

# INNOVATION CREATION IN SMEs: LESSONS FROM JAPAN



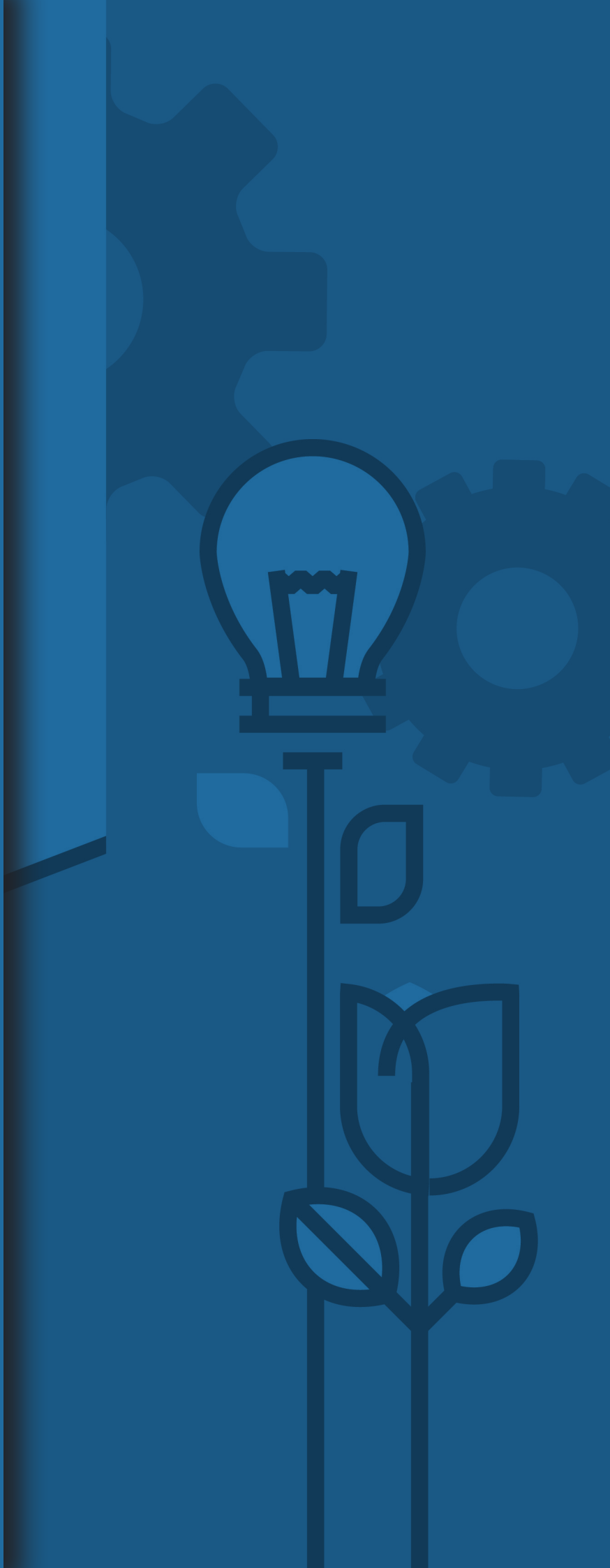
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# INNOVATION CREATION IN SMEs: LESSONS FROM JAPAN



Innovation Creation in SMEs: Lessons from Japan

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# FOREWORD

SMEs play vital roles in the economic development of all countries, especially in stimulating productivity and industrial growth, and APO members are no exceptions. In addition to their significant contributions to GDP, SMEs provide 60% or more of the jobs in the region, making them a major source of employment opportunities for an expanding labor force while addressing the need for more inclusive growth. However, to continue fulfilling their critical roles in growth and development, SMEs must embrace technology and innovation. This will lead to sustained productivity performance in the current volatile, uncertain, complex, and ambiguous environment. In this report, “innovation” refers to the development, deployment, and economic utilization of new products, processes, and services that can act as driving forces of future SME growth and expansion.

SMEs in the region continue to look to their counterparts in Japan in terms of innovating existing operating processes and management systems for productivity improvement. It should be emphasized that more than 99% of all businesses in Japan are SMEs, which employ at least 40% of the working population and account for 30% of economic output in terms of total added value. They serve as the backbone of the national economy, and their creative innovations are clearly worth examining and sharing.

This report highlights innovations pioneered by Japanese SMEs and compares them with those undertaken by SMEs in other countries in the four key areas of product innovation, process innovation, marketing innovation, and organizational innovation. The outcomes, obstacles faced, and lessons learned by enterprises when putting innovative concepts into practice are presented as practical examples to learn from. Tools and techniques like gamification, kaizen, thinking out of the box, brainstorming, Osborn’s checklist, and design thinking are described to demonstrate how they have been utilized in the creation of innovations by SMEs, with representative results and benefits.

The APO is grateful to Hideyuki Ezaki, President, Management Assistance Co., Ltd., Japan, for compiling this report. He also served as resource person for the APO e-Learning Course on Management Innovation in SMEs, Basic and Advanced Levels, in 2017 and 2018, respectively. We hope that the report will make policymakers, SME-related government agencies, and other stakeholders more aware of the many practical opportunities available for new value creation through constant practical innovation.

Dr. AKP Mochtan  
Secretary-General





# 1. INTRODUCTION

SMEs are the main components of national economies. According to the White Paper on Small and Medium Enterprises in Japan 2018, of 3,820,000 enterprises in the country, 99.7% were SMEs. They absorb approximately 40% of employment and create 30% of total value added in Japan.

During the first decade of the 21st century, corporate profits reached record high levels on the back of a robust global economy, and a positive economic cycle was seen in the areas of income and employment, with an increase in the number of employed persons despite a decline in the working-age population. At the same time, however, Japanese SMEs continued to face a sense of uncertainty about the future which stemmed from a shortage of workers, stagnant labor productivity, lack of successors, and other such issues. One of their biggest issues is securing resources. SMEs face limited financial resources, difficulty in accessing market information, few opportunities for hiring talented engineers, etc.

After making their best efforts to overcome such a severe business situation, “innovation” must be a key word for SMEs. We are now living an era of volatility, uncertainty, complexity, and ambiguity. An innovation mindset, proper understanding of innovation creation, and an approach to its practical process will drive SME growth not only in terms of technology but also of corporate management.

This report shows that innovations do not occur only in large enterprises or through state-of-the-art technology. SMEs can innovate even with their limited resources. The next section defines “innovation” and its types. Outcomes generated by innovation creation in Japanese SMEs are given as examples. The examples clarify how SMEs can make, change, or create something new through specific processes, including the “gamification” concept. The last part of this report explores practical insights into how to undertake innovation in workplaces. There are simple, effective frameworks or tips that may encourage SMEs to create new value on their own. These practical concepts emphasize the importance of an innovative mindset and understanding of practical steps.

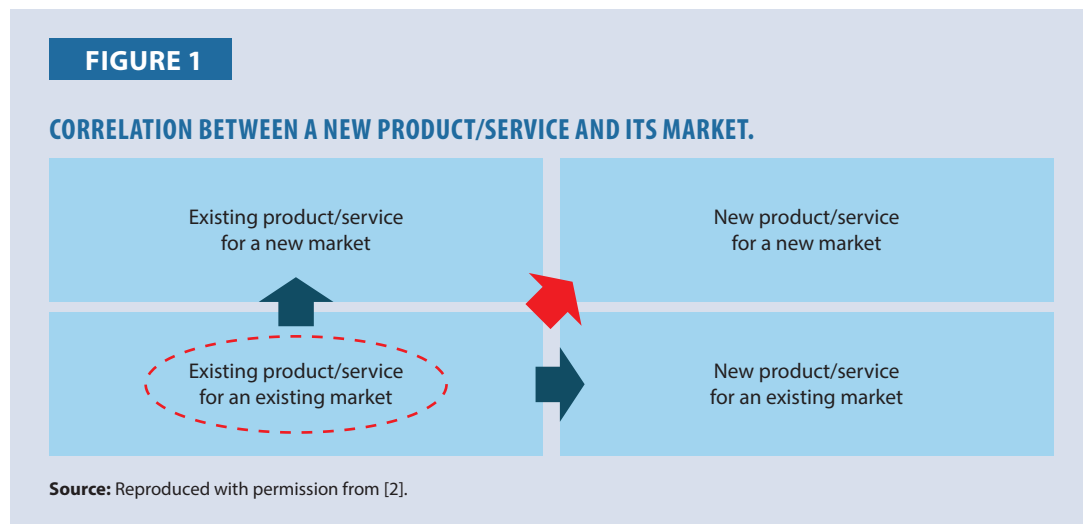
SMEs have many opportunities to create new value without making big investments. They also do not need to wait for flashes of inspiration. The author and the APO hope that the contents of this report will trigger the practice of innovation creation in workplaces.

## 2. DEFINING “INNOVATION”

The word “innovation” is common in the business setting. Enterprises like to use this word in their vision or mission statements and it is often seen in policy papers released by government ministries. Some ministries back up SME innovation by clearly stating its importance in their strategies. But individuals may feel a bit embarrassed if asked to explain the precise meaning. What, exactly, is “innovation”?

In 2013, Keeley et al. wrote, “Innovation is to create new and sustainable offerings” [1]. “New” means new to a certain industry or to a certain market. It does not have to be completely new to the world. In this sense, an innovation does not have to be an invention. Developing a new product or service for a new market must be an obvious innovation. However, as shown in Figure 1, two more types of innovation are recognized. Providing a new product to an existing market (lower right) or providing an existing product to a new market (upper left) is also regarded as an innovation.

“Sustainable” means that an innovation creates sufficient value and profit to absorb R&D expenses. Innovation must contribute financially to SMEs’ sustainable business growth. Peter Thiel, a Silicon



Valley-based co-founder of PayPal, stated that, “For a company to be valuable it must grow and endure, but many entrepreneurs focus only on short-term growth” [3]. The profit generated by an innovation is invested to create future value. “Offerings” mean that an innovation occurs not only in products. It includes services, combinations of products and services, interactions between enterprises and customers, business processes, or others. For instance, the OECD defines the four types of innovation as: product innovation; process innovation; marketing innovation; and organizational innovation (Table 1) [4].

Such definitions show that “innovation” has a broader meaning than most people recognize. It also tells us that innovations must take place everywhere in our lives in different contexts. Peter Drucker also explained that an innovation is not only for technology and that it should not even be a physical thing [5].

TABLE 1

FOUR TYPES OF INNOVATION. ADAPTED WITH PERMISSION FROM [4].

**Product innovation** A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user-friendliness, or other functional characteristics.

**Example: No Salt Restaurant [6]**  
Electrical stimulation of the tongue by specially developed forks results in the sensation of a salty taste, which is called "electric seasoning." People with high blood pressure on low-sodium diets can still enjoy the "salty flavor" of unseasoned food when using these forks.



Electro salt-flavored fork

**Process innovation** A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment, and/or software.

**Example: Zozo suit [7]**  
Zozo Inc. operates a Japanese e-commerce fashion site. It delivers a "suit" to customers which automatically measures them free of charge. The data collected by the sensors in the suit are transferred to the Zozo website via smartphone. This online innovation lets Zozo sell custom-tailored clothing without wasting people's time on visiting a physical store to be measured by sales staff.



Zozo suit

**Marketing innovation** A new marketing method involving significant changes in product design or packaging, product placement, product promotion, or pricing.

**Example: Antismoking packaging [8]**  
The "antismoking pack" is a coffin-shaped box of cigarettes which cynically delivers the message that "all smokers carry death in their pockets wherever they go." This design is meant to have a visually negative impact on smokers.



Antismoking package

**Organizational innovation** A new organizational method in business practices, workplace organization, or external relations.

**Example: Office redesign**  
An international organization redesigned its office to be more open by removing walls and enlarging windows. This changed the atmosphere and made it easier for the staff to communicate.



Before

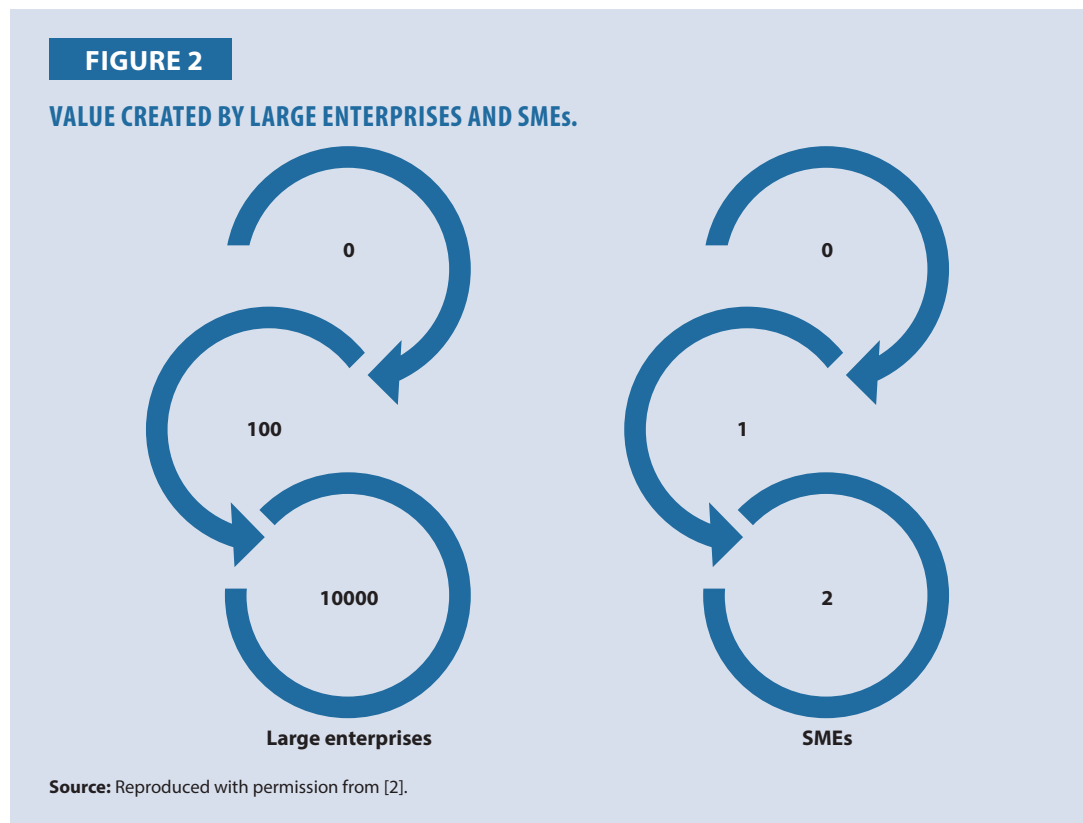


After

There is another classification of innovation based on magnitude, called “radical” or “sustainable innovation” [9]. Radical innovation creates new value while reducing the values of an existing product or service. For example, electric vehicles (EVs) have gained recognition as an “environment-friendly” form of transportation. At the same time, EVs have reduced the traditional value of gasoline consumption. These cars created a new market and became popular as a different product. Another typical example is smartphones. These small devices have changed daily life completely by adding hundreds of useful applications, sweeping away the value of landline telephones, wristwatches, or desktop calendars. Sustainable innovation, on the other hand, involves small, incremental steps that improve existing values. Minor design changes to a product or 5S or kaizen activity in workplaces can be categorized as this type of innovation.

A key to categorizing innovations is their value for customers or users. When an innovation destroys their existing sense of value, it is the radical type. When it contributes to increasing existing values, it can be regarded as a sustainable innovation.

SMEs can potentially have a major global impact through disruptive innovation. Even today’s world-leading enterprises started out small. Thiel remembered a time “when no loss was too big not to be described as an investment in an even bigger, brighter future” [3]. It makes sense for companies hoping to become dominant to seek a “blue ocean” with little competition. However, in general, SMEs do not have as many strategic choices as large enterprises do because of their limited resources. This forces them to take big financial risks. Therefore, it seems more reasonable and realistic for SMEs to rely on sustainable innovation, as shown in Figure 2. Large enterprises are ready to create large value by taking advantage of their resources and corporate system, although SMEs cannot afford this. This report focuses on how SMEs can achieve innovation incrementally to see practical benefits. Creating new value step by step is more reasonable for SMEs.



# 3. OUTCOMES AND LESSONS LEARNED IN INNOVATION CREATION IN SMEs

## 3.1 Successful Examples of Innovation Creation in SMEs

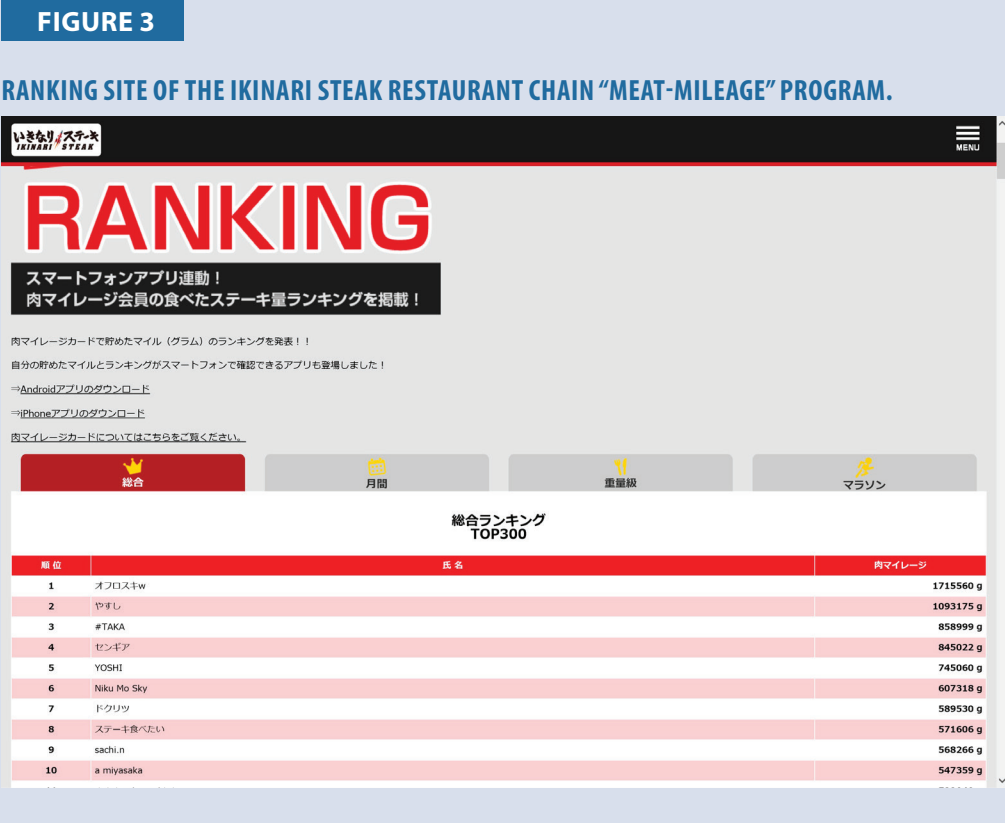
### 3.1.1 Gamification

“Gamification” adds an element of entertainment to a business solution. This concept appeared around 2010 and means that game design technologies and mechanisms are applied to problem solving or gaining customer loyalty. Popular gamification tools to attract customers are: 1) “loyalty” or point cards; 2) ranking systems; and 3) leveling up of experience. Under loyalty or point card systems, customers receive points for every purchase which can be applied to the purchase of other goods and services. In ranking systems, the points collected by individual customers are ranked, offering a fun experience when the rankings are shared among specific groups. Customers are motivated to repeat their consumption to collect more points, which obviously increases sales. A combination of a ranking system and leveling-up experience is also popular. When customers reach a certain rank, their status is upgraded, entitling them to receive extra rewards.

The Japanese restaurant chain Ikinari Steak uses an innovative gamification approach. It offers not only charcoal-grilled sizzling steak, but also a “meat-mileage” program. Customers’ steak consumption at the restaurants is recorded on a per-gram basis, and their cumulative history is ranked and shared on the website (Figure 3) in terms of: 1) total consumption history; 2) monthly consumption; 3) maximum number of grams consumed during one restaurant visit; and 4) “marathon” history, i.e., consumption over the long run [10]. This ranking system attracts potential diners and creates a feeling of friendly competition among steak lovers. As shown in Figure 3, as of 4 August 2018 the top-ranked Ikinari customer had eaten 1,715,560 g of steak, followed by the second-ranked who had eaten 1,093,175 g.

This ranking database is linked to customers’ membership status. Orders placed at Ikinari restaurants are automatically registered online. When customers’ steak orders reach the 3,000-g level, they receive “gold” status; 20,000 g qualifies for “platinum” and 100,000 g for “diamond” status. Like airlines’ frequent-flyer mileage programs, higher status offers more rewards like free meal and drink coupons. This system represents a “win-win” situation for the restaurant chain, long-time diners, and potential/bystander customers. Habitual diners enjoy more steak dinners while advancing their mileage status to receive more rewards. This attracts the interest of potential diners/bystanders and encourages them to join the meat-mileage program. Finally, the Ikinari restaurant chain profits while retaining customer loyalty.

While gamification can be seen as simply an amusing strategy to attract and retain customers from a business perspective, it can have deeper meaning when applied to social welfare services. Youplan Co., Ltd., which rents amusement arcade machines to festivals or events, expanded its client base to nursing homes [11]. The machines offer opportunities for fun and exercise to elderly residents as well as positive interactions with others. Their existing activity programs can feel monotonous, and some long-term residents become bored with the limited range available, although the arcade games appear to maintain their interest and promote concentration levels. Japan has already become a



superaged society, where 27.7% of population is over 65 years old and that percentage continues to increase [12]. This means that Japan is facing a serious shortage of workers in various sectors. Therefore, the gamification of residential care for the elderly is one solution to the challenge of how to offer better services with limited human resources and growing social demand for care facilities.



**Using donated exercise equipment.**

In a similar case of applying the gamification concept to provide a solution to a social issue, slot machines donated to a nursing home by a casino union in Saga prefecture have proven very popular among elderly residents [13]. The enjoyment from playing the slot machines stimulates their senses without requiring vigorous exercise, introductory lessons, or hands-on support by staff. On the other hand, the slot machine market has been decreasing due to the competition from game apps available on smartphones. The social value of this type of donation appeals to the public and can thus help to create new markets.

The examples described above target improved customers’ or users’ satisfaction through a combination of two of the four types of innovation: process innovation and market innovation. However, at the same time, innovation based on gamification can create new value for internal employees. As one example, a Japanese SME has a reward system to motivate employees to improve their organizational productivity, as shown in Table 2. This enterprise encourages employees to submit at least one idea, suggestion, or proposal to improve workplace productivity.



They may receive rewards valued in the range of USD1.00 to 12.00 based on the number of ideas submitted. An internal selection board evaluates all the ideas to select one gold (most effective), one silver (very effective), and five bronze suggestions in terms of their impact for additional rewards. The winners are recognized at an annual ceremony.

In a larger enterprise with approximately 500 employees, a similar program was introduced. However, it was a huge burden for the board to evaluate all the ideas submitted. Therefore, as shown in pattern 2 in Table 2, each department now selects the best ideas submitted by its own employees and passes them to the board for final evaluation.



Playing donated slot machines.

**TABLE 2**  
**REWARD SYSTEMS FOR IMPROVEMENT IDEAS.**

Submission of	Reward
1 idea	USD1
5 ideas	USD5
10 ideas	USD12
<b>Annual contest</b>	
	Pattern 1
	Select 1 gold = USD300
	Select 1 silver = USD100
	Select 1 bronze = USD50
	Pattern 2
	Select 1 gold, 1 silver, and 1 bronze from each department (prizes to be determined)

A financial incentive program motivates employees in many cases. Such programs can also be regarded as educational opportunities because employees must analyze their own work and workplaces to identify issues and solutions before submitting ideas. They also need to work together in applying solutions. This type of financial incentive may seem difficult for SMEs, but it is estimated that if USD500 is budgeted, more than 50 practical ideas will be received. In other words, an enterprise could resolve approximately 50 issues with the wisdom of employees. The rewards do not have to be in cash but could be meal coupons, small gifts, or other forms of recognition.

A “thanks card” is a simple, low-cost, interactive method to exchange comments of appreciation among staff in an enterprise or between enterprise staff and clients/suppliers [14]. When someone helps you, smiles at you, or has done a good job, you are expected to express appreciation and give a card to him or her.

Musashino Co., Ltd., which provides cleaning services to offices, shops, and private homes in Tokyo, adopted the thanks card system. Its 800 employees receive USD5 monthly if they write five cards, but are fined USD50 if they do not write more than 10 cards monthly (managers must write

at least 20 cards). The CEO made a strong commitment to this program because he had been looking for a way to enhance internal communication even though it is an extra cost.

Gamification has three elements: performance; achievement; and social interaction. “Performance” means that processes or ongoing results can be visualized in graphs or charts. It also has a clear goal and pathway that all participants can imagine when they become involved. “Achievement” means that some type of reward system is in place. The achievements should be clearly defined and measured in a leveling-up or ranking system. Beginners can understand the rewards at a glance and easily join the achievement process. In the “social interaction” element, interactive tools play an important role in allowing participants to compete or communicate with each other.

This gamification concept seems to work well in innovating the delivery of services and in communication. Former CEO Satoshi Iwata of Nintendo Co., Ltd., wrote in a corporate strategy paper [15] that, “Our mission is to deliver smiles to all people” and “Entertainment means anything to improve the quality of life.” Adding a flavor of entertainment can be widely applied to corporate management or to daily assignments, which ultimately offers better value to stakeholders.

### 3.1.2 Other Small Innovations

Gamification is a remarkable solution for business issues, but there are many other examples of useful small innovations. Reins International Inc. provides an excellent case of incremental innovation [16]. Reins is a huge barbecue restaurant chain with eight brands and more than 1,300 employees throughout Japan. But, like other restaurants, it had very few customers when it opened its original barbecue establishment. That situation lasted for some months.

The president found that customers were not satisfied with the service and he struggled to get detailed feedback. That did not work because dissatisfied customers simply left without communicating and never returned.



**Sample thanks card.**

In that tough situation, the president decided that when their bills were presented, customers would be told that they could receive a discount of USD3 per person if they described three bad experiences while at Reins restaurant. With that incentive, customers willingly gave details of their unfavorable impressions. With the large amount of feedback received, the president was able to improve operations one by one, and customers’ satisfaction levels climbed.

Such step-by-step actions based on a sincere desire to improve made the Reins chain famous and gave it a lasting reputation for reliability.

A major challenge faced by Japan Railways (JR) was that a huge number of passengers took the escalators in its stations during rush hours. For instance, 789,000 passengers pass through Shinjuku Station daily [17]. There is a high risk of accidents on crowded escalators, and it takes more time to get from one floor to another after waiting in a long escalator queue. JR needed to find a way to encourage commuters to use stairs.



The solution was simple. JR put information on calories burned when climbing the stairs, as shown in the photo below. Calories consumed at five-step intervals (1.7 kcal, 2.1 kcal, etc.) were posted, alongside the calories contained in a glass of beer and a slice of bread. That information appeals to health-conscious passengers and increases their use of stairs. As a result, JR successfully provided the double benefit of a little exercise and shorter commuting times.



Thank-you cards displayed in the office of the CEO.

The kaizen concept, which originated in Japan and became popular worldwide, is another example of incremental innovation. Sri Lanka is one country where kaizen is widespread at the corporate level. An association of corporate executives who studied in Japan hold a national kaizen contest annually. SMEs pay a fee to enter the contest and structure their internal kaizen systems following a manual issued by the association. Association auditors then evaluate the systems and recognize excellent SME kaizen practitioners.



Reins' website.

The contest illustrates numerous small but meaningful innovations in a variety of enterprises. The photo below shows a sign in the canteen of one entrant. In the initial phase, employees of that SME take “before” photos showing issues to be resolved in the workplace. They work together to identify and implement kaizen activities to improve the situation, and then take “after” photos to show their results. That SME also has a reward system under which excellent practices are shared among colleagues.



Calorie consumption counts on JR station stairs.

### 3.2 Internal Hurdles to Creating New Value in SMEs

The examples of innovative outcomes above seem simple and easy to achieve. However, in many cases, SMEs struggle to implement such activities because of physical and corporate culture-related hurdles that must be overcome.

### 3.2.1 Physical Hurdles

The biggest challenge for SMEs is their limited resources. They are surviving in their markets with limited physical resources, cash, technology, human resources, access to information, etc. Executives and staff struggle constantly in the face of many problems, which robs them of time to think about what they want for the future. Others compromise on new value creation because they think it needs more investment than resources could allow.



Display showing kaizen results.

However, as shown in many cases, incremental innovation does not necessarily require huge investment. Some incremental innovations can be carried out with just a few pieces of paper and marking pens, although some budgetary expenditure may be needed for rewarding employees who suggest successful innovations.

### 3.2.2 Cultural Hurdles

Limited physical and financial resources are not always the core issue when an SME fails to innovate. In many cases, stagnation is caused by the corporate culture, i.e., a conservative attitude toward change, complacency about existing products and services, or insufficient understanding of the business ecosystem. In this sense, the establishment of a “no-problem” culture may be the biggest obstacle for enterprises. “Smaller companies need to be highly agile,” noted Francois Hisquin, CEO of the French IT consultancy firm Octo Technology. “They should have a vision, but they should be able to move if the market is changing” [18]. He spoke from the viewpoint of the market globalization of SMEs, but the comment is applicable to various issues. A flexible mindset or risk sensitivity can be a seed for innovation creation.

## 3.3 Management of Innovation Creation

Innovation is not always created by inspiration. It should be controlled and managed internally as a business activity. Therefore, a holistic management system for idea creation and incubation should be in place. The points outlined below are critical to facilitate innovation in SMEs, as summarized from blog posts written by Andrew Margison of SME Management Consulting [19].

### 3.3.1 Committing to Innovation

First, strong commitment from the management is a must. That means that managers must explain clearly to people why they should create something new and what the enterprise goal is. A demotivated (or demotivating) attitude on the management side will influence others.

### 3.3.2 Foster Growth as a Part of Culture

Weaving a growth mindset into the everyday workplace encourages staff to adopt a progressive, onward-thinking attitude. This could be achieved by making training easily accessible, allowing staff to set their own goals, and supporting “off-the-wall” ideas. Having a growth mindset is all about encouraging people to learn and expand, and they should be supported in acquiring new skills.

### 3.3.3 Be Open to Giving and Receiving Feedback

Scheduling regular, frequent feedback sessions to help employees is a motivating factor. Feedback should not only be given on ideas themselves but also from a project viewpoint, including periodic reviews of costs, risks, progress, challenges, and other enterprise concerns. This means that management must know how to give appropriate feedback.

### 3.3.4 Make It OK to Fail

We need to allow people to take risks, and that means accepting that it is OK to fail sometimes. Individuals and teams worry about taking chances for fear of failure. Acceptance of failure, however, includes encouraging employees to put “wild ideas” on the table, which sometimes seem unrealistic but other times create innovative solutions.

### 3.3.5 Set an Exit Strategy

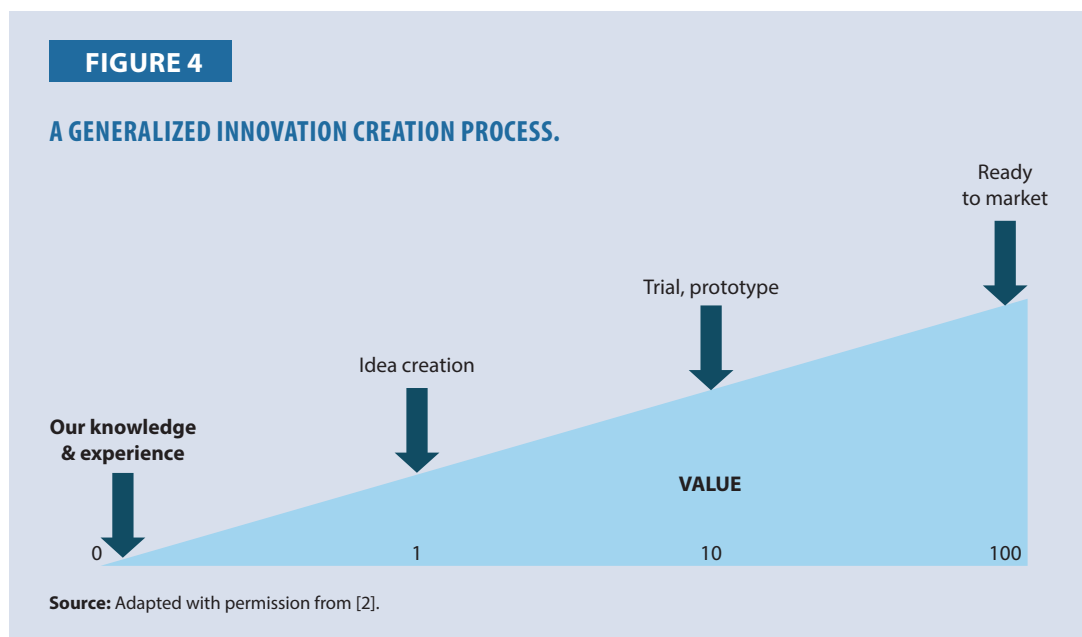
Tangible measures such as productivity, efficiency, and sales, with financial bonuses attached, are a focus of business. Setting measurable goals creates a framework that naturally encourages personal growth. In addition, SMEs cannot afford major R&D expenditures, and therefore such measures guide them in decision making on whether to continue specific efforts or redirect time and resources before poor results have a major negative impact on overall operations.

The key to the good management of innovation creation is top management commitment. This does not mean that managers let staff do as they like. In the initial phase, managers must draw up a clear blueprint and roadmap to follow. Starting something new without any guidelines will make employees nervous. However, fostering an environment where mistakes or failures are allowed can be part of good management practices.

# 4. PRACTICAL PROCESS OF INNOVATION CREATION IN SMEs

We tend to think of an excellent idea as a form of good luck or an inspiration and therefore believe that it is hard to manage. Unlike Newton “discovering” the law of gravity when an apple fell on his head, we cannot always just open the door and wait for an innovative idea to enter. This section explains how innovation is born through specific processes, which can be managed by SMEs.

A general innovation creation process is shown in Figure 4. The value of a finished product or a service is 100 when it is ready to be released to a market. Before release, it must be carefully tested at the trial phase as a prototype. Sales staff may offer free samples to potential customers and get their feedback. An R&D Department will then make some minor changes in design or materials to increase customer satisfaction. The value of the product or service at this phase will be less than that of the finished one. Such a trial product or service is usually selected out of hundreds of ideas suggested during internal discussions at the planning phase.



## 4.1 Thinking outside the Box

In many cases, businesses can achieve goals through the practical plan-do-check-act cycle. When a market need is identified, they plan a schedule, do pilot testing, and check the results to see if they should act to go forward or step back. The most difficult aspect of innovation creation seems to be: “How can we create 1 from 0?”

It does not make much sense simply to order the R&D Department in an SME to “develop an innovative home appliance.” A simple way to get ideas on new product development is asking two open questions. In this case, the first question is, “What kind of home appliance do you want in the

future?” Once some ideas are suggested, the second question is “Why do you want it?” When someone comes up with a new idea, it is always linked with his/her past experience or knowledge.

This kind of entry-level training in how to generate initial ideas is offered in some universities [20]. Students become conscious of the need for a new idea when they try to answer the first question and then become aware of its linkage with their own experience or knowledge when the second is asked.

**FIGURE 5**

**OUTLINE OF A WORKSHOP ON IDEA CREATION.**

**Exercise 1 (20 min):** Create a future home appliance (wild ideas are welcome)

**Exercise 2 (15 min):** Explain what inspired your idea

**Example:** A housekeeping teddy bear robot

“I’m too lazy to clean house, so I wanted an appliance to do it for me. That appliance should be cute and stylish so that it can always be on display.”



**Source:** Adapted with permission from [2].

As an example (Figure 5), one student answered the first question with “a housekeeping teddy bear.” When she thought about the second, she realized that she was lazy and therefore wanted a housekeeping robot. In addition, she wanted something that would be decorative as well as practical. Finally, she came up with the idea of combining a robot with her favorite teddy bear. We are still not sure whether that idea could result in a marketable product, but a simple workshop where wild ideas are welcome may develop the attitude that it is not very difficult to create something new from previous experience or knowledge.

## 4.2 Brainstorming

Brainstorming is a group activity in which efforts are made to find an answer for a specific problem by gathering a list of ideas spontaneously contributed by its members. In other words, brainstorming is a situation where a group of people meet to generate new ideas and solutions around a specific issue. People can think freely and suggest as many spontaneous new ideas as possible.

Only markers and paper (small sticky-notes are ideal) are needed. Once we set the boundaries, the discussion starts and we take notes of all the ideas, which are put up on the wall, whiteboard, or other space to share among participants. This simple activity generates new solutions to resolve unique issues. However, brainstorming is not just a free discussion session but requires ground rules to make it more creative (Figure 6).

### 4.2.1 Ground Rules

Three common brainstorming ground rules are listed below:

- **One sticker, one idea:** A sticker needs to explain a single idea as clearly as possible in as few words as possible. Complex sentences or long combinations of words will be confusing when ideas are organized in later steps.
- **As many ideas as possible:** The objective of brainstorming is to gather ideas for a solution. It does not matter if the ideas make complete sense at first. The sheer number of ideas is the priority, and wild ideas are welcome.
- **No evaluation, no judgment:** Ideas are sometimes generated individually, but brainstorming often requires interactions among a group. Everyone is requested to keep an open mind in an atmosphere of acceptance, without evaluating or judging others' ideas.

### 4.2.2 Process

The first step in the brainstorming process is identifying a core issue. The issues should be set by enterprises themselves according to their priority challenges. A core issue can be identified by referring to the four innovation categories of “product,” “process,” “market,” and “organization.” Some initial questions to help identify a core issue are listed in Table 3.

Once the brainstorming starts, wild ideas will be suggested by participants. In this “diffusing” step, we need to be conscious of connecting ideas to each other and to the core issue. This means that ideas are first grouped and then rearranged, possibly multiple times, during the session.

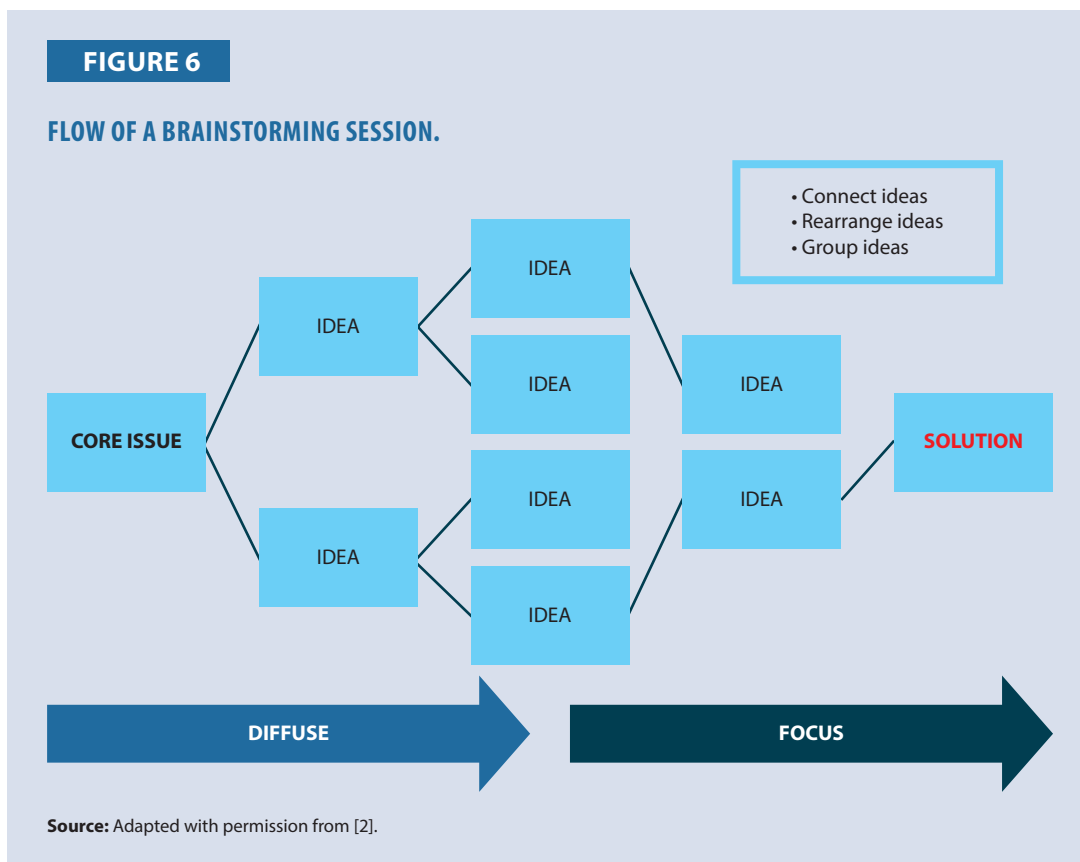




TABLE 3

## EXAMPLES OF QUESTIONS TO IDENTIFY A CORE ISSUE FOR BRAINSTORMING SESSIONS.

Product viewpoint
<ul style="list-style-type: none"> <li>• How can we make our new vehicle more stylish?</li> <li>• Which functions should our new device have?</li> <li>• What type of new menu items would appeal to older customers?</li> </ul>
Process viewpoint
<ul style="list-style-type: none"> <li>• How can we shorten delivery times for online orders?</li> <li>• What is the best way to respond to customers' complaints in stores?</li> <li>• Can we reduce the number of quality defects missed in the quality control section?</li> <li>• What is the optimal evacuation plan for passengers in the train station?</li> </ul>
Market viewpoint
<ul style="list-style-type: none"> <li>• What is a new market segment for our drone?</li> <li>• Who are the potential customers for new fruit imports?</li> <li>• How can the website be redesigned to promote our products?</li> </ul>
Organization viewpoint
<ul style="list-style-type: none"> <li>• How can we improve the retention rate in the Sales Department?</li> <li>• What kind of inducement or welfare benefit motivates staff more?</li> </ul>

After all the ideas are posted on the wall, whiteboard, etc., the brainstorming group shifts its focus to finding solutions. It is useful to consider the following three viewpoints when evaluating ideas.

- **Usefulness:** Will the solution spark joy? The idea should be useful to clients, our families, team members, and individuals. Drop the idea if it does not benefit anyone.
- **Innovation:** An organization is sometimes reluctant to change its existing system. Staff also have negative feelings toward changes that may increase workloads. Enterprises do not want to take risks, especially during business slowdowns, although they also tend to concentrate on current operations during busy periods and forget about preparations for future uncertainty.

People always look for excuses to avoid change. The ideas selected should not be too challenging or too easy but sufficiently workable to motivate employees to tackle the issues identified.

- **Feasibility:** Innovation creation is not a gamble. It is part of steady profit-making efforts that should follow a logical business process. New ideas should be analyzed carefully to ensure that their results are measurable in terms of eventual profitability, even if they appear to have great potential initially.

#### 4.2.3 Facilitation

Brainstorming is not a difficult method for idea generation, but there are obstacles to achieving its goal. If a group fails to identify an appropriate core issue, the discussion results may fall short of expectations. Time may run out without reaching a conclusion. It is therefore recommended that SMEs assign brainstorming facilitators who can guide sessions toward successful outcomes.

Facilitators do not need to make detailed preparations. They need to manage time and keep brainstorming sessions on track. What is most important is soliciting ideas from as many of the group as possible by questioning them. Those with little experience of this type of discussion session may feel self-conscious and remain silent. The facilitators' role is therefore to ask timely questions leading to new viewpoints to redirect discussions when necessary. Examples of useful questions are given in Table 4.

**TABLE 4**  
**EXAMPLES OF USEFUL QUESTIONS WHEN FACILITATING BRAINSTORMING SESSIONS.**

What if we connect "idea A" and "idea B"?
Is it possible to group "A" and "B"?
What will happen if we change the order of "A" and "B"?
Who will benefit the most from this idea? Should other functions be added?
Who are the main target customers for this product? The elderly? Children?
How could this service benefit your husband/wife/family?
What if we made this product bigger/smaller?
What would happen if this product were used in homes instead of factories?
Could this service be offered daily instead of weekly or monthly?

Facilitators should not ask negative questions or allow participants to do so. They should simply support idea diffusion by the brainstorming group members and help them focus by asking appropriate questions.

### 4.3 Osborn's Checklist

Alex Osborn, a creative theorist who worked in advertising and originated the brainstorming technique, developed a checklist of possibilities for changing existing ideas into new ones. Osborn's checklist is a technique for idea creation, often referred to by the letters referring to the six actions "substitute, combine, adapt, magnify, eliminate, and rearrange" (Figure 7) [21].

The target item is placed at the center of the Osborn's checklist chart. The item is enclosed by six questions generated for the item. Table 5 gives examples of



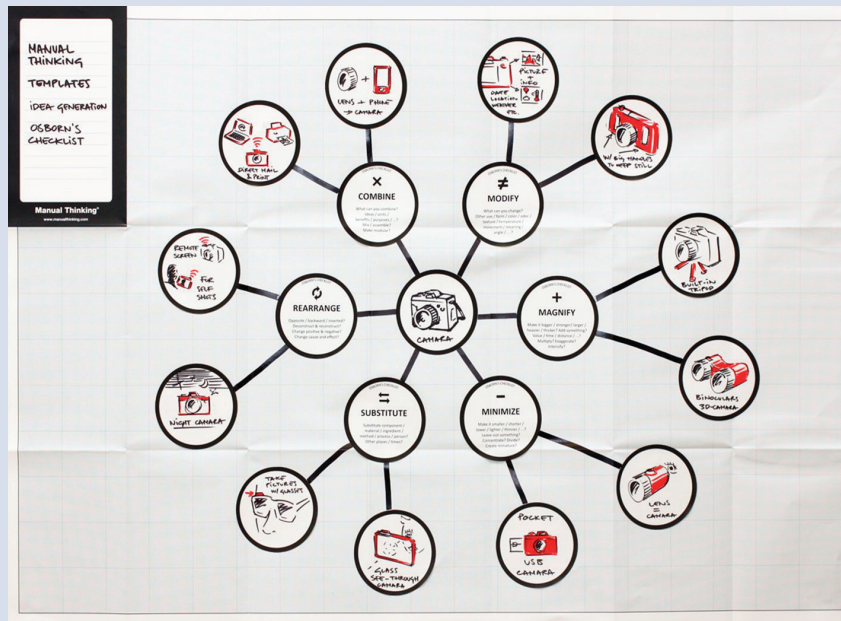
**University students in a brainstorming workshop.**

questions that could be generated. The outer circles in Figure 7 show answers to the questions, which may be innovative solutions adding new value to the original item.



**FIGURE 7**

**OSBORN'S CHECKLIST.**



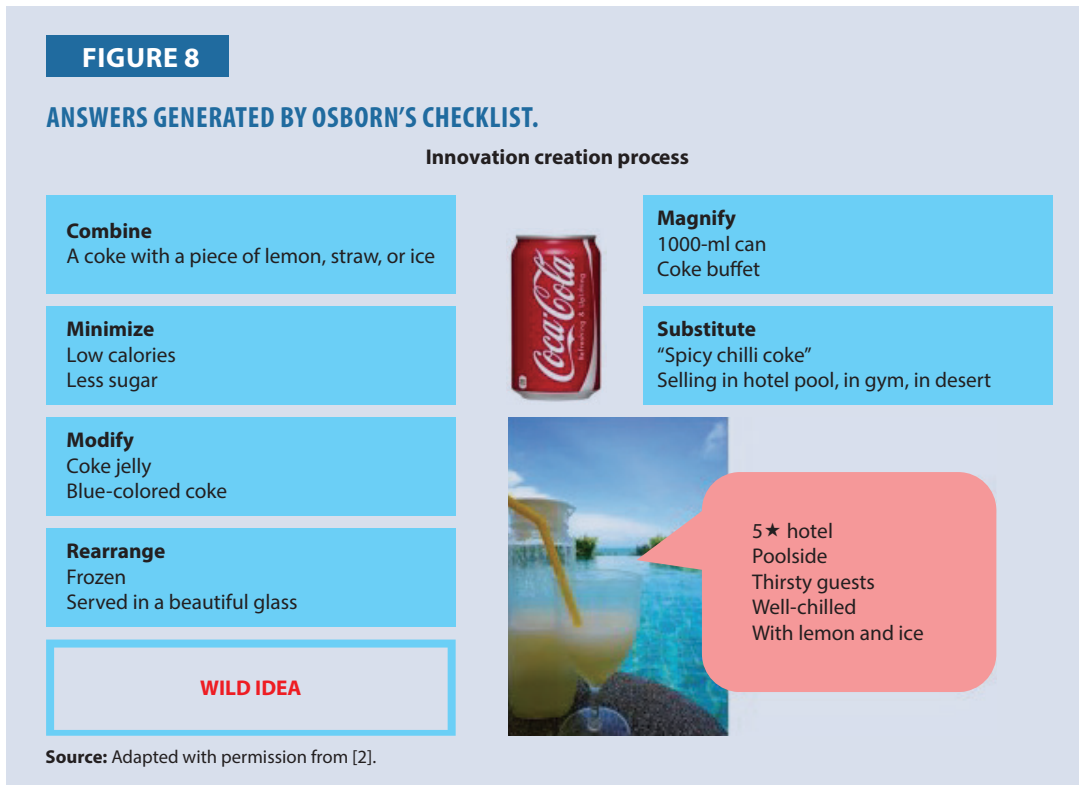
Source: Adapted with permission from [21].

**TABLE 5**

**QUESTIONS TO REACH INNOVATIVE NEW SOLUTIONS USING OSBORN'S CHECKLIST.**

Combine	How about a blend, an alloy, an assortment, an ensemble? Combine units?
Modify	New twist? Change meaning, color, motion, odor, taste, form, shape? Other changes?
Magnify	What should be added? More time? Greater frequency? Stronger? Higher? Larger? Longer? Thicker? Heavier? Extra value? Extra ingredient? Duplicate? Multiply? Exaggerate?
Minimize	What should be subtracted? Smaller? Condensed? Miniature? Lower? Shorter? Narrower? Lighter? Omit? Streamline? Split up? Understate? Less frequent?
Substitute	Who else? What else? Other ingredients? Other material? Other process? Other power? Other place? Other approach? Other tone of voice? Other time?
Rearrange	Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change place? Change schedule? Earlier? Later?

This checklist is useful when we seek practical new ideas to innovate/improve an existing product or service. In addition, it can help employees to think outside the box as a training tool. For example, as a training exercise, employees could be given the mission: “Sell a canned soft drink for 10 dollars.” Since the standard price is around one dollar, they are being requested to increase the value 10 times. After a tutorial on using Osborn’s checklist, the employees start by asking questions in all six categories and then trying to find answers to them. They are also expected to submit proposals on how to sell the soft drink for 10 dollars. Figure 8 shows an example of the six question categories and final proposal.



As a further example, some of the wild ideas in the six question categories generated in previous workshops to achieve the mission “Sell a canned soft drink for 10 dollars” are summarized below.

- **Combine:** Thinking about what could accompany the soft drink may produce answers. A lemon slice, drinking straw, or ice could be served in combination to add convenience for consumers.
- **Minimize:** Many believe that soft drinks contain too much sugar and are not healthy choices. To minimize those negative views, there may be room to develop low-calorie or sugar-free versions.
- **Modify:** A dramatic modification would be “eating” the drink in jelly form. Changing the color could be another option. A blue soft drink might capture consumers’ interest more than the standard dark brown or clear products already available.
- **Rearrange:** Instead of refrigerating the drink, what would happen if it were frozen? Frozen soft drinks, similar to smoothies, might be welcomed by consumers.
- **Magnify:** The company sells the soft drink in 2-liter PET bottles, but the canned version is always in smaller quantities like 350 or 500 ml. There might be an unidentified need for a 1-liter can. Soft drinks are commonly consumed along with popcorn in cinemas, where there might be a demand for a soft drink and snack buffet. A change in the serving size and presentation method might increase the value of the soft drink itself.
- **Substitute:** Canned soft drinks are sold in supermarkets and at fast food restaurants, where the competition is tough. Therefore, it makes sense to think about a situation where

there is no competition. If the company reaches out to people who really feel thirsty, it can ask for higher prices. Selling the soft drink at poolside, in gyms, or in remote areas would be an opportunity to raise its value.

In the next step, participants use the wild ideas to come up with rough plans for how the soft drink could be sold for 10 dollars. For example, it could be offered poolside in a five-star hotel, served with a slice of lemon and ice cubes in an attractive glass.

Osborn's checklist aims at the initial phase of idea creation. Additional business steps are then needed for commercialization. However, checklist-based workshops show opportunities for thinking outside the box and using experience and knowledge to create something new.

## 4.4 Design Thinking

The two examples of brainstorming and Osborn's checklist are practical processes for new idea creation. "Design thinking" is a popular method to produce new commercial value. Design thinking offers a way to deal with changes in a human-centric manner. This section illustrates its concept through an actual product development case study.

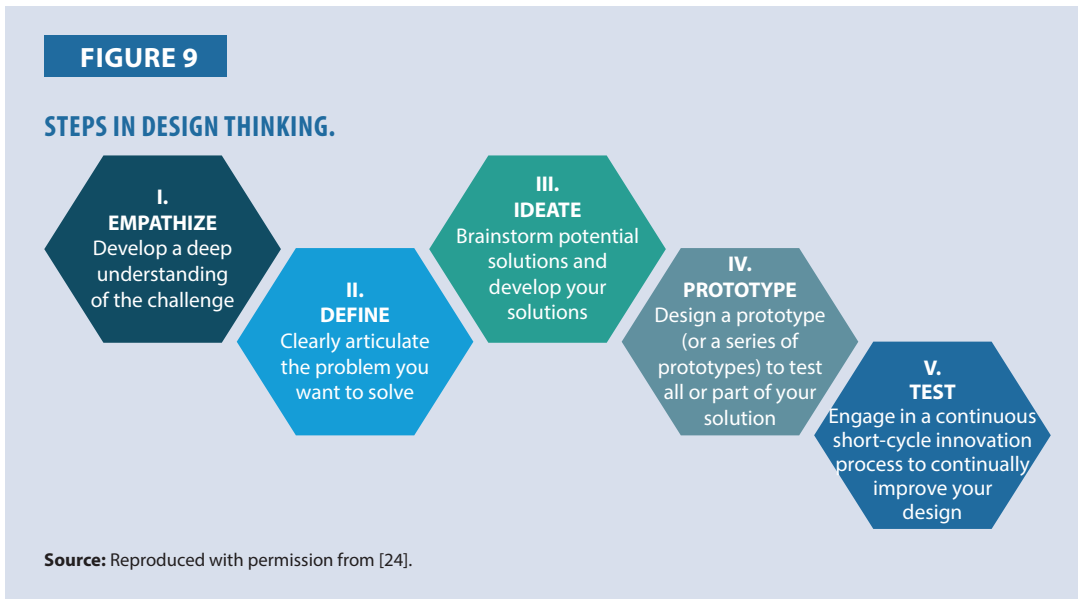
Design thinking is used to tackle unknown problems because it reframes them in human-centric ways and focuses on what is most important for users. Design thinking shows how to think outside the box and dig deeper into problem solving. It points to the right kind of research, the creation of prototypes, and testing of products and services to uncover new ways to meet users' needs. Cognitive scientist and Nobel Prize laureate Herbert A. Simon was the first to promote design thinking in his book *The Sciences of the Artificial* [22]. The concept was originally meant for designers or creative professionals but has become increasingly popular over the last few decades since David Kelly, President & CEO of design firm Ideo, began applying it in the business context [23]. It has since been a key to the success of many high-profile global enterprises.

Outside-the-box thinking is now taught at leading universities around the world and is encouraged at every level of business. It is also applicable to SMEs because it does not involve extra expenditure. All that is needed is an understanding of the design-thinking process and the will to develop something new. Design thinking can generate groundbreaking solutions in disruptive, innovative ways. It is more than a process but opens up new perspectives through a set of hands-on methods utilizing innovative mindsets.

### 4.4.1 Design-thinking Process

The Hasso Plattner Institute of Design at Stanford University, commonly known as the "D.School," describes design thinking as a five-step process [24]. The various steps of design thinking should be understood as different modes that contribute to an entire design project rather than as sequential steps. The ultimate goal throughout is to derive as deep an understanding of the product and its users as possible. Those five steps are illustrated in Figure 9 and summarized below.

- **Step 1. Empathize: research users' needs.** The first stage of the design-thinking process allows us to gain an empathetic understanding of the problem to be solved, typically through user research. Empathy is crucial to a human-centered design process because it allows us to set aside our own assumptions about the world and gain real insight into users and their needs.



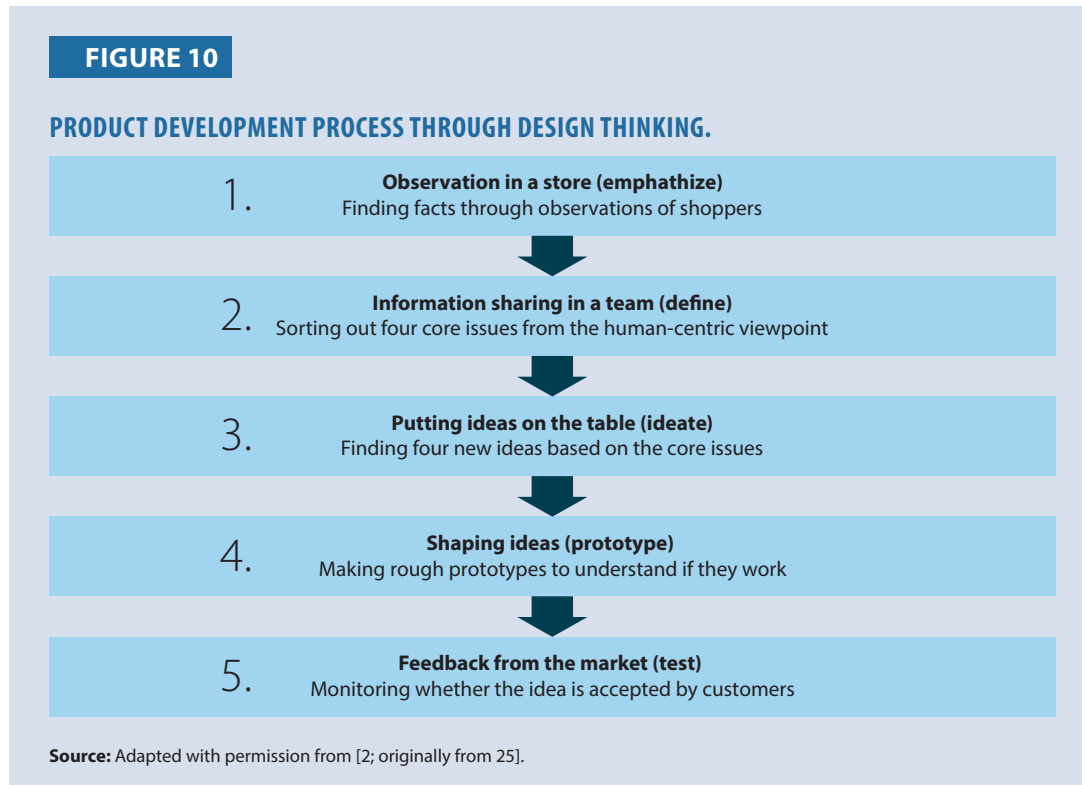
- **Step 2. Define: state users' needs and problems.** In this stage, we accumulate the information created and gathered during the empathize stage. This step analyzes the observations and synthesizes them to define the core problems identified so far. An important point is that we should always seek to define the problem in a human-centric manner.
- **Step 3. Ideate: challenge assumptions and create ideas.** Designers are ready to generate ideas as they reach the third step of design thinking. The solid background of knowledge from the first two phases means we can start to think outside the box, look for alternative ways to view the problem, and identify innovative solutions to the problem statement we have created.
- **Step 4. Prototype: start to create solutions.** This is an experimental phase, and the aim is to identify the best possible solution for each of the problems identified during the first three steps. Teams will produce a number of inexpensive, scaled-down versions of the product (or specific features found within the product) to investigate the problem solutions generated in the previous steps.
- **Step 5. Test: try solutions out.** Designers or evaluators test the complete product using the best solutions identified in the prototype phase. This is the final step of the model but, in an iterative process such as design thinking, the results generated are often used to redefine one or more further problems. Designers can then choose to return to previous stages in the process to make further iterations, alterations, and refinements to rule out alternative solutions.

#### 4.4.2 Practical Example of Design Thinking

For a more practical understanding of the design-thinking process, we can examine a remarkable example in a Japanese company, Plug Inc., engaged in market research, design, and product development. Its development of new packaging for toilet paper rolls clearly illustrates how design thinking works [25].

Toilet paper is an important commodity in daily life, which means it is floating on the “red ocean” of price competition. There is no room for adding extra functions to it, and therefore Plug defined

the core issue as: “Try to find ways to differentiate the design of toilet roll packaging” (Figure 10). Four facts were found during the research step, followed by four possible solutions. Finally, Plug developed a new toilet roll package to meet people’s needs. The overall process is presented schematically in Figure 11 and summarized below.



- **Observation in a store (emphathize):** A team of researchers and designers visited a retail store to observe shoppers buying multipacks of toilet paper. Four main issues/facts were identified (Figure 11).
- **Information sharing (define):** The team members reported their findings after the store observation step. At that point, it was critical for the design thinking to be based on a human-centric approach. The ISO explains that, “Human-centered design is an approach to interactive systems development that aims to make systems usable and useful by focusing on the users, their needs and requirements, and by applying human factors/ergonomics, usability knowledge, and techniques. This approach enhances effectiveness and efficiency; improves human well-being, user satisfaction, accessibility and sustainability; and counteracts possible adverse effects of use on human health, safety and performance” [26].

The four facts that the team found were actually based on the inconvenience to customers and their sense of dissatisfaction. Therefore, it is obvious that they observed the situation in the market with a deep focus on what people wanted and their shopping behavior and preferences.

- **Put ideas on the table (ideate):** This step is a form of brainstorming. Based on the key facts and information sharing in the previous steps, the team members converted the facts into their own perceptions and brought them to the table to find ideas for improvement (Figure 12).

FIGURE 11

**SCHEMATIC REPRESENTATION OF PLUG INC.'S DESIGN-THINKING PROCESS TO IMPROVE TOILET ROLL PACKAGING: FACT-FINDING PHASE.**

【何度も位置を直す】



カートに掛けるとバランスが悪くなる。カートに引っ掛けて運ぶ高齢者を追跡してその様子を観察すると、何度もパッケージの位置を調整する為に立ち止まっていた。

**FACT 1.**

**The toilet roll package falls repeatedly from customers' shopping carts.**

An elderly woman in the store had difficulties because the package would not stay in place on her shopping cart. She had to pause several times to adjust the position because it did not stay balanced while the cart was moving.

【服装に合わない】



着飾った女性が持ち帰る姿に違和感。本人もそれを自覚しているのか、とにかく早く家に帰りたいそうだった。

**FACT 2.**

**The packaging design is not attractive.**

The Plug team observed that the toilet roll packaging did not complement a younger woman shopper's fashion sense. She seemed eager to leave the store with the product as quickly as possible without her purchase being seen.

【バランスが悪い】



自転車のハンドルに引っ掛けており、バランスが悪そう。かごが浅く小さいため、トイレットペーパーをうまくのせられない。

**FACT 3.**

**The toilet roll package is not well balanced.**

A standard bicycle basket was not large enough to hold the pack of toilet rolls, and it did not balance well when hung from the handlebar.

【手がふさがる】



抱えて持つと、それ以上の買い物ができない。トイレットペーパーを買うために、もう一度買い物にくるといった消費者もいた。

**FACT 4.**

**Both hands are needed to carry the multipack.**

The Plug team saw that women shoppers were not able to buy other items because they needed to hold the toilet roll package in both arms. Some customers returned to the checkout line only to buy another pack of toilet rolls.

Source: Adapted with permission from [2]; originally from 25].



Through this process, the team proposed innovative ideas based on their observations. It was important that it did not cost too much to do this. Some paper and markers were all that was necessary. With management commitment, this type of creative activity can be undertaken in almost all SMEs.



**Output from a university students' design thinking "define" session.**

- **Shape ideas (prototype):** Prototypes are produced in this step based on the ideas created. Design-thinking teams should be free to develop trial prototypes even if the ideas for them are rough.

In the Plug project, the team devised four prototypes. The first (Figure 13, upper-left panel) was a flexible toilet roll multipack that could be attached to shopping carts, bicycles, or baby carriages. After peeling off a seal, the shape of the pack could be altered, allowing it to be attached conveniently. The second prototype (upper-right panel) was a package with built-in rings to slide over handlebars, carriage support bars, etc. The third (lower-left panel) added a shopping bag function to the package. When the outer cover is pulled up, the contents are concealed and other small items can be carried inside as well, as in a conventional shopping bag. The final idea (lower right panel) was to attach a three-way convertible strap to the toilet roll multipack. Customers peel the adhesive strap to adjust it to the desired length and then carry the package in one hand, over an arm, or over a shoulder.

The Plug project team refined the four prototypes to develop a final version after additional analysis (Figure 13). The final design targeted the consumer market (Figure 14). Its distinguishing feature is a yellow strap so that it can be carried over a shoulder, as illustrated in Figure 14. The new packaging design is called the "Hands-free toilet roll," is visually appealing as well as functional, and its colorful pattern complements any style.

- **Feedback from the market (test):** No one knows if a final product will be accepted by consumers until it is test-marketed. Once positive feedback is collected, the product will move on to mass sales, although minor changes may be needed to reflect the feedback from users.


#### 4.4.3 Logic behind Design Thinking

##### "Linear to Round"

The traditional design process required selecting one good concept from several ideas, followed by the production of several prototypes. The best solution was finally selected from among the prototypes. Such a straightforward process is called the linear model. While this design model enables steady, rapid development it does not allow returning to the previous step, because that would interrupt the smooth development flow and cost more. However, new findings may be made or the original concept may change during the process. Then the linear model becomes a form of "do-or-die" development. Once we start this process, we are not allowed to look back.


FIGURE 12

GENERATION OF IDEAS TO IMPROVE TOILET ROLL PACKAGING FROM FACTS AND PERCEPTIONS DURING THE PLUG DESIGN-THINKING PROCESS.




**気づき.1**  
自転車の前の籠に入りきらず、落ちないように手で押さえながら持っている。

**IDEA 1**  
自転車やカートに固定できる紐がついたデザインはどうか？




**気づき.2**  
ベビーカーがある時には持ちにくいので、子供が一緒でない時に買うようにしている。

**IDEA 2**  
取っ手がベビーカーにかけやすいデザインはどうか？



**気づき.3**  
着飾った女性がトイレットペーパーを持ち帰る姿に違和感がある。

**IDEA 3**  
トイレットペーパーと分からないビジュアルデザインはどうか？



**気づき.4**  
持ち手のところだけに重さが集中すると持ちにくいので、胸に抱えて持っている

**IDEA 4**  
肩にかけられるデザインはどうか？

Source: Adapted with permission from [2; originally from 25].

**PERCEPTION 1.**  
The multipack is too big to fit into standard bicycle baskets, and people have to hold it while steering their bikes.

**IDEA 1.**  
Design a strap to attach the pack to a cart or bicycle basket.

**PERCEPTION 2.**  
People do not buy toilet rolls when accompanied by kids because it is difficult to handle both a baby carriage and a multipack.

**IDEA 2.**  
Design a hook to attach the multipack to baby carriages.

**PERCEPTION 3.**  
Fashionably dressed women seem embarrassed to be seen carrying multipacks of toilet rolls.

**IDEA 3.**  
Develop a design that does not look like a toilet roll multipack.

**PERCEPTION 4.**  
It is difficult to hold the multipack in one hand so it must be carried in both arms.

**IDEA 4.**  
Create a design for carrying it over a shoulder.



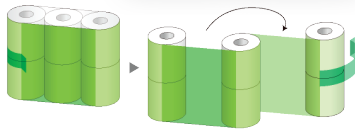
FIGURE 13

FOUR DESIGN-THINKING PROTOTYPES SUGGESTED TO IMPROVE TOILET ROLL PACKAGING.

IDEA:1

自由に固定出来るトイレトペーパー

購入後、シールを剥がし、形状を自由に可変することによって自転車やカートにぶら下げて持ち運ぶことが出来ます。



カート、ベビーカーに



自転車に

IDEA:2

フックがついているトイレトペーパー

持ち手に取り付けられたリング状のフックで、自転車やカート、ベビーカーに固定することが出来ます。



●ベビーカーにも  
●自転車にも  
●ショッピングカートにも



IDEA:3

買い物袋になるトイレトペーパー

購入後、逆さについている持ち手を引き出すことで、財布や同時購入のちょっとした小物をしまふことが出来る形状に、袋状にした際は全ての文字情報が隠れてしまうので、持ち運びも恥ずかしく無くなります。



1



2



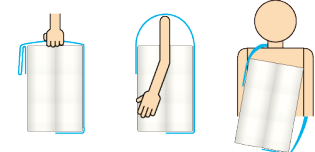
3



IDEA:4

持ち手が3段階に可変するトイレトペーパー

購入時は接着してある持ち手をはがし、自分の持ちやすいように長さを変えることによって両手を自由にすることが出来ます。



Source: Adapted with permission from [2; originally from 25].

FIGURE 14

FINAL VERSION OF THE NEW TOILET ROLL PACKAGING DEVELOPED THROUGH DESIGN THINKING.



Source: Adapted with permission from [2; originally from 25].

On the contrary, design thinking is a “round” model. It allows us to fail at each step and then step back. The development process is not along a straight, unwavering line.

“Observe, Create, and Try”

The basic steps of design thinking are repeating cycles of observation, idea creation, and prototyping, similar to ascending a spiral staircase. Design thinking is a circular activity with repeated trial and error to achieve a final human-centric solution. It depends on sharing information discovered through observation, brainstorming to clarify core issues and suggest solutions for them, devising solution prototypes, observing how the prototypes work, and finding ways to improve and refine the prototypes. Therefore, in Figure 9, the five steps in design thinking are not shown in a straight line, but there is room for trial and error in each step.

# 5. INTERNAL SYSTEM FOR INNOVATION CREATION IN SMEs

We should consider SMEs' limitations when applying innovation, as identified in Section 3. Most of them face shortages of resources such as finance, workforce, equipment, and information. Some are struggling to accumulate cash for upcoming operations; others are nervous about maintaining enough workers for smooth operations or the need to train new hires to assure quality. It is difficult for them to collect the right information at the right time. Based on this typical situation of SMEs, however, the following three tips are useful to integrate innovation creation into their systems.

## Tip 1. Commitment to establishing an innovative culture

Personnel in an organization do not want changes, especially those with longer working experience. However, society is filled with enough uncertainty to remind us often that “No change is the biggest risk.”

As described in the section on Management of Innovation Creation, top management is the first to understand the necessity for change and must demonstrate to employees a full commitment to it. That commitment does not mean that managers are able to do as they like. Top managers are expected to provide an innovation-enabling environment, like providing budget and conducting regular follow-up to see where there are hurdles to achieving innovation and solutions to overcome those hurdles. In addition, management needs to consider hedges to financial risk because innovative activities may fail to show the desired outcomes in the end. A project should be monitored periodically and evaluated by the indicators of expenditure, time consumption, labor force engagement, etc.

However, we should not forget the intangible effects. Even if attempts to innovate do not reach the ultimate goal, the experience gained can be a good lesson in skill development. A Croatian study found that, “Managers have a critical role in creating the culture of innovation. As with all strategic initiatives, innovation also must start at the very top and it needs to be led with the active involvement and support of management at all hierarchical levels.” In this sense, innovation in an organization must take place in an open atmosphere after overcoming bureaucracy at all hierarchies.

Taking work circumstances into consideration, we should be aware that people usually do not want overtime or extra work. Therefore, it is recommended that activities directed at innovation should be carried out during regular working hours, like QC circles [27]. The commitment of middle-grade employees is also important. To gain the maximum number of new ideas from young participants, their supervisors should understand each project fully and assign the appropriate team participants.

## Tip 2. Cross-cutting interaction

Another recommendation is to organize teams of members with different areas of expertise. Solutions tend to be monotonous if everyone on a team has a similar background and experience.

Design thinking aims at value creation from diverse viewpoints. On the other hand, a group that is too diverse may engage in unfocused discussion or take a long time to reach a conclusion. That is where an internal facilitator plays an important role in smoothing design-thinking flows. For example, Plug Inc. organized a team composed of designers and researchers.

It is suggested that the example of reward systems typical in Japanese enterprises is useful in design thinking-based innovation efforts, especially in SMEs. Such systems give permanent employees, part-timers, gatekeepers, and cleaning staff an equal chance to be rewarded for contributing their productive ideas. They also emphasize the importance of different opinions in solving problems and making improvements.

### Tip 3. Opportunities for skill development

Opportunities to generate ideas can be regarded as good opportunities for internal training. The activities involved include fact finding, problem identification, problem analysis, and logical thinking, which are all essential requirements in the workplace. They also involve teamwork and communication skills for successful completion. It is obvious that the overall goal of those activities is the creation of something new, but the development of employees should be viewed as a secondary beneficial outcome.

One interesting industry–education linkage in innovation creation was adopted in South Africa as an exit strategy for employability improvement training. The nation offers six-month internship programs for university students. Some enterprises ask student interns to form teams to identify and analyze issues in the workplace and then improve them. Students are expected to make presentations on their activities at the end of their internship programs. Through this linkage, students are motivated and seriously engaged in their mission. It should be noted that typical internship programs sometimes involve only monotonous tasks that do not have long-term benefits for either the student interns or the enterprises.

Numerous publications give useful information on the practical process of innovation creation. For example, *The Other Side of Innovation: Solving the Execution Challenge* [28] explains how to resolve challenges in terms of team building and conducting disciplined experiments. *Innovation: The Five Disciplines for Creating What Customers Want* [29] focuses on the process of innovation creation and the importance of an innovation team in that process.

# 6. CONCLUSION

All SMEs want to be innovative because they recognize that it is a key element for their growth. There is a widespread misunderstanding that innovation equals reliance upon state-of-the-art technologies or a world-shaking change as achieved by Google, Amazon, Facebook, and Apple. The first section of this report therefore began with the definition of innovation to reassure SMEs that they can innovate more easily than they might expect.

Once we recognize that innovation has a broader meaning, it becomes clear that society is filled with small innovations developed by SMEs. A series of examples in Japanese SMEs shows that the needs for and seeds of innovation are all around us. What is important is a mindset that sees facts with “problem sensitivity.” Section 3 introduces the viewpoint of “gamification” to resolve issues. Adding an element of enjoyment is a simple way to change many situations within the natural limitations of SMEs. Considering their limited resources, incremental rather than disruptive innovation may be preferable.

This report tries to explain how SMEs can undertake creative activities. The fourth section introduced practical processes to innovate. Those processes are not very difficult but need facilitators to achieve the desired outcomes, which in turn gives opportunities for upskilling of the staff involved.

It must be emphasized that SMEs have many opportunities for new value creation without making big investments. The right internal mindset alone can trigger innovation. It is hoped that the topics in this report will trigger innovation creation in workplaces, especially the example of how a Japanese design firm applied the design-thinking concept in actual product development.

The latter part of this report summarized how enterprises, especially SMEs, can facilitate the adoption of innovative processes. Efforts by all levels of employees in addition to the commitment by management are essential.

The examples and frameworks given in this report are just a small drop in the vast innovation ocean. They can easily be rearranged or customized when applied. One suggestion for a smooth start to the innovation creation process is, after gaining internal consensus, do whatever feels right for the specific enterprise in its specific circumstances, following the universal rule that “practice makes perfect.” Devising an action plan with allowances for unexpected events can help ensure that no serious setbacks occur. Those allowances can even turn errors into good experience, following another universal rule that “experience is the best teacher.”

Innovation creation should be a future-oriented activity including positive, fun elements. Encouraging staff to think outside the box and giving positive and negative feedback will drive innovation in your organization. Its continuation can give birth to a new corporate culture.

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# SUSTAINABLE PRODUCTIVITY

THE NEW FRONTIER FOR PRODUCTIVITY

Bangladesh  
Cambodia  
Republic of China  
Fiji  
Hong Kong  
India  
Indonesia  
Islamic Republic of Iran  
Japan  
Republic of Korea  
Lao PDR  
Malaysia  
Mongolia  
Nepal  
Pakistan  
Philippines  
Singapore  
Sri Lanka  
Thailand  
Vietnam

