Productivity Transformation in SMEs

Case Studies from Sri Lanka

The Asian Productivity Organization (APO) is an intergovernmental organization that promotes productivity as a key enabler for socioeconomic development and organizational and enterprise growth. It promotes productivity improvement tools, techniques, and methodologies; supports the national productivity organizations of its members; conducts research on productivity trends; and disseminates productivity information, analyses, and data. The APO was established in 1961 and comprises 21 members.

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PRODUCTIVITY TRANSFORMATION IN SMEs

CASE STUDIES FROM SRI LANKA

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Productivity Transformation in SMEs: Case Studies from Sri Lanka

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FOREWORD

Small and medium-sized enterprises (SMEs) are more than firms; they are the social architecture of livelihoods, learning, and dignity at work. When they raise productivity, communities gain resilience; when they stall, economies feel the strain. In Sri Lanka, SMEs are the bedrock of the economy, accounting for 75% of active enterprises (Ministry of Finance, Economic Stabilization and National Policies, 2022), 45% of employment, and over half of GDP (Ministry of Finance, Planning and Economic Development, 2025). Yet many face binding constraints such as limited finance, slow technology uptake, skills gaps, and regulatory bottlenecks. Rising costs intensify these pressures, narrowing room to scale, innovate, and join global value chains. This publication shows a different trajectory: practical methods that turn constraints into capabilities.

From December 2023 to August 2024, the Asian Productivity Organization (APO) and Sri Lanka's National Productivity Secretariat (NPS), Ministry of Industry and Entrepreneurship Development, implemented a Development of Demonstration Companies project titled Productivity Improvement in Manufacturing SMEs. The project aimed to create role models in applying productivity tools for efficiency, resilience, and competitive enhancement in the manufacturing sector in Sri Lanka. Three firms, JAK Plastics, Kiyota Coffee, and Roo Prabha, were guided by APO resource person Hideyuki Ezaki from Japan in adopting 5S, kaizen, and lean practices to streamline flow, improve quality, and institutionalize continuous improvement. Their journeys confirm a simple truth: with the right tools, mindset, and support, even small enterprises can achieve and sustain outsized gains.

This project also demonstrates the value of partnership. The NPS and the APO's demonstration companies created a safe arena for experimentation, coaching, and dissemination, culminating in an open conference where results, not rhetoric, took the stage. Such platforms matter. They shorten the distance between a promising idea in one firm and a workable standard in many.

I invite readers, particularly SME owners, to apply the lessons immediately: start small and standardize fast, manage by facts, digitize the minimum viable data, build team capability where value is created, extend improvement across suppliers, and benchmark openly to scale what works. For policymakers and national productivity organizations,

these cases demonstrate how low entry barriers, light-touch diagnostics, open templates, mentoring, and rewarding transparent results can amplify impact.

The APO remains committed to inclusive, sustainable productivity and to empowering SMEs as engines of national resilience. May these pages catalyze the next wave of applications, partnerships, and measurable outcomes methodically, equitably, and at pace.

Dr. Indra Pradana Singawinata
Secretary-General
Asian Productivity Organization
Tokyo

INTRODUCTION

In Sri Lanka, small and medium-sized enterprises (SMEs) "play a pivotal role in maintaining the economic fabric … contributing significantly to employment, GDP, and social stability. These businesses, characterized by their limited scale in terms of employees, revenue and assets, are the backbone of the Sri Lankan economy" (Rathnasinghe, 2024). On the other hand, many of them face challenges such as low productivity and quality. Particularly in the manufacturing sector, rapid price increases of goods and services, including fuel, electricity, machinery, and raw materials, hit their businesses hard. Productivity and quality improvement are thus crucial for boosting resilience and helping businesses to thrive.

A Development of Demonstration Companies project titled Productivity Improvement in Manufacturing SMEs was implemented by the APO Secretariat and the National Productivity Secretariat (NPS), Sri Lanka, from December 2023 to August 2024. This project aimed to establish role models for adopting productivity tools and techniques in Sri Lanka's manufacturing sector. Three companies, JAK Plastics (Pvt.) Limited, Kiyota Coffee Company (Pvt.) Limited, and Roo Prabha (Pvt.) Limited, participated in this project and implemented 5S, kaizen, and lean to improve production processes and product quality. Analysis of the challenges and opportunities related to productivity and quality clarified strategies for increasing overall efficiency through the application of productivity tools and techniques. Finally, the learning, results, and know-how that demonstration companies obtained were disseminated among other SMEs in the country and other APO members and used as benchmarks for productivity improvement in the neighboring industrial sectors.

This publication documents the progress of three companies in different industries as they transitioned from limited awareness of productivity concepts to the successful application of productivity tools and techniques, such as 5S and kaizen, for tangible improvements. The first chapter, "Overview of the Project," presents the corporate outline of the participating companies and the process flow of this project. The second chapter, "Project Implementation," details the activities and applied productivity tools and is followed by "Project Results," which outlines the achievements of each participating company. "Key Takeaways" and "Lessons Learned" explain the key points that can be disseminated to other industries.

This publication will also support entry-level consultations for microenterprises; the tools and frameworks that appear in this report can be used to prepare suggestions for companies that lack sufficient resources. The resource person for this project used these tools for management consultations, and they were effective enough to secure the companies' ownership of the productivity improvement initiatives. The application of the tools outlined in this publication may be duplicated in other APO members for productivity improvement.

OVERVIEW OF THE PROJECT

The objective of this project was to establish three demonstration companies on the applications of productivity tools and techniques in the manufacturing sector. The companies were expected to showcase the processes and tangible results of productivity improvement. "Productivity" in this project focused on both the reduction of inputs and the efficient expansion of created value.

This project was divided into three stages: (1) planning, (2) implementation, and (3) evaluation and dissemination (see Table 1). The project team (comprising the author of this publication as the resource person and individuals from the NPS and the APO Secretariat) and the participating companies conducted analyses to identify productivity challenges. This was followed by applying 5S and kaizen methodologies in the workplaces. In addition, several suggestions were made regarding specific managerial issues in each company.

TABLE 1

PROJECT TIMELINE.

Stage	Activity	Date
Stage 1: Planning	Kickoff meeting	22 January 2024
	Internal preparatory meeting	25 January 2024
	Site visit	12–18 February 2024
Stage 2: Implementation	Online meeting	1 March 2024
	Site visit	18–22 March 2024
	Online meeting	26 April 2024
	Site visit	24–29 May 2024
	Online meeting	13–14 June 2024
Stage 3: Evaluation and Dissemination	Site visit	5–8 August 2024
	Dissemination conference	9 August 2024

Source: Author.

The three participating companies faced specific productivity challenges in relation to quality, cost, and delivery, presenting opportunities to apply 5S and kaizen methodologies. An overview of the companies and their productivity challenges is presented below.

JAK Plastics (Pvt.) Limited

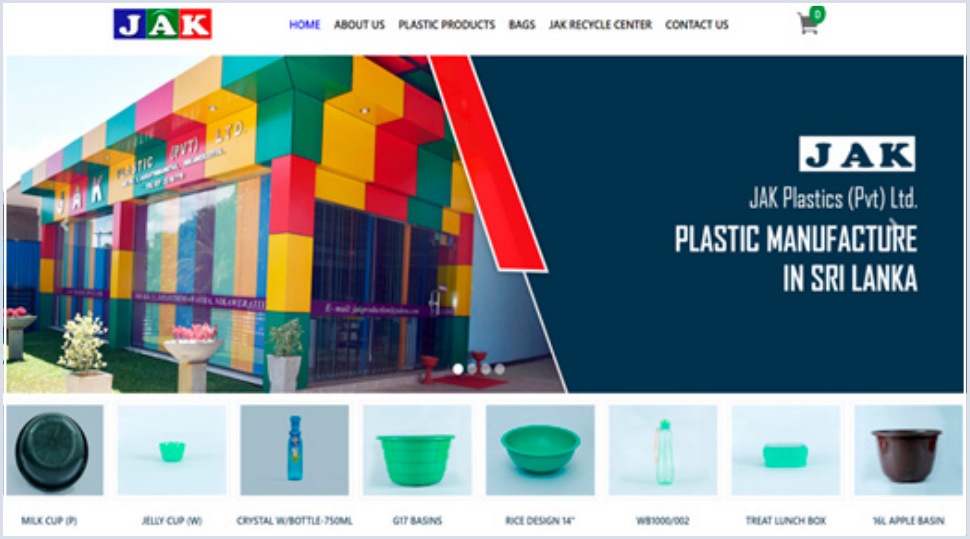
Company Overview

JAK Plastics (Figure 1) is a manufacturer of a wide range of plastic goods for the local market, with over 10 years of industrial experience in manufacturing plastic products for

domestic use (JAK Plastics, n.d.). The factory is in Nikaweratiya, a town in the center of Sri Lanka's North Western Province. The company was founded in 2010 by J. A. Karunathilaka and is equipped with over 10 injection molding machines and various other types of processing machine. JAK RECYCLE CENTER manufactures raw materials for the JAK factory. All unused and waste plastic is collected by the recycle center and recycled into pellet material.

FIGURE 1

JAK PLASTICS' HEADQUARTERS AND ITS PRODUCTS.



Source: JAK Plastics (n.d.).

Productivity Challenges

Although JAK Plastics has the advantages of a wide product range, a large-scale operation with over 120 employees, and an island-wide customer network, it had been facing several productivity challenges, such as a high percentage of defective products in the production process, insufficient shop floor space, an untidy work environment affecting quality, and a lack of modern technology for plastic recycling. The defect rate in March 2024 was 3.88% of recycled material and 2.04% of virgin material. JAK Plastics was interested in this project to address these challenges.

The high defect rate was one of JAK's most serious issues. With the information that recycled plastic pellets had a higher defect rate than virgin materials, the project team conducted observations in all areas of the center to identify possible causes, such as dust or moisture contaminating the recycled material to lower its quality. The formula for the composition of recycled plastics and virgin materials was another potential issue.

The quality control system was another challenge. JAK checked the production record using paper reports submitted daily by production sections. Only an experienced manager familiar with the processing conditions was able to understand the causes and effects of defects and the machine condition.

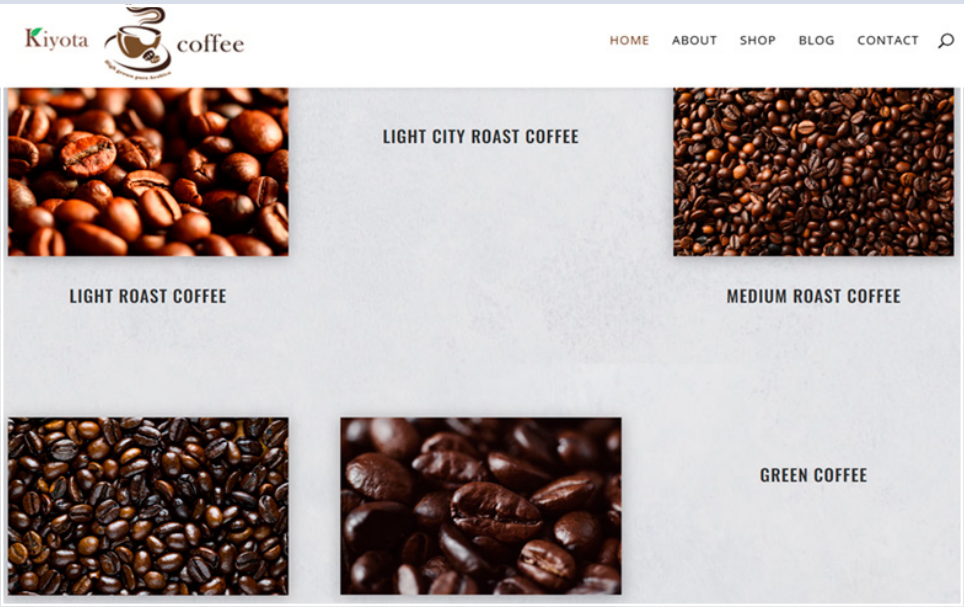
Kiyota Coffee Company (Pvt.) Limited

Company Overview

Kiyota Coffee Company (Pvt.) Ltd. (Figure 2) was founded in 2014 as a sole proprietorship business as Kofoga Products (personal communications, 22 January 2024). Its main business is the export of processed, roasted coffee beans. This specialty coffee is processed under the supervision and technical intervention of a Japanese buyer who contracted with the company. There are 30 staff members. The coffee bean processing factory is well equipped with machinery in Kiyota's own factory building. The product lineup is roasted coffee beans, roasted coffee powder, and drip packs, whose roasting level can be flexibly arranged upon customers' request.

FIGURE 2

KIYOTA COFFEE COMPANY'S MAIN PRODUCTS.



Source: Kiyota Coffee Company (n.d.).

Productivity Challenges

Kiyota procures coffee beans from farmers in both neighboring and distant areas. It faced issues related to raw coffee beans, such as farmers' unawareness of proper coffee cherry harvesting and farmers using conventional methods for processing, which resulted in downgrading the quality of coffee beans. In addition, coffee is a seasonal crop, so sourcing raw materials throughout the year is a challenge. This project was expected to give solutions to the abovementioned quality issues, with the involvement of farmers as material suppliers.

The physical situation of the company was identified as another issue. A very narrow path connected the factory and the main road, which caused delays in deliveries. The factory building was divided into small spaces, which blocked the smooth transportation of materials and products. The company was setting up a new factory next to the existing one, so designing an efficient layout was another issue.

Regarding marketing, most of the coffee beans were sold to wholesalers and retailers under original equipment manufacturing (OEM) agreements, though some were consumed at Kiyota's own restaurant. The team considered the importance of developing and releasing their original products under the Kiyota brand.

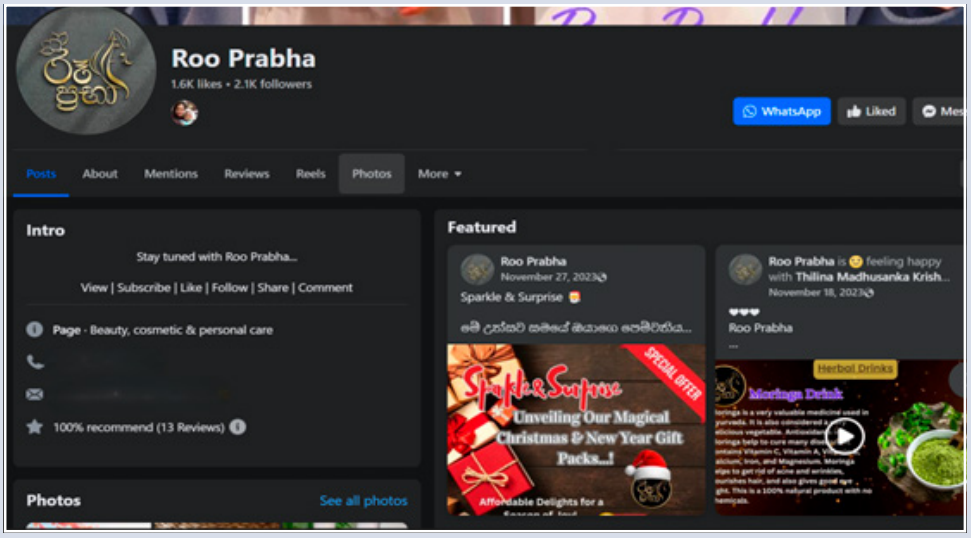
Roo Prabha (Pvt.) Limited

Company Overview

The director, Krishani Prabhashwaree Senarath, established Roo Prabha (Figure 3) in 2021. The company is a manufacturer of Ayurvedic beauty products. It specializes in creating authentic and high-quality formulations that nourish and rejuvenate the skin, hair, and body. Guided by the principles of Ayurveda, this company takes a holistic approach to beauty, promoting inner harmony and outer radiance. Its products are now being exported to 16 countries.

FIGURE 3

ROO PRABHA'S FACEBOOK PAGE.



Source: Roo Prabha (n.d.).

Productivity Challenges

Roo Prabha is a microenterprise with a director, a secretary, two employees, and five part-time members of staff. Its production site is a house-type site consisting of three zones: reception, production, and kitchen. The quality of the products is determined by the formulation of Ayurvedic ingredients and other ingredients, whose recipe is the secret of the director. This enables 100% handmade and organic products, but blocks mass production. All the production steps except the preprocessing of herbal ingredients were under the charge of the director herself. In such a small-scale business, the director was looking for opportunities for better production efficiency as well as market expansion.

Roo Prabha's main issue was how it accessed markets. It already had international customers, but the volume was small. The company expected to find a solution to the problem of attracting both new customers and repeat customers. Market expansion requires more production capacity. Therefore, the director needed to improve her own efficiency to improve the production volume.

PROJECT IMPLEMENTATION

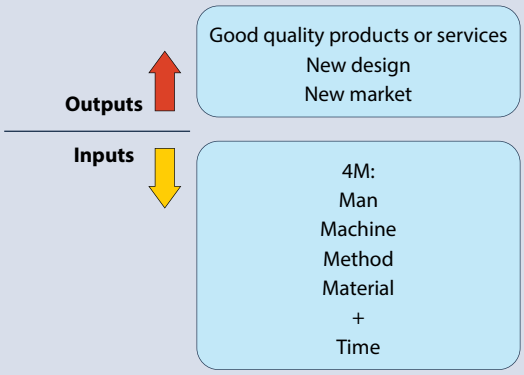
Implementation Methodologies

This project aimed to generate achievements by applying productivity tools and concepts. However, a corporate culture, especially one with a long history, tries to block innovation. For this reason, the resource person shared productivity concepts at the beginning of the first stage. A project will not come to a successful end if members are not fully committed.

At the very beginning of this project, the basic concept of productivity and the meaning of "productivity improvement" was explained online to all the stakeholders. Productivity is defined with a simple formula, "outputs divided by inputs." Outputs are the created value, such as the goods, products, or services of a company, including promotional activities and bringing new products into new markets. The inputs are categorized into four main elements: man (human resources), machine (machinery, software, or other physical resources), method (know-how, processes, or management), and material (raw material or other consumable items). Time also affects the efficient use of those inputs. Therefore, "productivity improvement" means increasing outputs or decreasing inputs (Figure 4). This project focused on outputs by diagnosing market, customer, and design issues.

FIGURE 4

DEFINITION OF PRODUCTIVITY IMPROVEMENT.



Source: Author.

To explore opportunities for productivity improvement, a proper understanding of the baseline of productivity elements was required. Therefore, the resource person observed the companies with the following points in mind to identify their existing productivity levels (see Table 2).

Regarding output, the resource person observed the products themselves as well as their packaging and materials and inventory levels: if too much inventory of raw materials,

works in process, or finished products is observed, this indicates an imbalance between production and sales. Checking the promotional aspects, such as the website, exhibiting spaces, brochures, or in-shop decorations, is also important to see if they are attracting customers. The communication system can be regarded as a facilitating factor of maximizing outputs, so the use of email, social media, or other digital communication tools was included in the points to check.

TABLE 2

OBSERVATION POINTS.

• Is the company producing good products? • Is it promoting them in the right way? • Is there too much inventory? • How is the communication with customers? • Is the company being proactive in developing new products or new designs?	Outputs
• Is there waste in the workplace? • Are the production processes efficient? • Is the company using the right machine, with the right tools, with the right skills? • How is the visual management in the workplace?	Inputs

Source: Author.

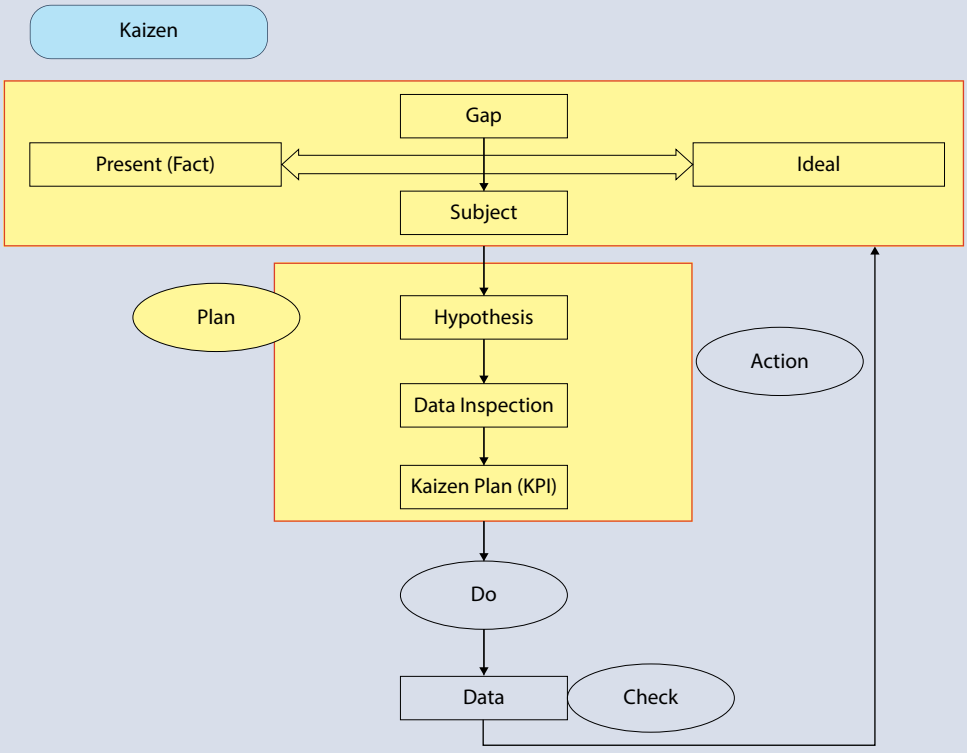
Identifying waste in a workplace is the entry point of checking input elements. The seven wastes (motion, overprocessing, overproduction, inventory, transportation, waiting, and rework/defects) should be checked. Some of these issues can be improved by applying 5S methodology. However, it is critical to apply root cause analysis to core issues. Therefore, the production process or the management system as well as the situation on the surface must be observed to identify the origins of such inefficiencies. Another important point at this stage is to focus on the good points of the company. The observation is not intended to point out what the company is lacking, but to find opportunities for improvements. Especially since COVID-19, costs have been increasing, which has urged companies to be more cost-sensitive than before. Cost reduction by eliminating waste was regarded as the highest priority area.

The information obtained from the observations should be used in the PDCA (plan, do, check, act) cycle. All the activities in the three stages followed this cycle. The resource person tried to design an ideal workplace based on the obtained information and the gaps identified using an As-Is and To-Be matrix. These gaps would be the subjects of productivity improvement for each participating company. In the planning phase, the companies and the resource person discussed possible solutions, which were used as hypotheses within the "Plan" phase of the cycle (see Figure 5). The data measuring achievements and key

performance indicators (KPIs) were also included in the dialogue. Past successful examples can be copied, but a tailor-made approach is critical because of the differences in size and sector. A company's financial status will also affect the kinds of solutions that can be implemented, so both low-cost, simple solutions and large, innovative solutions like installing a new machine or IoT systems should be provided. In this project, the resource person tried to propose as many solutions as possible so that the companies could select and prioritize based on their needs, resources, and capabilities.

FIGURE 5

KAIZEN FLOW.

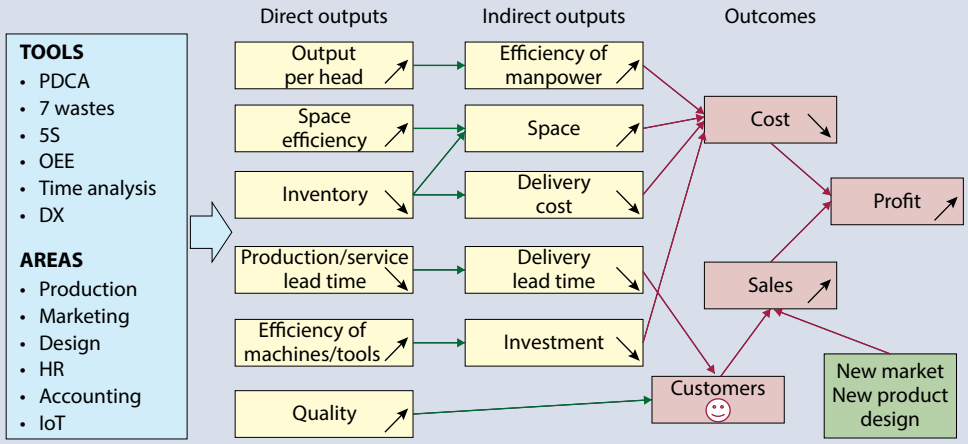


Note: KPI, key performance indicator.
Source: Author.

The productivity logic used in this project is illustrated in Figure 6, which clearly shows the outcomes and their correlations with productivity tools. The blue area shows the productivity tools to be applied in workplaces and the applicable business areas of those tools. The application of tools results in direct outputs: output per head, space efficiency, reduced inventory, reduced lead time, efficient use of machines, and quality improvement. The achievement of such direct outputs causes the indirect outputs: more efficient manpower, more space, reduced delivery cost and delivery time, and less investment. Such achievements will bring about the outcomes, which are financial indicators, shown in the red area. The outputs contribute to cost reduction, but some outputs link to an increase in the number of sales along with customer satisfaction. As mentioned previously, direct and indirect outputs are the elements of productivity. Therefore, Figure 6 illustrates the importance of productivity improvement as well as the elements of productivity.

FIGURE 6

PRODUCTIVITY LOGIC.



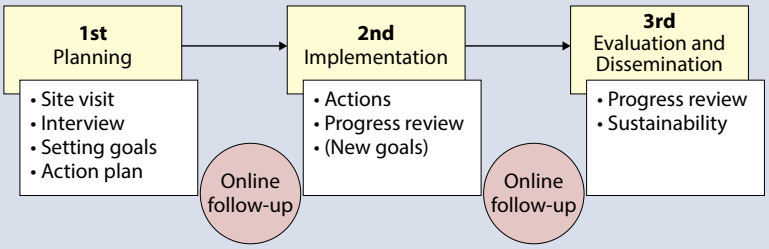
Note: PDCA, "plan, do, check, act"; OEE, overall equipment effectiveness; DX, digital transformation; HR, human resources; IoT, the Internet of Things.
Source: Author.

Steps for Project Implementation

As mentioned previously, this project comprised three stages, which are shown in Figure 7 and detailed in the sections below. Each stage was a combination of a site visit and an online meeting. The basic activities of each stage followed the PDCA cycle. This cycle enabled logical implementation by sharing the As-Is and To-Be status of the project in each stage.

FIGURE 7

IMPLEMENTATION STEPS.



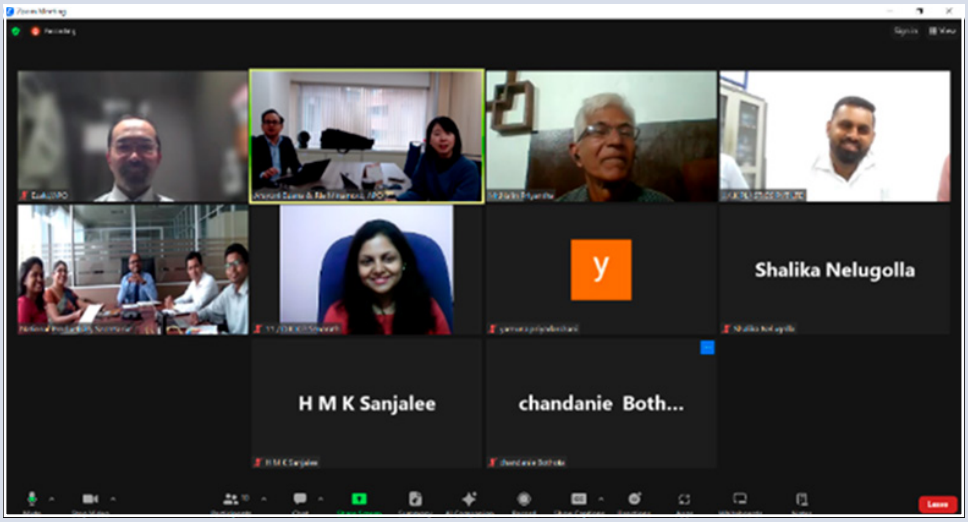
Source: Author.

Stage 1: Planning

The initial stage was regarded as crucial because the three participating companies were from diverse sectors (plastic products, food, and Ayurvedic products), which might face different types of challenges. This situation required the project team to form an accurate understanding of the participating companies' situations and expectations to enable customized support. The kickoff meeting (Figure 8) was held to share basic information as shown in Table 3. The resource person also asked the companies to prepare further company-specific information to be checked at the first site visit. The meeting revealed the corporate mission and vision, organizational structure, and other specific information, as well as some data and documents to be checked at the site visit.

FIGURE 8

PROJECT KICKOFF MEETING ON 22 JANUARY 2024.



Source: Screenshot taken by the Asian Productivity Organization.

TABLE 3

INFORMATION REQUIRED FOR PLANNING.

General Information	Company-specific Information
• Corporate vision and mission	• Table of profit per product
• Company organization	• Floor plan
• Number of employees	• Customer list
• Capital relationship	• Sales records for the last 2–3 years
• Product lineup	• Best suppliers and challenging suppliers
• Production process	• Details of training program
• Challenges to be tackled in the project	• Quality record
• Experience of productivity actions	• Financial data
	• List of machines and equipment

Source: Author.

The size of the companies ranged from over 100 employees to family size. Therefore, the resource person's five philosophies were shared at the kickoff meeting to explain how the project would guide them:

1. **Identified issues and unidentified issues**
   Some challenges were already identified. On the other hand, some of the challenges shared were technical issues rather than productivity ones. In addition, the resource person identified some new, previously unidentified challenges during the first site visit. This project would try to provide solutions to both issues.

2. **Resource constraints**
   This project needed to take into consideration the fact that most small-sized companies face resource constraints. For instance, solutions like installing state-of-the-art machines or hiring new staff were considered during the project but were not the first choice. This project included a microenterprise; therefore, small and easy solutions were mainly proposed.

3. **Priority**
   Companies cannot implement several solutions at the same time. The priority of the solutions was discussed during the project. The priority of a solution would be set by its managerial impact, its cost-effectiveness, and the company's technical capacity to implement it. The findings and proposals would include as many big solutions and small solutions as possible, from which the participating companies could select and implement the most appropriate solutions in the most effective way for their situation. The target of this productivity project was to prioritize self-effort. Automation and machining should cover areas where such efforts could not reach.

4. **Consultation and coaching**
   The resource person would behave as a consultant who led the project. However, he also needed to behave as a coach or a motivator to drive improvement. Especially during the site visits, the resource person tried to listen to the voices of both management and staff and extract their own answers through the conversations. He also needed to apply coaching concepts and made efforts to consider the good points of the companies for opportunities for further growth.

5. **Commitment of the top management and middle management**
   One of the key success factors of such productivity projects is the commitment of top management and the motivation of middle management. Changing the existing working conditions sometimes becomes demotivating to some workers. Therefore, we needed to explain clearly the "what" and the "why" in the initial phase of the project. The project would not last forever, so the solutions and advice needed to be installed as a part of their regular operations in the most effective and sustainable way. The productivity logic, its area of application, and the expected outcomes also had to be understood by the top management.

Productivity tools and concepts for tackling various productivity challenges were also prepared in advance (Table 4). These were ready to be flexibly selected and applied after the first site visit.

TABLE 4

PRODUCTIVITY TOOLS AND CONCEPTS.

Tool/Concept	Explanation
PDCA application	Apply the PDCA flow in productivity actions to manage business activities. This project itself followed this cycle, and the cycle was also applied to each proposed solution.

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Tool/Concept	Explanation
Seven wastes elimination	Remove waste in motion, time, overproduction, transportation, inventory, rework, and overprocessing to make the workplace leaner. Generally, waste elimination in a workplace comes first in productivity projects.
5S application	Improve the cleanliness of the workplace and its maintenance by sharing the same philosophy among workers. Remove unnecessary items and maintain organization in the workplace.
Overall equipment effectiveness measurement	Ensure efficient machine operation to improve capital productivity. This analyzes operation time and reasons for machine stoppage.
Time analysis	Improve labor productivity in labor-intensive workplaces by shortening production lead time. Measure the time consumption of each process to identify bottlenecks.
Layout improvement	Ensure space efficiency in material, product, and labor transportation. Analyze the location of machines to minimize transportation.
Visualization	Share information among staff to standardize processes and provide a real-time understanding of what is going on in the production area. Display information on the wall or place monitors to show real-time information.

Note: PDCA, "plan, do, check, act."
Source: Author.

Based on the information given, the resource person designed a visiting plan outlining what should be observed in the production sites (Table 5).

TABLE 5

POINTS TO CHECK DURING THE SITE VISIT.

In the Factory	For Marketing
5S/kaizen implementation	Promotional activities
Who leads the activities and areas of the activity	Product lineup
Space limitations	Competitor analysis
Production flow	Market analysis
Visualization for information sharing	Communications on the website or through social media
Volume of inventory	Information on the website
Defect rate of ingredients/products	Communication with customers
Quality guidelines	
Workers' motions	
Multitasking of workers	
Supervision by managers	

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In the Factory	For Marketing
Bottleneck points in production processes	
Machine stoppage	
Cleanliness of workplace	
Training program	
Stakeholder analysis	

Source: Author.

The observation during the first visit aimed to cover as many sites as possible. In JAK Plastics, the injection factory (Figure 9), the recycling center, a retail store operated by JAK, and a machining maintenance workshop were visited. In Kiyota Coffee, the team visited a farmer located in a neighboring area to see how they harvested and delivered coffee beans to Kiyota. Based on the checklist, the team members took videos and photos, checked documents, and conducted interviews.

FIGURE 9

SITE VISIT TO JAK PLASTICS.

Source: Photo taken by the National Productivity Secretariat.

Two days were booked for each company. Day one was used for interviewing and a site visit. The resource person made a "Findings and Suggestions" resource (Figure 10) in the evening of day one and shared it on day two. This resource aimed to share the results of the diagnosis so that the companies could select priority issues. This kind of productivity improvement project tends to focus only on challenges or negative aspects, but this project also identified good points of the companies. The suggestions were rooted in the logic of how a company can benefit from improving their workplace.

FIGURE 10

"FINDINGS AND SUGGESTIONS" SHARED WITH A PARTICIPATING COMPANY.

Findings & Suggestions 2

1st visit, as of 15-February, 2024
Hideyuki EZAKI / APO Resource Person

*Updated area is shown with red letters

1

Good points

- Passion for innovation (Try and error)
- Neat and visualized workspace
- ISO22000 under approval
- New factory for capacity increase
- Growing demand of coffee

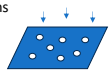
2

Suggestion 1 (Selecting process)

Now) 30kg output by 8 staffs per hour to check both color and size of roasted beans

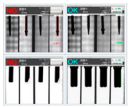
- Suggestion 1

Develop a jig - Make a hole of approved bean size. Size-defected beans fall down.
Staff A: Use a jig to separate by size and pick up rejected beans
Staff B-D: Check colors of OK size beans
Staff E: Check size and color of size-defected beans
Staff F: Delivery and transportation among the table
Staff G-H: Can support another tasks in new factory



- Suggestion 2

Install a machine-vision for AI inspection of size and color of beans
Secure traceability of quality history per farmer, climate, etc.



3

Suggestion 2 (Line balancing)

Now)

- Suggestion

Following above capacity, roasting process may be a bottleneck, which may produce more in-process inventory, and may cause less OEE rate.

⇒Set an even process capacity to flow the production smoothly

⇒Multitasking by workers for flexible line balancing

⇒Measure standard capacity of each process of new machine in the new factory.

4

Suggestion 3 (Raw material quality)

Now) Farmers supply young beans under inadequate pick-up, which causes low quality of size, flavor and color.

- Suggestion 1

Contracting an exclusive supply with excellent farms identified in the awareness program; "We will buy all your beans with ○Rps, as long as 90% of beans are approved"

This may enable training to selected farmers and motivate farmers to sustain quality

・Suggestion 2

Continuous training under the coffee association, because a single coffee manufacturer can not afford quality training.

5

Suggestion 4 (Upcycling)

Now) 30% of rejected beans are under development as energy drink, or soap.

Suggestion: develop new products under KIYOTA brand
Cascara tea, cascara syrup was developed in other countries.
Collaboration with neighboring industries (Tourism, Ayurveda, etc.)

Cascara Syrup: 1800 Rps/300ml
Recipe/Cost/Profit are disclosed by
a Japanese company

6

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Suggestion 5 (Bottom-up improvement)

- Suggestion 1

Set a "QC (=quality Control) circle with a few staffs.

This group activity is for discussing opportunity of improvement based on workers' experience of inconvenience, un-safety, and in-efficiency.
Circle members are assigned as a part of their job, and hold a meeting within 30 min. in every 2 weeks.

・Suggestion 2

It is difficult to start this activity, then Ezaki can facilitate a kick-off at the next visit with selected staffs to extract above experiences to seek for opportunities of improvement.

1st step: Have you ever had any inconvenience, unsafety or in-efficiency in your work?

2nd step: Let's think how we can remove them

3rd step: Goal setting and action plan

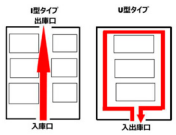
4th step: Implementation (Try and error)

5th step: Review by management

7

Suggestion 6 (Basic concept of layout planning)

- Suggestion 1
- Either I shape, U shape or J shape should be considered with the production flow to minimize the travel distance of materials and staffs.



・Suggestion 2

- Place machines as compactly as possible to reduce travel distance and to secure space for future expansion.

- Suggestion 3

Attend a NPS course for Shop Floor Management

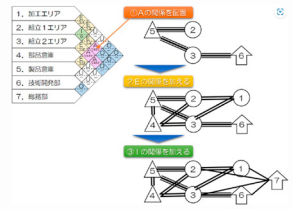
8

Suggestion 6+ (Basic concept of layout planning)

Finding: New factory setup is an opportunity for better efficiency

- Suggestion

Do P-Q analysis, process-relationship analysis, and areal analysis for setting layout may be included during the until visit.



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Source: Author.

Stage 2: Implementation

The main goal of this stage was to support the implementation of the companies' priorities selected in the previous stage. Based on internal considerations of the proposals, the companies had started some productivity actions. However, some issues required support from the resource person. The project team checked the progress and gave guidance on their activities.

As shown in the "Achievements since February" row in Table 6, the three companies had applied the 5S concept. They had started to neatly place materials and tools on shelves, not directly on the floor. The location of tools and materials was also considered in order to minimize transportation. Some of the workflows were visualized in the workplaces (Figure 11). With regard to marketing, the project team had a discussion on what types of products met market demand and how they would be designed.

TABLE 6

AS-IS AND TO-BE MATRIX OF PARTICIPATING COMPANIES IN STAGE 2.

	JAK Plastics	KIYOTA Coffee	Roo Prabha
Achievements since February	1. (Center) Materials are placed closer to the machine 2. (Center) Conveyer at washing section is improved to reduce wastes 3. (Factory) Digital prod. Data is taken 4. (Factory) Warehouse is neatly organized 5. (Factory) Zone control is done on the floor	1. An original bean sorting tool is developed 2. A new product of the own brand is under developed 3. Betterment of HR management by setting talk session with staffs and new welfare	1. Production process was changed to shorten lead-time 2. Visualize the new process on the wall 3. QR code is put on the product to explain customer voices 4. Free sampling and discounting system begins 5. Digital customer database is available 6. Remove plastic film from products
For/in the next site-visit	1. Quality data is analyzed by Ezaki 2. Set a meeting with Japanese companies on purchasing waste materials and new technologies of quality inspection (especially crushing machine, machine or washing machine) 3. Organize inks and molds on shelves 4. Set KPIs and measure tangible outcomes	1. Participating a program to support young coffee farmers to secure quality of beans 2. New factory will be in operation in near future 3. Promote as new entrant at a NPS exhibition event 4. Set KPIs and measure tangible outcomes	1. Customer database is analyzed by Ezaki 2. Set KPIs and measure tangible outcomes 3. Present own products at a NPS exhibition event 4. Identify how to measure outcomes with more tangible methods 5. Discuss new products and new market

Note: This is an unedited recreation of the matrix used in stage 2 of the project.
HR, human resources; KPIs, key performance indicators; NPS, National Productivity Secretariat.
Source: Author.

FIGURE 11

VISUALIZED PROCEDURE ON THE WALL IN ROO PRABHA.

Source: Photo taken by the author.

The companies prepared digital data regarding the production record and customer information. The resource person started a careful analysis of the data to find a way to use it effectively for their businesses. This analysis lasted until the next stage.

Based on the findings and the data collected by the end of this stage, KPIs were proposed to measure the companies' achievements (Table 7). The KPIs tied in with the suggestions given by the resource person in the "Findings and Suggestions" resource (Figure 10).

TABLE 7

PROPOSED KEY PERFORMANCE INDICATORS.

Sales and Promotional Key Performance Indicators	Production Key Performance Indicators
Compare the results from April 2023 with those from April 2024: • Number of inquiries • Number of repeat orders • Number of new purchases • Number of customer reviews • Number of sales	**Compare before and after the project:** • Time to fetch molds • Space created by sorting molds • Time to fetch inks • Space created by sorting inks • Production volume per time • Machine operating time % per day • Loading time per truck • Storekeepers walking distance per loading • Quality defect rate of recycled products per machine • Quality defect rate of recycled products per time • Volume of material input per time • Volume of output at cleaning process • Number of laborers at the selecting process • A new opportunity for dialogue with workers

Source: Author.

One of the unique findings of this project was that some of the core issues went beyond productivity. Those issues seemed rather technical, which meant technical analysis would be more effective than productivity tools. The resource person conducted desk research regarding the technical issues and listed Japanese companies who were specialized in the area.

The resource person contacted a few Japanese companies and asked if this project would interest them. The companies were plastic manufacturers, food machine wholesalers, and trading companies of Ayurvedic products. Among them, a company with plastic recycling technology agreed to share their advanced technology to explore further business opportunities. An online meeting was held with one of the participating companies to discuss how the Japanese company could provide technical support (Figure 12). For another participating company, the resource person made a contact list of Japanese trading companies as potential clients.

FIGURE 12

ONLINE MEETING WITH A JAPANESE COMPANY AT JAK PLASTICS.

Source: Photo taken by the National Productivity Secretariat.

The findings, progression, and pending issues were organized in a matrix, shown in Table 8, at the conclusion of this stage. This matrix was shared with the participating companies with a presentation template for the final dissemination conference.

TABLE 8

AS-IS AND TO-DO AT THE END OF THE IMPLEMENTATION STAGE.

As-is	To-do
• Progresses in storekeeping, motion reduction in recycling center, etc. • Just started managing quality history (Daily base check to monthly analysis) • Started quality improvement • Progresses in sorting process, labelling of stocked products aligned with ISO22000, and installing color-sorting machine • Installed metal detecting machine faces slow index problem • Achieved various sales-related KPIs • Expectation of business expansion • Talk with an investor • Exhibition of MoI in June • Identify area of improvement and the next tasks of each member	• Summarize some tangible/intangible output in presentation material • Discussion on 1) Pellet purchase, 2) Quality analysis, 3) JV in plastic business • Brush up the analysis of quality history • Summarize some tangible/intangible output in presentation material • Ezaki will search metal detecting solutions in Japan • Summarize some tangible/intangible output in presentation material • Ezaki will share an analysis of customer data • Ezaki will share a contact info of Japanese companies • Prepare a template of final presentation • Set the next online follow up in June • Scheduling of the exhibition event and the dissemination conference • Final outputs of the project

Note: This is an unedited recreation of the matrix used at the end of the implementation stage.
ISO, International Organization for Standardization; KPIs, key performance indicators; MoI, Ministry of Industry; JV, joint venture.
Source: Author.

Stage 3: Evaluation and Dissemination

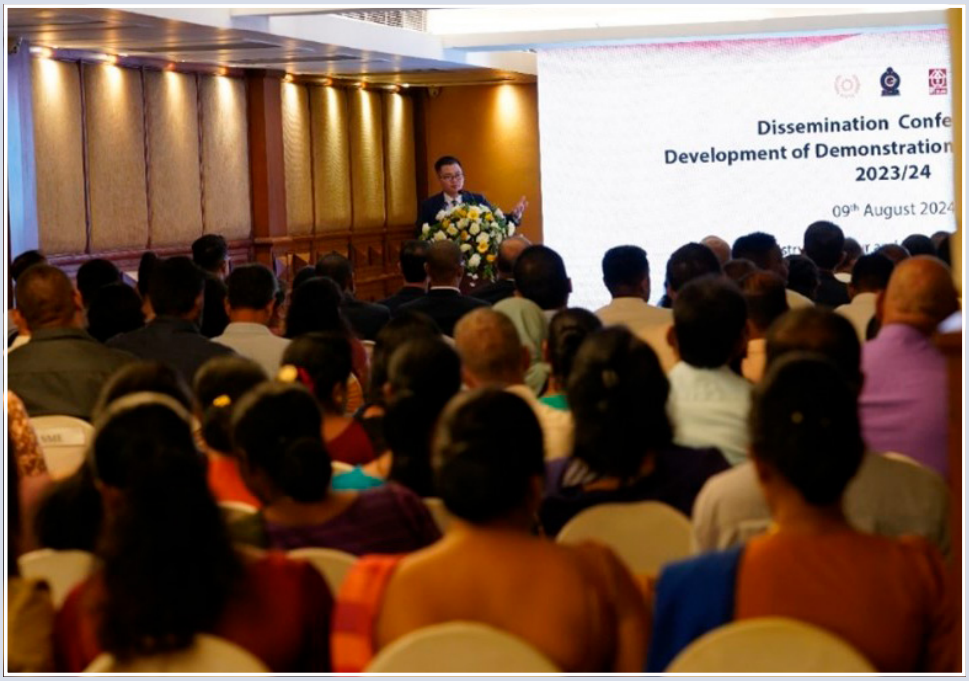
The last stage of the project involved summarizing the project and holding a dissemination event to share the productivity actions with neighboring industries. Prior to the dissemination conference, the project team made a final visit to each participating company to see their progress and discuss the results, issues, and their plans for sustaining productivity following the completion of the project.

In microenterprises, the president, owner, or director needs to play a chief role in sustaining such initiatives, but in larger companies, the commitment of the top management is the key factor. They need to implement initiatives in a systematic way by setting up a team and providing regular feedback. This project was the participating companies' first experience with productivity consultations, but they were able to make significant progress, and they expressed their strong willingness to sustain their productivity actions. The resource person also agreed to follow-up as necessary if the participating companies needed to communicate with Japanese companies further.

Over 150 participants from both the public and the private sectors attended the face-to-face dissemination conference held on 9 August 2024 in Colombo, Sri Lanka (Figure 13). The conference started with opening remarks by Niranja S. Jayakodi, Director of the NPS, and by Son Thanh Phan from the APO Secretariat, followed by the keynote address of R. P. A. Wimalaweera, then-Secretary of the Ministry of Labour and Foreign Employment and then–APO Director for Sri Lanka.

FIGURE 13

PROJECT DISSEMINATION CONFERENCE ON 9 AUGUST 2024.



Source: Photo taken by the National Productivity Secretariat.

A short video documentary introducing the project was officially projected in the opening. This video showed the strong commitment of the top management to this project, as well as their key achievements, in a very impressive way.

The three companies summarized the project activities to show progress and impact. The resource person introduced the productivity logic and tools that were applied in this project, followed by an online presentation from an APO demonstration company in Cambodia sharing the impacts of a previous Development of Demonstration Companies project in their factory and their initiatives to sustain the benefits after its completion. During this project, the NPS and the resource person created a manual that explains basic productivity concepts, provides practical examples, and showcases productivity actions. This manual was provided to all the participating companies at the conference (Figure 14).

FIGURE 14

HANDOVER OF THE APO CERTIFICATE AND THE IMPLEMENTATION MANUAL TO THE DEMONSTRATION COMPANIES AT THE DISSEMINATION CONFERENCE.

Source: Photos taken by the National Productivity Secretariat.

This conference also provided an exhibition space for the participating companies. JAK Plastics exhibited various plastic products for home use. Kiyota Coffee exhibited coffee powders and beans with different roast levels. Roo Prabha exhibited their Ayurvedic products, such as herbal drinks, soaps, and sprays (Figure 15). Many conference participants visited the tables of the three companies to take their products.

FIGURE 15

EXHIBITION OF THE COMPANIES' PRODUCTS DURING THE DISSEMINATION CONFERENCE.

Source: Photo taken by the author.

PROJECT RESULTS

This chapter explains the achievements and key takeaways of the three participating companies.

Achievements of JAK Plastics

Defect Quality Analysis

The project team contacted a Japanese plastic recycling company, TBM Co., Ltd., to assist JAK by analyzing pellets made from recycled plastics (see Figure 16). TBM's analysis concluded that the defects should be improved by adjusting the percentage of recycled and virgin plastic. TBM also suggested installing equipment for quality control. TBM suggested installing a drying machine to keep dust away from pellets and to find the best formula for processing temperature and processing time when mixing the pellets with virgin materials. Such solutions derived from root cause analysis can be regarded as significant achievements for JAK's quality improvement.

FIGURE 16

RECYCLED PLASTIC PELLETS AT JAK PLASTICS.

Source: Photo taken by the author.

Quality Control System

In this project, a digital spreadsheet was created where JAK could fill in data on daily production quality, such as defects per mold, per production line, per material, per temperature, and per processing time, as shown in Figure 17. Tracking these data helped deepen analysis of the issues and improve quality. JAK hired a new staff member to specialize in this task for continuous quality management. The transition to digital records will make their quality management activities more efficient by making it easier to track historical data.

FIGURE 17

DIGITALIZED QUALITY RECORD AT JAK PLASTICS.

Source: Provided by JAK Plastics.

5S Implementation

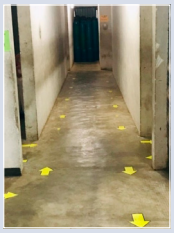
5S methodology changed the workspace, making it more effective (see Figure 18). Materials are now placed neatly, creating more space. The warehouse is connected to the packing area and the production area by a narrow path, which blocked the smooth transportation of storekeepers in the factory. The arrows on the floor now guide them in an easy manner.

FIGURE 18

5S IMPLEMENTATION BY JAK PLASTICS.

Organized material warehouse

Organized ink bottles



Guiding arrows on the floor

Source: Photos taken by the author.

One of the successful applications of 5S methodology was the case of crushed plastic pellet transportation in the recycling center. Crushed pellets were delivered by a belt conveyer without side walls, resulting in spilt pellets falling onto the floor (see Figure 19). Staff put basins under the conveyer and picked them up regularly. After this project, the center changed the belt material and attached walls to both sides. This keeps the area around the conveyer clean and reduces wasteful extra tasks by workers.

FIGURE 19

5S APPLICATION TO PREVENT SPILT PLASTIC PELLETS BY JAK PLASTICS.

Source: Photos taken by the author.

Achievements of Kiyota Coffee

Automation of the Bean Sorting Process

Throughout the three visits, the labor productivity of the coffee bean sorting process was prioritized. Several female staff members were in charge of sorting the beans by color and size. They picked up beans one by one to make an instant inspection on a large table where thousands of coffee beans were piled up. This seemed to be the most time-consuming process. Therefore, a new inspection system was considered to separate the color selection from the size selection. The staff had inspected the two aspects at the same time, but that task would be smaller if the size of beans could be sorted by using a coarse screen. The staff could then concentrate on color sorting only. They had installed and were trialing an automatic sorting machine at the time of the last visit (see Figure 20). The project team also suggested putting labels on products for easier material control and organizing the warehouse for better stock control.

FIGURE 20

AUTOMATIC SORTING SYSTEM AT KIYOTA COFFEE.

Source: Photos taken by the author.

5S Implementation

Kiyota stored coffee beans by roast level, but packaging materials needed to be stored more neatly because Kiyota needed to store various types of packing materials for each OEM customer. The neat warehouse would enable them to ensure adequate stock levels and shorten the time taken to access the right materials (Figure 21).

FIGURE 21

CLEANING ACTIVITY BY WORKERS AT KIYOTA COFFEE.

Source: Photos taken by the author.

Visualization in the Workplace

Kiyota developed signs to raise awareness of cleanliness and safety (see Figure 22). At the time of writing, they are applying for an International Organization for Standardization (ISO) 22000 certificate, which requires a high-quality food safety management system. These visualizations will appeal to the corporate philosophy of quality management for ISO auditors.

FIGURE 22

SAFETY SIGNS AT KIYOTA COFFEE.

Source: Photos taken by the author.

A color-coding system was applied to classify the production area (Figure 23). This system attracts the attention of all workers, helping them to follow the safety and hygiene rules of each area. This links to ISO 22000 requirements.

FIGURE 23

COLOR-CODING OF THE PRODUCTION AREA AT KIYOTA COFFEE.

Source: Photo taken by the author.

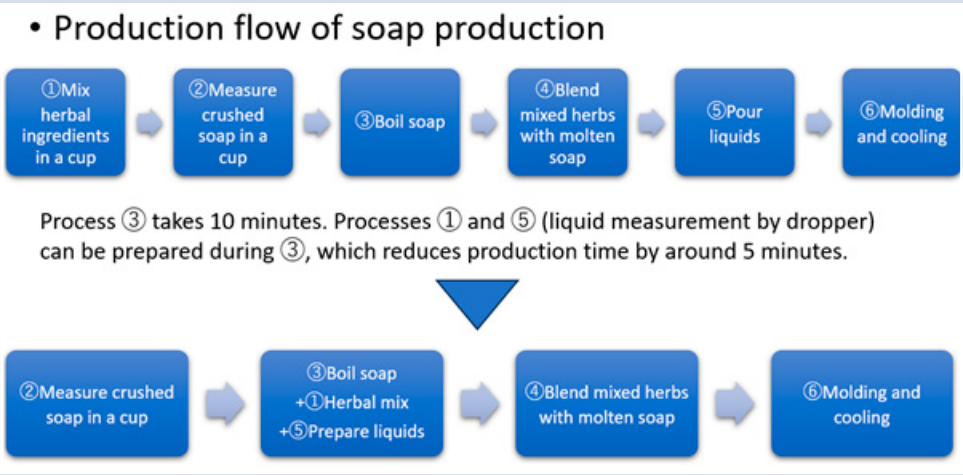
Achievements of Roo Prabha

Shorter Production Time through Process Improvement

Through work sampling and time analysis, the director shortened the production cycle by five minutes. Originally, the director blended herbal materials after finishing boiling the soap ingredients in water. However, she could change the process by blending the materials while waiting for the soap to boil. This change reduced the time taken for two actions in the soap production flow, as shown in Figure 24.

FIGURE 24

PROCESS IMPROVEMENT OF SOAP PRODUCTION AT ROO PRABHA.



Source: Provided by Roo Prabha.

Layout Change in the Production Site

The manufacturing site was small enough to be managed by the director alone, but the equipment (two drying machines, a working table, a boiling station, and a shelf) could be placed closer together to minimize the director's walking distance (Figure 25).

FIGURE 25

LAYOUT IMPROVEMENT AT ROO PRABHA.

Source: Photos taken by Roo Prabha.

Better Customer Satisfaction through Customer Analysis

Roo Prabha promotes its fully organic products and environmental friendliness. Therefore, the presentation of its products was also expected to align with these concepts. Previously, the company had covered bottles and spray packages with plastic film, but it started to use paper packaging instead (Figure 26). This removed the consumption of plastic film and the need for a sealing machine.

FIGURE 26

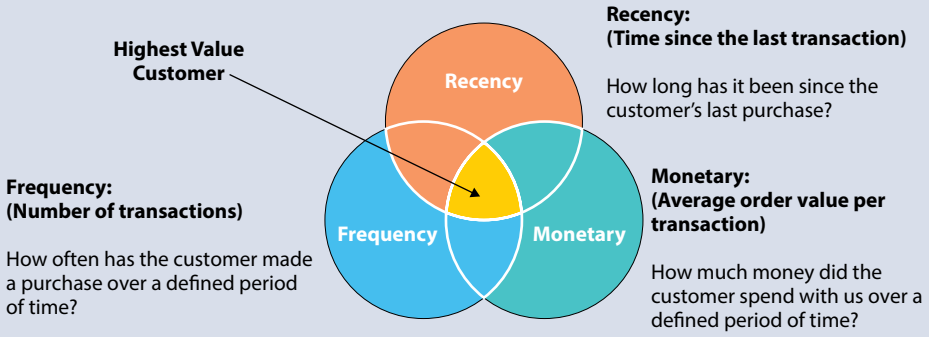
REMOVING PLASTIC FILM ON PACKAGES AT ROO PRABHA.

Source: Photos taken by Roo Prabha.

Roo Prabha embraces the nationwide and global market. The company was adding customer information into a database for every single purchase, but the only information included was "purpose of purchase," "gender," and "age." The project team suggested that this database could be improved for marketing activities. For instance, adding customer names would enable them to identify repeating customers. RFM (recency, frequency, monetary) analysis is "a marketing technique used to quantitatively rank and group customers based on the recency, frequency and monetary total of their recent transactions to identify the best customers and perform targeted marketing campaigns" (Hanna & Wright, 2024). It is based on the marketing maxim that 80% of your business comes from 20% of your customers. Through RFM analysis, the company can classify customers and prepare different service levels, similar to the flight mileage system of airlines. Figure 27 illustrates the structure of RFM analysis.

FIGURE 27

STRUCTURE OF RFM ANALYSIS.

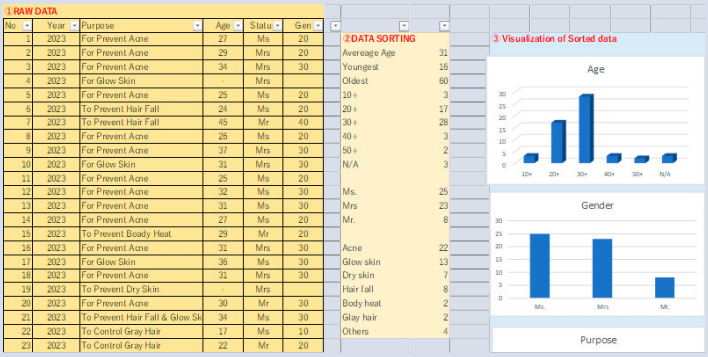


Source: Ambassador Software (n.d.).

The database (Figure 28) could be used for the promotional development of Roo Prabha. According to the brief analysis by the resource person, many customers were ladies in their 20s and 30s who bought products to solve skin issues. This suggested that new products for skin issues could attract more customers. It also suggested that the existing products could be promoted as gifts at special events for ladies, like Mother's Day, Valentine's Day, or Teachers' Day, or for new mothers and babies.

FIGURE 28

ANALYSIS OF CUSTOMER DATA BY ROO PRABHA.



Source: Provided by Roo Prabha.

New Promotional Activities

To encourage repeat orders from existing customers, Roo Prabha started to send discount coupons (Figure 29). The director also started to enclose thank you letters to express her appreciation and her expectation of a lasting connection as a part of her customer relationship management.

FIGURE 29

DISCOUNT COUPON OFFERED BY ROO PRABHA DURING THE PROJECT IMPLEMENTATION.

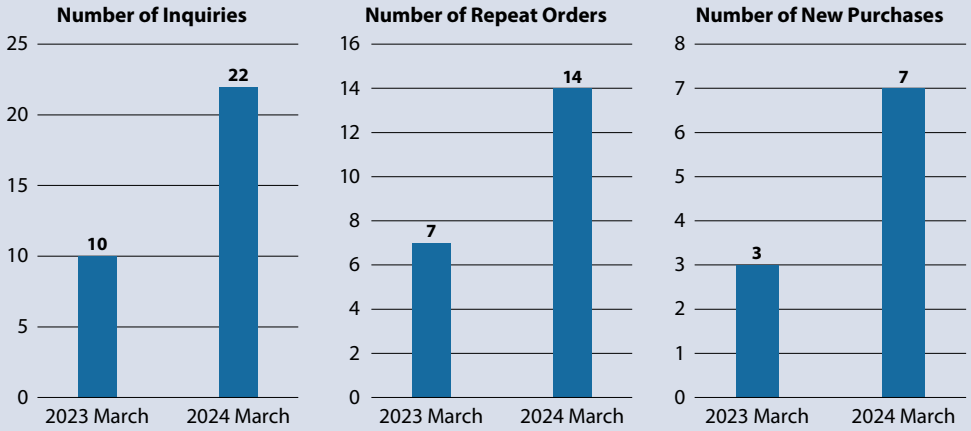
Source: Provided by Roo Prabha.

At the end of this project, some targeted sales and marketing KPIs had been improved. Most of the business operations were conducted by the director alone, whom we did not want to burden with multiple tasks at one time. With this in mind, the project team made as many small proposals as possible to be selected and prioritized by the director.

Figure 30 shows the achievements resulting from marketing improvements. The number of inquiries from customers, repeat orders, and new purchases doubled during the project. Using the database and promotional activities likely contributed to these achievements.

FIGURE 30

TANGIBLE OUTCOMES OF THE PROJECT FOR ROO PRABHA.



Source: Provided by Roo Prabha.

KEY TAKEAWAYS

Through the collaboration with three different companies, the project team observed several key takeaways that may be widely applicable in other projects.

Proactiveness toward New Phenomena

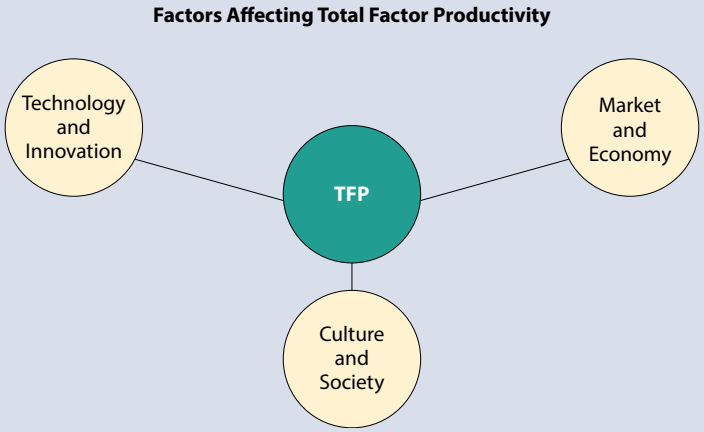
Productivity improvement projects are sometimes blocked by those who do not want to change their present operation system, or projects may be suspended due to team members losing their passion for improvement. However, the executives of the three companies were keen to try new things. They also had an eagerness to examine their weak points and a good culture for doing so. The strong commitment of the top management was the key factor in the companies' achievements.

Referring to External Excellence

The main challenge for JAK Plastics was the high defect rate of finished products made with recycled plastic pellets. We found that the quality of the recycled plastic material was affected by how many times it had been recycled. A Japanese company supported the defect analysis. This analysis demonstrated that the technology used plays an important role in total factor productivity (Figure 31).

FIGURE 31

TOTAL FACTOR PRODUCTIVITY.



Source: WallStreetMojo (2022).

Database Management

We tend to rely on experienced workers because they have technical excellence. They can find problems at a glance and make quick decisions on solutions based on their experiences.

However, once a company becomes big enough, it needs to shift from experience-based management to database management. The application of digital transformation or an enterprise resource planning system is costly, but preparing a simple spreadsheet database creates a tangible management system.

Duplication of Productivity in a New Factory

The production area of Kiyota Coffee was divided into small spaces, which blocked efficient production flow. However, they were setting up a new factory building just beside the original building. Setting up a new factory is a good opportunity to think about productivity. When a production line is moved to another place, no inefficiencies should be brought to the new site. The storage and material handling in the new building are expected to be designed to be more direct.

New Product Development

Kiyota Coffee was keen to develop new products because most of its coffee beans are for OEM supply under the name of retailers. Developing new products would bring new business opportunities. It would also improve Kiyota's market presence and attract more customers if new products were released under the Kiyota brand.

Supplier Management

The key issue in securing quality for Kiyota is receiving good beans from contracted farmers. Kiyota allocated a lot of human resources to the bean sorting process to inspect for broken beans and contamination among millions of beans. As a result of this project, coffee farmers were also expected to be involved in productivity actions to supply better materials in addition to in-house efforts by Kiyota Coffee. This project would be an entry point for giving productivity training to a few potential farmers as a center of excellence. An incentive granting system with the result given at the receipt inspection might motivate farmers to be more quality conscious. The key takeaway from this experience was that productivity movements should be expanded to the supply chain.

Digital Transformation as a Productivity Solution

Roo Prabha improved its customer communication by applying simple digital tools. When replacing business documents with a simple database, the data can tell us a lot of things. In this case, the data suggested a customer persona, potential needs that might guide new products, and possible marketing methods to establish a closer relationship with important clients.

Sales Increase as a Key Issue

Since the COVID-19 pandemic, SMEs have been looking for new opportunities to both develop new products and go into new markets. Companies can approach customers in a wider area more efficiently by utilizing social media and other digital communication tools based on customer analysis. Such an approach of increasing the output elements of productivity is highly recommended for other productivity projects.

SDG-aligned Productivity

Customers are increasingly interested in the environment and other social issues. Productivity solutions should align with such trends. For instance, replacing plastic film with paper might increase costs, but it will attract customers who like organic and natural products. In many cases, customers want to buy the story behind the product, not only the product itself.

LESSONS LEARNED

This project suggests how small companies can achieve their productivity goals. Some opportunities for external support are also identified through the project.

Starting a Project in a Single Company

Any company that faces challenges can start a project. If you list such challenges and design ideal situations addressing them, you are ready. Next, find the gaps between the present and the ideal situation and pick a prioritized combination of solutions. If you find difficulty in identifying any challenges, ask your staff; they will be able to provide many, because the frontline staff will have been overcoming lots of challenges.

You do not need to target the whole company site. Pick one single area to start, and replicate the success in another area. For instance, a restaurant had started the 5S methodology in a customer toilet and applied it to the kitchen counter and refrigerators. A government office started 5S in a document warehouse followed by a guest reception lobby and meeting rooms. Such a step-by-step approach will minimize burdens in the workplace. Small successes will drive dissemination to other areas.

Implementing and Monitoring Activities

The information in Tables 2 to 5 is cross-cutting and applicable to various industries checking their productivity. However, a single company can face struggles when starting or implementing productivity improvement initiatives due to lack of experience. In this case, collaborative project implementation will help its sustainability. An industrial association, a sectorial union, a regional government office, or other companies in the supply chain (e.g., material suppliers or outsourcing companies), for example, can be included in your project in a mentoring or monitoring capacity. In Sri Lanka, as well as the NPS, the Japan Sri Lanka Technical and Cultural Association (JASTECA) can support productivity activity. The association provides guidelines for productivity and prepares various training courses. It also holds national 5S, Kaizen, and Corporate Social Responsibility Awards, for which the author served as the chief auditor in 2014. Such external support and the provision of updated productivity methodologies could be a key component in the sustainability and dissemination of productivity improvements in your organization.

Accessibility of Productivity

Proper goal setting based on tangible KPIs is expected in productivity projects. However, people are not necessarily familiar with how to apply financial information to productivity. The KPIs should be considered based on not only internal factors but also objective criteria, such as average financial figures in the same industry. It is recommended that public organizations that manage SME-related policies, such as ministries of labor or industry, make referable databases of all the industries for their local economies.

In Japan, the Organization for Small and Medium Enterprises and Regional Innovation (also known as SME SUPPORT JAPAN) provides a free financial diagnosis website (only in Japanese; Figure 32). Based on the financial information entered, the website analyzes the profitability, efficiency, productivity, safety, and fluidity compared with the average levels of similar industries (Figure 33).

FIGURE 32

ONLINE FINANCIAL DIAGNOSIS WEBSITE.

Source: Organization for Small and Medium Enterprises and Regional Innovation (n.d.-a).

FIGURE 33

AN EXAMPLE OF FINANCIAL ANALYSIS.

Source: Organization for Small and Medium Enterprises and Regional Innovation (n.d.-b).

In Sri Lanka, a public digital dashboard for SMEs is in the planning phase according to the NPS. Its main function is intended to be business matching and interaction, but this sort of analytical function based on databases will guide SMEs' productivity actions in a more strategic way.

CONCLUSION

The project was highly appreciated by all demonstration companies as it helped them understand and apply productivity tools in their operations with measurable results. It also provided valuable insights for organizations supporting SMEs. One outcome is the NPS's plan to develop a digital dashboard to connect SMEs online; this is a promising platform for enhancing communication and collaboration across the sector.

On the other hand, in order to support the productivity improvement of more companies in the future, as can be seen from the examples of Kiyota and JAK Plastics, the issues that companies face need to be considered from a holistic perspective. In this sense, it would be good to consider cross-industry collaboration and the expansion of support resources and networks.

Although the support provided in this project was customized to SMEs according to the situation and needs of each company, there is great potential for companies to improve by introducing basic concepts and tools such as 5S and PDCA. In this regard, the role of public institutions such as the APO and the NPS will become increasingly important in the future. We hope that these organizations will monitor the results of this project, encourage participating companies to further improve their productivity, and create opportunities to provide basic productivity improvements to more SMEs.

This project followed a basic workflow instead of applying theoretical productivity methodologies, but the workflow functioned as a productivity tool in SMEs when it was managed with a productivity mindset. Taking many small steps will accomplish a big goal. It is not difficult to start your journey of productivity when you prepare with an eagerness for betterment. It will be wonderful if more SMEs refer to this publication to achieve their productivity goals.

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LIST OF ABBREVIATIONS

APO	Asian Productivity Organization
GDP	Gross domestic product
ISO	International Organization for Standardization
KPI	Key performance indicator
NPS	National Productivity Secretariat, Sri Lanka
OEM	Original equipment manufacturing
PDCA	Plan, do, check, act
RFM	Recency, frequency, monetary
SDGs	Sustainable Development Goals
SMEs	Small and medium-sized enterprises

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