

# Leading Innovation, 1st Edition



# LEADING INNOVATION, 1ST EDITION

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# INTRODUCTION

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## 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.

## 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
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## 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.<sup>1</sup>

This textbook is part of the eCampusOntario (and BCCampus) 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.

If you decide to adopt this book for a course or training program (or other) please report your adoption as eCampusOntario is keen to report students' savings and connect with successful OER adopters.

## 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	<ul style="list-style-type: none"> <li>• Original OER published with 10 chapters and accompanying chapter slides.</li> </ul>
November 9, 2022	Leading Innovation, 1st Edition, Version 2	<ul style="list-style-type: none"> <li>• New Test Bank with 58 multiple-choice questions and 15 short answer questions across 10 chapters.</li> <li>• Additional content was added to CH 5: Sustainable Innovation.</li> <li>• All chapters were modified as necessary to meet Web Content Accessibility Guidelines 2.0.</li> </ul>
July 21, 2023	<a href="#">Leading Innovation, 2nd Edition</a>	<ul style="list-style-type: none"> <li>• Two New Chapters—CH 9: New Venture Innovation and CH 10: Technological Innovation.</li> <li>• New content was added to CH 7: Design Thinking which includes Design for Delight, Certiport Certification, and a new video with PDF transcript.</li> <li>• New content was added to CH 11: Innovation Risks which includes environmental scanning as a risk reduction tactic.</li> <li>• Some content was moved between CH 11: Innovation Risks and CH 12: Leading Innovation.</li> <li>• An additional 14 End-of-Chapter exercises were added throughout the chapters.</li> <li>• The test bank was updated for a total of 99 M/C questions and 28 short answer questions across 12 chapters.</li> <li>• All chapter slide decks were replaced with new slides.</li> <li>• All chapters were modified as necessary to meet Web Content Accessibility Guidelines 2.0.</li> <li>• Minor modifications were made within the remaining chapters which included additional content, updating broken URL links, and adding to the lists of additional resources.</li> </ul>

## Accessibility

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](mailto: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.”<sup>2</sup>

- 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.

## Author

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

# CHAPTER 1: BUSINESS INNOVATION FOUNDATIONS

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## 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.<sup>1</sup>

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.<sup>2</sup>

## 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 obsolescence
- 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

As commonly said in business, innovation is the only Imperative. In a world where everything changes rapidly, the field of business has been left 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.



Person wearing a prosthetic leg

*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<sup>3</sup>*

## Where Do Good Ideas Come From?

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, feasibility and risk must be assessed.

Watch the YouTube video below, “Where Good Ideas Come From” to learn about where you can find or how you can develop good ideas. <sup>4</sup> [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/leadinginnovation/?p=5#oembed-1>

## Why is Innovation Important?

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.<sup>5</sup>

## 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

**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.<sup>6</sup>

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.<sup>7</sup>

## 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.<sup>8</sup>

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.<sup>9</sup>

## 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.<sup>10</sup>



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.<sup>11</sup>

## 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.<sup>12</sup>

## Explore the Concept – Product and Service Innovation

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

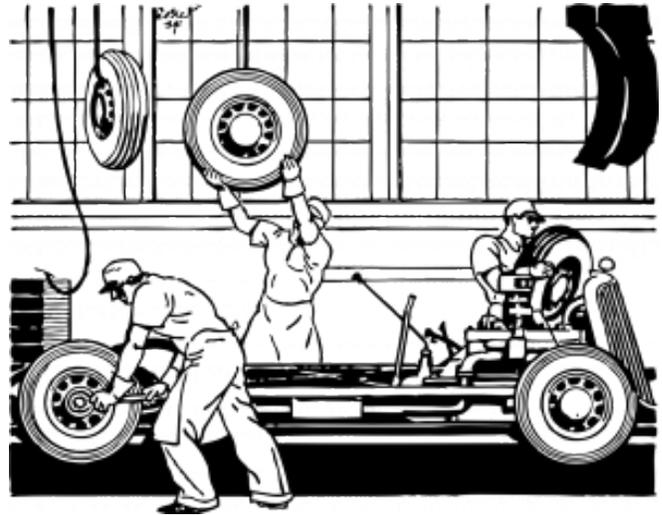
- Which services have you noticed they offer today that they may not have offered in previous years? When you went for a hair cut were there any new service offerings at the salon? When you ordered online were there any new services? New service innovations may add some small service that enhances the 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.<sup>13</sup>

**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.<sup>14</sup>

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.<sup>15</sup>



[Vehicle Assembly Line](#) by [Cler-Free-Vector-Images](#) has been designated to the [public domain \(CC0\)](#).

## 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.<sup>16</sup>

### 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. This feature

lets people watch security cameras from the fridge.<sup>17</sup>

- 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.<sup>18</sup>
- 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.<sup>19</sup>
- 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.<sup>20</sup>

## Doblin's Ten Types of Innovation®

### 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.<sup>21</sup>

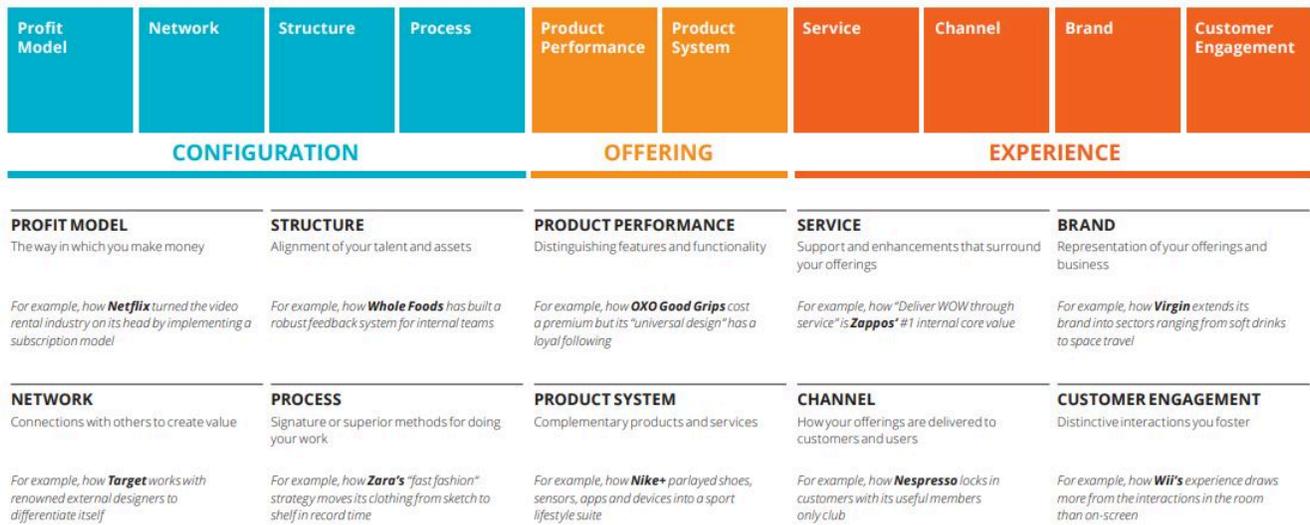


Figure 1.1 [Ten Types of Innovation](#) by [Deloitte Digital](#), all rights reserved. Used according to [Deloitte Terms of Use](#).

## 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.<sup>22</sup>

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.<sup>23</sup>

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.<sup>24</sup> 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.<sup>25</sup>

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. This principle helps overcome the drawbacks of traditional research-led or design-based innovation.

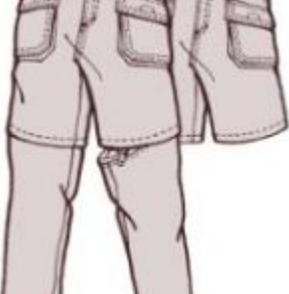
Conventionally, product innovation begins with consumer need identification that’s then translated into functions, therefore the form of the product is identified by the functions the product will be used for by consumers. Most consumers however struggle to articulate unmet needs and would have difficulty 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.”<sup>26</sup>

## 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.<sup>27</sup> Check out [Drew Boyd’s Pinterest](#) page for multiple examples of each pattern.

**Table 1.1 Systematic Inventive Thinking (SIT) – Five Patterns**

<p><b>Subtraction</b></p>	<p>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.</p>	
<p><b>Task Unification</b></p>	<p>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.</p>	
<p><b>Multiplication</b></p>	<p>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.</p>	
<p><b>Division</b></p>	<p>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.</p>	
<p><b>Attribute Dependency</b></p>	<p>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.</p>	

## 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.

Watch “The Power of Creative Constraints” YouTube Video below to learn more about creative constraints.<sup>28</sup> [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/leadinginnovation/?p=5#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. **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.
7. **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.
8. **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).
9. **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.
10. **Business Model Innovation** is probably the most challenging of the innovation types as it will likely present an organization with major requirements for change.
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](#) 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. 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.
16. **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, 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. **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. **Cognitive Fixedness.** Try it again, practice overcoming cognitive fixedness (thinking a product can only be used in a very specific way), but this time grab a plastic shopping bag. Many of these bags are thrown into the garbage after one use. Apply SIT by applying each of the five patterns to this plastic 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. This exercise can be done with just about any item you wish to start with.
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 noise (or very little), that would not be too expensive for consumers, and that would be a car disabled people (e.g., sight impaired, physical impairment, hearing impaired – you may wish to work with one constraint at a time then try combining them) could drive. 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.

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

To complete this exercise you may need to do a little research on Doblin's Ten Types of Innovation®

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/leadinginnovation/?p=5#h5p-1>

## Additional Resources

1. Innovation that [Change The World](#)
2. Top 10 Latest [Technological Innovations](#)
3. [Think Inside the Box: The Power of Constraint](#). YouTube Video.
4. [Ten Types of Innovation](#), Deloitte

## 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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- Mood ring

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# CHAPTER 2: THINKING CREATIVELY

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## 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 (<sup>1</sup>).

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. Watch 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
8. Freewrite More

Watch the “8 Creative Thinking Exercises to Boost Your Creativity” YouTube Video below to see if there is an exercise to boost your creative thinking.<sup>2</sup> [Transcript for “8 Creative Thinking Exercises to Boost Your Creativity” Video \[PDF–New Tab\]](#). Closed captioning is available on YouTube.



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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

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 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.<sup>3</sup>

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)<sup>4</sup>

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

[Transcript for “SCAMPER” H5P \[PDF–New Tab\]](#).



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## Benefits of Doing Creativity Exercises

Creativity exercises offer many benefits for individuals, groups, or companies who use them, including the following:<sup>5</sup>

- **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. Below are some ideas on how to enhance creativity and collaboration in teams, as well as some threats to team creativity.

When teams are working creatively during an ideation session there is a common pattern that occurs. At first, many ideas are shared that are not very unique, then ideas wane, then a spark of inspiration hits the team which drives momentum again but this time with unique ideas which may provide companies with new

paths to increasing revenue, market share, and more. This pattern is known as the shape of ideation and you will read more about this below.

## 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.<sup>6</sup>
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.<sup>7</sup>
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.<sup>8</sup>
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.<sup>9</sup>
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.<sup>10</sup>
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.<sup>11</sup>

## 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.<sup>12</sup>

**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.<sup>13</sup>

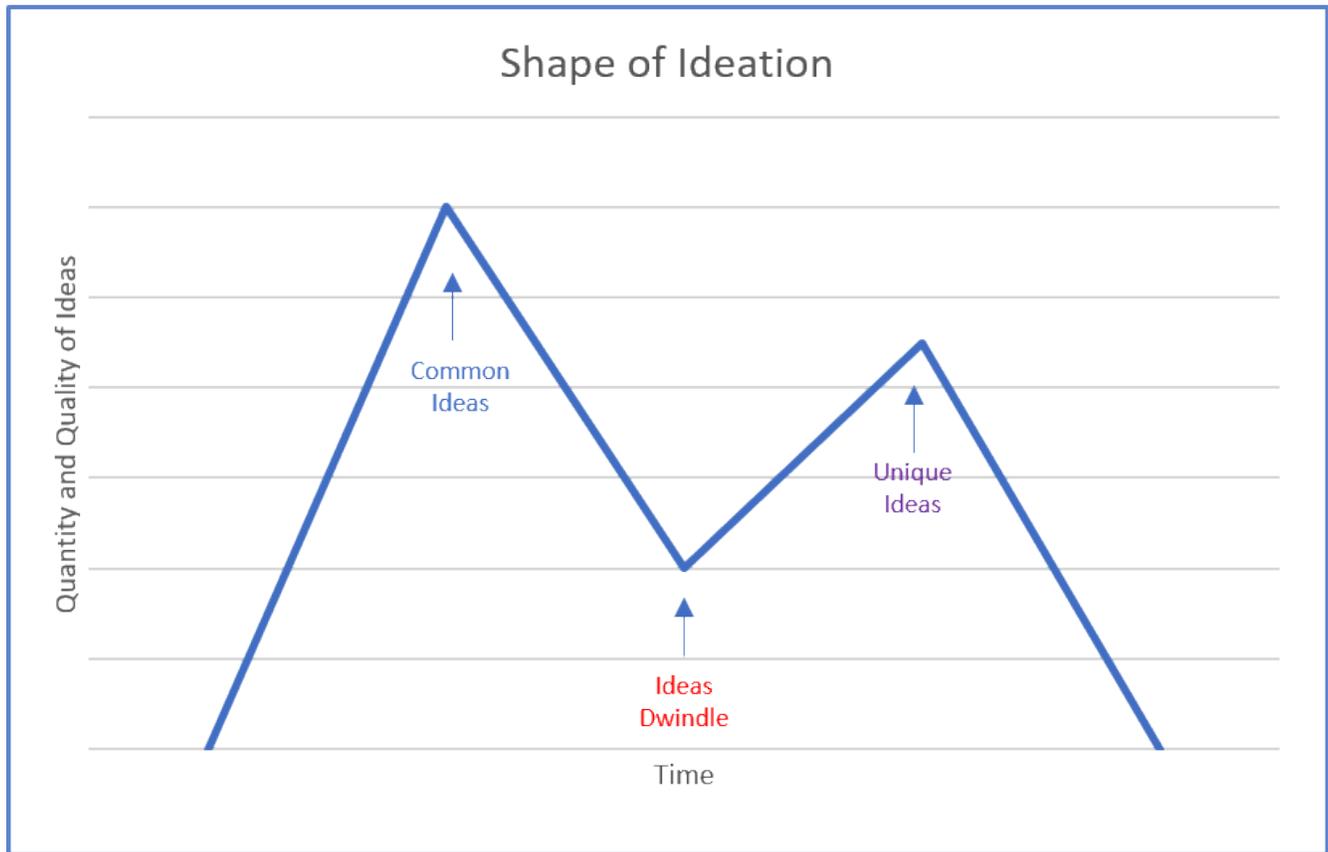
**Production Blocking:** This can occur when members cannot express their ideas because others are express-

ing 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.<sup>14</sup>

**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 “raise the bar”. Overall, the team will plateau and may find it more difficult to generate unique ideas over time.<sup>15</sup>

## 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 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.<sup>16</sup>



The Shape of Ideation

## Explore the Concept – Team Creativity Exercise

A common problem experienced during creative collaboration is interpreting what team members mean when they explain abstract concepts. This is a fun, and quite enlightening game of interpretation that addresses this issue. You may even find yourself using it as a party game outside of work!

You'll need strips of paper with phrases or actions written out on them, something like "singing in the rain" or "Mother Earth." Everyone starts with their own phrase and, to the best of their ability, draws it out on the first page of their notebook. After 30 seconds, everyone passes their notebook

to the person on their left. That person then has 30 seconds to interpret the drawing and write down what they think it is on the next page in the notebook. The next person draws what the last person wrote. 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.<sup>17</sup>

## Barriers to Creativity

Below is a list of some of the things that can be barriers to personal, team, and organizational creativity.<sup>18</sup>

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.<sup>19</sup>
2. **Structural fixedness.** This makes it really hard to imagine objects having a different structure than what we're used to.<sup>20</sup>
3. **Relational fixedness.** This type of fixedness makes it very hard to imagine two objects having a relationship that wasn't there before.<sup>21</sup>
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. **Benefits of doing creativity exercises.** Improved flexible thinking, Discovery of multi-dimensional ideas, Embracing work challenges, Seeing new concepts, and Improved team-work.
4. **Team creativity** is based on having open debates, and a free flow of ideas.
5. **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.
6. **Threats to team creativity.** Social loafing, Conformity, Production blocking, and Performance matching.
7. **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.<sup>22</sup>
8. **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.
9. **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. **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.

2. **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.
3. **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.<sup>23</sup>
4. **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?<sup>24</sup>
5. **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.<sup>25</sup>

6. **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?<sup>26</sup>
7. **How Creative Are You? quiz** Try the quiz at [How Creative Are You? \(QUIZ\) | Huff-Post Life](#)

## Self-Check Exercise – Quiz – Thinking Creativity



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

<https://ecampusontario.pressbooks.pub/leadinginnovation/?p=38#h5p-5>

## 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

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# 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.

## 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.

This 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.<sup>1</sup>

***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.<sup>2</sup>

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

An interesting thing about service innovations is that they are often combined with other types of innova-

tions. For example, if you are a customer of Tim Hortons then you may have used their loyalty program. When you place a product order you gain points and when you get enough points you can use those points to purchase a product. 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 for the company. When customers use the points program it changes the payment process for staff and the technology integrates with the payment system which allows the company to gather data about consumer purchases and preferences.

Airbnb's business is primarily based on service innovation. The creative entrepreneurial innovation allows people to travel and stay at different hosts 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.

Netflix produced a series of disruptive innovations that revolutionized how people get their daily dose of entertainment at cheap prices.

Need a snack on the go? Forgot your toothbrush or charger? It's not a problem at [Grab](#), a line of taxis in Singapore that offers in-car convenience stores. 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.<sup>3</sup>

## Discover What Customers Want

Many companies start their service innovation journey at the wrong end. They look at their existing services 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?

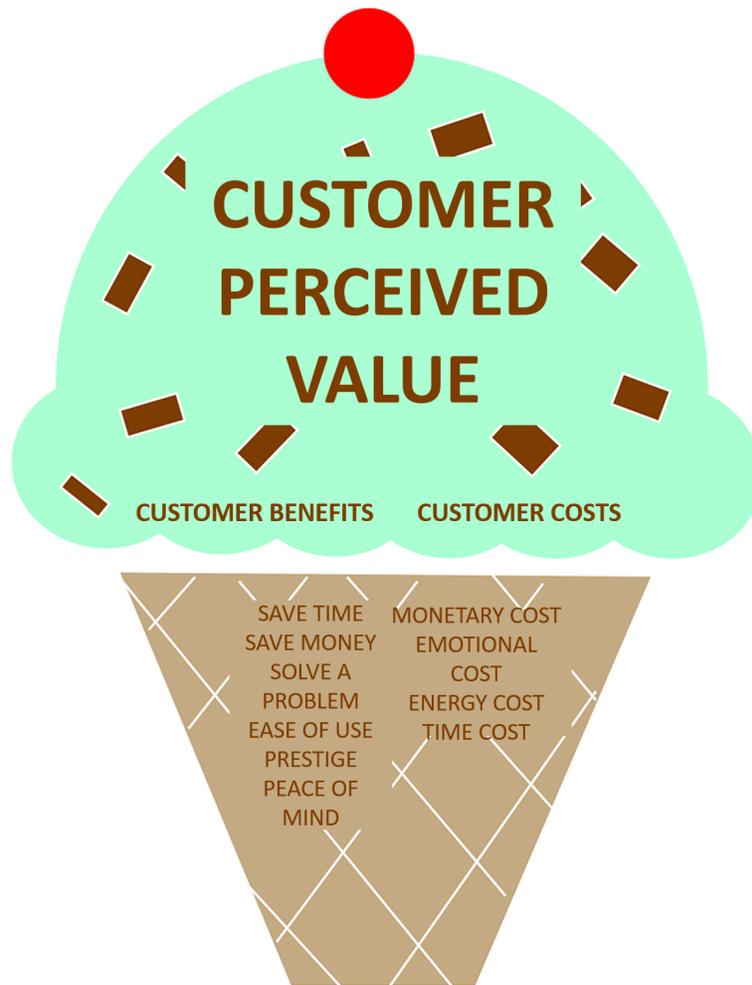
In order to create break-thru innovations, a company must do more than just add an element or a single attribute to an existing service or product. Unfortunately, most of the customer surveys businesses use today are trying to do just that, evaluate customer satisfaction based on current attributes. 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.<sup>4</sup> If an attribute is not a benefit to customers then you may need to consider removing it.

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  $(B - C = CV)$ .

## Tips for Businesses to Increase Customer Value<sup>5</sup>

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 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?

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, a senior 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 seniors (e.g., over 60) 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.



Running Shoe Attribute Benefits

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 are just 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.<sup>6</sup>

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 consumers' 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 wildily 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 their 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,

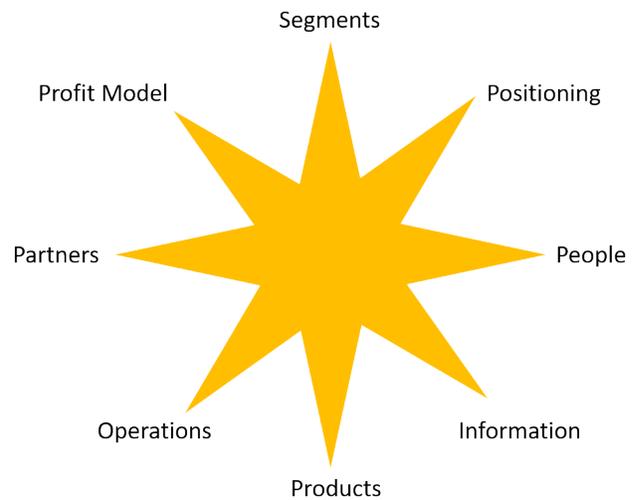
these companies all share something in common. They're innovating existing services and transforming the country's economy in the process.

## 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.<sup>7</sup>

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?
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 in respect to fluctuating demand and costs?



Customer Star Framework by Stefan Michel

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 with 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, 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 who 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.<sup>8</sup>

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.<sup>9</sup>

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. The 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, 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, 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. **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?
3. **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.
4. **McDonalds Customer Star Framework.** Try applying the Customer Star Framework for McDonalds 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 if the Customer Star dimensions are aligned. You may wish to watch the [LinkedIn Learning module, Service Innovation](#) by Stefan Michel who created the Customer Star Framework (you may require a subscription).
5. **User, Buyer, Payer Scenarios.** Come up with three (3) different scenarios, one where you are the user, buyer, and payer. A second scenario in which you are only the payer and someone else is the user and buyer. A third scenario in which you are the user and someone else is the buyer and payer. Share with a partner, the class and/or the professor and see if they agree with your positions in these scenarios.

6. **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/leadinginnovation/?p=40#h5p-6>

## Additional Resources

1. Taxis cars install [mini convenience stores](#)
2. 20 Fresh Examples of [Customer Experience Innovation](#)
3. The [30 Things Your Customers Value Most](#)
4. A list of [Innovative Customer Service Ideas to Create Happier Customers](#)

## 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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# CHAPTER 4: PROCESS INNOVATION

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## Chapter 4 Learning Outcomes

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

1. List the requirements for creating a good business process.
2. Explain four things that contribute to the development of a bad business process.
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. 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.<sup>1</sup>

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.

Often processes are documented and taught to employees. Employees are expected to follow the business processes as the processes support the company brand, function, mission/vision/values/goals, and service objectives. A great 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. Machines are used to cook and warm food and timers are used to enable employees to cook each hamburger 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 a student in a course. More complex processes might include the steps required to purchase new medical equipment for a hospital, the steps a furniture company follows to manufacture their most popular desk or the steps an executive chef takes to prepare a dinner for six customers.

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 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.



Students may be frustrated when processes are not clearly defined

## Business Process Requirements

A good business process meets the following requirements.<sup>2</sup>

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.

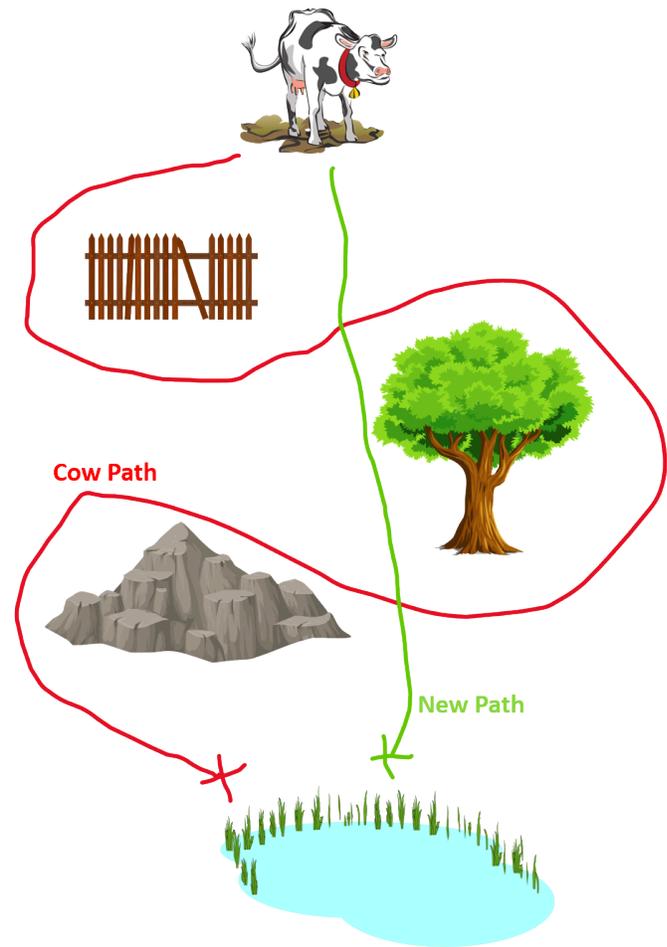
**Tip:** To print multiple packing slips at the same time, select the check box in the upper-left corner of the list, choose **Print packing slip for selected orders** from the drop-down menu, and then click **Go**.

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.

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 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.<sup>3</sup>



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

## 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.

Watch the “Business Process Improvement Tutorial for Beginners” YouTube video below for an introduction to business process improvement.<sup>4</sup> [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/leadinginnovation/?p=42#oembed-1>*

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.<sup>5</sup>

## Measure the Right Things

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.<sup>6</sup>

## 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.<sup>7</sup>

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

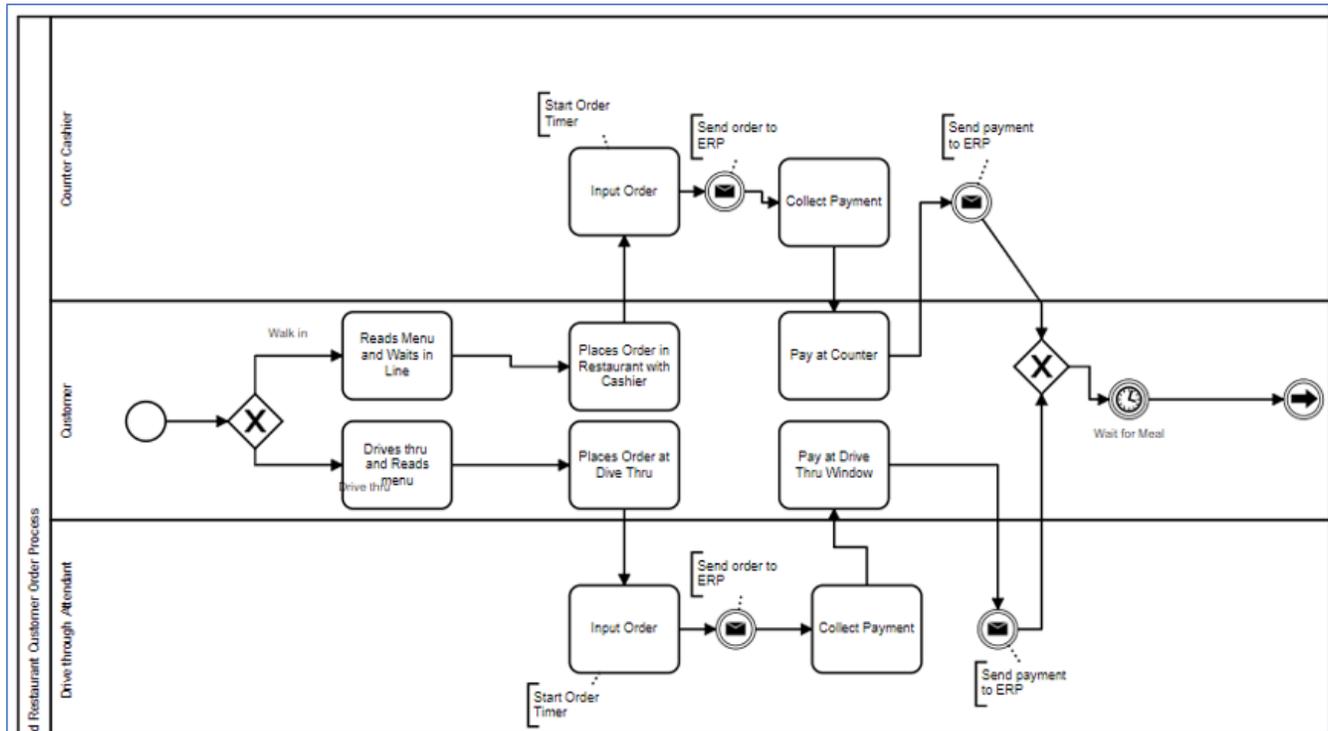
The tools and techniques most commonly used in process improvement are:

- 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 the example below of a partial BPMN diagram for a Fast Food Restaurant, Customer Order Process.



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, 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.<sup>8</sup>

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.<sup>9</sup>
2. **Kaizen.** When applied to the workplace KAIZEN™ means continuing improvement involving everyone – managers and workers alike. This methodology originated in Japan, 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 plan](#) typically accompanies the use of BPR.<sup>10</sup>
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](#).<sup>11</sup>

## 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 cus-

tomers, 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.com Seller Central Help](#). Discuss with a partner, the class, and/or your professor whether or not the process meets the business process requirements provided in this chapter. 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?
3. **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.
4. **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 also has a free tutorial and download or use online.

## 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/leadinginnovation/?p=42#h5p-7>

## Additional Resources

1. LinkedIn Learning [Business Process Improvement](#) Training video
2. [BPMN 2.0 Tutorial: Get started with Process Modeling – Camunda](#)
3. [What is Business Process Innovation and How Can It Improve Organization and Efficiency?](#)
4. Kaizen methodology tutorial for continuous improvement – [YouTube video](#)

## 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

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# CHAPTER 5: SUSTAINABLE INNOVATION

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## 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 how companies can facilitate change through sustainable innovation design.

## 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 – be they upper, middle, or low income – to make tangible improvements to the lives of their citizens. The goals (shown below) encompass social, environmental, and economic aspects.

# SUSTAINABLE DEVELOPMENT GOALS



## [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.<sup>1</sup>

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.

Watch the “Shaping the Future of Innovation”, Ivey Business School YouTube video below to learn about the Ivey Centre for Building Sustainable innovations.<sup>2</sup> [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/leadinginnovation/?p=44#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 generations 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 condi-

tions, 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.<sup>3</sup>

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 kill 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.<sup>4</sup>
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.<sup>5</sup>

## 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.<sup>6</sup>

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 high-

light 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.<sup>7</sup>

**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.<sup>8</sup>

**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 m<sup>3</sup> 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.<sup>9</sup>

**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.<sup>10</sup>

**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.<sup>11</sup>



Edible spoons

**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”.<sup>12</sup>

**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?<sup>13</sup>

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.<sup>14</sup>

Sustainability and innovation go hand in hand. One thing that the green building movement is achieving is that it’s 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.<sup>15</sup>

## 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.<sup>16</sup>

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.<sup>17</sup>

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.<sup>18</sup>

Watch 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.<sup>19</sup> [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/leadinginnovation/?p=44#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 also used to refer to **environmental sustainability**.
3. The **Sustainable Development Goals** (SDGs) of the United Nations 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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” 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” 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 partner 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:*

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## 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/leadinginnovation/?p=44#h5p-16>

## Additional Resources

1. 21 Sustainability Innovations [Changing the World](#)
2. Social Sustainability [Everything You need to know](#)
3. The 35 Easiest Ways to Reduce [Your Carbon Footprint](#)
4. World Atlas, [The World's Most Sustainable Countries](#)
5. Government of Canada [Explore our 13 goals \(fdds-sfdd.ca\)](#)
6. What is a [Circular Economy](#) and How Does it Work?
7. The [Triple Bottom Line](#)

## 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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- [Edible spoons](#) © Founcy Spoon from P!xabay

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# CHAPTER 6: GROWTH STRATEGY

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## Chapter 6 Learning Outcomes

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

1. Explain what it means to “know where the company is going” when aligning innovation to growth strategy.
2. Explain why it is important to do market research during the first step of the innovation process.
3. Describe the Ansoff Matrix and the amount of risk associated with each growth strategy.
4. Explain why the alignment between business strategy and innovation might break down as well as how companies can avoid these breakdowns.
5. Describe five of the Ten Types of Innovation®.
6. Discuss three ways to spot opportunities for innovation.

## Aligning Innovation to Growth Strategy

### Know Where the Company Is Going

**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. For this to happen, senior management needs to take a leadership role in implementing innovation initiatives. In order to align innovation with strategy, leaders need to review and analyze how well the company is meeting its strategic objectives. 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. That takes care of current needs, but what 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.<sup>1</sup> For example, Amazon continually innovates its core retail business, such as launching AmazonBasics, their private 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.<sup>2</sup>

Watch the Innovation Strategy YouTube video by Kuczmariski 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?<sup>3</sup> [Transcript for “Innovation Strategy” Video \[PDF–New Tab\]](#). Closed captioning is available on YouTube.



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## Make an Innovation: Plan and Test It

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.

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.

During brainstorming sessions, it is important to let everyone know that no idea is bad and all innovation comes with some risks. 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.

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 complicated, 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.

Watch the Innovation Process YouTube video by Kuczarski below to learn more about how the **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 ready for launch), and the last step is to launch the innovation in the marketplace.<sup>4</sup> [Transcript for "Innovation Process" Video \[PDF–New Tab\]](#). Closed captioning is available on YouTube.



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## 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.

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.<sup>5</sup>

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

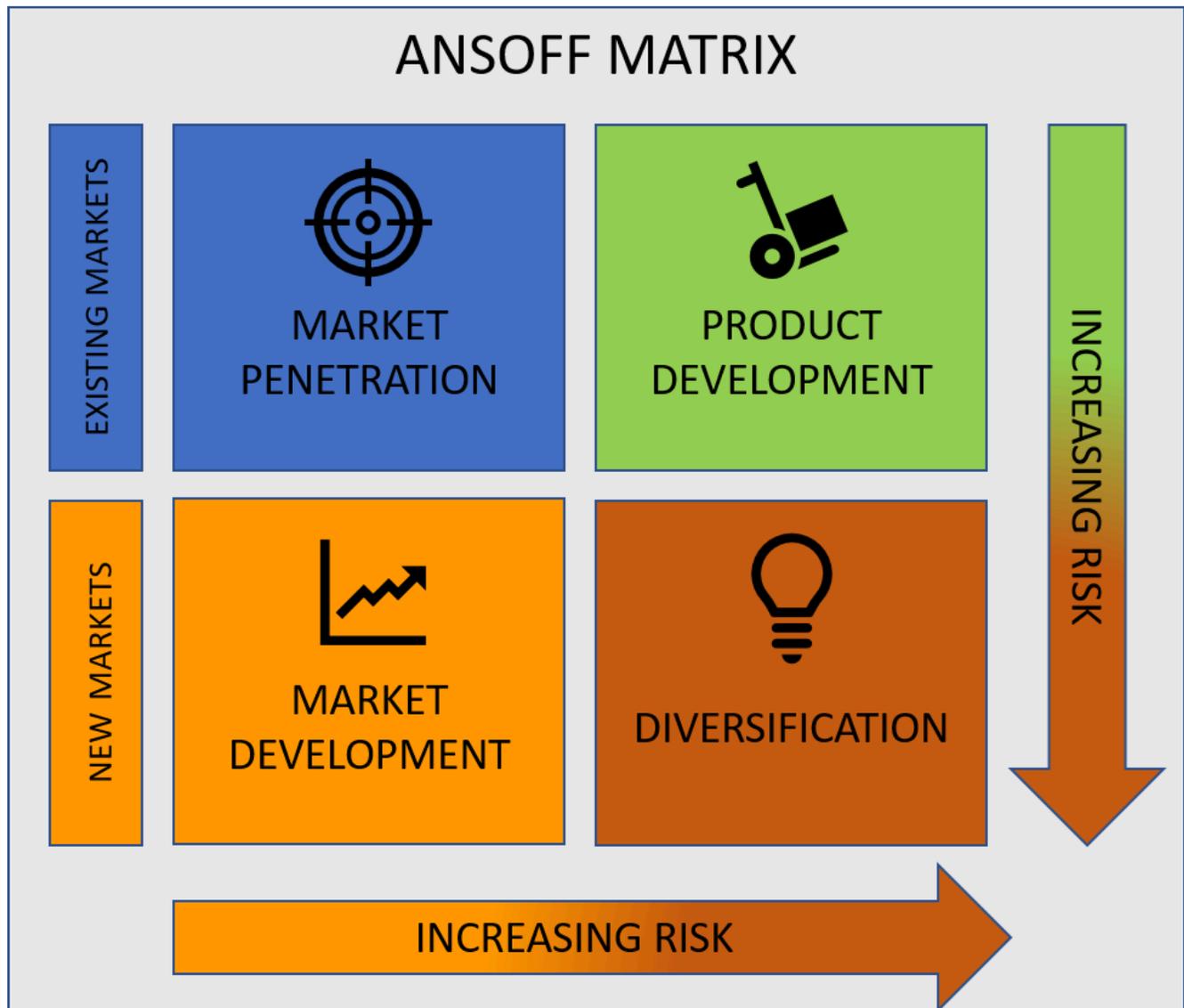
3. As part of their product development plan, a business may:

- 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 products they already produce or at least exist in the same sphere. For example, a company that builds computers 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.<sup>6</sup>



Ansoff Matrix for Strategic Planning

## Breakdowns Between Business Strategy and Innovation

Why does the alignment between business strategy and innovation break down? Below are five reasons misalignment might occur.

1. **Exploring solutions for the wrong reasons** – Not aligned with strategy.
2. **Changes in leadership** – 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.”<sup>7</sup>

4. **Poor communication of innovation strategy** – Goals, outcomes, and expectations with regard to innovation are not clear.
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:<sup>8</sup>

- **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 business 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.

## Spotting Opportunities

To spot 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 managers 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 cus-

tomers 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.

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.”<sup>9</sup>

## Unexpected Success and Failures

The marketplace is the number one area to look for opportunities. A good manager should be studying the market by conducting environmental scans (e.g. PEST, competitive analysis, trends, SWOT). Is a particular product or service in greater or lesser demand than anticipated? Why? For example: If a competitor is having unexpected success in a particular market segment, management must find out why this is 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.



A person looking for opportunities

## 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 continually be on the watch for this. One example is deregulation. When a previously regulated industry becomes open there is historical precedence for companies that enter early to be very successful. Other things to watch out for are the convergence of multiple technologies and 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.

## Ten Types of Innovation®

Innovation is all about coming up with new things that create value for your customers, and the organization. There are many types of innovation, although when we hear about a company innovating we often hear about new products or services. The most common innovation types include product, service, and process. 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. There are many ways for companies to innovate to remain competitive in their industries. 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.

The 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. Doblin's 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

Watch this 3-minute video by MindTools explaining Doblin's 10 Types of Innovation®.<sup>10</sup> [Transcript for "Doblin's 10 Types 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/leadinginnovation/?p=46#oembed-3>*

## Key Takeaways

1. **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.
2. The **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.
3. 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.
4. There are **a number of reasons misalignment can occur**, 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 **ensure that strategic alignment is occurring** 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 **seven sources of innovative opportunity** are 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.
7. **Doblin's 10 Types of Innovation**<sup>®</sup> 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

## End-of-Chapter Exercises

1. **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.
2. **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.
3. **Doblin's Ten Types of Innovation®.** Search the Internet to read more about Doblin's Ten Types of Innovation® then locate an innovation for each of Doblin's Ten Types. Which companies have innovated in which of the ten types of innovation? Share your findings with the class and/or professor.
4. **Failed Innovations.** Search the Internet to locate one, or more, of the ten types of innovations that have failed. Why happened that caused the failure? What could have been done differently? Discuss these findings and remedies with your class and/or professor.
5. **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.
6. **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.

## 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/leadinginnovation/?p=46#h5p-10>

## Additional Resources

1. What is innovation strategy? [Discover best practices, definitions, tools, and examples](#)
2. [What Is Innovation Strategy With Examples](#)
3. Business Innovation Strategy: [9 Key Pillars for Success](#)
4. Business Diversification: [The Best 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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# CHAPTER 7: DESIGN THINKING

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## 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. Watch this brief introduction to design thinking from IDEO U.<sup>1</sup> [Transcript for “What is Design Thinking?” 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/leadinginnovation/?p=48#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 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.



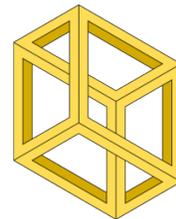
Empathize



Define



Ideate



Prototype



Test

### Five Stages of Design Thinking

## Empathize

Imagine what the customer might be thinking or feeling, what needs they may have, and what their desires are. 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 yourself 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.<sup>2</sup>

## 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.<sup>3</sup>

## 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:<sup>4</sup>

- 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.<sup>5</sup>

## 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:<sup>6</sup>

- **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.<sup>7</sup> [Transcript for “What is Design Thinking?” 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/leadinginnovation/?p=48#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 seniors that 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:<sup>8</sup>

- 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

## Prototyping and 3D Printing

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).<sup>9</sup>

**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 want 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.

Watch this YouTube video from Mashable, “What is 3D Printing and How It Works?”, to learn more about the 3D Printing process.<sup>10</sup> [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/leadinginnovation/?p=48#oembed-3>*

## 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 seniors that 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. 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.

## 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 seniors. 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 seniors have poor circulation, and this can slow the healing of foot sores. Seniors 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. **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.
5. **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.
6. **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.
7. **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/leadinginnovation/?p=48#h5p-11>

## 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. [20 Products](#) That Are Now Being Made Using 3D Printing
9. The Importance of Prototyping in [UX Designing](#)
10. 3D Printing History and Overview – [Wikipedia](#)
11. [55 Useful, Cool Things to 3D Print](#)
12. [History of 3D Printing](#): It's Older Than You Think

## 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

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# CHAPTER 8: PRODUCT INNOVATION

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## 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?

**Product Innovation** can come in three different forms. 1) The development of a new product, such as the Fitbit or Amazon's Kindle. New product development may be considered radical innovation as it can be a game-changer in the market. 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.

**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 prototyped 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.<sup>1</sup>

**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.<sup>2</sup>

## 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 is 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.<sup>3</sup>

## What are the Seven Stages of Product Development?

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 look at the feasibility of ideas and resources available as well as risks. This group considers and plans new and improved products in seven different phases, as shown below:



Person generating ideas

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.<sup>4</sup>

Watch the YouTube video below, “Product Development Process: 7 Essential Stages”, to learn more about each stage in the new product development process.<sup>5</sup> [Transcript for “Product Development Process: 7 Essential Stages” Video \[PDF–New Tab\]](#). Closed captioning is available on YouTube.



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## 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.<sup>6</sup>

The following eight factors will influence the success of new product development.<sup>7</sup>

## 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.<sup>8</sup>

## 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.”<sup>9</sup>

## 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.<sup>10</sup>

*“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.”<sup>11</sup>*

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.<sup>12</sup>

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.<sup>13</sup>

## Combining Innovation Types – Nike Example

Let's look at how Nike combines the Ten Types of Innovation® to delight customers and stay ahead of the competition.<sup>14</sup>

“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.”<sup>15</sup>

## Combining Innovation Types – Method Example

Let's look at how Method combines the Ten Types of Innovation® to delight customers and stay ahead of the competition.<sup>16</sup>

The product 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 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.<sup>17</sup>

## 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 advantage, 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 Doblin's list of Ten Types of Innovation®. You may even have some of these combined innovation products right in your home. Do these prod-

ucts 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/leadinginnovation/?p=52#h5p-13>

## 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

(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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# CHAPTER 9: INNOVATION RISKS

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## Chapter 9 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. Explain how using metrics for innovation will help reduce risk.
3. Discuss ways to deal with resistance to change.
4. Explain what is meant by “Get the Right Team” for an innovation project.
5. List ways in which a company can safeguard its intellectual property in order to reduce risk.
6. Explain why innovation project failure is acceptable.

## Use 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.<sup>1</sup>

Every new ground-breaking product and service, in the end, will become obsolete, commoditized, and out-competed by new and better solutions, products, and companies.<sup>2</sup> This may be best epitomized by Kodak, Blockbuster, Polaroid, Pan Am, Sears, Compaq, Nokia, Yahoo, and Blackberry.<sup>3</sup> To secure healthy revenue streams and long-term survival, organizations need to have a balanced portfolio of innovation projects covering horizons of time short-term (core), mid-term (adjacent), and 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.<sup>4</sup>

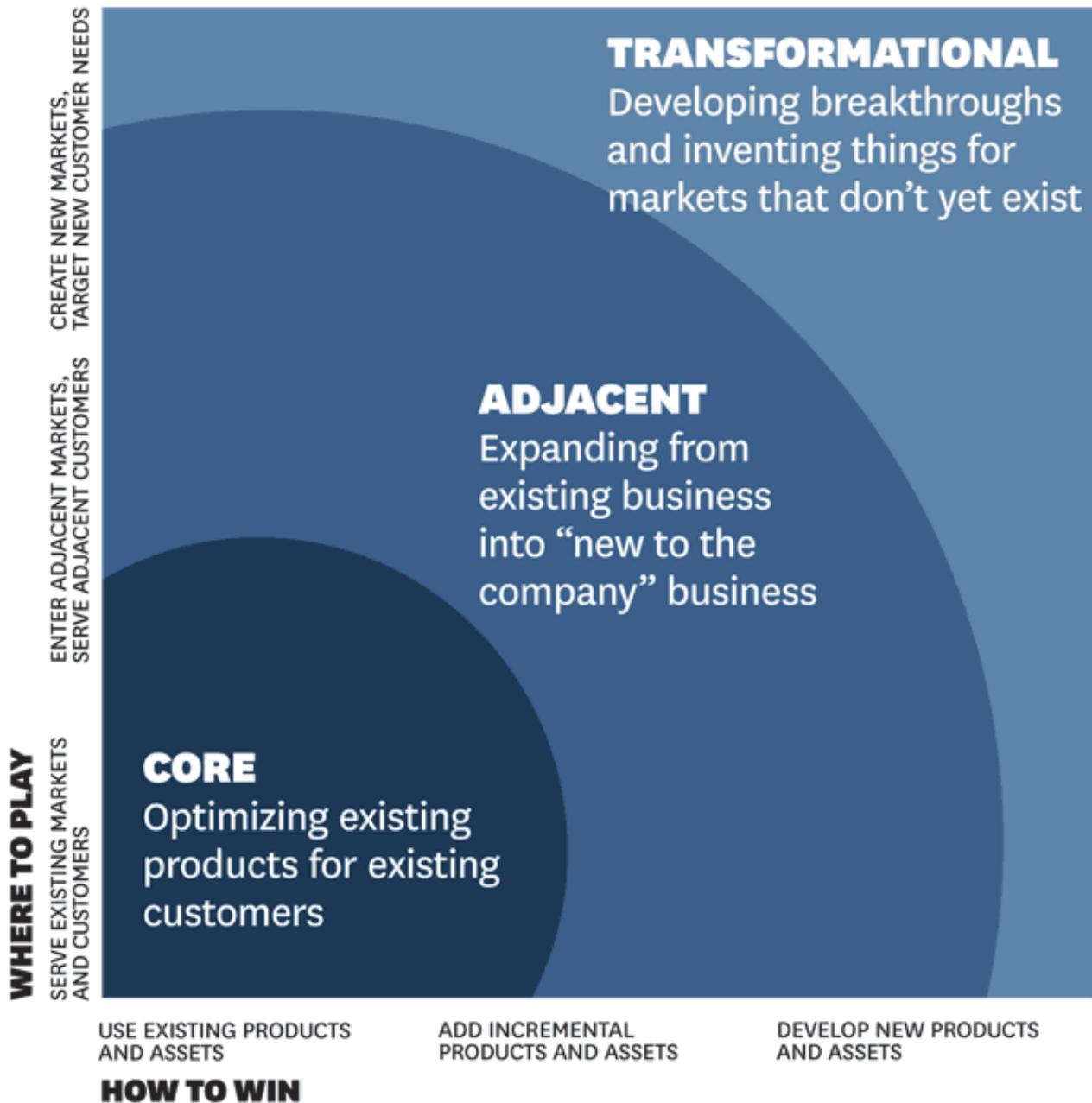
The **Innovation Ambition Matrix**, as featured in the Harvard Business Review (May 2012), is a classic model that helps companies decide how to fund different growth initiatives. Few organizations think about the best level of innovation to target, and even fewer manage to achieve it. According to Nagji 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.<sup>5</sup>

- **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.<sup>6</sup>

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.<sup>7</sup>

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.<sup>8</sup>



[Innovation Ambition Matrix](#), Nagji, B. & Tuff, G., Harvard Business Review

## Innovate Using Metrics

There are many risks associated with innovation such as the loss of money, the loss of time, the loss of company reputation/image, and the loss of potential. The loss of potential means that if a company invests money, time, and other resources into developing a new innovation that fails in the marketplace, those resources allocated to that failed innovation could have been allocated to other areas of the company or a different innovation project; therefore, there is a loss of potential on what could have been done with those resources. Not every innovative idea can be brought to fruition due to the limited resources needed to make it so, therefore, companies must select the best ideas to pursue and mitigate risks as best they can. Using [metrics](#) to compare and track performance and progress on innovation projects is a good way to monitor return on investment.

### Why Use Metrics for Innovation?

The list below provides a few reasons that companies should use innovation metrics.<sup>9</sup>

- 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



Measure progress and success

### 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 senior 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.<sup>10</sup>

- 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

Watch this YouTube video “Innovation QuickWin: Innovation Metrics” to learn about the major metrics that companies need to set to monitor and track innovation success.<sup>11</sup> [Transcript for “Innovation Quickwin: Innovation Metrics” 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/leadinginnovation/?p=67#oembed-1>*

## Reduce 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.

Ten reasons people resist change include the following:<sup>12</sup>

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.

Watch 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.<sup>13</sup> [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/leadinginnovation/?p=67#oembed-2>

## Get the Right Talent

### Innovation Project Team

An important component of innovation project success is building the right team. Companies must select, hire, collaborate with, and outsource the right talent (people), some key points to remember are listed below.<sup>14</sup>

- 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

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 outsourcing parts of the project development to experts in the field, for example, small companies that focus on a niche area. Another option would be for the company to hire the talent they need, but 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 company employee.

It may be that the company could benefit from an innovation management contractor. These companies guide the innovation project, train internal managers, help manage the project, and bring their expertise and experience to the company for a fee and a determined length of time.

## 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.<sup>15</sup> 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.

## Collaborate with Customers, Consultants, and Competitors

Collaboration with customers, consultants, competitors, and employees may be something that will help the company meet its innovation goals. These projects are often referred to as co-creation projects and sometimes referred to as open innovation projects. Some well-known innovation consulting firms include IDEO, Innosight, frog, Board of Innovation, and there are many others. The expertise of each firm may vary as well as the services they offer, but companies can hire a consulting firm that specializes in innovation to help guide and support them through their innovation initiatives.

**Open innovation** is a business management model for innovation that promotes collaboration with people and organizations outside the company. In this sense, [open innovation challenges](#) are a true cultural break from the company silo mentality and the secrecy traditionally associated with the corporate R&D culture. This innovation model becomes viable when the company acknowledges that there are many bright professionals and greater knowledge outside the organization. It is at this very moment that the opportunity to attract those external individuals and/or companies becomes more real. Companies implement open innovation practices in different ways, such as alliances between companies, research chairs in universities, [crowd-sourcing](#) competitions, and innovation ecosystems.<sup>16</sup>

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.<sup>17</sup>

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.<sup>18</sup>

## Safeguard Intellectual Property

In general terms, **intellectual property** is any product of the human intellect that the law protects from unauthorized use by others. 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.

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.<sup>19</sup> [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/leadinginnovation/?p=67#oembed-3>*

## Study 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](#).<sup>20</sup> 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.<sup>21</sup>

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.

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. 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.
3. Using **metrics** to compare and track performance and progress on innovation projects is a

good way to monitor return on investment.

4. 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.
5. **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.
6. 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).
7. 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.
8. 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.

## 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. A good example of this can be found in "[Achieve a More Balanced Portfolio in 2019](#)" by Lisa Bodell. What do you discover? Does it make sense? Discuss your observations with your class and/or professor.
3. **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.
4. **Company Collaboration.** Search the Internet for information on a recent company-to-com-

pany 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.

5. **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.
6. **Frugal Innovation.** Search the Internet to look for examples of frugal innovation. Which companies are doing this? Why? Is this a way to reduce the risk of innovation? What is the return on investment for these types of innovations? Do many companies venture into frugal innovation development? Why or why not? Do you feel this is something most companies should be doing? Why or why not? Discuss your findings with your class and/or professor.
7. **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.
8. **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.
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/leadinginnovation/?p=67#h5p-14>

## Additional Resources

1. 50 Examples of [Corporations That Failed to Innovate](#)
2. Innovation [Metrics and KPIs](#)
3. Customer Co-Creation: [12 Companies Doing it Right](#)
4. 21 Successful [Co-Branding Partnerships](#)
5. [10 Famous Success Stories](#) That Will Inspire You to Carry On
6. The [50 Greatest Breakthroughs](#) Since The Wheel

## 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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# CHAPTER 10: LEADING INNOVATION

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## Chapter 10 Learning Outcomes

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

1. Discuss how leaders can create an innovative culture in the workplace.
2. Discuss how employees can be rewarded for innovation and creativity.
3. Explain how a strategic business partner or co-creation may help a company innovate.
4. Explain how company structure can support or hinder innovation.
5. Explain why some organizations fail at innovation.

## Creating an Innovative 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.<sup>1</sup> While innovation strategy varies depending on the market and business goals, some challenges are universal, for example, an executive may be struggling to manage the company's innovation efforts to produce the results planned for or the leader of an innovation project may be finding it hard to garner the support needed from senior management.<sup>2</sup>

## What is an Innovative Culture?

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. Key characteristics of an innovative culture include:<sup>3</sup>

- **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.

Watch this YouTube video “Amazon’s culture of innovation” to learn more about how Amazon creates a culture of innovation.<sup>4</sup> [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/leadinginnovation/?p=54#oembed-1>

## Why Have an Innovative Work Culture?

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. To summarize, the benefits of having an innovative work culture include the following:<sup>5</sup>

- 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

## How Can Leaders Build an Innovative Work Culture?

Below are some tips for how leaders can build an innovative work culture:

- 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.
- Build trust within the team—be honest, admit mistakes, take ownership, be dependable, collaborate. Try team-building exercises to help people feel free to share ideas without being judged.
- Ask customers for feedback/invite customers to feedback rounds.
- Ask stakeholders for feedback.
- Invest in training for employees.
- Actively invest resources in research and development (R&D).
- Partner with startups and innovative companies.
- Build an intrapreneurship program.
- Express that failure is an option. Make sure everyone understands that a part of getting to success often includes some failures.
- Actively research on the Internet (industry news, tech news, etc.).
- Survey/interview/meet with experts.
- Incorporate innovation into the business strategy. Establish a company innovation vision, set goals, and share values to promote innovation in the workplace.
- 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.

## How Can Leaders Nurture Innovation?

### Internal Collaboration

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 people to spend about 10% of their time in marketing and sales and vice versa.<sup>6</sup>



Focused colleagues brainstorming in the boardroom

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.<sup>7</sup>

### Innovation Labs and Intrapreneurship

Designing innovation labs is one way to foster and support innovative initiatives. Some well-known organizations create innovation lab spaces where their employees can experiment and work on innovative ideas. Some companies share successful ideas from employees by supporting them in intrapreneurship initiatives which 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.

### Top Innovation Labs

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.

Below is a list of a few companies with successful innovation labs.<sup>8</sup>

- 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

Some successful intrapreneurship examples include:

## BOXLAB

[Intrapreneurship programs](#) are a great way to make innovative projects and ideas happen. This happened in BASF and its intrapreneurship program, [Chemovator](#), where 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.<sup>9</sup>

## Vimeo

Vimeo is an exceptional example of how an Intrapreneur, Anjali Sud, transformed its companies’ 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.<sup>10</sup>

## 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.<sup>11</sup>

## Innovation Time for Employees

Leaders who build innovation into their culture may offer “free time” to employees who wish to work on innovative initiatives. Leaders want to encourage innovation in non-obvious areas. Getting employees to expand their definitions of innovation is essential, so leaders should explicitly spell out for employees distinct areas that are ripe for innovation within the company, such as product, process, or business model, and let employees know the company is seeking contributions in any of these areas.<sup>12</sup>



Innovation team

Companies like Google, 3M, and a host of others are known for letting their employees spend 15 to 20 percent of their time each week working on creative side projects, innovations, and ideas – and it pays off. (This is how Gmail and Google Earth were created.) In addition to creating space for employees to innovate, leaders should also be prepared to reward employees for their creativity. For example, employees might be promised a certain percentage of net revenue for any employee who comes up with a new product that goes to market.<sup>13</sup>

## Partnerships and Acquisitions

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 and has determined it would not be feasible to expand operations, purchase technology, or obtain patents that would be needed to develop a specific innovation, might gain the strengths needed (e.g., supply chain, manufacturing, technology, patents, trademarks, etc.) through a partner company that would share these with the innovation team. (Note that some of these concepts were discussed in the chapter on innovation risks.)

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.<sup>14</sup>

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. They've been very successful at this, bolstered of course by the company's increasing stock value.<sup>15</sup>

The government often partners with businesses toward innovation, especially social innovation, technology innovation, and environmental innovation. Governmental organizations across the globe have launched their own innovation hubs often partnering with businesses to find innovations that will bring value to entire communities. (Note that some of these concepts were discussed in the chapter on innovation risks.)

Innovation consultants can help guide the innovative process. Companies can outsource these experts if they do not have an organizational structure for innovation or lack talent within the organization. (Note that some of these concepts were discussed in the chapter on innovation risks.)

## Open Labs for Co-Creation

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.<sup>16</sup> Collaborating with customers by inviting them into innovation projects through gathering feedback to participating in development, customers have helped companies make great strides.

Companies might consider co-creation partnerships with customers, universities, suppliers, start-ups, and even competitors. 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.<sup>17</sup>



BMW sports car engine

## Structuring for Innovation

“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.”<sup>18</sup>

## Align Innovation with Corporate Strategy

**Innovation strategy** is about mapping an organization's mission, vision, and value proposition for defined customer markets. Doing so 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. (Note that additional details about innovation strategy are provided within the chapter on growth strategy.)

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:<sup>19</sup>

- 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.

## Balance the Innovation Ambition Matrix

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.<sup>20</sup> (Note that some of these concepts were discussed in the chapter on innovation risks.)

## Create a Culture of 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 communicated 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.

## Look for Opportunities and Threats

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 (SWOT, competitive analysis, PEST, Porter's Five Forces, Ansoff Matrix, Innovation Matrix, etc.).

## Accept Risk

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.

## Build Organizational Structure for 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 responsible for their own profit and loss, so they essentially compete with each other for company



Department managers competing for resources

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.<sup>21</sup>

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.<sup>22</sup>

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.<sup>23</sup>

Watch this YouTube video “How Apple is Organized for Innovation: The Functional Organization” to learn more about how to organize a company for innovation success.<sup>24</sup> [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/leadinginnovation/?p=54#oembed-2>*

## Funding and Budgeting for Innovation

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. 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. This lowers both the risk and the cost of innovation while still allowing the company to develop new capabilities. 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.<sup>25</sup>

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 a limited number of resources, therefore, 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.

## Measuring Innovation Progress and Success

Measuring innovation input, progress, and output will help companies mitigate risk. 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. (Note that some of these concepts were discussed in the chapter on innovation risks.)

Despite these challenges, businesses can measure innovation with a mixture of the following:<sup>26</sup>

- Timesheet metrics
- New product or service metrics
- Financial metrics
- Training and staff competency metrics
- Management and leadership metrics

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.<sup>27</sup>

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

## Why Do Some Organizations Fail at Innovation?

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. A few reasons innovations fail are listed below.

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.

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.<sup>28</sup>
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.<sup>29</sup>
4. **Poor Organizational Structure and Processes.** An organizational structure that does not support innovation. The larger an organization is, the slower the processes often become. Sluggish processes with long decision-making cycles can be a death sentence for innovations. In addition, there are often interface and communication problems. All this has a negative effect on the quality and efficiency of innovation projects. This becomes more obvious when compared to the speed of how quickly start-ups can innovate.<sup>30</sup>
5. **Wrong decisions.** Management may set the wrong course in innovation projects or when selecting ideas. Wrong decisions can affect the prioritization of ideas, product strategies for new products, selection of variants in development, etc. The reasons behind this include lack of corporate and innovation strategy or insufficient information as a basis for decision-making.<sup>31</sup>
6. **Lack of Internal Communication.** Despite working hard, being isolated in groups/departments can hinder collaboration by creating unnecessary competition within departments. Once input is required from all departments, internal communication and collaboration must be streamlined.
7. **Low priority for innovation.** The unrealized commitment and the lack of support for innovation are certainly some of the main reasons why innovations fail. As a result, many resources are lost through friction losses and innovation tasks are not worked out in the required quality. The main cause is from above and it is also reflected in the culture of innovation.<sup>32</sup>

## 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.<sup>33</sup>

### 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.<sup>34</sup>

### 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.<sup>35</sup>



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.<sup>36</sup>

### **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.<sup>37</sup>

### **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 reputa-

tion 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.<sup>38</sup>

### **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. 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.

2. **Key characteristics** of an innovative culture include unique strategy, autonomy, trust, accepting failures, and leadership.
3. 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.
4. 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.
5. Leaders can **nurture 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.
6. **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.
7. 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%.
8. **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 organiza-

tional structure helps employees understand their roles and corresponding expectations and informs goal-setting.

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. **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.
2. **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).
3. **Innovation Lab.** Search the Internet to locate an example of a company's Innovation Lab that recently produced 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.

4. **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.
5. **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.
6. **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.
7. **Opportunity costs** are the potential benefits a business misses out on when choosing one alternative over another.

## Self-Check Exercise – Quiz – Leading Innovation



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

<https://ecampusontario.pressbooks.pub/leadinginnovation/?p=54#h5p-15>

## Additional Resources

1. 14 Inspiring [Examples of Intrapreneurship](#) and Employee Ideas in Action
2. 10 Inspiring [Examples of Successful Intrapreneurship](#)
3. 7 Considerations When Creating a [Corporate Innovation Lab](#)
4. [31 Innovation Labs](#) to Know
5. Types of [Organizational Structures](#) and Their Pros and Cons
6. Real Innovations [Require More than Just R&D](#)

## 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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# GLOSSARY OF TERMS

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## 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 Innovation

Executing an idea that addresses a specific challenge or opportunity and achieves value for both the company and its stakeholders.

## 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 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.

## 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.

## 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.

## 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.

## 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 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.

## 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.

## 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.

## 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 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.

## 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

This type of fixedness makes it very hard to imagine two objects having a relationship that wasn't there before.

## 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 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

This makes it really hard to imagine objects having a different structure than what we'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.

## 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).