Growth Strategy"). A good example of this can be found in "Achieve a More Balanced Portfolio" by Lisa Bodell. What do you discover? Does it make sense? Discuss your observations with your class and/or professor.

3. **Practice PEST.** Perform a PEST analysis (PEST, PESTLE, PESTEL, SLEPT, STEPE, or STEEPLE analysis, as assigned by your professor) for your school or workplace by scanning the business environment. This is an external environment scan. You will analyze political, economic, social, technological, legal, environmental, and ethical factors, regardless of the acronym you choose, that may have an impact on your institution either positively or negatively. Are there new regulations or economic changes in the environment? Are there social trends happening? Analyze your research findings and determine if there are any changes that could bring about risks or opportunities for your school or workplace. Share your analysis with your class and professor.

4. **Practice SWOT.** Perform a SWOT analysis for your school or workplace by scanning the business environment. This is an internal and external scan. You will analyze your institution's strengths, weaknesses, opportunities, and threats. Are there weaknesses your school or workplace needs to be concerned about? What opportunities did you find? Share your analysis with your class and professor.

5. **Practice Competitive Analysis.** Perform a competitive analysis for your school or workplace by scanning the business environment. This is an external environment scan. You

should research at least two other institutions and then compare your findings to your institution. Are other institutions offering more online courses? Are other institutions providing free books or other learning resources to students? What is the enrollment in your specific program at your institution, and what is it at competing institutions? Are the websites easy to use? Share your analysis with your class and professor.

6. **Metrics.** Search the Internet to find an example/story/article about how innovation metrics were used to guide a company throughout an innovation initiative. Share your findings with your class and/or professor.

7. **Opportunity costs** are the potential benefits a business misses out on when choosing one alternative over another.

8. **Government Support.** Visit the Government of Canada [Innovation and Support](#) website. Review the types of support the Government of Canada offers businesses. Do you think these supports will help entrepreneurs, small businesses, or large corporations most? Why? Share your findings with your class and/or professor.

9. **Intellectual Property.** Search the Internet to see if Coca-Cola has a patent on its Coke formula. You might also search for other companies that have patents or other intellectual property protection on their products, processes, or business models. Share your findings with your class and/or professor.

10. **Innovation Failure.** Search the Internet for information on companies that have failed at innovation. What was the failure? Why did they fail? What did they learn from the failure? Share your findings with your class and/or professor.

Self-Check Exercise – Flashcards – Risk Level

An interactive H5P element has been excluded from this version of the text. You can view it online

here:

https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=79#h5p-11

Additional Resources

1. 50 Examples of [Corporations That Failed to Innovate](#)
2. Innovation [Metrics and KPIs](#)
3. [10 Famous Failures](#) that Will Inspire You
4. The [50 Greatest Breakthroughs](#) Since The Wheel
5. [How to Measure](#) Innovation Better

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

Media Attributions

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Notes

1. Goh, F. (n.d.). *10 companies that failed to innovate, resulting in business failure.* https://www.collectivecampus.io/blog/10-companies-that-were-too-slow-to-respond-to-change

2. Anderson, M. (n.d.). *The importance of keeping a balanced innovation portfolio.* https://blog.mike-andersson.com/the-importance-of-keeping-a-balanced-innovation-portfolio/

3. Valuer (2022, July 28). *50 examples of corporations that failed to innovate.* https://www.valuer.ai/blog/50-examples-of-corporations-that-failed-to-innovate-and-missed-their-chance

4. Bodell, L. (2018, December 28). *Achieve a more balanced innovation portfolio in 2019.* https://www.forbes.com/sites/lisa-bodell/2018/12/28/achieve-a-more-balanced-innovation-portfolio-in-2019/?sh=4814103070cb

5. Nagji, B. & Tuff, G. (2012, May). *Managing your innovation portfolio.* Harvard Business Review. https://hbr.org/2012/05/managing-your-innovation-portfolio

6. Sharp, T. (2015, September 2). *Core innovation, adjacent innovation, and transformative innovation.* https://choral-net.org/2015/09/core-innovation-adjacent-innovation-and-transformative-innovation/

7. MBA Knowledge Base. (n.d.). *The innovation ambition matrix.* https://www.mbaknol.com/strategic-management/the-innovation-ambition-matrix/

8. Nagji, B. & Tuff, G. (2012, May). *Managing your innovation portfolio.* Harvard Business Review. https://hbr.org/2012/05/managing-your-innovation-portfolio

9. Gosnell, K. (2023, March 22). *Environmental scanning: How CEOs can stay ahead of the curve and beat the competition.* https://www.business.com/articles/what-is-environmental-scanning/

10. https://www.csps-efpc.gc.ca/tools/jobaids/risk-management-essentials/risk-management-eng.aspx

11. https://www.indeed.com/career-advice/career-development/pest-analysis

12. Hermans, K. (2022, October 4). *What is competitive analysis? Template, examples, and how-to.* https://blog.logrocket.com/product-management/what-is-competitive-analysis-template-examples-tutorial/

13. White, C. (2022, November 10). *What's a competitive analysis & how do you conduct one?* https://blog.hubspot.com/marketing/competitive-analysis-kit

14. Kenton, W. (2023, June 19). *SWOT analysis: How to with table and example.* https://www.investopedia.com/terms/s/swot.asp

15. Kenton, W. (2023, June 19). *SWOT analysis: How to with table and example.* https://www.investopedia.com/terms/s/swot.asp

16. Mack Institute. (n.d.). *Choosing innovation metrics for success in the digital era.* https://mackinstitute.wharton.upenn.edu/2020/innovation-metrics-for-success-digital-era/

17. Davis, C. (2017, December 5). *7 considerations when creating a corporate innovation lab.* https://www.cio.com/article/228053/7-considerations-when-creating-a-corporate-innovation-lab.html

18. Braineet. (n.d.). *Innovation metrics and KPIs: Measuring innovation to create growth.* https://www.braineet.com/blog/innovation-metrics-kpis

19. Mack Institute. (n.d.). *Choosing innovation metrics for success in the digital era.* https://mackinstitute.wharton.upenn.edu/2020/innovation-metrics-for-success-digital-era/

20. FutureThink. (2015, November 5). *Innovation quickwin: Innovation metrics.* [Video]. YouTube. https://www.youtube.com/watch?v=EewsYXAZopQ&t=17s

21. Crash Course MBA. (2020, July 2). *7 strategies for overcoming resistance to change.* [Video]. YouTube. https://www.youtube.com/watch?v=8JHafy_Cj7I

22. Crash Course MBA. (2020, July 2). *7 strategies for overcoming resistance to change.* [Video]. YouTube.

https://www.youtube.com/watch?v=8JHafy_Cj7I

23. Anderson, M. (n.d.). *The importance of keeping a balanced portfolio.* https://blog.mike-andersson.com/the-importance-of-keeping-a-balanced-innovation-portfolio/

24. Legamart Editorial. (2022, June 3). *Trade secrets: Definition, protection, types, and remarkable examples.* https://legamart.com/articles/trade-secrets-definition-and-examples/

25. Schilling, M. (2021, August 7). *Innovation strategy: Intellectual property.* [Video]. YouTube. https://www.youtube.com/watch?v=d6F4Hma6ijg

26. Braineet. (n.d.). *35 famous innovation failures - and what you can learn from them.* https://www.braineet.com/blog/innovation-failures

27. Andal, E. (2021, June 4). *10 famous failures to success stories that will inspire you to carry on.* https://www.lifehack.org/articles/communication/10-famous-failures-that-will-inspire-you-success.html

28. Swisher, P. (2016, July 29). *How to lead successful innovation: Lessons from experts.* https://professional.dce.harvard.edu/blog/how-to-lead-successful-innovation-lessons-from-experts/

CHAPTER 12: LEADING INNOVATION

Chapter 12 Learning Outcomes

After reading this chapter, you should be able to do the following:

1. Explain how company structure can support or hinder innovation.
2. Discuss how leaders can create an innovative culture in the workplace.
3. Discuss how employees can be rewarded for innovation and creativity.
4. Explain how a strategic business partner or co-creation may help a company innovate.
5. Explain why some organizations fail at innovation.

How Can Leaders Structure the Organization to Support Innovation?

Smaller businesses do not have much problem with the organizational structure getting in the way of innovation because most employees who have an innovative idea can speak directly with the owner of the business to get the idea reviewed and approved. Larger corporations have several types of organizational structures and some of those, such as hierarchical have many layers, so an employee may speak with their direct manager who then speaks to an area manager who then speaks to another manager, and so on. Often in these large organizations, different departments are respon-

Department managers competing for resources

sible for their own profit and loss, so they essentially compete with each other for company resources which is not the best structure to support collaborative innovation or make it easy to get big ideas into the innovation pipeline.

From small businesses to large organizations like global megacorporations, companies across the globe generally rely on four different types of organizational structures in the [mechanistic](#) *model: Functional, Divisional, Matrix, and Hybrid. Matrix structures combine functional structures with divisional structures in a grid arrangement that combines vertical functions (e.g., organizational roles and titles) with horizontal divisions (e.g., directors of various product lines, projects, etc.). A matrix organization decentralizes decision-making and provides teams with increased autonomy while simultaneously improving cross-functional collaboration to boost overall productivity and encourage innovative approaches to problem-solving. Hybrid is similar to matrix structures, yet allows for collaborative sharing of data and resources while preserving division-specific specializations.*[1]

While the four organizational structures above are the most common, companies around the world also use four other types of organizational structures which are more [organic](#) *in nature: Process, Circular, Flat, and Network. Process structures concentrate on end-to-end workflows for specific processes. This improves adaptability and flexibility to meet changing demand and market conditions. A circular structure is intended to encourage the dissemination of information and inspiration from the center and allow different divisions to participate as components of a single whole. In flat structures, management and executive staff take a more collaborative rather than supervisory role, working and communicating closely with team members and project managers.*[2]

To ensure operations are running smoothly, many businesses follow an organizational structure that best supports their size and business goals. Having and communicating a clear organizational structure helps employees understand their roles and corresponding expectations and informs goal-setting.[3]

Play this YouTube video "How Apple is Organized for Innovation: The Functional Organization" to learn more about how to organize a company for innovation success.[4] [*Transcript for "How Apple Is Organized for Innovation: The Functional Organization" Video [PDF–New Tab]*](#)*. Closed captioning is available on YouTube.*

One or more interactive elements has been excluded from this version of the text. You can view them online here: [*https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=88#oembed-1*](https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=88#oembed-1)

How Can Leaders Create an Innovative Work Culture?

Creating an innovative culture at work can improve employee satisfaction, team productivity, and the quality of the company's products and services. It can also help grow brands, attract prospective employees, keep talent in the workforce, and help generate revenue.[5]

An **innovative culture** *is a work environment that fosters and rewards employee creativity instead of focusing*

on deadlines and revenue. Tech companies often have an innovative culture since the tech industry constantly changes and generates new ideas.[6]

Key characteristics of an innovative culture include:[7]

- ***Unique strategy:*** *An innovative strategy often involves specific goals and a strategy specifically designed for and by the company.*
- ***Autonomy:*** *When the workplace has an innovative culture, it often gives employees freedom in how they work to accomplish goals.*
- ***Trust:*** *An environment of trust encourages employees to share ideas and attempt new methods to accomplish goals.*
- ***Accepting failures:*** *Innovation may lead to some failures along the way. Allowing these failures helps employees be more creative without the fear of defeat or making a mistake.*
- ***Leadership:*** *Good leaders with effective management abilities help maintain an innovative culture. However, it's best implemented when employees act as leaders, too.*

An innovative work culture encourages continuous improvements which can help the company produce improved products and services which in turn helps the company retain existing customers and attract new customers. An innovative company also attracts investors and new talent (new employees). Innovation can improve the company's image and make it a leader in the industry, again bringing more customers, investors, and profit. Innovative companies often have higher revenues and profits than their competitors.

When companies trust, encourage, and reward their employees, their employees feel more creative and create new ideas at work. These new ideas are often beneficial to the company. Innovative cultures create happier and more productive employees. Innovation can prepare a company to adapt to its industry and market and this ability to adapt can lead to a company's longevity as it must keep up with its competition to stay relevant. When a team searches for new methodologies or processes and creates new products, it may discover a groundbreaking idea or predict a future problem it may face. Both can help the company adapt to a changing landscape.[8]

Listed below are a few of the benefits of having an innovative work culture.[9]

- *Sets a course for improvement*
- *Helps develop new ideas*
- *Leads to company growth*
- *Gives a competitive advantage*
- *Increases team efficiency*
- *Develops an adaptive nature*
- *Appeals to more talented professionals*

- *Improves the company brand*

Leaders should do the following to help create an innovative work culture.

1. *Incorporate innovation into the business strategy. Establish a company innovation vision, set goals, and share values to promote innovation in the workplace.*
2. *Actively motivate and encourage innovation from employees. Invite them to share ideas during company meetings and discuss company problems and solutions in a group environment.*
3. *Build trust within the team. Be honest, admit mistakes, take ownership, be dependable, and collaborate. Try team-building exercises to help people feel free to share ideas without being judged.*
4. *Establish a reward system for innovative thinking, such as rewarding employees' progress in innovation with commission-based pay, promotions, bonuses, time off, treats, events, special recognition, or sharing in the innovation profits.*
5. *Ask customers and other stakeholders for feedback.*
6. *Actively invest resources in research and development (R&D).*
7. *Partner with startups and innovative companies.*
8. *Build an intrapreneurship program.*
9. *Express that failure is an option. Make sure everyone understands that a part of getting to success often includes some failures.*
10. *Use the Internet to actively research industry news, tech news, etc.*
11. *Survey/interview/meet with experts.*
12. *Invest in training for employees.*

Play this YouTube video "Amazon's culture of innovation" to learn more about how Amazon creates a culture of innovation.[10] *[Transcript for "Amazon's culture of innovation" Video [PDF–New Tab]](). Closed captioning is available on YouTube.*

> One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=88#oembed-2

How Can Leaders Nurture Innovation?

Leaders must create corporate structures that continuously nurture innovation. They should build connections to innovation within the company vision, mission, and values and ensure that company values and goals are com-

municated throughout the organization. It is also important for the leaders of the organization to model the behaviours they want to see in their employees and create a culture of innovation through providing training, motivation, encouragement, and support to employees. Leaders must examine new ideas with an open mind. Many ideas are in their infancy when they first appear and it may take time to refine and perfect the concept.

Below is a list of some of the ways company leaders can support innovation and encourage its growth.

Create an Innovation Strategy

To nurture innovation a company should have an innovation strategy that is communicated to all stakeholders. An innovation strategy is a clearly-defined plan of structured steps a person or team must perform to achieve the growth and future sustainability goals of an organization. An innovation strategy provides people with a framework for critical decision-making. Leaders may consider the following questions when devising a strategy:[11]

- *In what areas will we invest?*
- *How much will we invest?*
- *Who will make investment decisions?*
- *What capabilities will we need to develop to support our investments?*
- *What capabilities can we not build, which we must then acquire or form a partnership to provide?*

Holding on to traditional practices just because "that's what we've always done" is not a strategy for success. That rigid approach is guaranteed to fail in the face of disruption, as proven by Kodak and Blockbuster.

The chapter entitled, "Growth Strategy" discusses innovation strategy as a growth strategy in more detail.

Use the Innovation Ambition Matrix

To nurture innovation, leaders who want an innovative company must ensure a balanced innovation portfolio; a combination of core, adjacent, and transformative innovation initiatives. Generally, 70% of innovation investments are in core innovations, 20% in adjacent innovations, and only 10% in disruptive innovations. In terms of value creation potential, however, the ratios are inverted: core innovation efforts typically contribute 10% of the long-term cumulative return on innovation investment, adjacent initiatives contribute 20%, and transformational projects yield a huge 70%. The right balance of innovation investment will vary from company to company according to particular factors like the age of the company, its competitive position in the market, and characteristics of the industry served (e.g. number of suppliers, market growth, and regulatory patterns). Most companies tend to be heavily oriented toward just core innovation and whilst this is understandable in terms of avoiding the greater risks and uncertainties associated with adjacent and transformational initiatives, the result

will be a steady, long-term decline in business and attractiveness to customers if a company never tries some adjacent or transformational projects.[12]

The chapter entitled, "Innovation Risks" discusses the Innovation Ambition Matrix as a way to mitigate risks in more detail.

Scan the Business Environment

To nurture innovation leaders must continually look for opportunities and threats and examine the company's strengths and weaknesses so as to build weaknesses into strengths, use strengths to combat threats, and take advantage of opportunities. Using research and analysis tools such as a SWOT analysis, Competitor Analysis, PESTLE analysis, Porter's Five Forces competitive landscape analysis, Ansoff's Matrix for strategic planning, Innovation Matrix for innovation planning, and more, leaders can plan ahead, mitigate risks, and make informed decisions based on research.

The chapter entitled, "Innovation Risks" discusses how scanning the business environment can help reduce risks, and provides additional details about the analysis tools.

Accept Reasonable Risks

To nurture innovation leaders must be ready to accept risk and understand it is acceptable to fail and try again, as this is part of the innovative process. Investing in a knowledge management system will help the company make it easy to share information and ideas, track innovation progress, manage the budget, track ROI, and keep track of lessons learned from past failures so as to avoid these pitfalls in the future. An electronic system allows companies to capture the benefits of, and lessons learned from innovation.

The chapter entitled, "Innovation Risks" discusses how to reduce innovation risks in more detail.

Encourage Internal Collaboration

To nurture innovation, it is important to create cross-departmental teams and make communicating across departments easy. When, for example, the marketing team only speaks to the marketing team this creates a recipe for [groupthink](). To ensure employees understand how the different parts of the company work and how they must work together to achieve progress, leaders might, for example, create a policy whereby anyone who wishes to become a business unit general manager must have worked in at least two functional areas for two or more years. The CEO of a very successful technology company requires the R&D

Focused colleagues brainstorming in the boardroom

people to spend about 10% of their time in marketing and sales and vice versa.[13]

A great example of internal or cross-company collaboration is Starbucks. As the rise of café culture birthed hipster pop-ups and independent shops, the dominant chains began to lose ground. Keen to avoid a Kodak moment, Howard Schultz jumped to action. The Starbucks CEO invited store managers from all over the world to come together for a conference to redesign the café experience.[14]

Design Innovation Labs

Designing innovation labs is another way to nurture and support innovative initiatives. Innovation Labs focus on business growth. They can either be internal to a company that has the resources and the team available to run their own internal programs, or they can be external such as a consulting firm that supports the innovation process of other businesses. Innovation labs are strategic and goal-focused and are used as tools to address specific company innovation requirements. An innovation lab is a fast, flexible and creative concept that adapts to the needs of the host organization. Innovation Labs can be set up for just a few days, run over the course of a few months, or can become an ingrained part of a company that provides a constant source of innovation. Some well-known organizations create innovation lab spaces where their employees can experiment and work on innovative ideas.

Below is a list of a few companies with successful innovation labs.[15]

- *Kohl's Innovation Center*
- *Google[x]*
- *Amazon Lab126*
- *Verizon 5G Labs*

- *Volkswagen Automative Innovation Lab*
- *Staples' Velocity Lab*
- *Coca-Cola's KOLab*
- *Lowe's Innovation Lab*
- *Capital One Labs*

Foster Intrapreneurship

Intrapreneurship is defined as entrepreneurship inside an existing company. Intrapreneurship programs are a great way to make innovative projects and ideas happen. It refers to the new businesses or ventures created within an established organization. Some companies nurture innovative ideas brought forth by employees by supporting them in intrapreneurship initiatives. These initiatives often take the form of company spin-offs or subsidiaries whereby the employee who came up with the idea often becomes a top-level manager of the new spin-off company. Often intrapreneurship is supported through an innovation lab.

Below is a list of a few successful intrapreneurship initiatives.

Vimeo

Vimeo is an exceptional example of how an Intrapreneur, Anjali Sud, transformed the company's business model inside out and went from being the Marketing Director to the CEO of the company. Increasing sales by 54% in a year, Anjali Sud changed the struggling online video platform to a successful SaaS business.[16]

BOXLAB

Through the intrapreneurship program at BASF, Chemovator, BOXLAB Services became the first corporate spin-off in the organization. Mischa Feig and Lisa Ruffin are the intrapreneurs behind the spin-off, which now operates as an independent startup on the market with BASF holding minority shares.[17]

PlayStation

Back when gaming consoles were first being developed and marketed, Sony was not interested in entering this industry. It's hard to believe this considering that today, gaming accounts for 29% of Sony's revenue. Ken Kutaragi is the intrapreneur behind the launch of the first Sony PlayStation in December 1994 in Japan. It eventually became the first "computer entertainment platform" to ship over 100 million units, doing so in under a decade.[18]

Consider Mergers or Acquisitions

To nurture innovation, large companies may work with smaller businesses that have a niche, expertise, technology, or specialty that the larger company does not have. Many times large organizations purchase (acquire) these smaller companies so that the larger organization can expand its innovative skillset, technologies, processes, patents/trademarks, and expertise with what the smaller company brings. For example, software and application development might not be the company's thing so the company might consider partnering with a Python developer to launch a brand new web application that the industry has never seen.[19]

Cisco's acquisition strategy generally targets smaller companies that have developed innovative new products, but the key to making these acquisitions pay over the long term is the company's ability to retain the talented engineers and managers from the acquired companies.[20]

Collaborate with Competitors

Collaboration may be something the company needs to do to meet its innovation goals. These projects are often referred to as co-creation, joint ventures, coopetition, partnerships, or collaboration projects. Many new products are brought to consumers through this type of collaboration. "One of the most famous competitive collaborations is Microsoft and Intel. They created Wintel Alliance, in which Intel worked on hardware, and Microsoft created the software. While the alliance has since fizzled out, the two giants collaborated to build software and hardware platforms and brought their tech to virtually every home in the world."[21]

Below is an example of how Starbucks collaborated with Spotify to offer customers of both businesses an innovative music ecosystem.

Example: Company-to-Company Collaboration

Co-branding Campaign: First-of-Its-Kind Music Ecosystem

Starbucks scaled up a premium coffee shop experience into a massive global brand, using music to create an ambiance around its coffee. Spotify, a music streaming platform, has powered almost 25 billion hours of listening around the world. Starbucks and Spotify forged an innovative co-branding partnership to build a "music ecosystem", offering artists greater access to Starbucks consumers

and giving Starbucks access to Spotify's expansive discography. Through the initiative, Starbucks employees get a Spotify premium subscription, with which they can curate playlists (that patrons can access through the Starbucks Mobile App) to play throughout the day in the shop. This music ecosystem is designed to expand the coffeehouse environment that Starbucks is known for while giving artists greater exposure to Starbucks customers. The "musical-ecosystem" partnership is mutually beneficial, an opportunity for the companies to reach the other's audience without sacrificing their brand.[22]

Collaborate with Government

The Government of Canada is encouraging greater partnerships among Canadian businesses, universities, and colleges to drive innovation and encourage the adoption of new processes and technologies that help Canadian businesses prepare to compete and win in the global marketplace.[23] Businesses can get a list of financing programs, expertise, facilities, and more to support their innovation projects at the Government of Canada Innovation Funding and Support *website.*

The government often partners with businesses toward innovation, especially social, environmental, and technological innovation. Governmental organizations across the globe have launched their own innovation hubs often partnering with companies to find innovations that will bring value to entire communities.

Collaborate with Consultants

Innovation consultants can help guide and support the innovative process. Companies can outsource these experts if they do not have an organizational structure for innovation or lack talent within the organization. Some well-known innovation consulting firms include IDEO, Innosight, frog, and the Board of Innovation. The expertise, experience, and services offered by each consulting firm may vary, but these experts can guide the innovation project, train internal managers, and help manage the project.
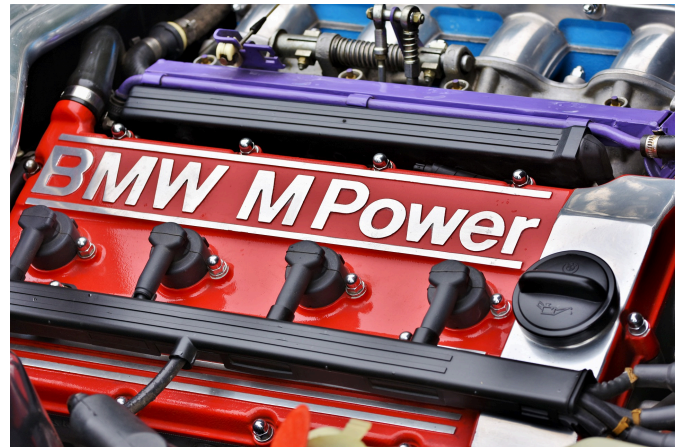
Collaborate with Customers

Open innovation *is a business management model for innovation that promotes collaboration with people and organizations outside the company. O*pen innovation, also known as co-creation, means stepping away from the usual corporate culture of *secrecy which is often associated with research and development. This innovation model becomes viable when the company acknowledges that there are many bright professionals and greater knowledge outside the organization. Companies might consider co-creation partnerships with customers, gathering ideas*

from [crowdsourcing](#) competitions, and working with universities, research organizations, suppliers, start-ups, and even competitors. Collaborating with customers by inviting them into innovation projects, through gathering feedback to participating in development, customers have helped companies make great strides.

An "open lab" can offer real benefits for organizations, for example, reinforcing corporate commitment to innovation and creativity in a physical space. Auto manufacturer, BMW, has a co-creation lab where its customers can share their ideas and become an integral part of concept vehicle development.[24]

BMW sports car engine

In early 2018, Swedish furniture and home goods retailer IKEA launched 'Co-Create IKEA', a digital platform encouraging customers and fans to develop new products. In 2018, Coca-Cola entered into a co-creation experiment with customers to make sure its Southeast Asia product strategy reflects the tastes of the region and its people.[25]

Below is an example of how IKEA co-creates with customers.

Example: Company-to-Customer Collaboration

Co-Create IKEA

In early 2018, Swedish furniture and home goods retailer IKEA launched 'Co-Create IKEA', a digital platform encouraging customers and fans to develop new products.

IKEA's co-creation platform focuses on four specific areas:

- Asking customers for product idea suggestions
- Running IKEA Bootcamps to work with entrepreneurs
- Collaborating with university students on product solutions
- Connecting with innovation labs around the world

If a suggestion for furniture or product design is successful, IKEA may license the technology or

agree to invest in future products. For designers and technically talented fans, this creates a strong incentive: to gain exposure through the world's largest furniture retailer. This approach has led to many thousands of customer suggestions. Participants are also eligible for cash rewards if their ideas work and are selected. Even more helpfully, IKEA provides resources like test labs and proto-type shops to help customers develop and fine-tune their suggestions. For IKEA, co-creation helps put crowd wisdom to work in product innovation, allowing the company to harness useful design insights. This creates real market advantages for the company and contributes to a community of dedicated customers.[26]

How Can Leaders Fund and Budget for Innovation?

When a company selects an innovative idea to pursue, management must determine where the money will come from to fund the innovation project. Management must also create a budget for the project, a team to work on the project, a timeline for development, and track long-term returns on investment. Companies evaluate innovative ideas and select the ideas that align with corporate strategy and have the best chance of success because the investment of resources (i.e., time, labour, money) for one innovative project may mean lost opportunities on other innovative projects.

There are many ways to fund innovation projects and often companies will have money budgeted for a certain number of innovation projects to be supported over specific spans of time. If additional funds are needed, the Government provides support and funding for various types of innovation, crowdfunding may be an option for some innovative projects, bank loans may be an option, and investors or partnerships may also be a way to help support the company budget for innovation. The chapter entitled, "New Venture Innovation" discusses crowdfunding for financing innovative initiatives in more detail.

The process for establishing a funding source will differ depending on the company. For example, Allstate CIO, Suren Gupta, has described how a formal Innovation Council evaluates ideas and allocates funding. In other companies, if the innovation ties closely to a particular business unit, then funding may come from that group's budget. The actual size of the budget depends on whether a company lab is building the technology itself, partnering with other organizations, or acquiring a company, product, or talent. For example, Amazon and Google have spent millions of dollars developing parcel delivery drones. Meanwhile, companies like UPS and Daimler AG have opted to partner with—and make strategic investments in—established drone makers, thus, reducing both the risk and the cost of innovation while still allowing the company to develop new capabilities.[27]

How Can Leaders Measure Innovation Progress and

Success?

It is not always easy to figure out the right mix of metrics to use to measure innovation. Some organizations measure what is easy rather than what is important. The most important function of measuring innovation is to ensure the project is moving in the right direction. Innovation metrics allow managers to see if the team is doing enough of the right kind of activities to be able to actually achieve results. Measuring innovation helps to guide resource allocation, hold the team accountable for their actions and responsibilities, and assess the effectiveness of innovation activities.

"By committing to measuring innovation, the company can encourage employees to be more conscious of the need for creativity and fresh thinking, no matter what their day-to-day responsibilities might be. If management regularly measures the company's innovative output and shares these measurements with employees it will help encourage staff to think about innovation accountability on a daily basis and take responsibility for finding new ways of doing things."[28]

The chapter entitled, "Innovation Risks" discusses measuring innovation using specific types of metrics as a risk reduction tactic.

How Can Leaders Prevent Innovation Failure?

Companies need to facilitate creative ideation; they also need processes to capture the outputs of creative ideation and transform them into profitable and scalable innovations. There are many reasons why innovation projects or new products fail in the market. Usually, a failure is not related to the quality of an idea itself, but to its implementation, which means that it has internal organizational causes. Management must be aware of the company's weaknesses and act to create a framework that encourages and strengthens innovation, which should create higher innovation successes and generate additional revenue for the company.

Listed below are a few reasons innovations fail each with a suggested action for .

1. ***Fear of taking risks.*** *The innovative process carries no guarantees, and the consequences of fear of risk tend to make organizations prefer the status quo. Organizations need to conduct risk assessments before jumping into innovation projects, but there will always be some risk involved.*
2. ***Lack of market orientation.*** *The lack of market orientation and understanding of customer needs is another main reason why new products fail on the market. The product does not offer a true and convincing customer value or differentiate itself from existing products.[29] Organizations need to scan the business environment, observe consumer trends, gather customer feedback, and research competitors in order to create new innovations customers want and will pay for.*
3. ***Failure to scale.*** *Scaling is the part where most of the value creation and impact comes from. Scaling an*

innovation can be defined as the process of expanding the presence and the use of the innovation to be as widespread as possible to maximize that impact.[30] *Organizations need to know when to scale up as well as down and plan for each.*

4. ***Poor Organizational Structure and Processes.*** *An organizational structure that does not support innovation and communication can have a negative effect on the quality and efficiency of innovation projects. The larger an organization is, the slower the processes often become. This becomes apparent when compared to the speed of how quickly start-ups can innovate.*[31] *Organizations should change the structure and processes as needed to support innovation.*

5. ***Wrong decisions.*** *Management may make poor decisions which result in innovation losses. The reasons behind this include a lack of corporate and innovation strategy or insufficient information as a basis for decision-making. Organizations need to scan the environment regularly, and change strategies as needed to adapt to changes in the environment.*

6. ***Lack of Internal Communication.*** *Despite working hard, being isolated in departments can hinder collaboration by creating unnecessary competition between departments. Organizations need a structure that supports communication and collaboration so as to enhance innovation.*

7. ***Low priority for innovation.*** *There may be no budget for innovation. Some managers may be too busy with day-to-day operations to even think about new innovations. Organizations must build innovation into their mission, vision, and values and align innovation strategy with business strategy. They should plan and budget for innovation making it a priority in order to remain competitive.*

Example: Innovation Practices that Saved LEGO

LEGO story sourced from [The Leadership Network](#)

From the brink of bankruptcy, LEGO has grown into a highly profitable toy brand that produces a staggering 22 billion plastic bricks a year. Fueled in part by LEGO movies, the privately held company surged ahead of its main rival, Mattel, in 2014 to become the biggest toy manufacturer in the world. Against all odds, LEGO achieved one of the biggest turnarounds in history. How did they do it?

Setting a new direction

First, LEGO restructured and hired a new CEO, Jørgen Vig Knudstorp, a process-based

thinker and father of four who arrived from McKinsey & Co. in 2001 and was promoted to CEO just three years later, at just 36. Knudstorp quickly realized that the problem was not with the product, but with the company's attempts to become more relevant in the age of video games. LEGO had "over-innovated," spreading itself far too thin and launching so many new initiatives that the company had lost its sense of identity.[32]

Innovation at the core

Knudstorp's turnaround plan involved a mix of cost-cutting, philosophical revitalization, sustainable innovation, and back-to-basics simplicity. The goal was to rediscover the very essence of LEGO, innovate close to the core, and leverage their loyal and creative fan base. He set up "The Future Lab", a secretive and highly ambitious R&D team tasked with inventing new, technologically enhanced "play experiences" for children all over the world based on detailed ethnographic studies of how children play. With The Future Lab, LEGO developed a range of low-risk, low-cost innovation practices to test ideas and cultivate expertise.[33]

Smart Licensing

LEGO's breakthrough with licensed intellectual property began in 1999 with an agreement to license Star Wars characters and vehicles. On the heels of the Star Wars success, LEGO smartly committed itself to obtaining licensing arrangements with established brands, including Harry Potter, Lord of the Rings, DC Comics, Marvel, and Disney. The move paid off, while royalty expenses were in the hundreds of millions, profits reached billions.[34]

Star Wars LEGO characters

Rapid prototyping

Within its factories, LEGO has embraced a philosophy of rapid prototyping. Inspired by Google and other technology companies, they create minimum viable products to prototype and get new products to market quickly on a small scale. The Future Lab also cultivates intrapreneurship as its relationship with LEGO is more akin to an incubated start-up. By using market testing and validating their new products, The Future Lab is driving culture change to ensure that this new business model and way of working will be accepted across the organization.[35]

Open Innovation

Lego goes a step further with consumer feedback by putting customers, suppliers, and partners in

the driving seat for innovation. LEGO Ideas is a crowdsourcing platform that allows fans to design their own sets, gather support from fellow fans (you need at least 10,000 votes), and eventually get LEGO to produce your set as one of its standard lines. Examples include *Back to the Future*'s DeLorean and the *Ghostbusters* Ectomobile, which are now widely popular.

The online platform now generates hundreds of new product suggestions each year and uses subtle and powerful open innovation techniques, employing everything from social media to peer selection to entice fans into contributing new designs and ideas.

LEGO Architecture is another good example. Several years ago, a Chicago architect and Adult Fan of LEGO (AFOL) reached out to LEGO, suggesting they create official kits similar to his homemade LEGO models of iconic buildings. The idea was initially met with some resistance, but fortunately, a free-thinking Norwegian LEGO executive saw value in AFOLs and created a stealthy, shoestring plan to prove their worth to the company. They tested the LEGO architecture line in just a couple of stores in Chicago and saw that they were able to charge "grown-up prices" for kits with the same number of LEGO bricks inside. The pilot was a success and the line remains hugely popular amongst adult fans of LEGO worldwide.[36]

Designing Products for Girls

Another example of audience diversification is LEGO Friends. In 2011, boys made up 90% of LEGO consumers and LEGO wanted to broaden its appeal to more girls. Their research showed that – while both girls and boys love the building aspect of LEGO – there is a key difference in *how* boys and girls tend to play with their sets. Whereas boys tend to be more compelled by a strong narrative, girls are more likely to use their sets for role-playing. After years of refinement, the company launched LEGO Friends, a new line designed specifically for girls. The line doubled sales expectations in 2012, the year it was launched, and in that year alone LEGO tripled its sales to girls.

Low-Risk Experimentation

In the past, LEGO wouldn't have launched any "risky" products that could smear the brand's reputation for quality. But that's precisely why Knudstorp created Future Lab – so mistakes can be made relatively cheaply and vast amounts can be learned. For example, LEGO Universe, an online game that resembled World of Warcraft, was discontinued just over a year after its launch as they weren't able to build a satisfactory revenue model. The experiment barely damaged LEGO's reputation whilst providing multiple key insights and learning lessons to establish the company in the digital world.

In February 2015, LEGO launched a new game – LEGO Portal Racers – in partnership with augmented reality company Metaio. The game uses an Intel RealSense camera and depth technology

to allow users to play without using their hands, instead of using head movements to steer left or right. The original idea was to have kids build their own vehicles out of bricks and scan them into the game, but it remains a digital-only experience for the time being. Like LEGO Fusion, it is a means for Future Lab to understand and experiment with new technologies.

Few businesses have mastered the digital/physical experience but LEGO's ability to experiment quickly, cheaply and under the radar means it can continue to evolve, discover new forms of play, and delight its fans.[37]

So what can we learn from the ups and downs of innovation at LEGO?

1. Innovation without direction is risky.
2. Innovate close to the core first.
3. To experiment and test ideas in a safe way, without damaging your brand reputation, start with small projects and small budgets, then test, learn and improve.
4. Disrupt yourself – build the next big thing before a competitor does.
5. Foster open innovation and listen to the wisdom of your customers.
6. Build an innovation culture that gives people the freedom to be creative, as well as the direction and focus needed to deliver profitable innovation.

Key Takeaways

1. **Organizational structure** is a way or method by which organizational activities are divided, organized, and coordinated. From small businesses to large organizations like global mega-corporations, companies across the globe generally rely on four different types of **organizational structures** in the mechanistic model: Functional, Divisional, Matrix, and Hybrid. While the four organizational structures above are the most common, companies around the world also use four other types of organizational structures which are more organic in nature: Process, Circular, Flat, and Network. To ensure operations are running smoothly, many businesses follow an organizational structure that best supports their size and business goals. To

ensure operations are running smoothly, many businesses follow an organizational structure that best supports their size and business goals. Having and communicating a clear organizational structure helps employees understand their roles and corresponding expectations and informs goal-setting.

2. **Innovation strategy** is about mapping an organization's mission, vision, and value proposition for defined customer markets. It sets boundaries for innovation performance expectations by simplifying and structuring the innovation work to achieve the best possible outcome.

3. Leaders who want an innovative company must ensure a **balanced innovation portfolio**; a combination of core, adjacent, and transformative innovation initiatives. Generally, 70% of innovation investments are in core innovations, 20% in adjacent innovations, and only 10% in disruptive innovations. In terms of value creation potential, however, the ratios are inverted: core innovation efforts typically contribute 10% of the long-term cumulative return on innovation investment, adjacent initiatives contribute 20%, and transformational projects yield a huge 70%.

4. An **innovative culture** is a work environment that fosters and rewards employee creativity instead of focusing on deadlines and revenue. Creating an innovative culture at work can improve employee satisfaction, team productivity, and the quality of the company's products and services. It can also help grow brands, attract prospective employees, keep talent in the workforce, and help generate revenue.

5. **Key characteristics** of an innovative culture include unique strategy, autonomy, trust, accepting failures, and leadership.

6. There are many **benefits** of creating an innovative work culture, such as competitive advantage, company growth, improved company brand, increased team efficiency, the development of an adaptive nature, and more.

7. There are many ways in which leaders can **build an innovative work culture** including asking customers and other stakeholders for feedback, motivating employees to innovate, partnering with startups and innovative companies, building an intrapreneurship program, establishing a reward system for innovative thinking, and more.

8. Leaders can **encourage and grow innovation** by facilitating internal collaboration, creating innovation labs, supporting intrapreneurship, providing innovation time for employees, forming partnerships, acquiring smaller companies, and developing open labs for co-creation opportunities.

9. The process for establishing a funding source for innovation will differ depending on the company. The actual size of the **budget** depends on whether a lab is building the technology

itself, partnering with other organizations, or acquiring a company, product, or talent.

10. **Measuring innovation** input, progress, and output will help companies mitigate risk. Several metrics can be used to measure innovation such as the number of new ideas in the pipeline, the number of innovation projects started, revenue from new innovations, etc.

11. There are many reasons why **innovation projects fail** in the market. Usually, a failure is not related to the quality of an idea itself, but to its implementation, which means that it has internal organizational causes. Innovations fail for some of the following reasons: fear of taking risks, lack of market orientation, failure to scale, poor organizational structure or processes, wrong decisions, lack of internal communication, and low priority for innovation.

End-of-Chapter Exercises

1. **Type of Innovator Quiz.** Review the description for the [types of innovators](#) shared by an innovation strategist, then complete [the quiz](#) to discover what type of innovator you are and get custom-tailored suggestions so you can start innovating even faster (you will need to share an email to get results).

2. **Structuring for Innovation.** Analyze the organizational structure of your school or workplace. Is it currently structured for innovation? How does the company support innovation currently? Would you suggest a change to its organizational structure so as to better encourage innovative projects? Share your findings and suggestions with your class and professor.

3. **Culture of Innovation.** Search the Internet to locate an example of a company that is well known for its innovative culture (an example not already mentioned in the chapter). Research what they did to become known as an innovative company. How do the company leaders foster an innovative company culture? Would you want to work in an organization like this? Why or why not? Share your research and thoughts with your class and professor.

4. **Customer Collaboration.** Search the Internet for information on a recent company-to-customer collaboration on an innovation project. Which customers participated? What was the company hoping to gain by including customers? What was the result? Share your findings with your class and/or professor.

5. **Competitor Collaboration.** Search the Internet for information on a recent company-to-company collaboration on an innovation project. What was the result? Were there issues that you read about? Was there a cross-company project team? Share your findings with your class and/or professor.

6. **Innovation Lab.** Search the Internet to locate an example of a company's Innovation Lab that recently produces a new innovation success. What was that success? What type of innovation was it–product, service, technology, etc.? Was it an incremental or disruptive innovation? How long did it take to develop this concept and get it to market? Discuss your findings with our class and/or professor.

7. **Intrapreneurship.** Search the Internet to locate examples of successful intrapreneurship. What was the idea? How did the intrapreneur come up with the idea? How was the employee(s) rewarded? Do you have ideas for improvement or new product/service offerings that could be implemented in your workplace or even within your college or university? Share your thoughts with your class and/or professor.

8. **Partnerships, Mergers, and Acquisitions.** Search the Internet to locate a recent partnership, merger, or acquisition between two or more companies. What prompted this action? What were the benefits (and drawbacks, if any) for each company? Do you think this action will increase the companies' ability to innovate? Share your findings with your class and professor.

9. **Government Initiatives.** Visit the Government of Canada [Innovation, Science, and Economic Development Canada](#) website. Review the current list of projects and initiatives the Government of Canada is working on. Which ones interest you the most? Why? Share your findings with your class and/or professor.

10. **Funding.** Search the Internet for examples of where companies can find funding for their innovative ideas. Consider both small, start-up companies or entrepreneurs, as well as large corporations. Where do they find the money to support innovation development? Share your findings with your class and/or professor.

11. **Innovation Failure**. Search the Internet to locate an example of a company's innovation that failed. What is this innovation and why did it fail? Could the company have done something along the innovation path to correct the issues? Discuss your findings with your class and/or professor.

12. **Failed to Innovate.** Search the Internet for Blackberry, Kodak, and Yahoo. What happened to these companies? Why did they fail to innovate? Was leadership the issue? Were poor decisions made? There are many companies that fail to innovate for reasons they feel are justified, but what happens if a company does not stay competitive? Share your findings

with the class and/or professor.

Self-Check Exercise – Quiz – Leading Innovation

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/leadinginnovation2/?p=88#h5p-12

Additional Resources

1. Types of Organizational Structures and Their Pros and Cons
2. 14 Inspiring Examples of Intrapreneurship and Employee Ideas in Action
3. 10 Inspiring Examples of Successful Intrapreneurship
4. 7 Considerations When Creating a Corporate Innovation Lab
5. 31 Innovation Labs to Know
6. Real Innovations Require More than Just R&D
7. Customer Co-Creation: 12 Companies Doing it Right

8. 21 Successful [Co-Branding Partnerships](#)

References

(Note: This list of sources used is NOT in APA citation style instead the auto-footnote and media citation features of Pressbooks were utilized to cite references throughout the chapter and generate a list at the end of the chapter.)

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Notes

1. *Del Vecchio, D. (n.d.). Types of organizational structures and their pros and cons.* https://planergy.com/blog/types-of-organizational-structure/
2. *Del Vecchio, D. (n.d.). Types of organizational structures and their pros and cons.* https://planergy.com/blog/types-of-organizational-structure/
3. *Indeed Editorial Team. (2021, May 21). Ten types of organizational structure (with pros and cons).* https://www.indeed.com/career-advice/career-development/types-of-organizational-structures
4. *Harvard Business Review. (2021, January 27). How Apple is organized for innovation: The functional organization. [Video]. YouTube.* https://www.youtube.com/watch?v=5hENFA3CJUY
5. *Indeed Editorial Team. (2021, April 29). How to create an innovative culture at work.* https://www.indeed.com/career-advice/career-development/innovative-culture
6. *Indeed Editorial Team. (2021, April 29). How to create an innovative culture at work.* https://www.indeed.com/career-advice/career-development/innovative-culture
7. *Indeed Editorial Team. (2021, April 29). How to create an innovative culture at work.* https://www.indeed.com/career-advice/career-development/innovative-culture
8. *Swisher, P. (2016, July 29). How to lead successful innovation: Lessons from experts.* https://professional.dce.harvard.edu/blog/how-to-lead-successful-innovation-lessons-from-experts/
9. *Swisher, P. (2016, July 29). How to lead successful innovation: Lessons from experts.* https://professional.dce.harvard.edu/blog/how-to-lead-successful-innovation-lessons-from-experts/
10. *London Business School. (2018, March 26). Amazon's culture of innovation. [Video]. YouTube.* https://www.youtube.com/

watch?v=GNjmCewxyo0

11. Richards, R. (2021, January 6). *Business innovation strategy: 9 key pillars for success in 2021.* https://masschallenge.org/article/innovation-strategy

12. MBA Knowledge Base. (n.d.). *The innovation ambition matrix.* https://www.mbaknol.com/strategic-management/the-innovation-ambition-matrix/

13. Gupta, A. & Wang, H. (2022, April 11). *Leading with innovation.* [Video]. LinkedIn Learning. https://www.linkedin.com/learning-login/share?account=2167290&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Fleading-with-innovation%3Ftrk%3Dshare_ent_url%26shareId%3DTXB4x2NCQgeap7wP6n%252BqqQ%253D%253D

14. Richards, R. (2021, January 6). *Business innovation strategy: 9 key pillars for success in 2021.* https://masschallenge.org/article/innovation-strategy

15. Rice, M. (2019, November 22). *31 corporate innovation labs to know.* https://builtin.com/corporate-innovation/corporate-innovation-labs

16. Studio Záo. (n.d.). *Innovation examples: Top 5 stories from Google, Airbus and more.* https://studiozao.com/resources/intrapreneurship-examples

17. Studio Záo. (n.d.). *Innovation examples: Top 5 stories from Google, Airbus and more.* https://studiozao.com/resources/intrapreneurship-examples

18. Studio Záo. (n.d.). *Innovation examples: Top 5 stories from Google, Airbus and more.* https://studiozao.com/resources/intrapreneurship-examples

19. Abrams, M. (2021, December 23). *How to make your company more innovative.* https://bitrebels.com/business/how-make-company-more-innovative/#:~:text=Here%20are%20several%20ways%20you%20can%20encourage%20more,With%20Creatives.%203%203.%20Require%20Time%20Off.%20

20. Morris, L. (2007). *Creating the innovation culture: Geniuses, champions, and leaders.* http://www.innovationlabs.com/CreatingInnovationCulture.pdf

21. Harisson, J. (2020, November 28). *What is brand collaboration?* https://foundr.com/articles/marketing/competitive-collaboration-boost-brand

22. Bernazzani, S. (n.d.). *21 examples of successful co-branding partnerships (and why they're so effective).* Hubspot. https://blog.hubspot.com/marketing/best-cobranding-partnerships

23. Government of Canada. (n.d.). *Seizing Canada's moment: Moving forward in science, technology, and innovation 2014.* https://www.competitionbureau.gc.ca/eic/site/113.nsf/eng/h_07657.html

24. Orange Business Services. (2019, February 4). *Co-innovation: How to make it a success.* https://www.orange-business.com/en/magazine/co-innovation-how-to-make-it-successful

25. Braineet. (n.d.). *Customer co-creation examples: 12 companies doing it right.* https://www.braineet.com/blog/co-creation-examples

26. Braineet. (n.d.). *Customer co-creation examples: 12 companies doing it right.* https://www.braineet.com/blog/co-creation-examples

27. Davis, C. (2017, December 5). *7 considerations when creating a corporate innovation lab.* https://www.cio.com/article/228053/7-considerations-when-creating-a-corporate-innovation-lab.html

28. Braineet. (n.d.). *Innovation metrics and KPIs: Measuring innovation to create growth.* https://www.braineet.com/blog/innovation-metrics-kpis

29. Lead Innovation Blog. (2018, April 27). *Four reasons why innovation fails.* https://www.lead-innovation.com/english-blog/why-innovations-fail

30. Nieminen, J. (2021, October 22). *Scaling innovation -- The what, why and how.* https://www.viima.com/blog/scaling-innovation

31. Lead Innovation Blog. (2018, April 27). Four reasons why innovation fails. https://www.lead-innovation.com/english-blog/why-innovations-fail

32. The Leadership Network. (2016, November 7). 5 sustainable innovation practices that saved LEGO. https://theleadership-network.com/article/lego-sustainable-innovation#:~:text=5%20Sustainable%20Innovation%20Practices%20that%20Saved%20LEGO%201,Products%20for%20Girls.%20...%205%20Low-Risk%20Experimentation.%20

33. The Leadership Network. (2016, November 7). 5 sustainable innovation practices that saved LEGO. https://theleadership-network.com/article/lego-sustainable-innovation#:~:text=5%20Sustainable%20Innovation%20Practices%20that%20Saved%20LEGO%201,Products%20for%20Girls.%20...%205%20Low-Risk%20Experimentation.%20

34. The Leadership Network. (2016, November 7). 5 sustainable innovation practices that saved LEGO. https://theleadership-network.com/article/lego-sustainable-innovation#:~:text=5%20Sustainable%20Innovation%20Practices%20that%20Saved%20LEGO%201,Products%20for%20Girls.%20...%205%20Low-Risk%20Experimentation.%20

35. The Leadership Network. (2016, November 7). 5 sustainable innovation practices that saved LEGO. https://theleadership-network.com/article/lego-sustainable-innovation#:~:text=5%20Sustainable%20Innovation%20Practices%20that%20Saved%20LEGO%201,Products%20for%20Girls.%20...%205%20Low-Risk%20Experimentation.%20

36. The Leadership Network. (2016, November 7). 5 sustainable innovation practices that saved LEGO. https://theleadership-network.com/article/lego-sustainable-innovation#:~:text=5%20Sustainable%20Innovation%20Practices%20that%20Saved%20LEGO%201,Products%20for%20Girls.%20...%205%20Low-Risk%20Experimentation.%20

37. The Leadership Network. (2016, November 7). 5 sustainable innovation practices that saved LEGO. https://theleadership-network.com/article/lego-sustainable-innovation#:~:text=5%20Sustainable%20Innovation%20Practices%20that%20Saved%20LEGO%201,Products%20for%20Girls.%20...%205%20Low-Risk%20Experimentation.%20

GLOSSARY OF TERMS

3D printing

is an inexpensive way to make a prototype. Today 3D printing, or additive processing for manufacturing, has become a standard.

Ansoff Matrix

is a strategic planning tool that organizations use to plan and analyze strategies for growth. Each strategy for growth carries a different level of potential risk.

Balanced Innovation Portfolio

Leaders who want an innovative company must ensure a balanced innovation portfolio; a combination of core, adjacent, and transformative innovation initiatives. Generally, 70% of innovation investments are in core innovations, 20% in adjacent innovations, and only 10% in disruptive innovations. In terms of value creation potential, however, the ratios are inverted: core innovation efforts typically contribute 10% of the long-term cumulative return on innovation investment, adjacent initiatives contribute 20%, and transformational projects yield a huge 70%.

BPMN (Business Process Modeling Notation)

is a graphical method of representing business processes within a business process diagram. BPMN diagrams help the whole team see the flow of the process.

Business Accelerator

is a program designed to help established startups scale quickly, and often provide funding in exchange for equity in the business. Accelerators often require startups to already have a minimum viable product or a fixed team before they can apply.

Business Incubator

is a specialized program designed as a space for new businesses to learn and grow. The programs provide services for entrepreneurs and startups while offering reduced rates for supplies and workspace. Typically, young businesses must apply for a position and commit to a certain amount of time in the program.

While in a business incubator, companies can more thoroughly plan their business, learn from other individuals and save money.

Business Innovation

Executing an idea that addresses a specific challenge or opportunity and achieves value for both the company and its stakeholders.

Business Model Canvas

is a strategic planning tool used by managers to illustrate and develop their business model. The business model canvas template clearly identifies the key elements that make up a business. Additionally, it simplifies a business plan into a condensed form. In this way, the business model canvas template acts as an executive summary for the business plan.

Business Model Innovation

is probably the most challenging of the innovation types as it will likely present an organization with major requirements for change. Often, the very capabilities or processes that have been optimized to make a company successful and profitable will become the targets for transformation.

Business Plan

is used to help secure funding, validate a business idea, grow an existing business, buy a business, sell a business, or advise clients. It legitimizes a business idea, shows the results of research, provides product and customer information, and includes operational and strategic goals. A business plan is a document that explains how your business operates. It summarizes your business structure, objectives, milestones, and financial performance. It's a guide that helps you, and anyone else, better understand how your business will succeed.

Business Procedure

is like a step-by-step recipe for how to complete a task and may be considered a simple type of process. A complex process can contain multiple procedures.

Business Process

is a sequence of steps progressing toward a business goal. This sequence of steps can be clearly depicted using a flowchart and may also be referred to a business method.

Business Process Automation

is a technology-driven strategy to automate a business process in order to accomplish it with minimum cost and in a shorter time. It is extremely useful for both simple and complex business processes.

Circular Economy

is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.

Closed World Principle

is the notion that the best and fastest way to innovate is to look at resources close at hand.

Cognitive Fixedness

is a state of mind in which you think of an object or situation in one specific way, to the exclusion of any alternative.

Competitive Analysis

Competitive analysis (sometimes called a competitor analysis or competition analysis) is exactly what it sounds like, a structured approach to identifying and analyzing a company's competitors. More concretely, it's an assessment of the competition's offerings, strategy, strengths, and weaknesses.

Constraints

can foster innovation when they represent a motivating challenge and focus efforts on a more narrowly defined path.

Cow Path Theory

is a theory that many organizations have processes they have been following for years and may not notice that these old processes may no longer be efficient or effective.

Crowdfunding

is a kind of crowdsourcing and alternative financing by which people, via the Internet, can contribute money to a person, cause, event, or business venture.

Customer Value

The formula for customer value can be written as: (Total Customer Benefits - Total Customer Costs) = Customer Value, or (B - C = CV)

Cyclical Thinking

is not merely recycling. It's designing products to be easily disassembled in combination with designing new take-back systems and infrastructure that make it easier and less expensive for companies to collect the materials they'll use in one generation of products in order to manufacture the next generation of products. This regenerative approach to design has taken many forms over the last several decades as we move towards establishing a circular economy.

Design Thinking

is one of several approaches to innovation and is a process for creative problem-solving. Design thinking has a human-centered core. It encourages organizations to focus on the people they are creating for, which leads to better products, services, and internal processes. The design thinking framework helps inspire creative thinking and strategies that lead designers to create user-friendly products that help solve a particular problem.

Disruptive Innovation

is the launch of a new business model, concept, product, or service that creates a new market segment and value drivers.

Entrepreneur

is someone who starts, owns and operates a business.

Environmental Scanning

is about understanding the world and context in which the business operates. It is a process for monitoring both the internal and external environments for clues to existing circumstances and changes that could bring about risk or opportunities. The purpose of environmental scanning is to find and retain information in order to inform decision-making at a certain point in time.

Environmental Sustainability

is about acting in a way that ensures future generations have the natural resources available to live an equal, if not better, way of life as current generations. Many innovations today are focused on solving

environmental issues. The Sustainable Development Goals (SDGs) of the Organization for Economic Cooperation and Development (OECD) are broad and ambitious, calling on all countries – be they upper, middle, or low income – to make tangible improvements to the lives of their citizens. The goals encompass social, environmental, and economic aspects (OECD, 2021).

Function Follows Form Principle

is a way to overcome some of the drawbacks of traditional research-led or design-based innovation. You begin with an abstract, conceptual solution and then work back to the problem that it solves.

Functional Fixedness

You see objects, components, and things around you, and you can't imagine them doing different functions than what they're designed to do.

Incremental Innovation

is the concept of growing or improving a company by making a succession of small-scale improvements to existing products, services, processes, and tools.

Innovation

Creating something new that serves people's needs or wants.

Innovation Ambition Matrix

as featured in the Harvard Business Review (May 2012), is a classic model that helps companies decide how to fund different growth initiatives.

Innovation Labs

focus on business growth. They can either be internal to a company that has the resources and the team available to run their own internal programs, or they can be external such as a consulting firm that supports the innovation process of other businesses. Innovation labs are strategic and goal-focused and are used as tools to address specific company innovation requirements.

Innovation Portfolio

is a collection of innovation projects, ideas, and programs that the company manages to reduce potential risks associated with innovation.

Innovation Process

should be systematic and predictable. The first step of the process is doing market research, the second step is solution generation, the third step is business case development (figure out how to monetize the innovation), the fourth step is to scale up (get it ready to be launched), and the last step is to launch the innovation in the marketplace.

Innovation Strategy

is about mapping an organization's mission, vision, and value proposition for defined customer markets. It sets boundaries to innovation performance expectations by simplifying and structuring the innovation work to achieve the best possible outcome.

Innovative Culture

is a work environment that fosters and rewards employee creativity instead of focusing on deadlines and revenue.

Intellectual Property

is any product of the human intellect that the law protects from unauthorized use by others.

Management Processes

The processes that plan, organize, coordinate and control all the functions of the business.

Metrics

are measures of quantitative assessment commonly used for assessing, comparing, and tracking performance or production.

Necessity Entrepreneur

is someone who starts a business based on a need for income, out of necessity, because they cannot find employment, have lost their job, need to supplement their income, or require flexibility to attend to other demands in their lives.

Open Innovation

is a business management model for innovation that promotes collaboration with people and organizations outside the company.

Operational Processes

The processes that constitute the core business of the organization and create the primary value stream.

Opportunity Costs

are the potential benefits a business misses out on when choosing one alternative over another.

Opportunity Entrepreneur

is someone who sees an opportunity to make money, gets involved at the right time, and aims for business growth and economic development.

Organizational Structure

is a way or method by which organizational activities are divided, organized and coordinated.

Organizational Structures

From small businesses to large organizations like global megacorporations, companies across the globe generally rely on four different types of organizational structures in the mechanistic model: Functional, Divisional, Matrix, and Hybrid.

PEST Analysis

A PEST analysis is one way to scan the external environment for opportunities and risks. Traditionally, the framework was referred to as a PEST analysis, which was an acronym for Political, Economic, Social, and Technological; in more recent history, the framework was extended to include Legal, Environmental, and Ethical factors. After completing a PEST analysis, organizations are in a better position to plan an effective strategy to meet their objectives and minimize risks. PEST factors are considered when assessing the impact of external factors on a company's profitability.

Process Innovation

can include changes in the equipment and technology used in manufacturing (including the software used in product design and development), improvement in the tools, techniques, and software solutions used to help in supply chain and delivery system, changes in the tools used to sell and maintain your good, as well as methods used for accounting and customer service.

Product Development Life Cycle

explains how new ideas are brought to the market. From concept to commercialization, it guides aspiring

builders through the process of product development in a way that's intended to reduce risk and maximize the odds of finding traction. In relation to the product life cycle, it's like a prequel to the introduction phase.

Product innovation

is the process of creating a new product—or improving an existing one—to meet customers' needs in a novel way. Product innovation can come in three different forms. 1) The development of a new product, such as the Fitbit or Amazon's Kindle. 2) An improvement of the performance of the existing product, such as an increase in the digital camera resolution of the iPhone 11.

Product Life Cycle

attempts to describe the stages a product goes through from launch to discontinuation, which typically includes introduction, growth, maturity, and decline.

Prototype

is a mini design of the actual product. It can be a sketch, a low-quality, or a high-quality copy depicting what the real product will look like. It is important for companies to prototype fast and often in order to produce innovations at the right times--when customers demand them and before competitors beat them to market.

Psychographics

are all about understanding customers' lifestyles, values, beliefs, and optimizing marketing to demonstrate to customers how the company can fulfill these psychographic variables by providing the benefits sought thus providing customers value.

Radical Innovation

is the creation of a whole new product.

Relational Fixedness

You find it very hard to imagine two objects having a relationship that wasn't there before.

Risk

refers to the effect of uncertainty on objectives and outcomes at different levels of the organization.

SCAMPER Technique

is based very simply on the idea that what is new is actually a modification of existing old things around us.

Service Innovation

changes the way customers are served to create value for customers and revenue for the company.

Service Innovations

ensure and enhance the utility, performance, and apparent value of an offering. Some offerings are purely service, such as getting a haircut, hiring someone to paint your house, or taking an Uber to your friend's place. These are services you may utilize throughout your lifetime. Other service innovations may be combined with product offerings, such as purchasing groceries (products) and having them delivered to your home (service), or buying a new television (product), and purchasing the warranty (service).

Shape of Ideation

If we graphed this ideation process we would see a graph that at first has many ideas, but after a short period of time the group feels they have exhausted all the good ideas, and the ideas stall. What happens next, someone offers a different, silly, or absurd idea, then more ideas come from that idea and the tide has turned. The best ideas often come after this turn in the graph.

Social Entrepreneur

does not start a company with their main goal being to make a profit, instead, their goal is to make positive change in the world.

Social Innovation

refers to a response to a social or environmental problem, which, once adopted, results in better solutions than existing approaches. Social innovations have a transformative impact and improve organizations, communities, regions, or systems.

Structural Fixedness

You find it really hard to imagine objects having a different structure than what you're used to.

Supporting Processes

The processes that support the core processes. They help the business create an environment where the core processes can work better. Examples include accounting and technical support.

Sustainability

is the capacity to endure in a relatively ongoing way.

Sustainable Innovation

means that companies seek out ways in which to sustain continuous innovation/improvement for company growth, competitive advantage, and increased market share, etc.

SWOT Analysis

A SWOT (strengths, weaknesses, opportunities, and threats) analysis is a framework used to evaluate a company's competitive position and to develop strategic planning. SWOT analysis assesses internal and external factors, as well as current and future potential.

Systematic Inventive Thinking

SIT is a thinking methodology where creativity takes centre stage. It contains five thinking patterns that humans have used for thousands of years. It directly contradicts the principle of 'thinking outside the box' and uses 'thinking inside the box' as a guiding principle in order to prove that creativity is not the prerogative of only a few.

Technological Innovation

focuses specifically on technology and how to embody it successfully in many types of innovations such as products, services, processes, profit models, channels, and customer service engagement innovations.

Triple Bottom Line

is often used to refer to the concept that businesses need to not only be concerned with making a profit but also be concerned about the manner in which they do so. The three parts of the Triple Bottom Line include considering the impact that business operations and innovation have on societal, environmental, and financial well-being; in other words, people, planet, and profit (respectively).