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Southeast Asia Packaging Machinery Market

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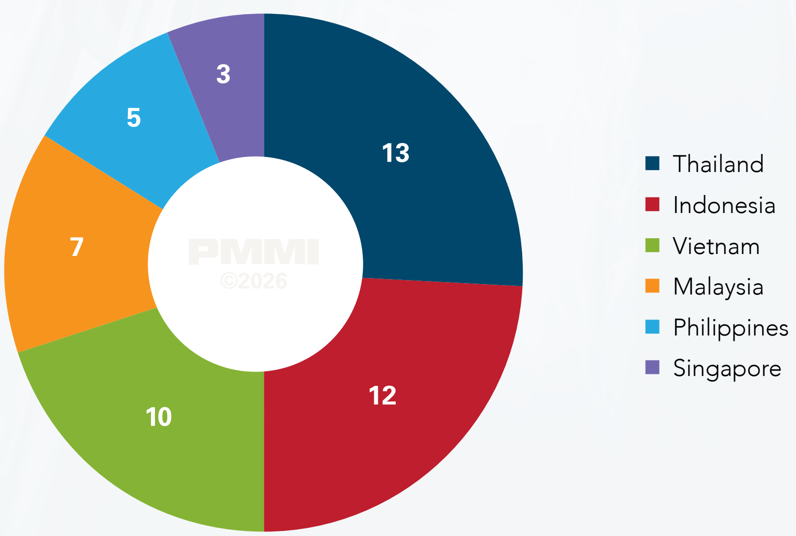
Executive Summary

This study was commissioned by PMMI in collaboration with Automate UK to provide a comprehensive, interview-based assessment of packaging and processing equipment demand across six major Southeast Asian markets. Conducted by Orissa International, it focuses on key end-user sectors, including food, beverage, pharmaceuticals, personal care, and industrial applications, with the objective of identifying operational priorities, pain points, investment plans, and vendor-selection criteria among multinational and local manufacturers.

The research combines extensive secondary sources, such as trade publications, market studies, and company reports, with primary interviews conducted with 50 Southeast Asian manufacturers, offering direct insights into operational needs, investment behavior, and supplier expectations.

Figure 1: Number of interviews conducted by market



Regional Market Landscape and Key Markets

The Southeast Asian market for packaging and processing equipment shows strong growth potential, increasing complexity, and intensifying competition. While the region is shaped by common drivers such as expanding food and beverage manufacturing, regulatory developments, and gradual technological upgrading, it remains highly diverse in terms of market maturity and investment dynamics. Indonesia, Thailand, and Vietnam stand out as the most attractive markets due to their scale, growth trajectories, and evolving demand patterns, while Malaysia, Singapore, and the Philippines play more moderate or specialized roles.

Competitive Environment and Regulatory Trends

Competition across Southeast Asia is intense and relatively consistent across markets. Chinese suppliers dominate due to their cost competitiveness and expanding capabilities, while European manufacturers maintain strong positions in higher value segments. Regional Asian players further reinforce competition through supply chain integration and geographic proximity. In contrast, North American suppliers have a relatively limited presence.

At the same time, regulatory developments are reshaping the market environment, particularly in relation to sustainability. Key trends include:

Implementation of extended producer responsibility frameworks

Policies aimed at reducing plastic waste and promoting recycling

Increasing emphasis on circular economy models and sustainable packaging solutions

Operational Priorities and Technology Adoption

Manufacturers across Southeast Asia demonstrate strong alignment in their operational priorities, with a clear focus on cost control, productivity, and efficiency. Automation is becoming increasingly important as companies respond to labor constraints, rising costs, and the need for consistent product quality. However, adoption levels vary across markets, reflecting differences in industrial maturity and internal capabilities.

Supplier Selection and Strategic Implications

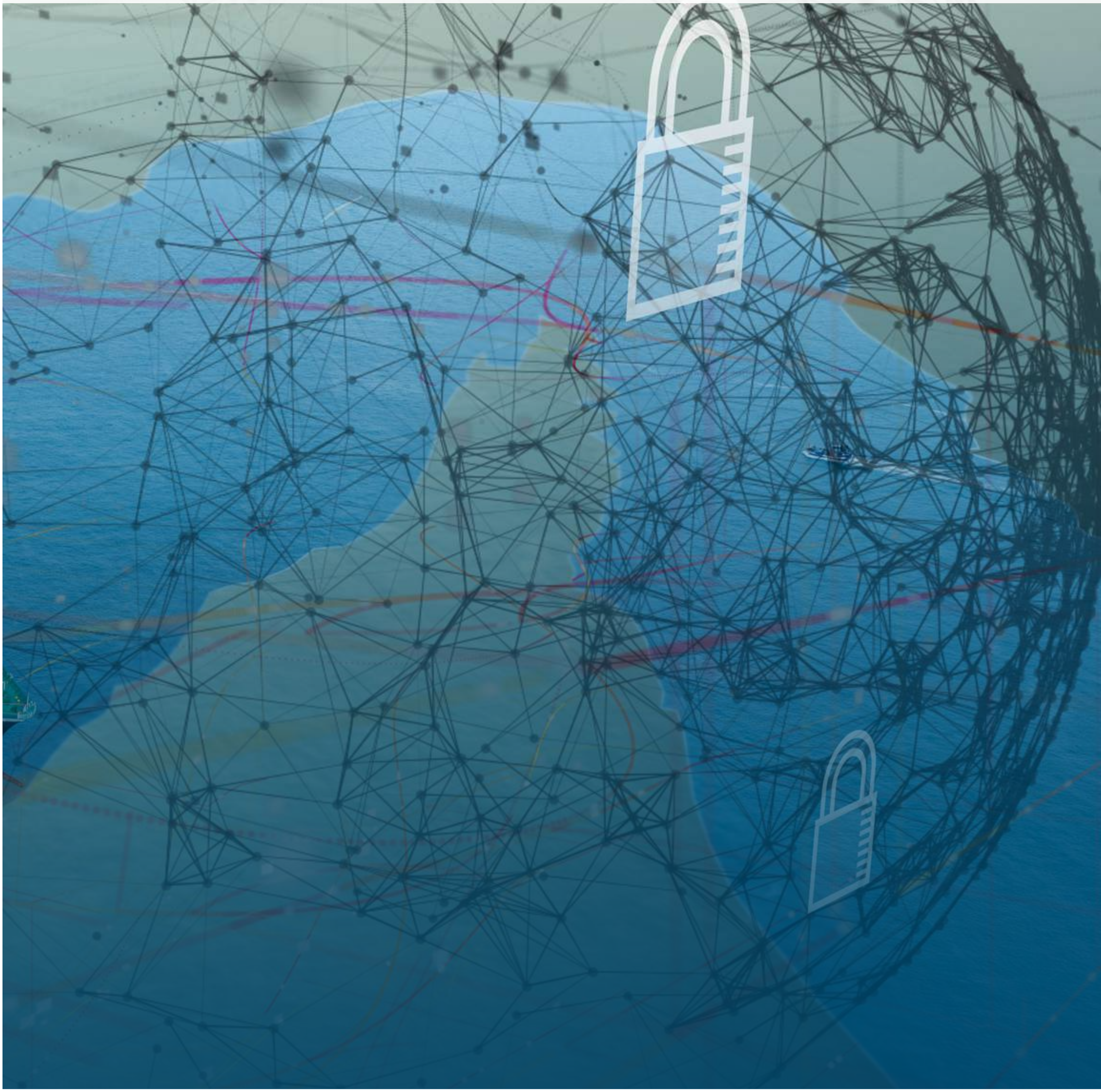
Supplier selection across Southeast Asia is driven primarily by reliability, technical performance, and after sales support, with service capabilities emerging as a critical differentiator. Companies prioritize minimizing downtime and ensuring rapid technical assistance, often placing greater importance on service than on initial purchase price.

For North American suppliers, the region offers significant opportunities but requires a more localized and adaptive approach. Success will depend on:

- Strengthening local presence and service capabilities
- Aligning pricing and value propositions with market expectations
- Offering solutions that address practical operational needs and integration challenges

Ultimately, competing effectively in Southeast Asia requires not only strong technology, but also a clear understanding of local market conditions and the ability to deliver solutions that combine performance, affordability, and reliable support.

REGIONAL OVERVIEW



COMPARATIVE ANALYSIS OF SOUTHEAST ASIAN MARKETS

Market Structure and Regional Diversity

The six Southeast Asian markets examined in this study collectively illustrate a highly dynamic yet heterogeneous regional landscape for packaging and processing equipment. While all markets are shaped by broadly similar drivers, including the expansion of food and beverage manufacturing, increasing regulatory pressure, and gradual technological upgrading, their levels of maturity, growth trajectories, and competitive dynamics differ significantly. Taken together, they reveal a region characterized by strong underlying demand, rising complexity, and intensifying competition among global suppliers.

In terms of market size and investment dynamics, Indonesia, Vietnam, and Thailand clearly emerge as the largest and most structurally significant markets in the region. Indonesia, with imports reaching USD 413.8 million in 2024, stands out as the single largest market, reflecting the scale of its domestic consumption base and its expanding industrial sector. Vietnam and Thailand follow closely, with imports of USD 344.2 million and USD 326.4 million respectively, both driven by robust growth in food processing, beverage production, and export-oriented manufacturing. These markets are characterized by sustained capital investment, increasing production capacity, and a growing need for modern packaging solutions.

Malaysia occupies a different position within the regional hierarchy. Although smaller in absolute terms, it demonstrates steady and consistent growth, with imports rising from USD 102.5 million in 2020 to USD 149 million in 2024. This trajectory reflects ongoing investment in upgrading manufacturing capabilities and improving operational efficiency rather than large-scale expansion. By contrast, Singapore and the Philippines represent smaller markets with more constrained or volatile demand. Singapore's import patterns are strongly influenced by project-based investments, resulting in pronounced fluctuations from year to year, while the Philippines shows relatively stable but modest demand, with imports remaining within a narrow range over the period.

Competitive Dynamics and Regulatory Developments

Despite these differences in scale and growth patterns, the competitive landscape across all six markets displays a notable degree of consistency. Chinese suppliers dominate the region, occupying the leading position in most markets due to their cost competitiveness, broad product offerings, and increasing technological sophistication. Alongside China, European manufacturers, particularly from Germany and Italy, retain strong positions in the higher-value segment, supplying advanced equipment that meets the needs of multinational manufacturers and more technologically demanding applications. Regional players such as Japan, South Korea, and Taiwan occupy intermediate positions, reflecting the importance of intra-Asian trade and regional supply chain integration.

Within this context, the position of North American suppliers has room for improvement across all markets. In most cases, the United States ranks outside the top tier of suppliers and, in several markets such as Vietnam and Indonesia, falls to twentieth position or below. This limited presence suggests structural challenges related to pricing, market access, and alignment with local requirements, particularly in comparison with Asian competitors that offer lower-cost solutions and stronger regional support networks.

Regulatory developments represent another key dimension shaping the regional landscape. Across Southeast Asia, there is a clear and accelerating shift toward sustainability, driven by the introduction of extended producer responsibility (EPR) frameworks, plastic reduction policies, and broader circular economy strategies. While the pace and level of enforcement vary by country, the overall direction is consistent. Vietnam and the Philippines stand for their advancements in regulatory implementation, with mandatory EPR systems already in place and actively shaping packaging practices. Indonesia and Malaysia are in transition, moving toward stricter regulatory regimes with phased implementation and increasing enforcement. Thailand is developing a comprehensive legislative framework through its proposed Sustainable Packaging Management Act, while Singapore is focusing on data-driven approaches and deposit-return schemes within a broader circular economy strategy.

Operational Priorities and Technology Adoption

At the operational level, manufacturers across all six markets exhibit a high degree of convergence in their priorities. Cost control, productivity improvement, and operational efficiency consistently emerge as the most important considerations in packaging and processing operations. These priorities are closely linked to the growing importance of automation, which is increasingly viewed as a necessary response to labor constraints, rising wages, and the need for consistent product quality. However, the extent of technological adoption varies significantly. Singapore and Thailand show relatively higher levels of maturity, with greater adoption of advanced automation, digital systems, and integrated production processes. Malaysia and Vietnam are actively investing in modernization but face challenges related to integration and internal capabilities. Indonesia and the Philippines, while showing interest in automation, remain more focused on capacity expansion and cost efficiency, reflecting earlier stages of industrial development.

Across all markets, similar barriers to technology adoption are observed. High costs and uncertain returns on investment are consistently cited as major constraints, alongside internal skill gaps and the complexity of integrating new equipment into existing production lines. These challenges highlight the importance of not only technological capability but also organizational readiness in shaping the pace of modernization.

Supplier selection is driven primarily by considerations of reliability, technical performance, and after-sales support, with the latter emerging as a critical differentiator. Companies consistently emphasize the importance of minimizing downtime and ensuring rapid response to technical issues, often placing greater weight on service capabilities than on initial purchase price. Supplier discovery remains largely relationship-driven, relying on existing networks, industry events, and peer recommendations rather than digital channels.

PRIORITY MARKETS IN SOUTHEAST ASIA

Within this diverse regional landscape, Indonesia, Thailand, and Vietnam stand out as priority markets based on their scale, growth potential, and evolving demand for packaging and processing equipment. These markets combine large and expanding manufacturing bases with increasing investment in modernization, making them particularly attractive for American suppliers.

INDONESIA

Indonesia's position as the largest market in the region reflects both its demographic scale and its industrial expansion. The strong recovery of imports to over USD 400 million in 2024 underscores sustained demand for packaging machinery, particularly in food, beverage, and pharmaceutical sectors. The market is characterized by a strong focus on capacity expansion and cost efficiency, with companies prioritizing new production lines and scalable solutions. At the same time, regulatory developments related to waste management and recycled content are beginning to drive gradual shifts toward more advanced and sustainable packaging technologies. However, the market remains highly price-sensitive and dominated by Asian suppliers, which poses challenges for higher-cost international competitors.

THAILAND

Thailand represents a more mature and diversified market, with a well-established manufacturing base and a strong presence of multinational companies. Its packaging machinery imports, while slightly below previous peaks, remain substantial and reflect steady demand. Thailand demonstrates a relatively higher level of technological sophistication compared to other markets in the region, with increasing adoption of automation and digital solutions. Sustainability is also becoming more prominent, supported by government policies and industry initiatives. At the same time, investment patterns suggest a measured approach, with companies balancing modernization efforts against cost considerations.

VIETNAM

Vietnam is distinguished by its rapid growth and strong investment outlook. The significant increase in imports to USD 344.2 million in 2024 highlights the expansion of its manufacturing sector, particularly in export-oriented industries. Vietnamese manufacturers show a clear focus on improving efficiency and productivity, accompanied by growing interest in automation and digitalization. The regulatory environment, particularly the implementation of EPR, is further accelerating demand for modern and sustainable packaging solutions. While challenges related to skills and system integration persist, the overall trajectory of the market suggests increasing openness to advanced technologies.

STRATEGIC GUIDANCE FOR NORTH AMERICAN SUPPLIERS

Market Visibility and Positioning

The analysis of these markets indicates that Southeast Asia offers substantial opportunities for North American packaging machinery suppliers, but also presents significant challenges that require a carefully adapted approach. The limited presence of North American companies across the region suggests that success will depend on addressing structural barriers and aligning more closely with local market conditions.

One of the most immediate priorities is the need to increase market visibility and brand recognition. In several markets, North American suppliers are not perceived as leading providers of packaging machinery, reflecting limited awareness among end-users. This underscores the importance of sustained marketing efforts, participation in industry events, and the development of strong local partnerships to build credibility and familiarity.

Pricing and Value Proposition

At the same time, price sensitivity remains a defining characteristic of most Southeast Asian markets. Companies frequently prioritize cost considerations, particularly in Indonesia and Malaysia, where lower-cost Asian suppliers dominate. For North American manufacturers, this implies the need to clearly articulate the value proposition of their equipment, emphasizing total cost of ownership, long-term reliability, and operational efficiency rather than upfront price alone. In some cases, it may also necessitate exploring localized production, assembly, or partnerships to improve cost competitiveness.

After-sales support emerges as perhaps the most critical factor influencing purchasing decisions across all markets. Manufacturers consistently highlight the importance of rapid response times, availability of spare parts, and access to technical expertise. In this context, North American suppliers must ensure that they can provide strong local service capabilities, either through direct presence or through well-qualified distributors. Without this, even technologically advanced solutions may struggle to gain traction.

Technology Alignment and Integration

Aligning with prevailing operational priorities is equally important. Across the region, companies are increasingly focused on automation, efficiency, and productivity improvements. This creates opportunities for suppliers offering solutions that reduce labor dependency, improve consistency, and enhance operational performance. However, these solutions must also be adaptable and compatible with existing systems, as integration challenges are a major concern for many manufacturers.

Sustainability represents another area of growing importance, particularly in markets such as Vietnam, Thailand, and the Philippines where regulatory frameworks are more advanced. Suppliers that can offer equipment compatible with recyclable materials, biodegradable packaging, or circular economy requirements are likely to benefit from this trend. Nevertheless, sustainability must be positioned in conjunction with operational benefits, as companies generally prioritize solutions that deliver both environmental and economic value.

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Market-Specific Strategy

Finally, it is essential for suppliers to differentiate their strategies across markets. Indonesia requires a focus on cost-effective and scalable solutions that support capacity expansion. Thailand offers opportunities for more advanced technologies and sustainability-driven innovations, while Vietnam combines strong growth potential with increasing demand for automation and compliance-oriented solutions. A uniform regional approach is unlikely to succeed; instead, companies must tailor their offerings and go-to-market strategies to the specific characteristics of each market.

THAILAND

END-USER SECTOR OVERVIEW

Import Overview

Thailand's imports of packaging machinery showed moderate growth from USD 343.9 million in 2020 to USD 326.4 million in 2024, with a dip in 2021 and recovery thereafter. China consistently led as the largest supplier, reaching USD 110.0 million in 2024, highlighting its dominant role in the regional market. Germany and Italy remained key European partners, benefiting from advanced technology offerings. Japan maintained a steady mid-tier position, while Spain and South Korea showed gradual increases, reflecting diversification in sourcing. The United States held a relatively minor role, ranked tenth in 2024 with USD 5.4 million in exports. Despite a slight recovery from 2023, US shipments remain small compared with major Asian and European suppliers, indicating limited penetration in Thailand's packaging machinery market and strong competition from China, Germany, and regional Asian producers.

Table 1: Thailand's imports of packaging machinery

Partner	2020	2021	2022	2023	2024	2024 Ranking
World	**343.9**	**273.4**	**278.9**	**288.7**	**326.4**	**–**
China	86.5	89.4	83.0	93.2	110.0	1
Germany	84.9	37.2	40.7	48.1	56.5	2
Italy	39.7	33.7	29.0	36.8	45.4	3
Japan	52.5	46.9	46.2	40.0	39.4	4
Spain	9.0	7.6	5.3	7.6	12.7	5
South Korea	13.4	12.5	14.7	10.3	12.3	6
Taiwan	11.0	15.6	12.5	9.1	11.4	7
Belgium	3.6	1.0	0.6	1.7	5.8	8
Switzerland	3.0	1.4	1.2	3.3	5.7	9
United States	**8.4**	**3.4**	**1.9**	**3.0**	**5.4**	**10**

Unit: USD 1,000,000

Key Policies and Trends

Environmental considerations are increasingly shaping both regulation and market behavior in Thailand's packaging sector. Over the past decade, concerns around marine pollution, landfill capacity and resource efficiency have pushed the government to move from fragmented waste controls toward a more structured, policy-driven transition to a circular economy. The foundation of this framework is the Thailand Roadmap on Plastic Waste Management 2018–2030. This is a phased plan adopted by the government that progressively bans certain plastic products and sets targets for reuse and recycling. Initial milestones focused on eliminating items such as plastic cap seals, oxo-degradable plastics and microbeads by the end of 2019, and lightweight plastic bags, foam food containers, single-use plastic cups and plastic straws by 2022. The roadmap's ambitions extend to a goal of reusing and recycling 100% of targeted plastic waste by around 2027.

Figure 2: Thailand's Roadmap on Plastic Waste Management 2018–2030

The Plastic Waste Management framework has been supplemented by Action Plans (2020–2022 and 2023–2027) that add implementation measures and procedures for reducing landfill waste and increasing recycling rates. The current 2023–2027 Action Plan shifts more clearly toward regulatory and economic levers. It introduces tighter controls on landfilling of recyclable plastics, prioritizes mechanical and chemical recycling over disposal, and supports the development of take-back and collection schemes for specific plastic packaging types. The plan also strengthens the role of local authorities by linking national targets to provincial waste management plans and by encouraging public–private partnerships for recycling infrastructure.

Thailand has also pursued single-use plastic bans at different administrative levels. National-level measures have already prohibited lightweight plastic bags in many retail contexts and single-use products such as straws and foam containers, and some bans extend to national parks and protected areas to protect natural environments. Complementary policies such as voluntary plastic bag levies and incentives for biodegradable alternatives have been used to support behavioral change across retail and consumer sectors.

On the regulatory side, Thailand is advancing a Sustainable Packaging Management Act, currently under drafting, to provide a formal legal foundation for managing packaging sustainably. This draft law, supported by the Ministry of Natural Resources and Environment, is intended to define which packaging types must be managed sustainably and to embed EPR as a core obligation for business operators. Under the proposed framework, producers would have responsibilities for packaging throughout its lifecycle, including registration requirements and submission of sustainable packaging management plans. The draft law is expected to be refined through public consultations and legislative processes and aims for enactment with effect around 2027.

Shift towards sustainability: the case of SCG Packaging

SCG Packaging is a Thai company that has emerged among the regional leaders for integrating packaging solutions. Notably, in 2025 it was announced that SCG Packaging set an investment budget of over USD 400 million to expand its downstream consumer packaging operations across ASEAN. The investment focuses on high-growth segments such as foodservice packaging, medical supplies, laboratory ware, and regional market expansion.

Figure 3: SCG Packaging partnered with Sanofi to upcycle medical waste

Source: SCG Packaging

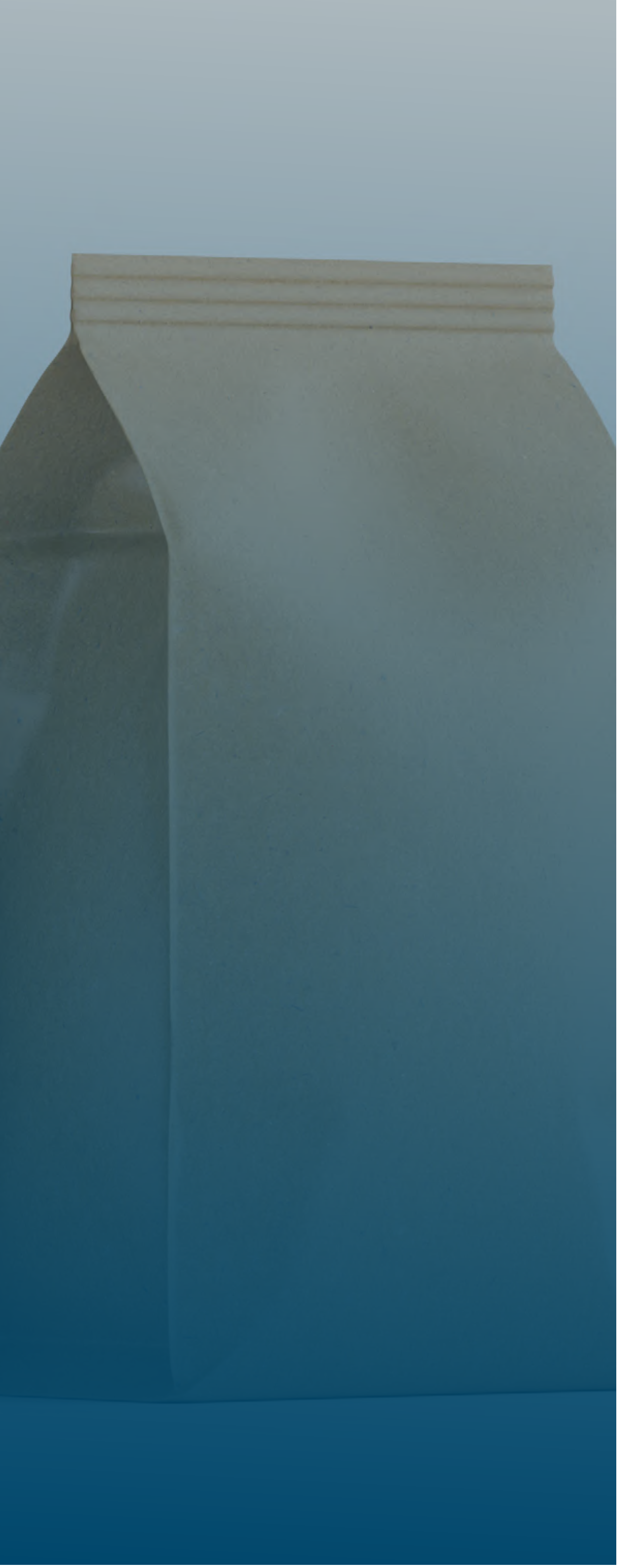
The company's recent activities are also illustrative of the broader shift towards sustainability, and include the following:

SCG Packaging partnered with Sanofi, a French pharmaceutical company, to launch the "Reviving Used Insulin Pens" initiative in June 2024. This collaboration marked Thailand's first use of advanced recycling technology to upcycle medical waste into high-quality plastic pellets. The resulting materials can be safely reused in new packaging, addressing both medical waste management challenges and the need for high-grade recycled plastics.

SCG Chemicals partnered with Unilever to launch ASEAN's first 100% post-consumer recycled High-Density Polyethylene (HDPE) skincare packaging in late 2024. Designed for brands such as Vaseline, the packaging maintains product scent, texture, and performance despite using fully recycled material.

In 2025, SCG Packaging launched paper-based cutlery as part of its expanding eco-friendly product portfolio. This innovation contributed to increased revenue from its packaging innovation segment, signaling growing market acceptance of sustainable alternatives to plastic.

In August 2025, SCG Packaging opened a biodegradable flexible packaging line at its Rayong site, targeting over 20,000 tons of eco-friendly output per year. This production line targets applications requiring both flexibility and environmental performance, supporting brands seeking lower-impact packaging options.



Notable developments

Some key examples of end-users that have recently expanded their operations in Thailand include:

Nestlé Thailand has significantly expanded its manufacturing footprint with the opening of the Navanakorn 7 plant in Pathum Thani. The expansion focused on increasing the production capacity for high-demand beverage brands, specifically MILO and BEAR Brand, to serve both domestic and regional markets. The facility is designed with a "sustainability-first" architecture, utilizing energy-efficient machinery and waste-reduction technologies. Packaging is deeply integrated into the production flow; the plant features high-speed, automated primary packaging lines for UHT cartons.

Thai Union, a global leader in shelf-stable seafood, is undergoing a transformation of its manufacturing capabilities through 2026 under its "SeaChange 2030" strategy. The company has expanded its production lines at its Samut Sakhon facilities to accommodate the "ECOTWIST" packaging innovation. This expansion involves investment in new, lighter-weight canning lines and specialized primary packaging machinery that reduces steel usage and eliminates the need for plastic wrap on multi-packs. The manufacturing process now includes a redesigned secondary packaging phase that uses FSC-certified cardboard sleeves rather than traditional plastic shrink-wrap.

Ajinomoto has accelerated its manufacturing expansion in Thailand, focusing on its "Yum Yum" instant noodle brand and "Birdy" coffee range between 2024 and 2026. The company has invested in additional production lines at its Ayutthaya and Nong Khae factories to meet the 3-4% annual growth in domestic ready-to-eat demand. This expansion includes the installation of advanced automated seasoning mixing systems and high-speed noodle frying lines. A critical feature of this expansion is the modernization of the packaging phase; Ajinomoto has integrated AI-driven quality control sensors into its primary packaging lines to detect seal integrity and label accuracy in real-time.

TCP Group, the developer of the Red Bull brand, has undertaken a strategic expansion of its manufacturing capacity. This includes the upgrading of its flagship production facility in Prachinburi, Thailand. The expansion involves the addition of intelligent production lines capable of multi-product switching, allowing the company to pivot between energy drinks and functional beverages. The Prachinburi site features a highly integrated packaging system where aluminum can manufacturing is often located in close proximity or integrated via conveyor systems to the filling lines. This packaging approach minimizes the logistics cost of transporting empty containers.

Kao Thailand has expanded its manufacturing operations at the Amata City Chonburi Industrial Estate to increase the production of skin care and hygiene products, such as Biore and Attack. The company invested in expanding its "ESG-compliant" manufacturing lines, which focus on reducing water and energy consumption. The expansion includes new production lines for concentrated liquid detergents and high-value facial cleansers. Packaging integration is a hallmark of this facility; Kao has implemented "thin-wall" packaging technology which reduces the amount of plastic used in primary containers by up to 15%.

L'Oréal's "Bangkok Plant," which serves as a major export hub for the Asia-Pacific region, has undergone significant capacity increases between 2024 and 2026. The expansion is focused on hair care and skin care categories, utilizing "Industry 4.0" technologies such as cobots (collaborative robots) and data-driven supply chain management. The facility, located in the Bang Na area, has expanded its cleanroom production zones to accommodate the manufacturing of more complex dermo-cosmetic formulations. L'Oréal has also integrated "Smart Packaging" capabilities into the line, where QR codes and anti-counterfeiting markers are printed directly onto the primary labels during the manufacturing process.

Partnership for sustainable packaging for personal care and household products

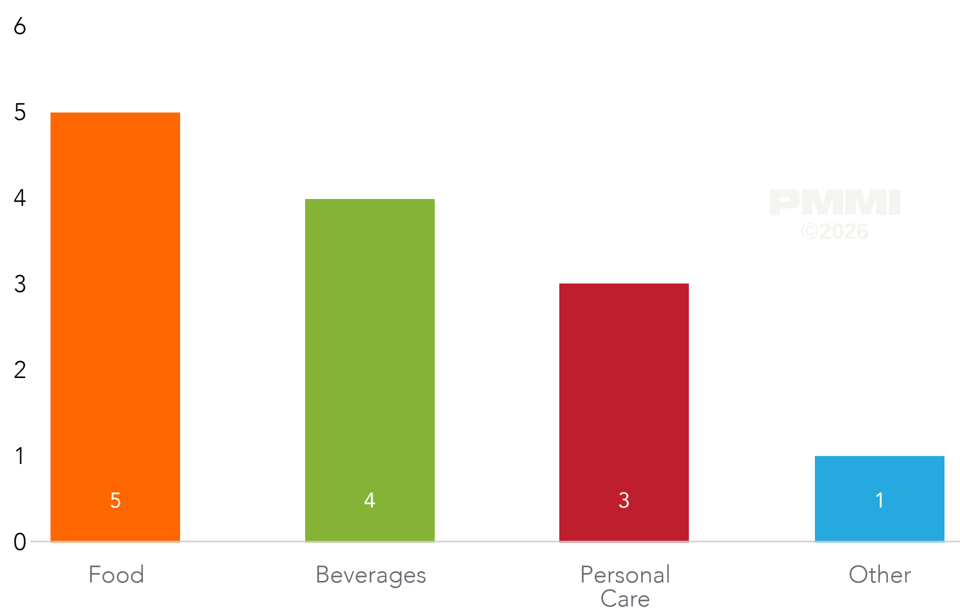
Kao Industrial (Thailand), a major manufacturer of personal care and household products, signed a Memorandum of Understanding (MoU) with Dow and SCG Chemicals to jointly develop packaging designed for recyclability and a lower carbon footprint. This partnership is aligned with Kao's "Kirei Lifestyle Plan" and its ambitious environmental goals, including achieving zero carbon emissions and net-zero waste plastic packaging by 2040.

Figure 4: The partnership aims to provide sustainable packaging options

PRIORITIES FOR PACKAGING AND PROCESSING OPERATIONS

A series of interviews was conducted with manufacturers based in Thailand to gain insights into their packaging operations, planned investments, and operational pain points. The interview sample includes food manufacturers (38%) producing instant noodles, sugar, canned seafood, and processed frozen foods. Beverage companies (31%) manufacture fruit juices, dairy products, bottled drinking water, and wine. Personal care firms (23%) produce cosmetics, sanitary products, and condoms. One company (8%) manufactures biodegradable tableware made from sugarcane bagasse for food-service applications and export markets.

Figure 5: Sectoral breakdown of manufactures interviewed in Thailand



Sector	Companies	Share
Food	Delight 88 (JubJub), Mitr Phol Group, Kuang Pei San (Pumpui/ Smiling Fish), Surapon Foods, Thai President Foods	38%
Beverages	Chabaa Bangkok, Dairy Farming Promotion Organization (DPO), Khapkhluan Laksanaprim (Prim Drinking Water), Siam Winery	31%
Personal Care	Cosmo Progress International, Kao Industrial Thailand, Thai Nippon Rubber Industry	23%
Other	Sugarcane Ecoware	8%

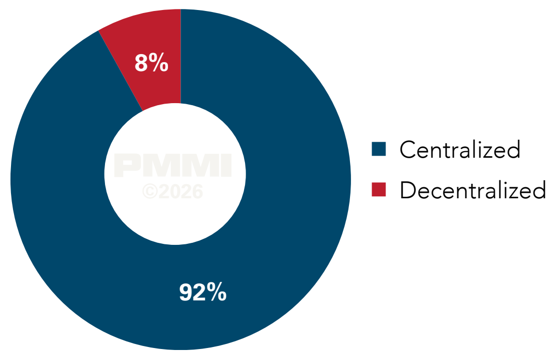
Interviewees typically held operational or technical roles closely linked to production and equipment decisions, including plant managers, production managers, factory directors, engineers responsible for machine design or line planning, and senior managers involved in supply chain or purchasing committees.

Across the 13 companies interviewed, procurement decisions for packaging and processing equipment are highly centralized. In 12 companies, purchasing authority sits at the corporate level and is typically managed by a central procurement department, headquarters, or senior management committee. Plant-level managers, engineers, and technical teams generally contribute by defining equipment specifications, identifying operational requirements, and evaluating supplier proposals, but they do not make the final purchasing decision.

Only one company (Pumpui) reported a more decentralized or hybrid structure, where consultants and technicians participate directly in equipment selection before final approval by the board.

Overall, this structure suggests that capital investments in packaging and processing equipment are treated as strategic corporate decisions, with centralized oversight ensuring budget control and supplier consistency while still incorporating operational input from plant-level technical teams.

Figure 6: How centralized or decentralized are procurement decisions?



N = 13

Investment Plans and Capital Spending

Thai companies interviewed show a strong convergence around productivity, automation, and cost efficiency.

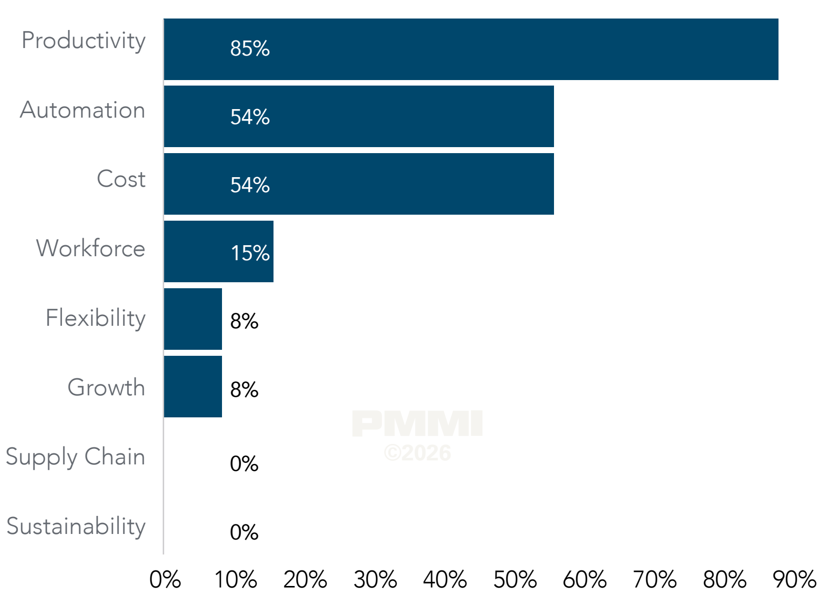
Productivity is the most frequently cited priority. Companies across food, beverage, and personal care sectors highlighted the need to maintain or increase output, improve line efficiency, and reduce operational disruptions. This reflects the high-volume nature of many of the manufacturers interviewed, including large-scale food processors and beverage producers.

Automation also emerges as a major focus. Several companies indicated that automation helps address labor shortages, rising labor costs, and workforce skill gaps. In some cases, automation is part of broader strategies to modernize production lines, improve consistency, and reduce dependency on manual operations.

Cost considerations remain an important operational priority as well. Many firms emphasized the need to control production costs, optimize equipment utilization, and ensure strong returns on capital investments in new machinery or line upgrades.

Other priorities such as flexibility, workforce efficiency, and growth were mentioned less frequently but still appear in specific contexts. For example, some manufacturers are investing in flexible production lines to support product innovation or smaller batch production, while others highlighted workforce efficiency due to labor market constraints.

Figure 7: What are your key priorities in packaging and processing operations?



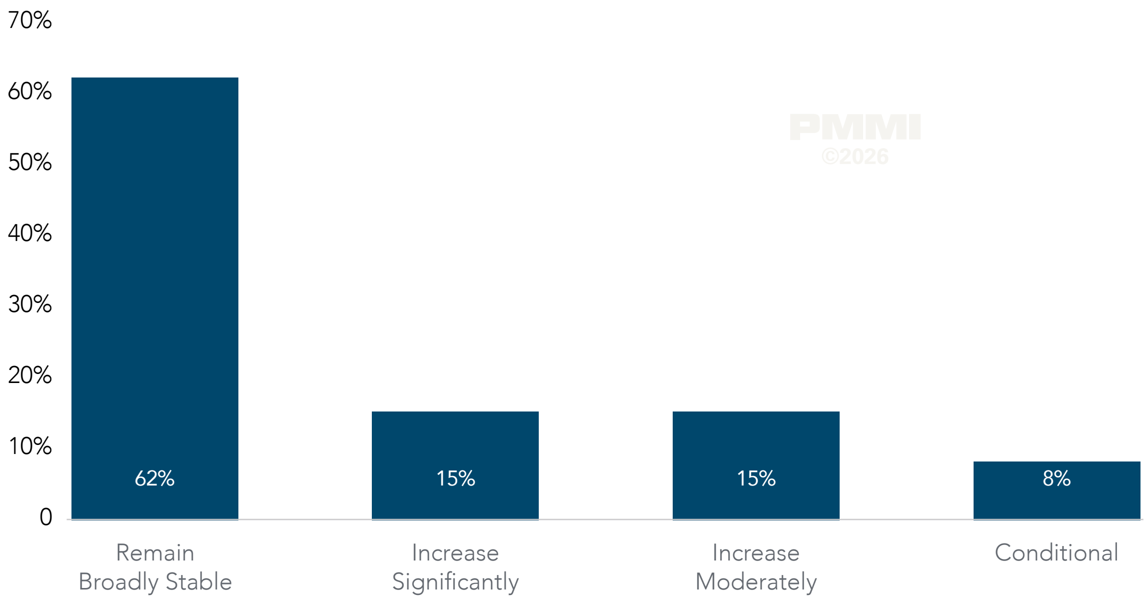
N = 13; Each company could select up to 3 answers

Manufacturers interviewed indicate generally moderate or stable capital spending expectations. Nearly two-thirds of respondents expect investment to remain broadly stable over the next 12 to 36 months. Several companies noted that their current machinery is still performing well or that recent equipment purchases reduce the need for immediate additional investment.

At the same time, around 30% of companies anticipate increasing investment, either significantly or moderately. These planned increases are generally linked to automation initiatives, line upgrades, or capacity expansion to support productivity improvements and operational modernization.

Only one company (JubJub instant noodles) indicated a conditional investment outlook, stating that future equipment purchases will depend on product demand. Overall, the responses indicate a measured investment environment, where companies balance operational improvements with careful capital allocation.

Figure 8: Over the next 12 to 36 months, how do you expect your investment in packaging and processing equipment to evolve?



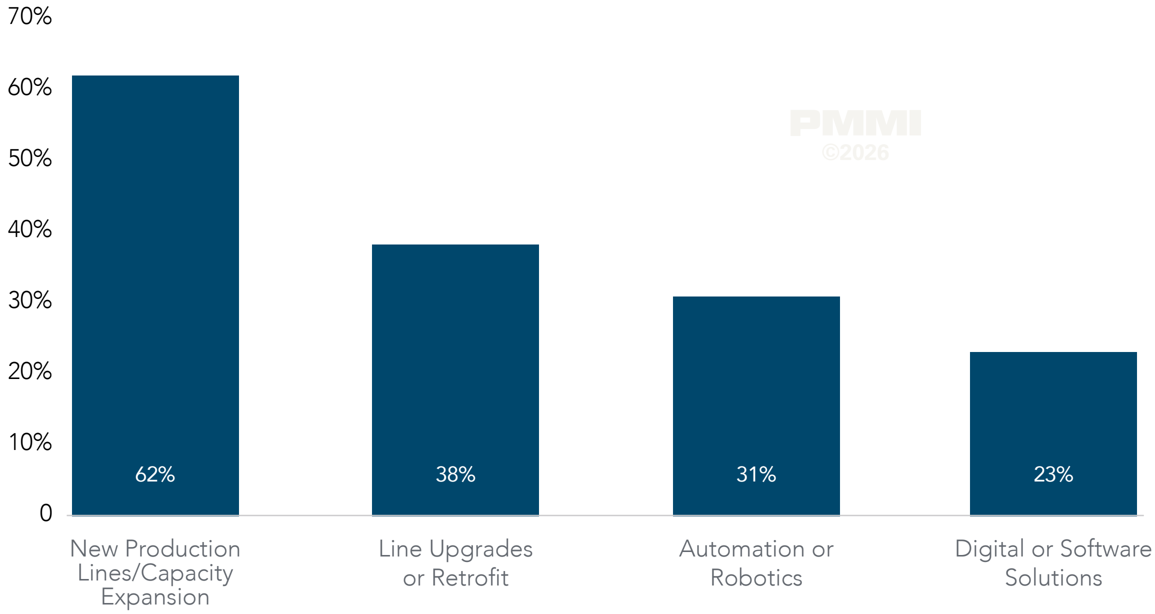
N = 13; Each company could select up to 3 answers

Most companies are prioritizing capacity expansion and production upgrades, while a smaller group is investing in automation and digital technologies. In effect, the most frequently cited priority is new production lines or capacity expansion, reflecting ongoing efforts to increase output or support new products. For example, Thai President Foods highlighted the need for more flexible production lines capable of producing smaller batches and new flavors to respond to rapidly changing consumer preferences.

A significant share of companies is also focusing on line upgrades or retrofits, suggesting that many manufacturers prefer improving the efficiency of existing equipment rather than undertaking full greenfield investments. In some cases, upgrades are specifically aimed at reducing costs or improving operational performance.

Meanwhile, automation and digitalization investments are emerging in some companies' strategies. Surapon Foods, for instance, reported plans to integrate IoT and AI vision systems into production lines to support automation initiatives.

Figure 9: Which types of investments are currently priorities for your organization?



N = 13; Multiple answers allowed

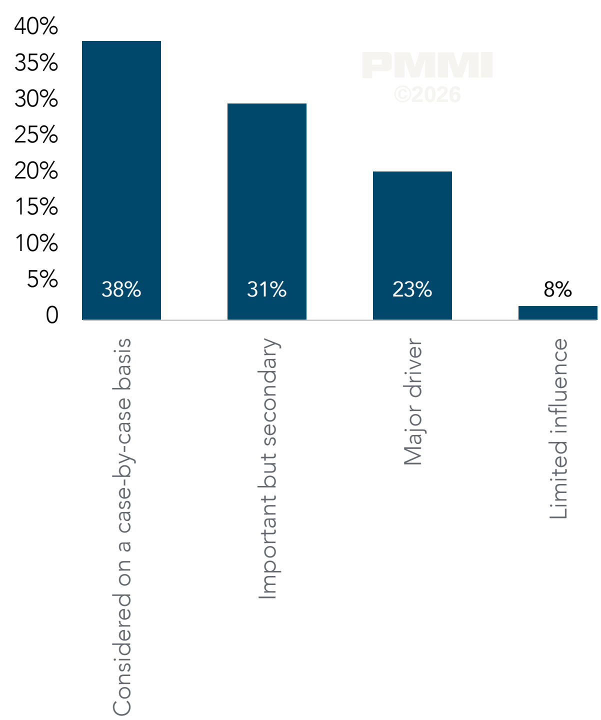
Overall, 92% of companies interviewed consider sustainability to some degree when making equipment investment decisions, though only a minority treat it as a primary driver.

For some manufacturers, sustainability is embedded in broader corporate strategies. Mitr Phol Group highlighted that sustainability is a major driver due to the company's environmentally focused policies and integrated bio-based production model. Similarly, Surapon Foods reported that sustainability strongly influences investment decisions, including efforts to integrate low-carbon machinery into production lines.

Other companies view sustainability as important but secondary or evaluate it case by case, balancing environmental considerations with cost, productivity, and return on investment. Only one company, Siam Winery, reported that sustainability currently has limited influence on equipment investment decisions.

Across several interviews, sustainability was often linked to energy efficiency, waste reduction, and alignment with broader corporate ESG strategies. In practice, many companies indicated that environmentally beneficial technologies are most likely to be adopted when they also deliver operational efficiencies or measurable cost savings, highlighting the close relationship between sustainability and productivity improvements in manufacturing investment decisions.

Figure 10: To what extent do sustainability considerations influence your equipment investment decisions today?



N = 13; Each company could select only one answer

When presented with an open question, Thai companies indicated that market demand, financial performance, and operational efficiency gains are the main factors shaping capital expenditure decisions.

Across several companies, demand growth and business expansion were identified as key triggers for investment. For example, Prim Drinking Water indicated that expansion into OEM supply markets and rising product demand would accelerate machinery purchases. Similarly, Delight 88 noted that investment decisions depend directly on demand for its products.

Financial performance and budget availability were also highlighted as important considerations. DPO explained that investment could be delayed if the company's profitability or income does not meet expectations, reflecting the capital-intensive nature of processing equipment. In other cases, respondents emphasized the need for technologies that clearly improve productivity and deliver measurable returns.

A third factor relates to competitive pressures and operational performance. Chabaa Bangkok pointed to the importance of maintaining high packaging quality and competitiveness in the beverage market as drivers for equipment investment.

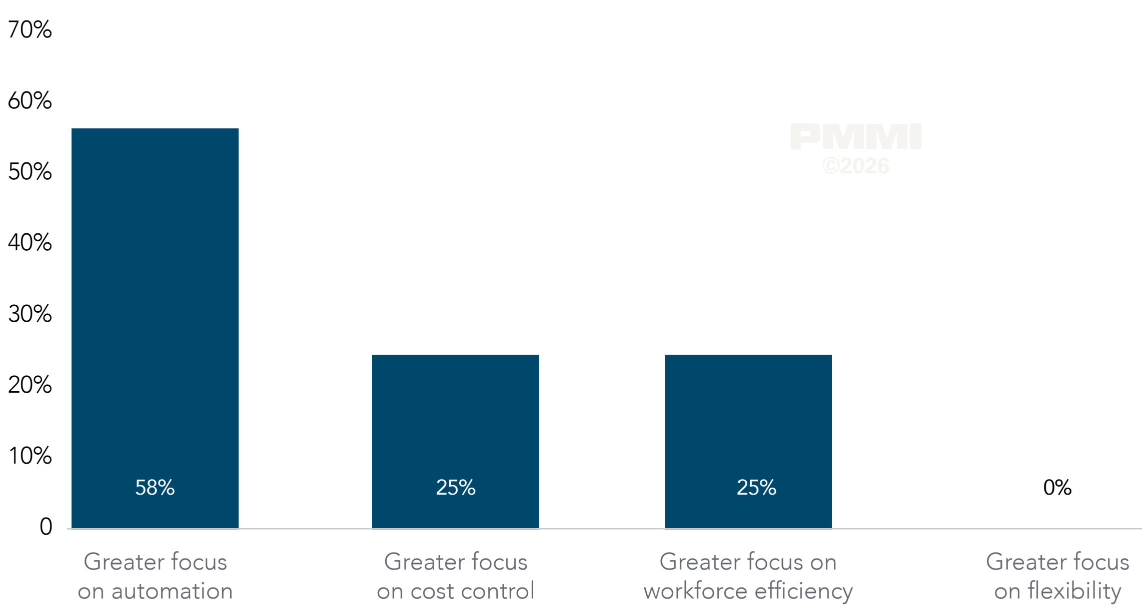
Operational Priorities and Performance Objectives

Interviews with Thailand-based manufacturers reveal a clear shift toward greater automation, cost discipline, and improved workforce efficiency.

The most widely reported shift is a stronger focus on automation, cited by more than half of respondents. Companies explained that automation initiatives help address labor shortages, rising labor costs, and the need for greater production consistency and efficiency. For example, Surapon Foods indicated that increased automation is aligned with management's strategic objective to transition toward fully autonomous production lines. Likewise, Thai President Foods noted that the company expects significant workforce turnover in the coming years and is therefore investing more heavily in automation to reduce reliance on manual labor.

Several companies also reported a growing emphasis on cost control, reflecting increased pressure to maintain competitiveness amid rising operating costs and capital-intensive equipment investments. In addition, greater attention to workforce efficiency was highlighted by companies such as Kuang Pei San, Kao Industrial, and Siam Winery, where improving labor productivity and optimizing workforce utilization have become more important operational priorities.

Figure 11: Compared with two to three years ago, how have your operational priorities changed?



N = 12; Multiple answers allowed

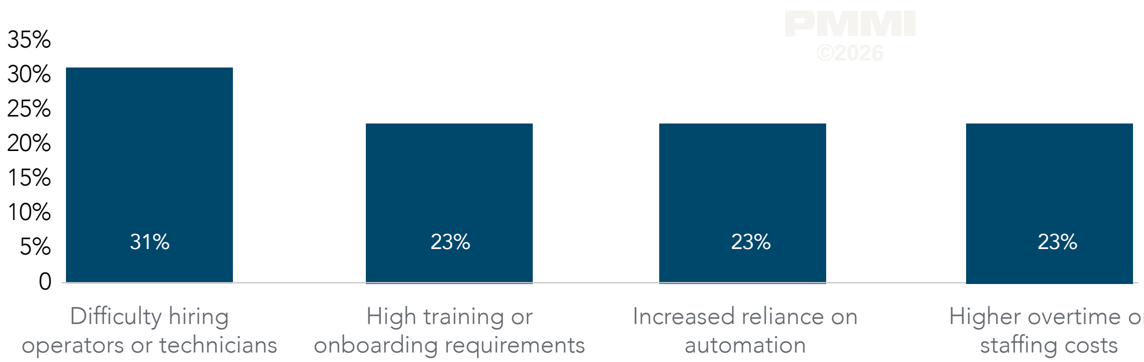
One of the most frequently cited challenges is difficulty hiring operators or technicians, reflecting tightening labor markets and growing demand for technically skilled workers. For example, Kuang Pei San Food Products reported challenges recruiting skilled labor and increasingly relies on migrant workers from neighboring countries to support operations.

Several companies also highlighted high training or onboarding requirements, particularly where production relies on specialized machinery requiring technical expertise. DPO, for instance, noted the importance of continuous training for technicians and operators to maintain stable operations and ensure effective use of processing equipment.

Some manufacturers reported greater reliance on automation as a response to workforce constraints. Cosmo Progress International explained that automation initiatives help maintain operational resilience and reduce dependence on manual labor in a tight labor market.

Finally, a number of companies indicated higher overtime or staffing costs, reflecting the need to maintain production volumes despite labor shortages or skill gaps. Kao Industrial (Thailand), for example, reported rising overtime costs and greater emphasis on improving workforce efficiency.

Figure 12: How do workforce constraints currently affect your production operations?



N = 13; Multiple answers allowed

A recurring theme across interviews is the increasing role of automation and technology in production operations. Several companies explained that automation helps mitigate labor shortages, improve process consistency, and maintain productivity despite workforce constraints. In some cases, companies are redesigning production lines to reduce reliance on manual tasks and improve operational stability.

Another common response relates to investments in workforce training and organizational capability. For example, Mitr Phol reported that during the plant's off-season period, operators and technicians undergo reskilling and upskilling programs to strengthen technical capabilities and support more efficient production operations.

Similarly, DPO highlighted the importance of on-site technical support from equipment suppliers, whose technicians help maintain operations, train staff, and resolve machinery issues quickly.

Some companies also emphasized improvements in internal processes and team structures. For instance, Chabaa Bangkok noted that supervisors are expected to develop stronger problem-solving capabilities so they can independently resolve most operational issues, such as machinery breakdowns or workforce shortages.

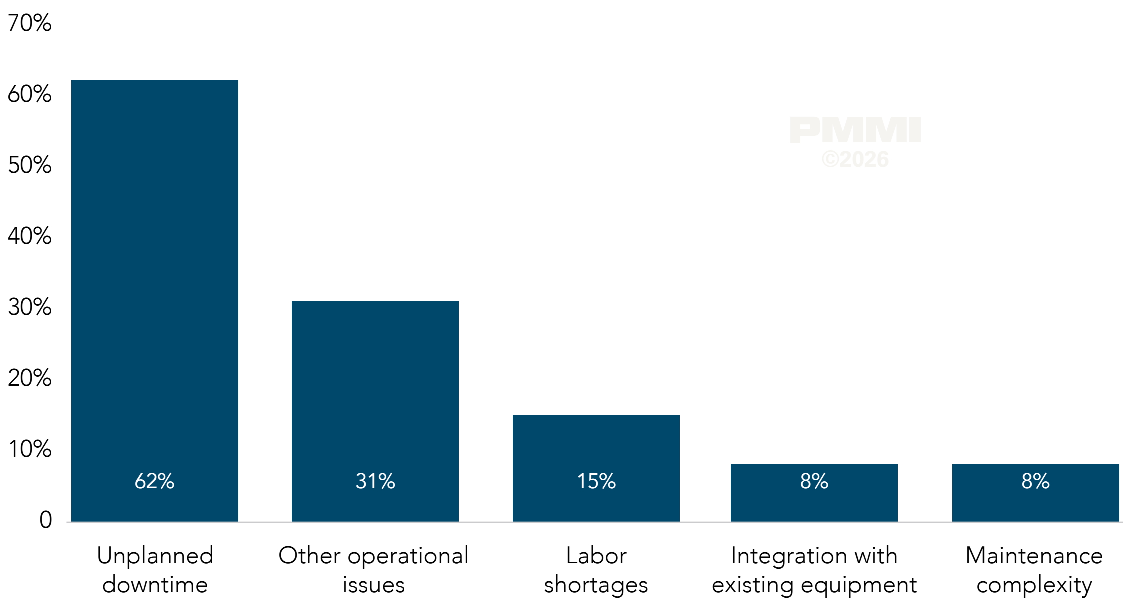
Operational Pain Points and Constraints

Thai companies experience a range of operational challenges, with unplanned downtime emerging as the most common issue, disrupting production schedules, reducing output, and increasing operational costs. Several respondents reported that unexpected machine stoppages have a direct impact on line efficiency and product throughput.

In addition to downtime, a number of companies highlighted specific technical or operational issues unique to their production processes. For instance, Chabaa Bangkok pointed to recurring mechanical issues involving machine components such as shafts and locking mechanisms. Meanwhile, Siam Winery identified both unplanned downtime and challenges related to high-speed labelling settings, which can affect packaging line stability and product labelling accuracy.

A smaller number of companies reported labor shortages, maintenance complexity, or equipment integration challenges as key operational pain points. For example, Kao Industrial (Thailand) highlighted integration issues when introducing new machinery into existing production lines.

Figure 13: What are the most significant operational pain points in your packaging or processing lines today?



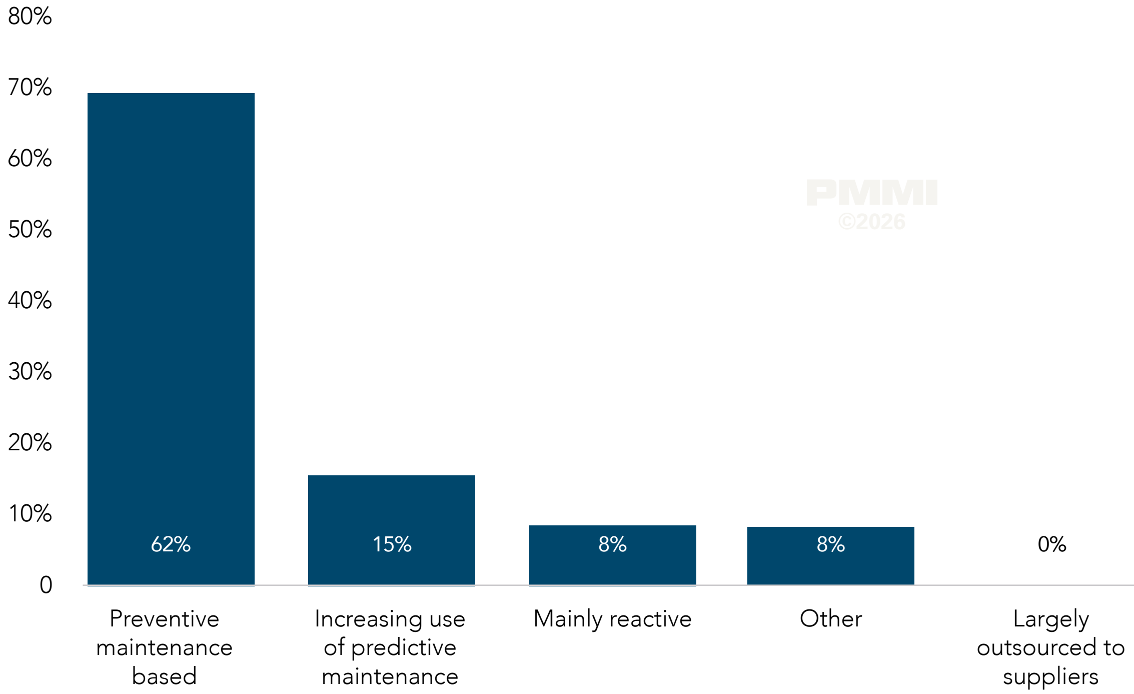
N = 13; Multiple answers allowed

Over two-thirds of manufacturers interviewed rely on preventive maintenance, where equipment is serviced according to scheduled intervals in order to reduce the risk of breakdowns and maintain stable production performance. This model is widely used in high-volume manufacturing environments where unplanned downtime can significantly disrupt production. For example, Kao Industrial reported relying on preventive maintenance to keep machinery operating reliably and minimize unexpected interruptions.

A smaller group of companies indicated that they are increasingly adopting predictive maintenance, using operational data and performance monitoring to anticipate potential equipment failures. Chabaa Bangkok, for instance, maintains statistical records of machine performance that allow the team to forecast maintenance requirements and plan servicing more effectively.

One company reported a mainly reactive maintenance model, where maintenance is carried out primarily after equipment issues occur. Meanwhile, Sugarcane Ecoware described an alternative approach that combines supplier support and outsourced services for certain systems, reflecting the technical specialization required for some production processes.

Figure 14: How would you describe your current maintenance model?



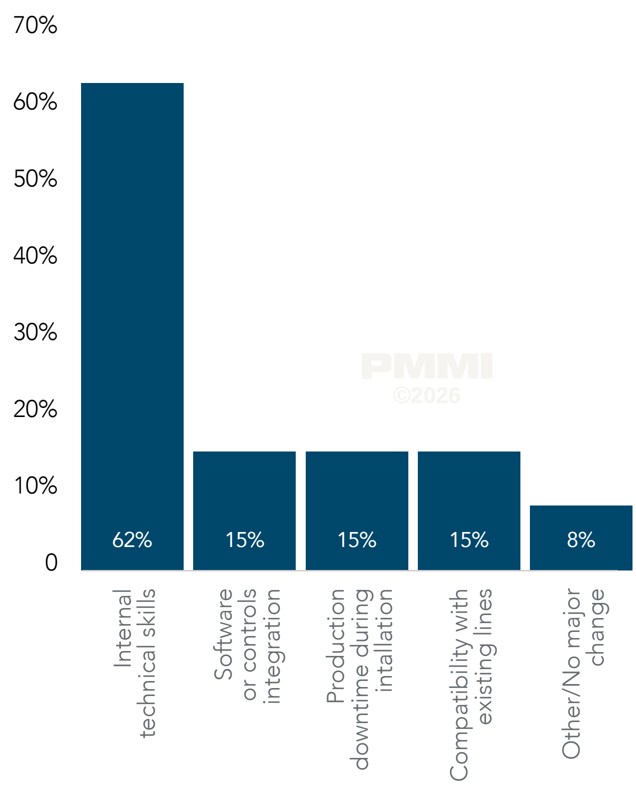
N = 13; Each company could select only one answer

The main barriers are related to internal technical capabilities, selected by nearly two-thirds of respondents rather than line compatibility or installation constraints. Many companies noted that while advanced machinery can improve efficiency and automation, successful integration depends on having technicians and operators who can install, run, troubleshoot, and maintain increasingly sophisticated systems. Cosmo Progress International, for example, explained that the technical capabilities of staff do not always match the requirements of more advanced machinery, resulting in additional training needs and higher operational costs.

A smaller group of companies pointed to software or controls integration and production downtime during installation as key obstacles, especially when new systems must be incorporated into active production environments. Prim Drinking Water, for instance, highlighted both software integration and installation-related downtime as important concerns.

Only a limited number of companies cited compatibility with existing lines as a major challenge, suggesting that for most respondents the greater issue lies not in physical fit, but in the organizational and technical readiness needed to absorb new technologies effectively.

Figure 15: What challenges do you face when integrating new equipment or technologies?



N = 13; Multiple answers allowed

Equipment reliability, technical capability, and production efficiency are the main concerns affecting manufacturing performance. Several companies identified unplanned downtime or production disruptions as the most critical issue. Downtime directly reduces output and increases operational costs, particularly in high-volume manufacturing environments where production lines run continuously. For example, Kuang Pei San Food Products noted that unexpected downtime has the greatest impact on overall performance because it interrupts production flow and reduces throughput.

Several respondents also pointed to technical skill gaps and the complexity of modern machinery as key challenges. As production equipment becomes more sophisticated, companies reported that technicians may lack the specialized knowledge needed to troubleshoot and resolve issues quickly. Cosmo Progress International, for instance, explained that a mismatch between advanced hardware and available technical expertise can lead to extended downtime and operational inefficiencies.

In some cases, respondents highlighted specific operational or environmental factors affecting performance. DPO emphasized that external resource constraints such as unstable electricity supply, water shortages, and compressed air availability can significantly disrupt production operations. Meanwhile, Mitr Phol noted that unidentified production losses can affect efficiency and increase costs, underscoring the importance of better operational monitoring and diagnostics.

Technology Adoption and Emerging Demands

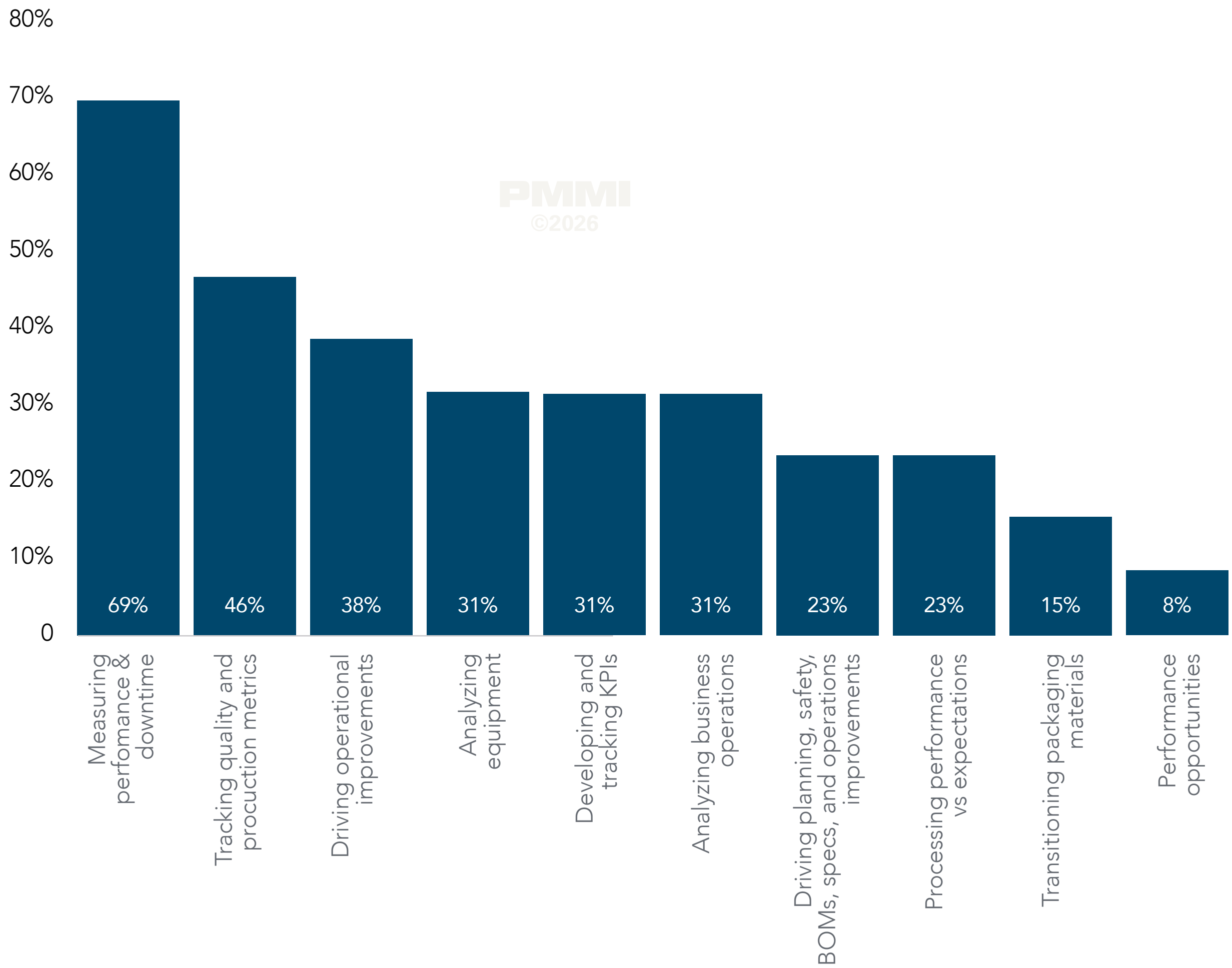
Considering operational objectives priorities, the most prominent priority is measuring performance and downtime, selected by nearly 70% of respondents. This highlights a widespread need for greater visibility into production efficiency, with many companies seeking to better understand line performance, identify bottlenecks, and reduce downtime.

Closely related to this, a significant share of companies emphasized tracking quality and production metrics and driving operational improvements, indicating a strong focus on continuous improvement initiatives supported by data. For example, Thai President Foods and Kao Industrial both highlighted the importance of performance tracking and quality monitoring to optimize operations.

A second tier of priorities includes equipment analysis, KPI tracking, and broader business analytics, suggesting that many companies are developing more structured approaches to performance management and decision-making. Siam Winery, for instance, specifically emphasized performance monitoring and KPI tracking, pointing to a focus on establishing clearer performance frameworks.

More advanced or targeted priorities, such as processing performance benchmarking, planning optimization, or transitioning packaging materials, were mentioned less frequently and tend to reflect more specific operational or strategic initiatives within individual companies.

Figure 16: For which of the following operational objectives do you currently have the greatest needs or priorities?



N = 13; Multiple answers allowed

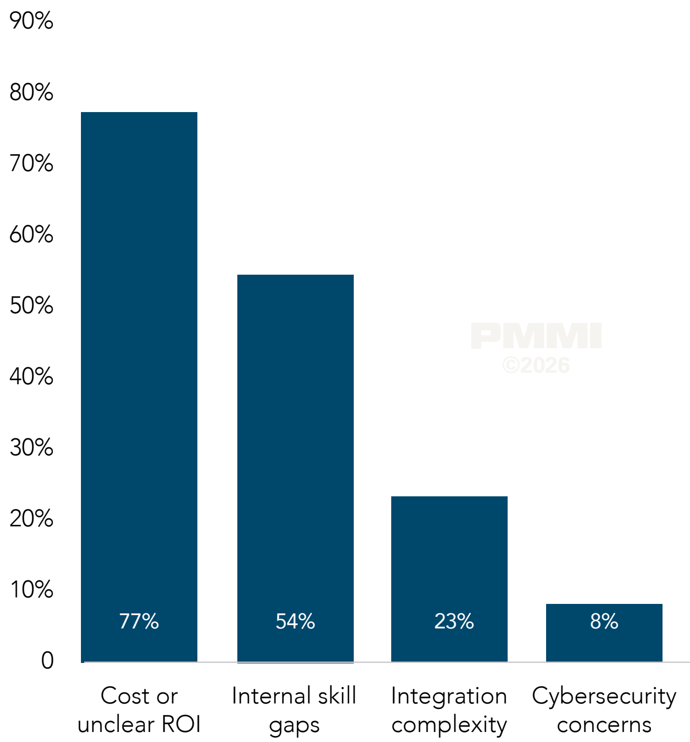
The most significant barrier to technology adoption is cost or unclear return on investment (ROI), cited by over three-quarters of respondents. This highlights that while interest in digital solutions is widespread, companies often struggle to quantify financial benefits and justify upfront investment, particularly in capital-intensive manufacturing environments.

A second key barrier is internal skill gaps, reported by more than half of companies. This reflects the growing complexity of digital tools and the need for specialized technical capabilities to implement and operate them effectively. In many cases, this creates a dependency on external support or slows down adoption timelines.

Integration complexity is a more targeted concern, affecting a smaller group of companies. It typically relates to the challenge of integrating new digital systems with existing production lines or legacy equipment, which can increase both cost and implementation risk.

Finally, cybersecurity concerns were mentioned by only one respondent, suggesting that while data security is not yet a widespread barrier, it is beginning to emerge as digitalization increases.

Figure 17: What are the main barriers to adopting more advanced or digitalized solutions?



N = 13; Multiple answers allowed

The strongest demand from manufacturers is for more automated equipment that can operate with fewer staff, followed closely by stronger after-sales service and remote support. This reflects the dual pressures many companies face: on the one hand, labor constraints and the need to reduce dependence on operators; on the other, the increasing complexity of production systems, which raises the importance of responsive supplier support.

A second cluster of priorities centers on equipment flexibility and digital visibility. Several respondents want machines that are easier to upgrade or adapt to changing production needs, while others are looking for better access to usable machine data to support monitoring and decision-making. This suggests that manufacturers are not only seeking higher efficiency, but also greater adaptability and transparency in day-to-day operations.

One notable outlier came from Sugarcane Ecoware, which asked for machine data to be linked directly to mobile phones, pointing to interest in simpler, more accessible forms of real-time monitoring rather than broader digital platforms.

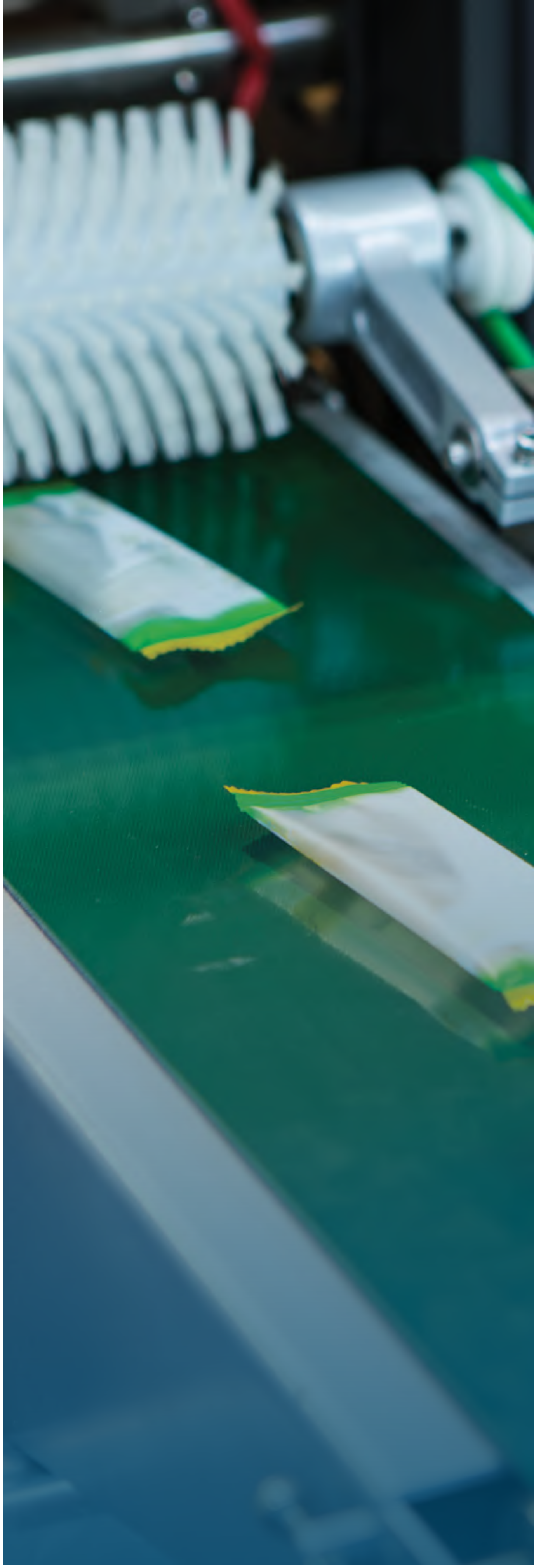
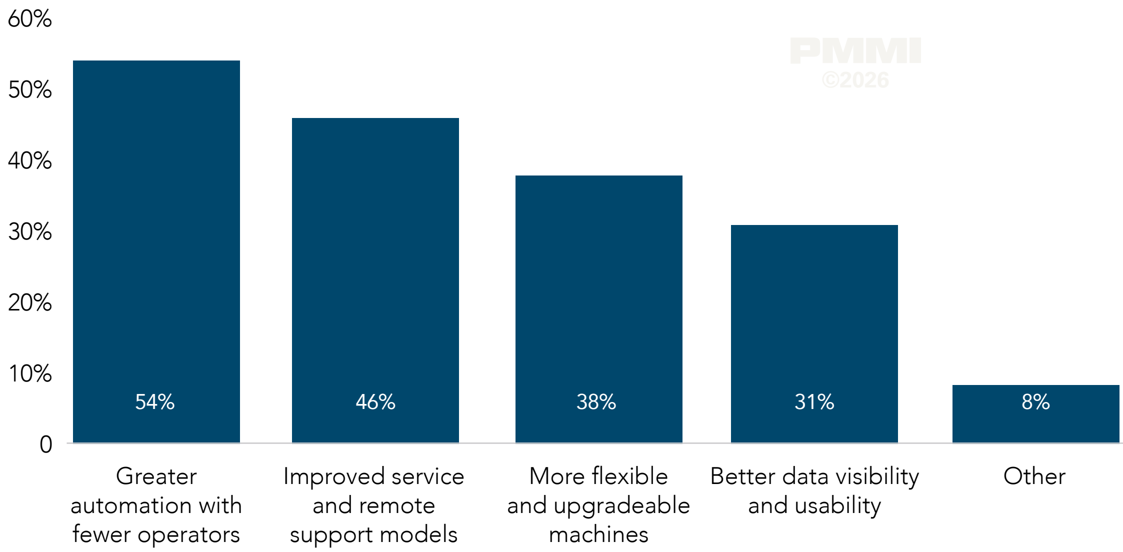


Figure 18: Looking ahead, which innovations or capabilities would you most like to see from equipment suppliers?



N = 13; Multiple answers allowed

Thai companies interviewed highlighted the importance of tangible performance gains, particularly in terms of efficiency, productivity, and downtime reduction. Companies defined success as the ability to use data to identify issues quickly, optimize processes, and increase output without increasing resources. For example, some respondents emphasized that real-time visibility into machine performance enables faster decision-making and more effective troubleshooting.

Another key dimension of success is actionable data. Several companies highlighted that simply collecting data is not sufficient, as value comes from the ability to translate data into clear insights that operators and managers can act upon. This includes identifying bottlenecks, monitoring operator performance, and improving production planning.

Cost savings and return on investment are also central to how companies assess value. Respondents frequently noted that digital initiatives must demonstrate clear financial benefits, such as reduced labor costs, lower waste, or improved equipment utilization, in order to justify continued investment.

Some companies also pointed to improved quality and consistency as indicators of success, particularly where digital tools help track production metrics and reduce variability.

Vendor Selection and Procurement Decision Drivers

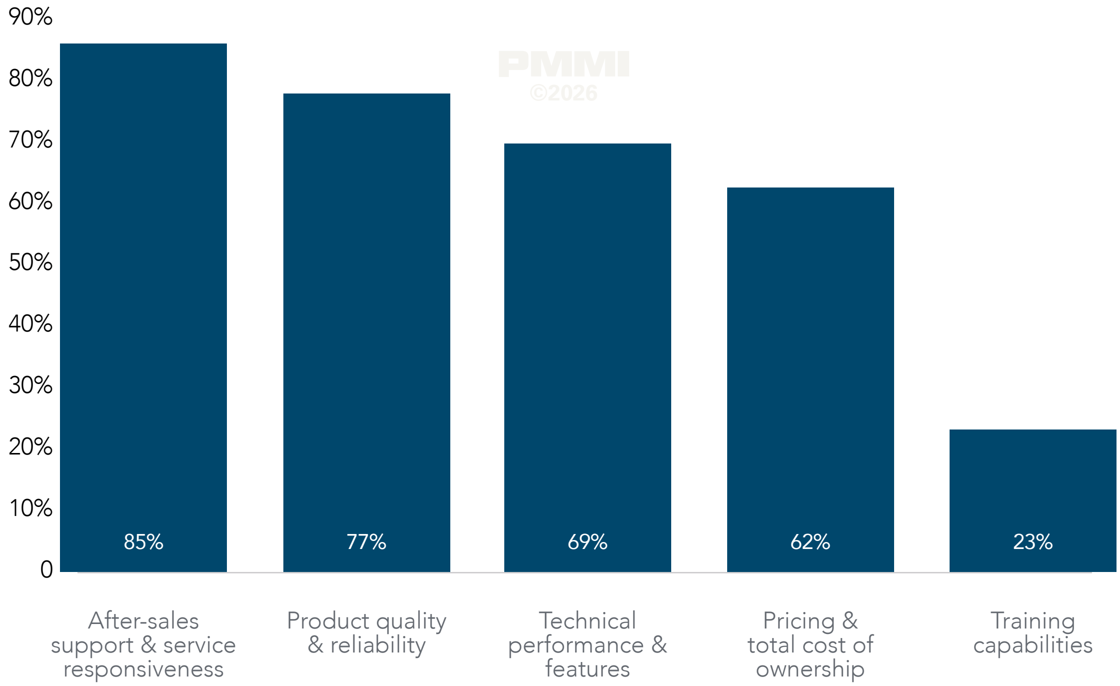
Thai companies interviewed indicated that supplier selection is primarily driven by technical performance, equipment reliability, and after-sales support. These factors are consistently prioritized as they directly impact production stability, uptime, and overall operational efficiency.

After-sales support emerged as a particularly critical differentiator. Respondents emphasized the importance of fast response times, local service presence, and spare parts availability, especially in environments where downtime carries significant cost implications or where in-house technical capabilities are limited.

While pricing and total cost of ownership are important considerations, companies typically evaluate cost alongside performance and reliability. Many respondents indicated a willingness to invest more upfront for equipment that delivers better long-term efficiency and lower operational risk.

Other factors, such as training capabilities, play a more secondary role and are mainly relevant for companies facing workforce skill gaps.

Figure 19: Looking ahead, which innovations or capabilities would you most like to see from equipment suppliers?



N = 13; Multiple answers allowed

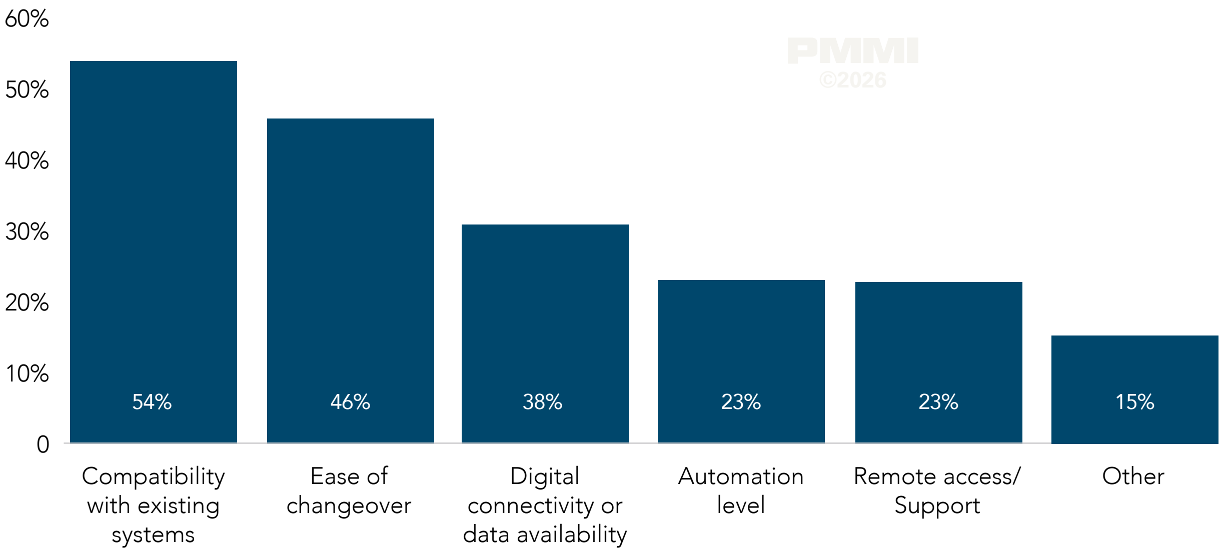
Thai companies interviewed indicated that the most important technical capability when evaluating new equipment is compatibility with existing systems. This was the most frequently selected factor, reflecting the strong need to integrate new machinery smoothly into existing production environments, minimize disruption, and simplify maintenance and spare-parts management.

A second major priority is ease of changeover, especially among companies managing multiple product formats or requiring operational flexibility. Respondents pointed to the importance of equipment that can switch efficiently between SKUs or production requirements without causing excessive downtime.

Other technical capabilities were selected less frequently but remain important for specific groups of manufacturers. Digital connectivity or data availability was valued by companies looking for better monitoring and performance visibility, while automation level was prioritized by firms seeking labor reduction or higher production consistency. Remote access/support was important mainly for companies that rely on fast supplier assistance or have limited in-house technical resources.

A small number of companies also highlighted more specialized requirements outside the standard options. These included ease of use and the ability to capture real-time throughput and safety-related data, suggesting that some buyers evaluate equipment through a more operationally specific lens.

Figure 20: Which technical capabilities are considered essential when evaluating new equipment?



N = 13; Multiple answers allowed

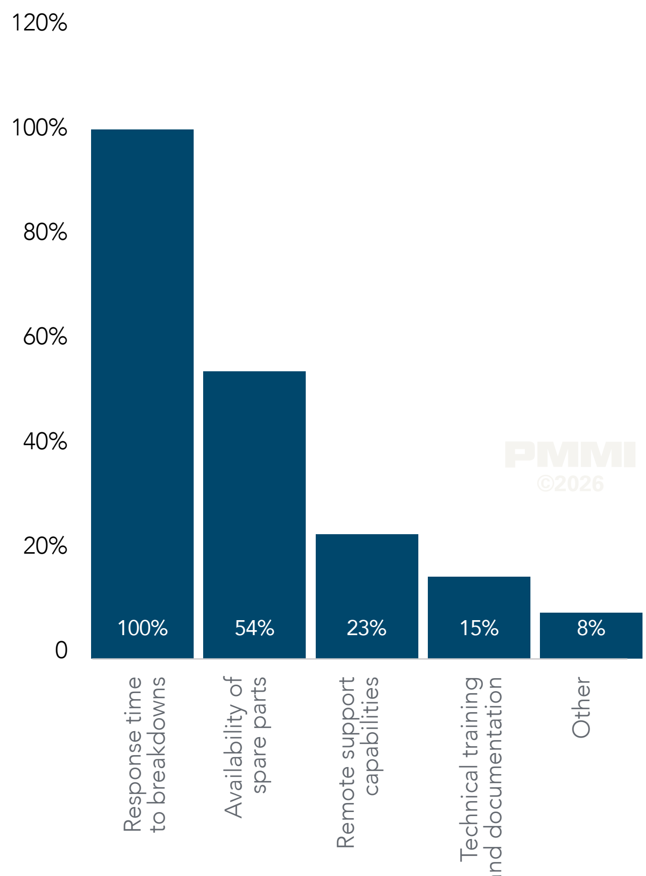
Thai companies interviewed showed a very clear consensus that the most important aspect of after-sales support is response time to breakdowns. This was selected by all 13 companies, underscoring how strongly buyers associate supplier value with the ability to restore operations quickly and minimize downtime.

A second important consideration is availability of spare parts. This was especially relevant for companies where downtime can be prolonged by parts shortages, making supplier inventory and logistics capabilities a practical decision factor, not just a service add-on.

Remote support capabilities were mentioned less frequently, but they matter for a specific subset of companies that rely on rapid technical guidance or have limited in-house troubleshooting capacity. This suggests remote support is valued more as an enabler of faster problem resolution than as a standalone differentiator.

Technical training and documentation appeared only occasionally, indicating that most companies are more concerned with immediate operational recovery than with formal knowledge transfer. Where training was selected, it tended to reflect more complex production environments or stronger needs for internal capability building.

Figure 21: What aspects of after sales support matter most to your organization?



N = 13; Multiple answers allowed

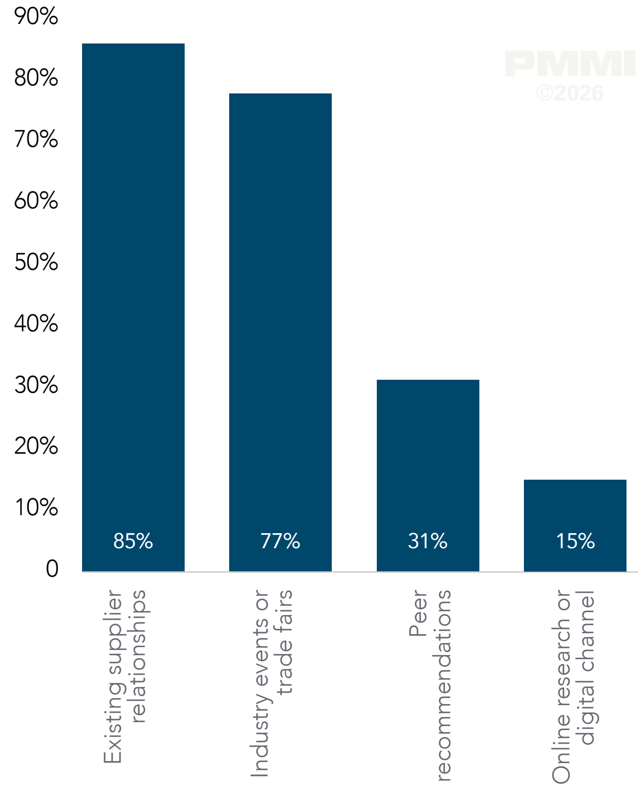
Thai companies interviewed indicated that the main way they become aware of new equipment suppliers or solutions is through existing supplier relationships. This was the most frequently cited channel, suggesting that supplier discovery is still driven largely by established networks and prior business ties rather than by broad market scanning.

A second major source of awareness is industry events and trade fairs. Many respondents continue to rely on exhibitions and trade events to identify new technologies, compare suppliers, and stay informed about market developments. This indicates that in-person industry engagement remains an important route for supplier visibility, especially for companies evaluating capital equipment.

Peer recommendations play a more limited but still relevant role. These appear to matter most in cases where trust, operational experience, and word-of-mouth validation are important in reducing perceived supplier risk.

By contrast, online research and digital channels were mentioned relatively infrequently. This suggests that while digital discovery is present, it is not yet a primary route for identifying new equipment suppliers among most of the companies interviewed.

Figure 22: How do you typically become aware of new equipment suppliers or solutions?



N = 13; Multiple answers allowed

Thai companies interviewed highlighted several unmet needs from equipment suppliers, with a strong emphasis on enhanced service capabilities and operational efficiency improvements. A recurring theme is the demand for more responsive, localized technical support, including faster on-site troubleshooting and stronger after-sales engineering capabilities. This reflects the critical importance of minimizing downtime and ensuring continuity of operations, particularly in environments with limited in-house technical expertise.

Another key gap identified is the need for greater automation and smarter machine capabilities. Several companies expressed interest in solutions that can improve productivity while reducing reliance on labor, such as automated quality inspection, flexible production systems, or advanced weighing and filling technologies. These capabilities are seen as directly enhancing efficiency, consistency, and scalability.

Companies also emphasized the importance of better data visibility and digital integration. Respondents indicated a desire for real-time monitoring tools, performance dashboards, and systems that can provide actionable insights into operations. These capabilities would support better decision-making, improved planning, and clearer measurement of return on investment.

Cost-related improvements were another recurring theme. Some companies highlighted the need for more cost-efficient machinery, including solutions that reduce spare parts usage, simplify maintenance, or provide clearer cost-benefit analysis. This reflects ongoing pressure to balance performance improvements with financial constraints.

Finally, a smaller number of companies pointed to sustainability and advanced process capabilities as emerging requirements, such as machinery supporting net-zero operations or improved waste management. While less widespread, these needs indicate a growing awareness of environmental and regulatory considerations in equipment selection.

INDONESIA

END-USER SECTOR OVERVIEW

Import Overview

Indonesia's imports of packaging machinery recovered in 2024 to USD 413.8 million, approaching the 2020 peak, after a dip in 2021. China solidified its position as the largest supplier with USD 173 million, reflecting strong regional competitiveness. Germany and Italy remained significant European partners, with steady contributions despite some volatility. Japan maintained a mid-tier position, while India emerged strongly in 2024, reaching USD 22 million, signaling growing diversification of sources. South Korea, Singapore, and Taiwan played moderate roles, indicating regional supply integration. The United States held a marginal position, ranking twentieth in 2024 with just USD 1.5 million, down sharply from earlier years. This decline highlights limited penetration in Indonesia's packaging machinery market, which is dominated by Asian suppliers and established European exporters, leaving US suppliers with minimal influence.

Table 2: Indonesia's imports of packaging machinery

Partner	2020	2021	2022	2023	2024	2024 Ranking
World	**414.2**	**310.8**	**360.7**	**377.0**	**413.8**	**–**
China	79.4	115.4	148.4	148.4	173.0	1
Germany	101.3	29.7	45.2	52.5	52.7	2
Italy	90.0	38.7	32.1	43.3	44.9	3
Japan	38.7	22.0	36.1	37.5	24.1	4
India	4.9	6.0	6.9	6.5	22.0	5
South Korea	13.3	20.4	9.8	15.5	13.2	6
Singapore	4.1	8.7	6.9	7.6	9.6	7
Netherlands	3.6	6.0	5.6	5.6	8.8	8
Sweden	2.2	5.8	0.9	1.6	8.3	9
Taiwan	17.6	9.3	11.0	7.9	8.1	10
United States	**13.7**	**12.1**	**11.4**	**2.8**	**1.5**	**20**

Note: HS codes considered are 842220, 842230, and 842240 | Unit: USD 1,000,000

Key Policies and Trends

Indonesia's packaging sector is undergoing a period of significant regulatory reform. A central pillar is the move toward mandatory Extended Producer Responsibility (EPR) for packaging waste. Under the framework established by the Ministry of Environment and Forestry through Regulation No. P.75/2019 on Waste Reduction, producers, manufacturers, brand owners, and retailers are required to reduce waste from packaging and products they place on the market. The regulation mandates phased targets through 2029, obliging producers to redesign packaging, reduce waste generation, and take responsibility for post-consumer collection and recycling. The measure is part of Indonesia's 2025–2029 National Medium-Term Development Plan (RPJMN), which targets 100% waste management by the end of the period.

Indonesia's move to EPR requires to reduce waste from packaging

Source: ChemLinked

Building on this roadmap, the government has strengthened enforcement. As of August 2025, plastic recycling obligations have become mandatory in practice for affected producers, requiring companies to submit detailed collection, recycling, and reporting plans. Producers must demonstrate measurable progress in recovering plastic packaging waste and are subject to administrative sanctions for non-compliance. This marks a shift from largely voluntary sustainability commitments to a more structured compliance regime, reinforcing the "polluter pays" principle and embedding circular economy concepts in national waste policy.

In parallel, Indonesia is introducing minimum recycled content requirements to stimulate domestic recycling markets and reduce reliance on virgin resin. Effective January 1, 2026, new regulations require flexible plastic packaging to contain at least 15% post-consumer recycled (PCR) material. The measure is expected to displace approximately 120,000 tons of virgin plastic annually, promoting demand for locally sourced recycled feedstock and encouraging investment in sorting and reprocessing infrastructure.

Food packaging safety has emerged as another major policy focus. In mid-2025, Indonesia introduced stricter food contact material rules designed to enhance consumer protection and align with international standards. The Indonesian Food and Drug Authority (BPOM) released a draft "positive list" of approved substances for packaging materials including plastics, glass, and metals. Only substances explicitly listed and assessed for safety may be used in food contact applications.

Notable developments

Some key examples of end-users that have recently expanded their operations in Indonesia include:

Friesland Campina opened a new Frisian Flag Indonesia dairy manufacturing facility in Cikarang, West Java. The company described this as a record investment within its international production network, reporting EUR 257 million for the project. The plant integrates filling and packaging as part of the hygienic "end-of-line" process such as UHT/sterile filling into cartons or bottles, followed by secondary packing into cases for distribution.

PT PepsiCo Indonesia inaugurated its first Indonesian manufacturing plant in Cikarang, West Java, with the official opening in June 2025 and operations commencing in January 2025. The facility was built with an investment of USD 200 million and is designed to serve as PepsiCo's local production hub for popular snack brands including Lay's, Cheetos, and Doritos. Located within the Greenland International Industrial Center (GIIC), the plant features three production lines with a combined installed capacity of 24,000 tons per year and has created nearly 400 jobs, reflecting a significant increase in domestic manufacturing footprint for the global food company.

PT Multi Citra Rasa, an Indonesian food and beverage manufacturer, opened a new production facility in the MM2100 industrial area, Bekasi, West Java in late 2024, marking a substantial expansion over its prior operations. The new plant occupies approximately two hectares and increases capacity roughly sixfold relative to the previous facility. The expanded site supports manufacturing of the company's portfolio of beverage bases and syrups such as DRiPP Gourmet Syrup, MultiBev, and other branded products for domestic distribution and export markets spanning Southeast Asia and beyond.

Indonesia's iconic tea beverage producer PT Sinar Sosro has been actively scaling operations in response to domestic and export demand, including modernizing and expanding its facilities in West Java and Central Java over the 2024–26 period. Investments have focused on bottling line upgrades and extended shelf-stable beverage production capacity to strengthen supply for flavored teas and ready-to-drink beverages across ASEAN markets.

Indian Multinational consumer goods company Godrej Consumer Products Ltd (GCPL) confirmed in 2025 that its Indonesian subsidiary, PT Godrej Consumer Products Indonesia, commenced construction of a new manufacturing facility in Kendal, Central Java. This plant is intended to expand the company's capacity in the personal care and FMCG segment, supporting local production and strengthening Godrej's manufacturing footprint in Southeast Asia.

PT Bio Farma, the state-owned vaccine manufacturer based in Bandung, West Java, announced plans in late 2024 to build a new vaccine production plant to increase overall manufacturing capacity. The company's announced intention aims to enable multi-fold capacity growth (up to five times current production) and support export growth over the coming decade. The new facility initiative is part of Bio Farma's strategic emphasis on strengthening Indonesia's role as a regional hub for vaccine supply, supported by its status as ASEAN's key vaccine producer.

PT Livzon Pharma Indonesia, a joint venture involving Indonesia's Kalbe Farma and China's Livzon Group, is investing around USD 40 million to build an active pharmaceutical ingredient (API) manufacturing facility in the GIIC industrial area in Cikarang, West Java, scheduled to start operations by mid-2027. The new API production site targets sterile antibiotic APIs such as vancomycin and teicoplanin, representing upstream expansion within Indonesia's pharmaceutical supply chain

Indonesia's first lightweight aseptic milk packaging format

PT So Good Food, one of Indonesia's largest processed food and dairy manufacturers, partnered with Ecolean, a Swedish packaging technology provider. In this collaboration, So Good Food's dairy brand Real Good became the first company in Indonesia to adopt Ecolean's aseptic, lightweight packaging format for its UHT-milk products, launching flavoured milk in Ecolean® Air Aseptic 125 ml packages complete with straws.

Figure 24: Ecolean and Real Good introduced innovative packaging solutions in Indonesia

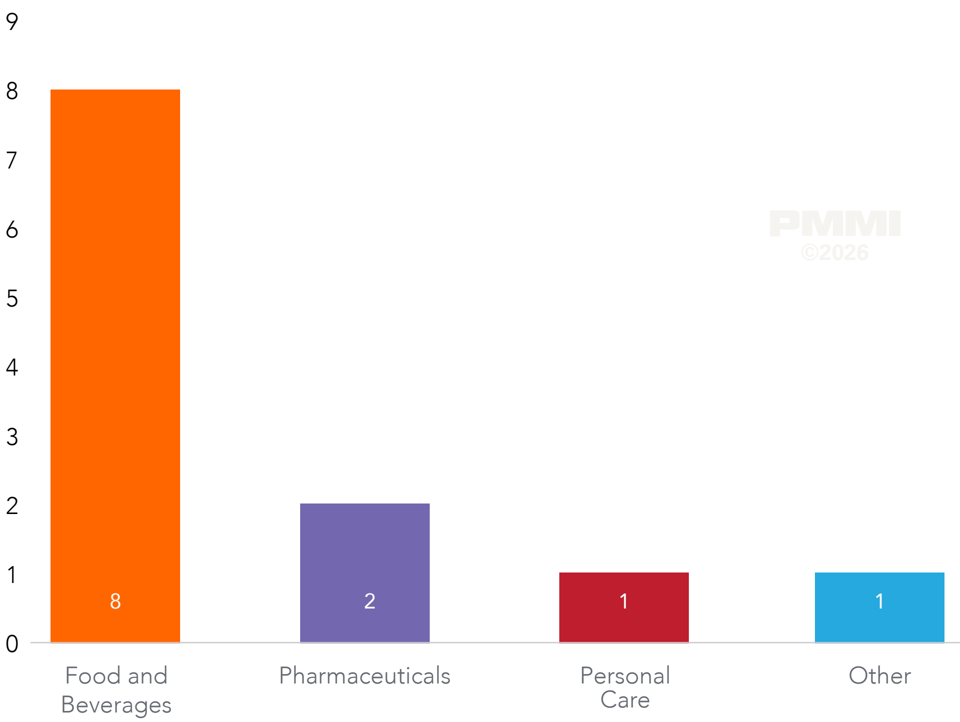
Source: Ecolean

This partnership was designed to combine So Good Food's understanding of local consumer preferences with Ecolean's advanced aseptic packaging technology to offer a convenient, ambient-stable package that does not require refrigeration and differentiates the product on retail shelves. The refrigerant-free, flexible packages have helped Real Good target younger consumers with convenience and sustainability in mind, and played a role in So Good Food achieving recognition from Indonesia's National Agency of Drug and Food Control for high aseptic standards.

PRIORITIES FOR PACKAGING AND PROCESSING OPERATIONS

We conducted a series of interviews with manufacturers based in Indonesia to gain insights into their packaging operations, planned investments, and operational pain points. The interview sample is dominated by food and beverage manufacturers (67%), producing a wide range of products including snacks, dairy products, flour, confectionery, frozen meat, and other fast-moving consumer goods. Pharmaceutical companies account for 17% of respondents, manufacturing medicines in various dosage forms such as tablets, syrups, and creams for the domestic healthcare market. Personal care manufacturers represent 8% of the sample, focusing on products such as perfumes. The remaining 8% comprises a state-owned enterprise operating across the agriculture and food supply chain, covering livestock, processing, and distribution.

Figure 25: Sectoral breakdown of manufactures interviewed in Indonesia



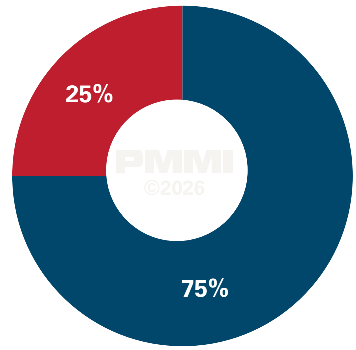
Sector	Companies	Share
Food and Beverages	PT David Roy Indonesia, PT Indofood Fortuna Makmur, Nestlé Indonesia, PT Sinar Pangan Utama, PT URC Indonesia, PT Yummy Food Utama, PT Indofood Sukses Makmur (Bogasari), Orang Tua Group	67%
Pharmaceuticals	PT Ikapharmindo Putramas, PT Sanbe Farma	17%
Personal Care	PT Morel-Renee Parfum Multi Industries	8%
Other	PT Berdikari	8%

Across the 12 companies interviewed, procurement decisions for packaging and processing equipment are predominantly centralized. In 9 companies, purchasing authority sits at the corporate level and is typically managed by a central procurement function, headquarters, or senior management. In these organizations, plant-level managers, engineers, and operational teams contribute by defining technical specifications, identifying operational requirements, and evaluating supplier proposals, but the final purchasing decision remains centralized.

Three companies reported a more decentralized or hybrid structure. In these cases, procurement decisions involve greater input from plant-level teams or business units, although central functions may still play a role in final approval, tender processes, or budget control.

Overall, this structure indicates that investments in packaging and processing equipment are generally treated as strategic, company-wide decisions in Indonesia. Centralized procurement enables stronger control over capital expenditure, standardization of equipment, and supplier management, while still incorporating technical and operational input from production teams to ensure alignment with on-the-ground requirements.

Figure 26: How centralized or decentralized are procurement decisions?



N = 12

Investment Plans and Capital Spending

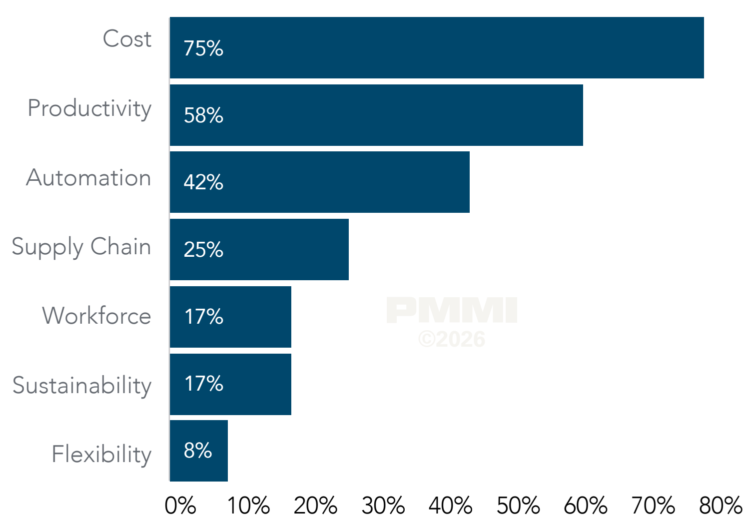
Across the 12 companies interviewed, cost control emerges as the most important priority in packaging and processing operations, cited by 75% of respondents. This reflects a strong focus on managing operational expenses and maintaining margins in a competitive manufacturing environment.

Productivity is the second most cited priority, highlighted by 58% of companies. Many respondents emphasized the need to maximize output and improve operational efficiency, often in conjunction with investments in automation and process optimization.

Automation is also a key focus, selected by 42% of respondents. This indicates a growing shift toward reducing reliance on manual labor, improving consistency, and addressing workforce-related constraints through increased mechanization and digitalization.

Supply chain considerations were mentioned by 25% of companies, particularly among food manufacturers, reflecting the importance of ensuring reliable material flow and distribution efficiency.

In contrast, workforce and sustainability were less frequently cited, each selected by 17% of respondents, suggesting that while these factors are relevant, they are currently secondary to cost and efficiency concerns. Flexibility was mentioned by only one company, and none of the respondents identified growth as a top-three operational priority.



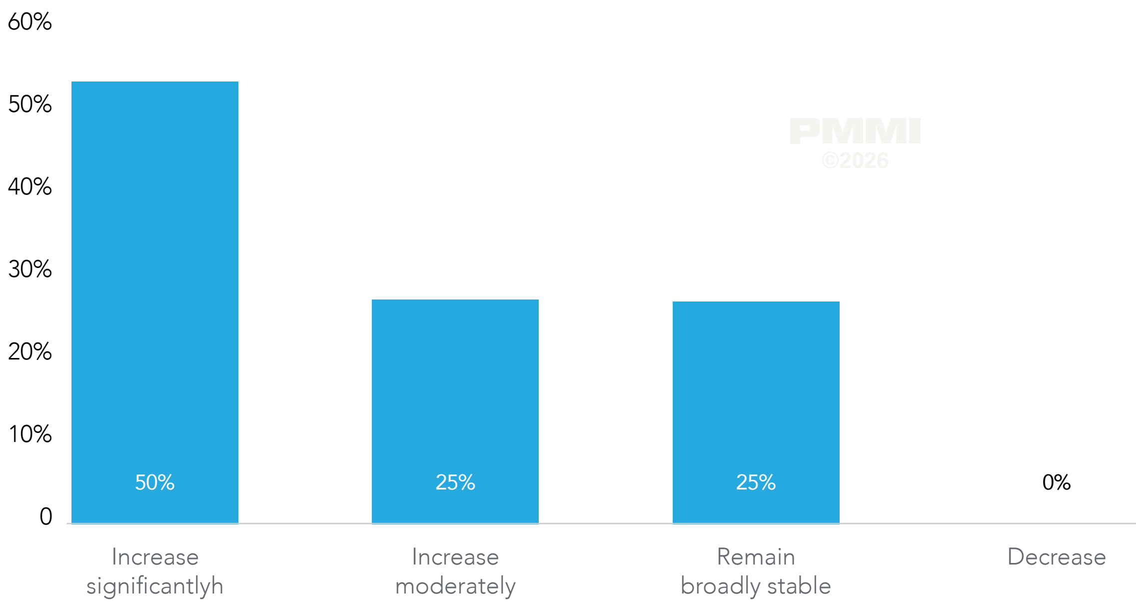
N = 12; Each company could select up to 3 answers

Across the 12 companies interviewed, most respondents expect investment in packaging and processing equipment to increase over the next 12 to 36 months, although the pace and intensity vary. Half of the companies (50%) anticipate a significant increase in investment, suggesting ongoing efforts to expand capacity, upgrade equipment, or improve operational efficiency. However, this is balanced by 25% of respondents who expect only moderate increases, indicating a more measured approach to capital spending.

A further 25% expect investment to remain broadly stable. This suggests that some companies may have already made recent investments or are prioritizing optimization of existing assets rather than immediate expansion.

Importantly, no respondents indicated plans to decrease investment, pointing to a generally steady outlook. At the same time, the presence of both moderate growth and stable responses indicates that investment decisions are likely to remain closely tied to factors such as market demand, internal budgets, and project prioritization, rather than uniformly aggressive expansion.

Figure 28: Over the next 12 to 36 months, how do you expect your investment in packaging and processing equipment to evolve?



N = 12; Each company could select only one answer

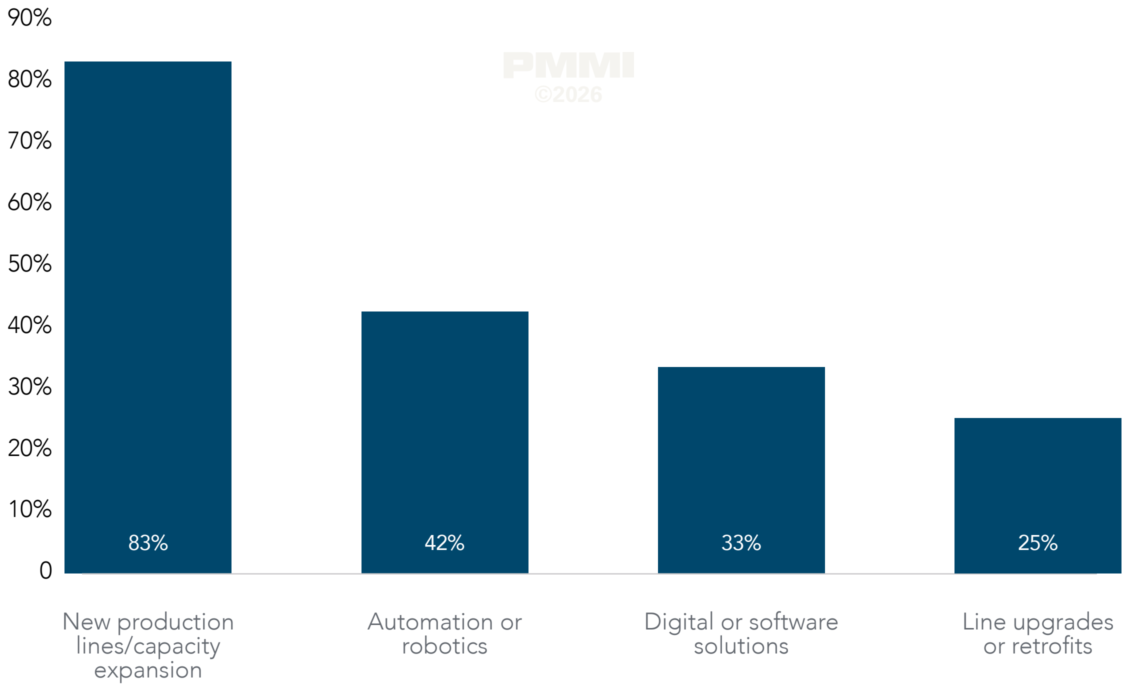
The most common investment priority is the expansion of production capacity, with 83% of respondents selecting new production lines or capacity expansion. This suggests that many manufacturers are still focused on scaling output to meet demand or support business growth.

Automation and robotics are the second most cited priority, selected by 42% of companies. This reflects a continued shift toward improving efficiency and reducing reliance on manual processes, although it is not yet as universal as capacity expansion.

Digital or software solutions were identified by 33% of respondents, indicating a growing but still emerging focus on digitalization. These investments are likely aimed at improving data visibility, process monitoring, and operational control, but adoption appears less widespread compared to more tangible equipment investments.

Line upgrades or retrofits were selected by 25% of companies, suggesting that some manufacturers are prioritizing incremental improvements to existing production lines rather than full-scale expansion or replacement.

Figure 29: Which types of investments are currently priorities for your organization?



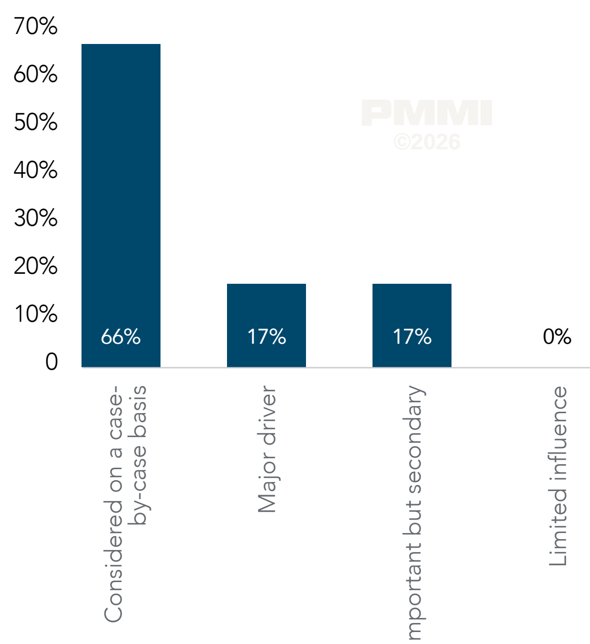
N = 12; Multiple answers allowed

Two-thirds of respondents indicate that sustainability is evaluated on a case-by-case basis. This suggests that while environmental considerations are part of the decision-making process, they are typically weighed alongside other factors such as cost, technical performance, and operational requirements, rather than driving investment decisions on their own.

A smaller group of companies (17%) consider sustainability to be a major driver, indicating a more proactive or strategic approach to environmental considerations. Another 17% describe it as important but secondary, reinforcing the view that sustainability is relevant but not yet central to most investment decisions.

No respondents reported sustainability as having limited influence, suggesting that the topic is at least acknowledged across all companies, even if its importance varies.

Figure 30: To what extent do sustainability considerations influence your equipment investment decisions today?



N = 12; Each company could select only one answer

When asked what would accelerate or delay investment in packaging and processing equipment, respondents highlighted a mix of demand-driven, financial, and operational factors.

Market demand and business growth emerge as the most consistent drivers of investment. Several companies indicated that increasing sales volumes or expansion plans would directly accelerate capital expenditure. For example, PT David Roy Indonesia and PT Indofood Fortuna Makmur both noted that sales demand plays a key role in triggering investments, while Orang Tua Group similarly highlighted market demand and project priorities as determining factors.

Financial considerations and internal approval processes also play a significant role. Respondents frequently noted that investment decisions depend on budget availability, return on investment, and funding approvals. In some cases, corporate approval or prioritization of projects can delay planned investments, even when there is a clear operational need.

Operational efficiency and performance improvements are another important factor. Companies indicated that investments are more likely to proceed when they contribute to productivity gains, cost reductions, or process improvements. The need to enhance efficiency or support new product development can act as a trigger for equipment upgrades.

In addition, a few respondents pointed to external or structural factors. PT Sinar Pangan Utama mentioned that unstable government policies and taxation could delay investments, while also noting that strong after-sales service from suppliers could accelerate them.

Operational Priorities and Performance Objectives

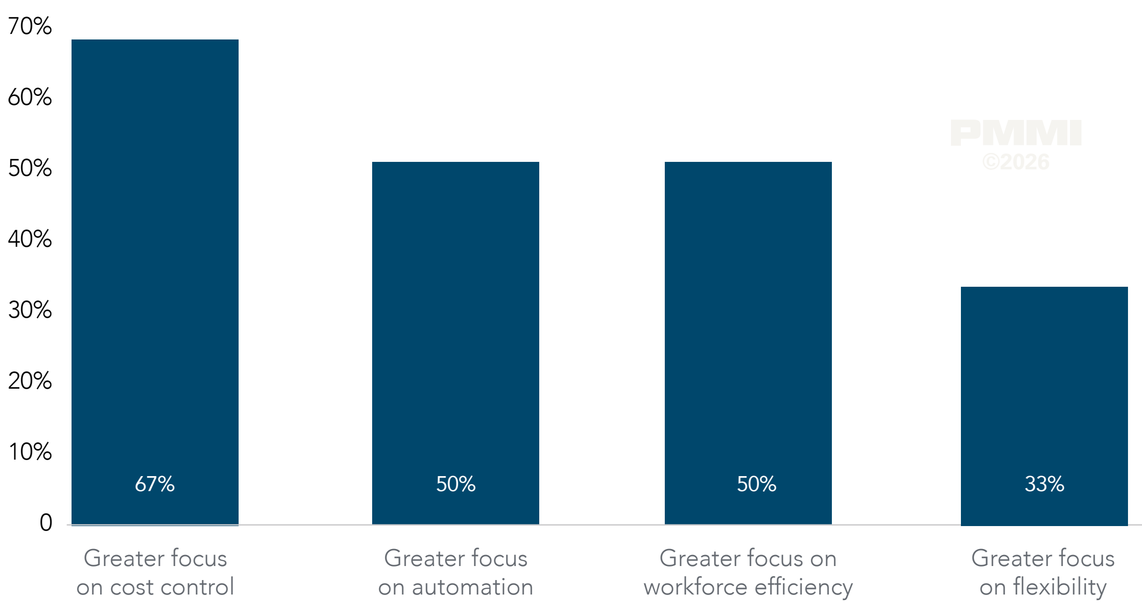
Responses indicate a clear shift toward efficiency-driven operations over the past two to three years. Cost control is the most frequently cited change, selected by 67% of companies. This suggests that managing expenses and improving cost efficiency has become a stronger priority, likely in response to margin pressures and rising operational costs.

At the same time, half of the respondents report a greater focus on automation and workforce efficiency. These two priorities are closely linked, reflecting efforts to reduce reliance on manual labor, improve productivity, and address workforce-related constraints. The parallel increase in both areas suggests that companies are not only investing in automation, but also rethinking how labor is deployed and managed within operations.

Flexibility was selected by 33% of respondents, indicating a growing need to adapt production processes to changing demand patterns, product variations, or supply chain conditions. While less widely cited than cost or automation, it remains an important consideration for a subset of companies.

Overall, the results point to a shift toward more efficient, streamlined, and technology-enabled operations. Companies appear to be balancing cost pressures with the need to maintain productivity, with automation and workforce efficiency emerging as key levers for achieving this.

Figure 31: Compared with two to three years ago, how have your operational priorities changed?



N = 12; Multiple answers allowed

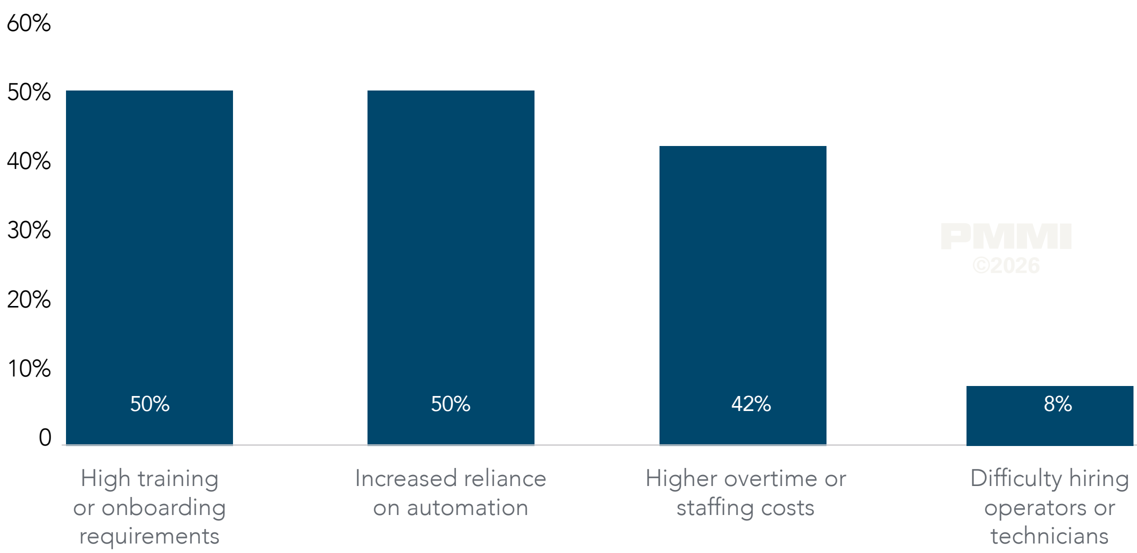
Workforce constraints are affecting production operations in several ways, with training requirements and automation emerging as the most common responses. Half of the respondents report high training or onboarding requirements, indicating that workforce capability and skills development remain key challenges. This suggests that even when labor is available, companies face difficulties ensuring workers are sufficiently trained to operate increasingly complex equipment.

A similar proportion (50%) indicate increased reliance on automation. This reflects a broader shift toward reducing dependence on manual labor and mitigating workforce-related constraints through technology adoption.

Higher overtime or staffing costs were cited by 42% of companies, pointing to cost pressures associated with maintaining production levels. This suggests that workforce limitations are not only operational but also financial, requiring companies to allocate additional resources to sustain output.

In contrast, only one company reported difficulty hiring operators or technicians. This indicates that the primary challenge is not necessarily labor availability, but rather workforce quality, training, and cost management.

Figure 32: How do workforce constraints currently affect your production operations?



N = 13; Multiple answers allowed

A recurring theme across responses is the increasing role of automation and process optimization in shaping production operations. Several companies indicated that they are redesigning workflows and production setups to improve efficiency, reduce manual intervention, and maintain output despite workforce constraints.

In particular, respondents highlighted a shift toward leaner operations and more efficient resource allocation. For example, PT David Roy Indonesia noted that changes in operational priorities and labor constraints have led to greater use of automation, workflow optimization, and cross-training of employees, alongside the use of real-time performance monitoring to improve efficiency.

Workforce-related adjustments are also evident in how companies manage labor and operations. Some respondents emphasized the need to improve workforce efficiency through better planning, training, and task allocation, while others indicated increased reliance on overtime or structured workflows to maintain production continuity.

In addition, companies are placing greater emphasis on standardization and process discipline. For instance, PT Berdikari highlighted a stronger focus on operational efficiency, clearer standard operating procedures, and improved coordination between different functions, particularly in logistics and distribution activities.

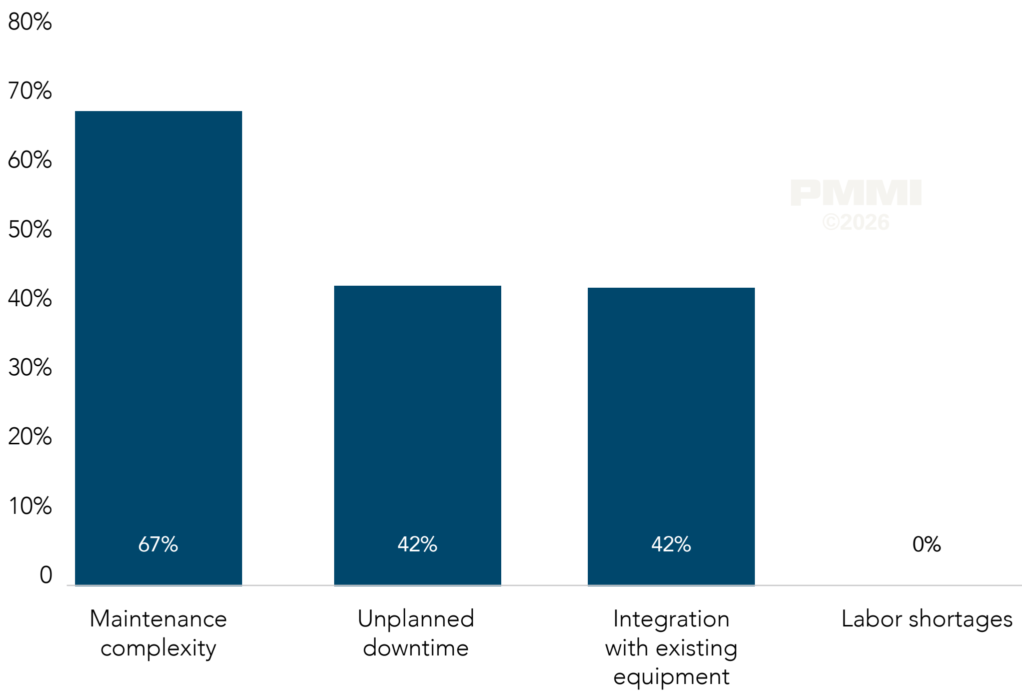
Operational Pain Points and Constraints

Maintenance complexity is the most frequently cited operational pain point, highlighted by 67% of respondents. This suggests that managing and maintaining increasingly sophisticated equipment is a key challenge, particularly as production lines become more automated and technologically advanced.

Unplanned downtime and integration with existing equipment are the next most common issues, each selected by 42% of companies. Unplanned downtime directly affects production output and efficiency, while integration challenges reflect difficulties in incorporating new machinery into existing production environments, especially when systems and technologies are not fully compatible.

Notably, none of the respondents identified labor shortages as a primary operational pain point. This reinforces earlier findings that workforce-related challenges are more closely linked to training, efficiency, and cost rather than outright labor availability.

Figure 33: What are the most significant operational pain points in your packaging or processing lines today?



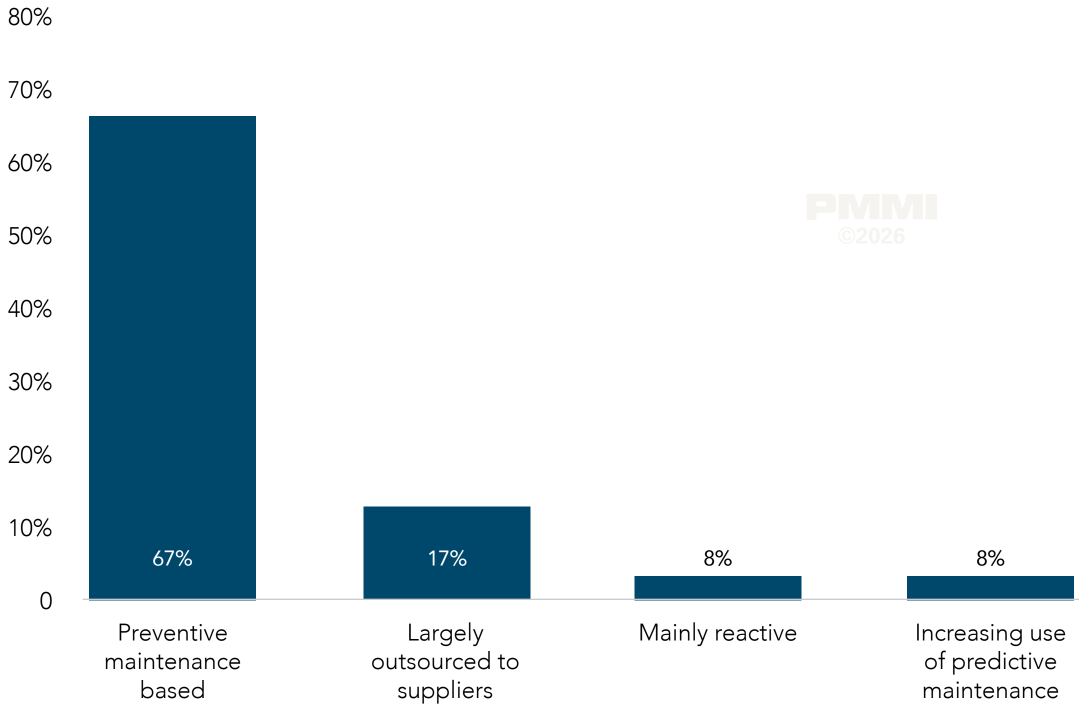
N = 12; Multiple answers allowed

Preventive maintenance is the dominant approach, adopted by 67% of respondents. This indicates that most companies have moved beyond purely reactive models and are implementing scheduled maintenance practices to reduce the risk of breakdowns and improve equipment reliability.

A smaller group of companies rely on outsourced maintenance models (17%), where equipment suppliers play a significant role in maintaining machinery. This suggests that some manufacturers prefer to depend on external expertise, particularly when dealing with complex or specialized equipment.

Only one company reported mainly reactive maintenance, indicating that purely corrective approaches are now relatively uncommon. Similarly, only one respondent indicated increasing use of predictive maintenance, suggesting that more advanced, data-driven maintenance strategies are still at an early stage of adoption.

Figure 34: How would you describe your current maintenance model?



N = 12; Each company could select only one answer

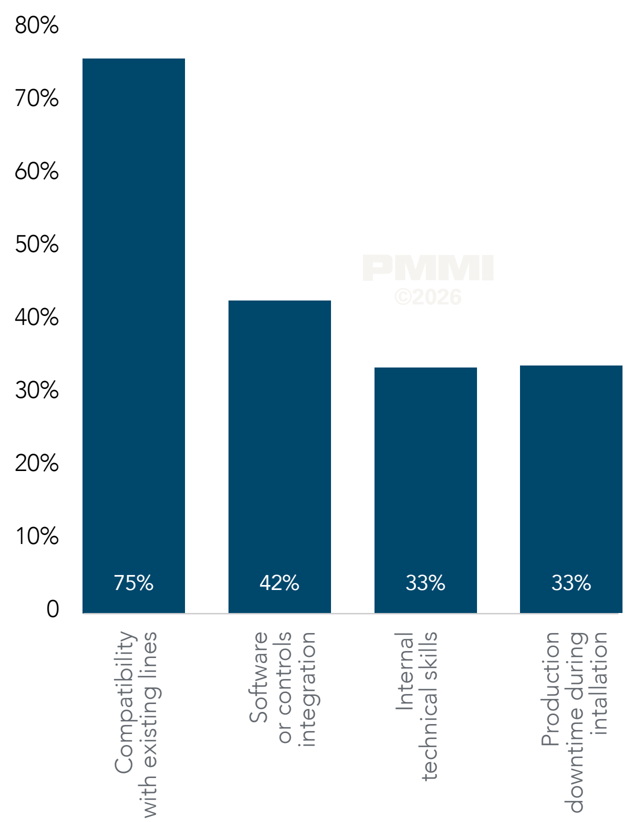
Compatibility with existing lines is the most significant challenge, cited by 75% of respondents. This highlights the difficulty of integrating new equipment into legacy production environments, where differences in machine specifications, layouts, and standards can create operational inefficiencies or require additional adjustments.

Software and controls integration is the second most common issue, selected by 42% of companies. This reflects challenges in aligning different systems, particularly when equipment from multiple suppliers must operate within a single production line.

Internal technical skills were mentioned by 33% of respondents, indicating that some companies face capability gaps when implementing or managing new technologies. This can slow down integration processes and increase reliance on external support.

Production downtime during installation, also cited by 33% of companies, points to the operational trade-offs involved in upgrading equipment. Integrating new machinery often requires temporary disruptions to production, which companies must carefully manage to minimize impact on output.

Figure 35: What challenges do you face when integrating new equipment or technologies?



N = 12; Multiple answers allowed

Equipment reliability, system integration, and operational efficiency emerge as the main concerns affecting overall manufacturing performance. Several companies identified unplanned downtime as the most critical issue, as it directly disrupts production flow and reduces output. In high-volume environments, even short interruptions can have a significant impact on efficiency and overall performance.

Integration challenges are also frequently highlighted as having a major impact. Respondents noted that difficulties in aligning new equipment with existing machines and systems can lead to inefficiencies, delays, and suboptimal performance. For example, PT Indofood Fortuna Makmur emphasized that unplanned downtime, combined with complex maintenance and integration issues, has the greatest impact because it directly reduces production output.

In some cases, respondents pointed to broader system-level challenges. PT David Roy Indonesia highlighted the lack of integration between departments as a key issue, noting that siloed information and poor coordination can reduce operational efficiency and negatively affect overall performance.

Other responses indicate that performance impacts are not always driven by a single issue, but by a combination of factors such as maintenance complexity, system compatibility, and process inefficiencies. These challenges often reinforce each other, making it more difficult for companies to maintain stable and efficient production operations.

Technology Adoption and Emerging Demands

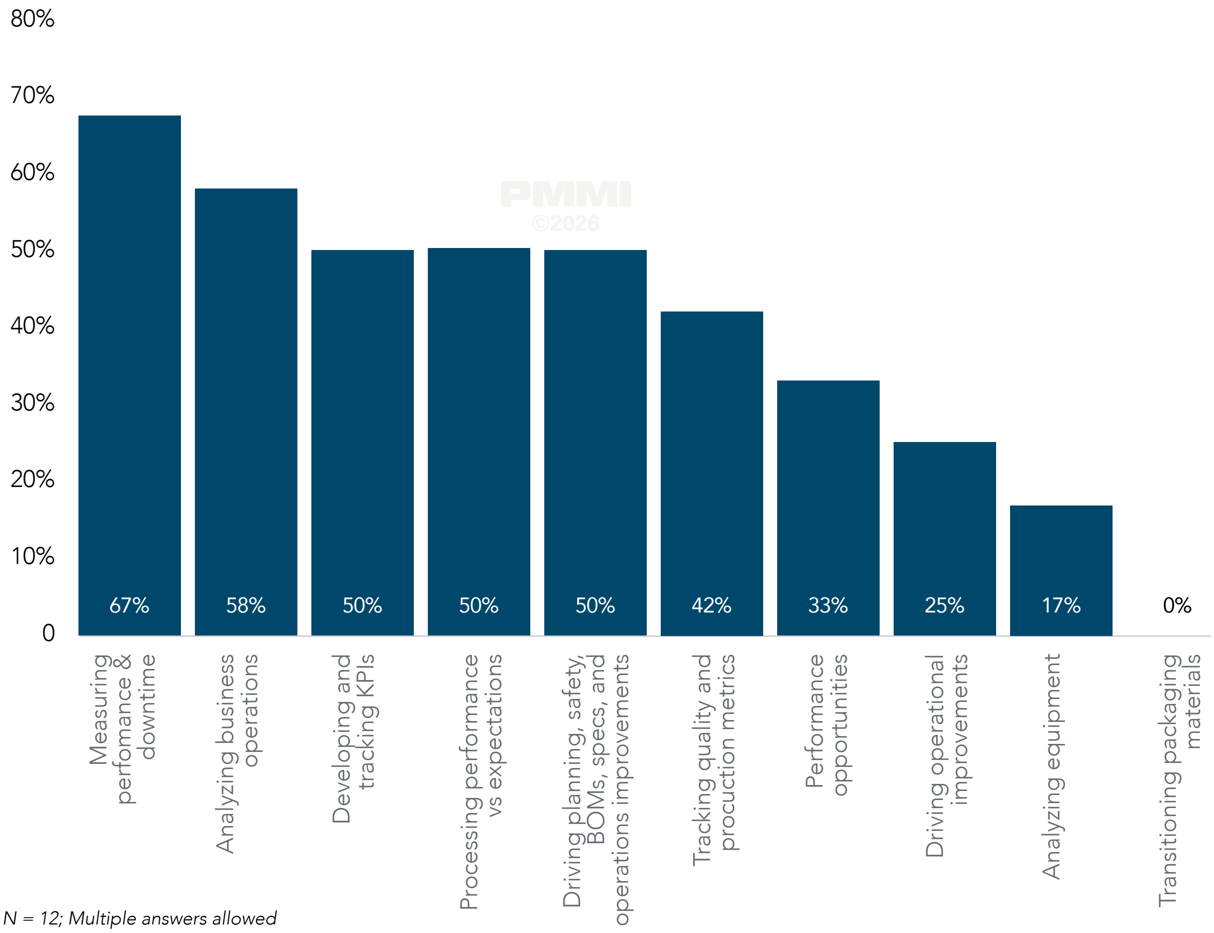
Considering operational objectives priorities, the results show a strong emphasis on performance measurement and data-driven decision-making. Measuring performance and downtime is the most frequently cited priority, selected by 67% of respondents, indicating that companies are focused on improving visibility into production efficiency and identifying sources of loss.

A similar trend is reflected in the high number of respondents prioritizing business analysis (58%) and KPI development and tracking (50%). This suggests that many companies are strengthening their ability to monitor, evaluate, and manage operations through structured performance metrics.

Operational execution and process optimization also feature prominently. Half of the respondents highlighted processing performance versus expectations and broader operational improvements (including planning, safety, and specifications), indicating a need to align actual production outcomes with targets and improve overall process control.

Tracking quality and production metrics further reinforces this focus on monitoring and control, particularly in environments where consistency and output quality are critical. Lower priority areas include analyzing equipment and transitioning packaging materials, suggesting that current efforts are more focused on overall operational performance and system-level visibility rather than specific equipment-level analysis or material changes.

Figure 36: For which of the following operational objectives do you currently have the greatest needs or priorities?



N = 12; Multiple answers allowed

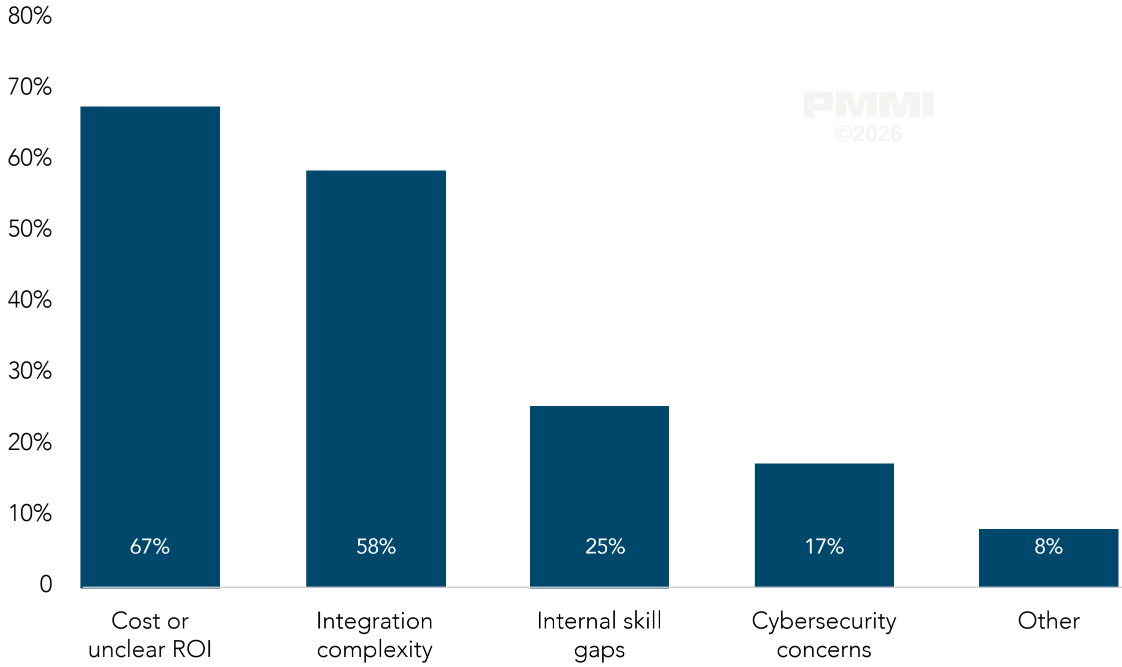
Cost and unclear return on investment are the most significant barriers, cited by 67% of respondents. This indicates that companies remain cautious about investing in advanced or digital solutions unless there is a clear financial benefit. High upfront costs and uncertainty around payback periods continue to limit adoption.

Integration complexity is the second most common challenge, selected by 58% of companies. This reflects ongoing difficulties in incorporating new digital systems into existing production environments, particularly where legacy equipment and multiple vendors are involved.

Internal skill gaps were mentioned by 25% of respondents, suggesting that some companies lack the technical capabilities required to implement and manage digital solutions effectively. This can slow down adoption and increase reliance on external support.

Cybersecurity concerns were raised by only one company, indicating that while data security is a consideration, it is not yet a primary barrier for most respondents. A small number of companies also highlighted broader cost-related constraints, reinforcing the importance of financial considerations in shaping digital investment decisions.

Figure 37: What are the main barriers to adopting more advanced or digitalized solutions?



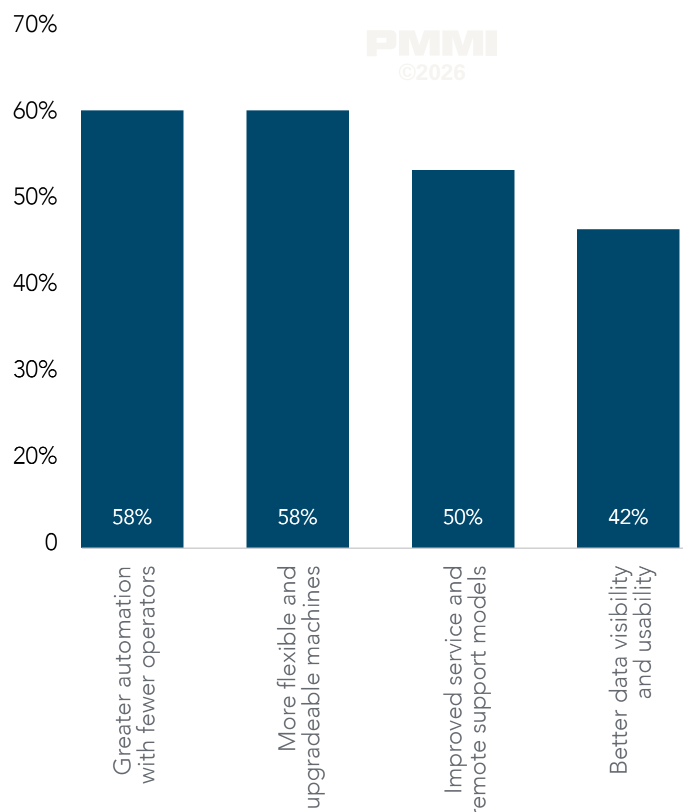
N = 12; Multiple answers allowed

The responses highlight a strong demand for automation and flexibility in future equipment solutions. Greater automation with fewer operators and more flexible, upgradable machines are the most frequently cited priorities, each selected by 58% of respondents. This reflects the need to improve efficiency while maintaining adaptability to changing production requirements.

Service-related capabilities are also a key focus, with 50% of companies highlighting improved service and remote support models. This suggests that beyond equipment performance, ongoing technical support and responsiveness from suppliers are critical considerations.

Data visibility and usability were selected by 42% of respondents, indicating growing interest in digital capabilities that enable better monitoring, analysis, and decision-making. While not yet the top priority, this points to increasing awareness of the value of data-driven operations.

Figure 38: Looking ahead, which innovations or capabilities would you most like to see from equipment suppliers?



N = 12; Multiple answers allowed

Respondents highlighted the importance of tangible operational improvements when defining success for digital or data-driven initiatives. Efficiency gains, cost reduction, and improved production performance are consistently cited as key indicators. Several companies emphasized that successful initiatives should lead to more efficient operations, reduced costs, and better overall output quality.

Real-time visibility and monitoring capabilities are also an important dimension of success. Companies indicated that the ability to track production performance, identify issues quickly, and monitor processes in real time enables faster decision-making and more effective operational control. For example, PT Yummy Food Utama emphasized traceability across the production process, including the ability to compare inputs and outputs and identify issues in real time.

Another recurring theme is the importance of actionable and usable data. Respondents noted that data must be presented in a way that supports analysis and decision-making, rather than simply being collected. This includes the ability to track key performance indicators, compare expected versus actual performance, and identify areas for improvement.

Cost savings and return on investment are central to how companies assess value. Several respondents indicated that digital initiatives must demonstrate clear financial benefits, such as reduced operational costs or improved efficiency, to justify continued investment. PT Sanbe Farma, for instance, highlighted the importance of aligning data outputs with production targets and ensuring efficiency between inputs and outputs.

Vendor Selection and Procurement Decision Drivers

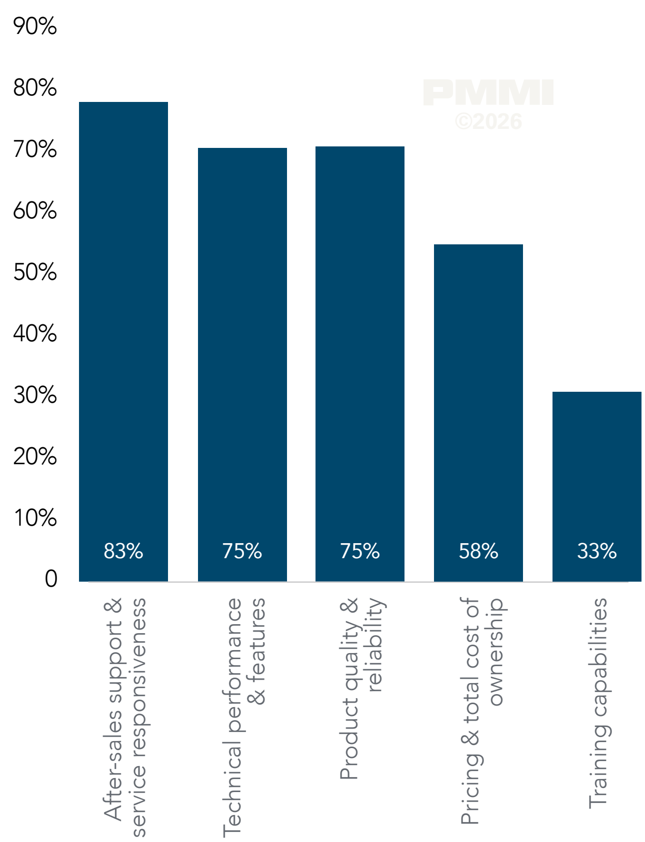
Interviews with Indonesian companies interviewed indicated that after-sales support and service responsiveness is the most influential factor in supplier selection, cited by 83% of respondents. This highlights the importance of reliable technical support, fast response times, and ongoing service in maintaining production continuity, particularly in environments where downtime can have significant operational impact.

Technical performance and product quality are also critical, each selected by 75% of companies. This indicates that equipment must meet operational requirements and deliver consistent, reliable performance, especially in high-volume or quality-sensitive production settings.

Pricing and total cost of ownership were cited by 58% of respondents, suggesting that while cost remains an important consideration, it is balanced against performance and service factors rather than being the sole decision driver.

Training capabilities were mentioned less frequently (33%), but still reflect the need for suppliers to support knowledge transfer and ensure that operators and technicians can effectively use and maintain new equipment.

Figure 39: Looking ahead, which innovations or capabilities would you most like to see from equipment suppliers?



N = 12; Multiple answers allowed

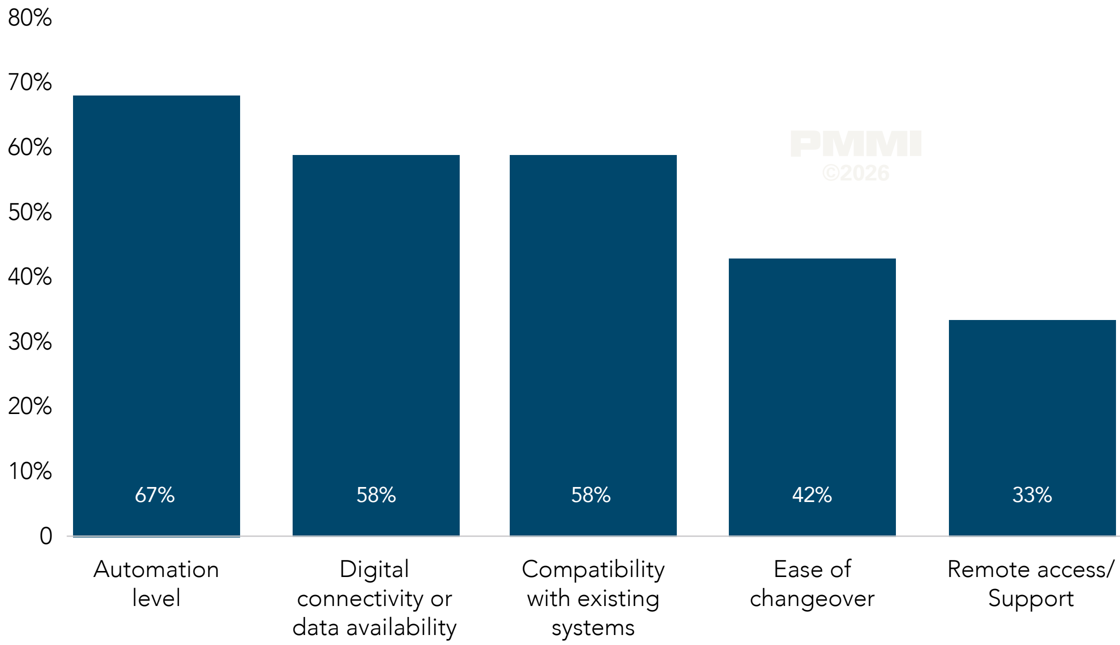
Automation level is the most frequently cited capability, selected by 67% of respondents. This reflects the ongoing shift toward more automated production environments, where reducing manual intervention and improving consistency are key requirements.

Digital connectivity and compatibility with existing systems are both highlighted by 58% of companies. This indicates that equipment is increasingly expected to integrate seamlessly into existing production lines and digital infrastructure, enabling data exchange, monitoring, and coordination across systems.

Ease of changeover, selected by 42% of respondents, suggests that flexibility remains an important consideration, particularly for companies managing multiple product types or frequent production adjustments.

Remote access and support capabilities were mentioned by 33% of companies, reflecting growing interest in solutions that allow for faster troubleshooting and reduced reliance on on-site technical intervention.

Figure 40: Which technical capabilities are considered essential when evaluating new equipment?



N = 12; Multiple answers allowed

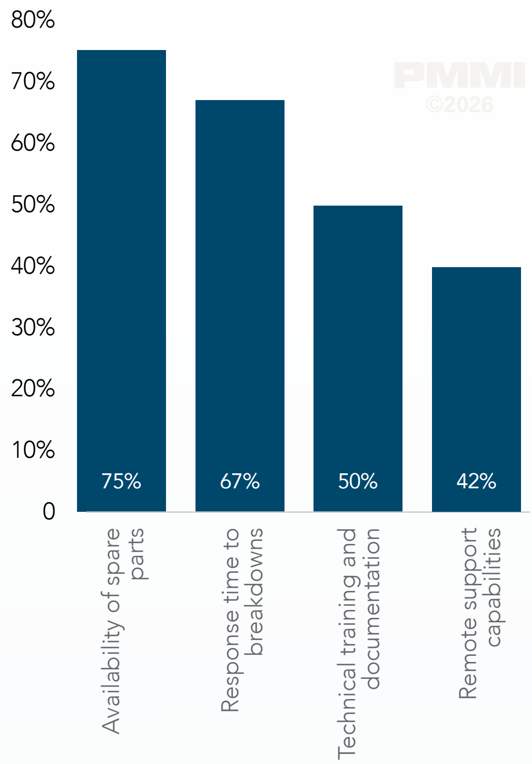
Availability of spare parts is the most frequently cited priority, selected by 75% of respondents. This highlights the importance of minimizing downtime by ensuring that critical components can be quickly sourced and replaced when needed.

Response time to breakdowns is also a key concern, cited by 67% of companies. Fast and reliable support is essential to restore operations quickly, particularly in high-volume production environments where disruptions can significantly affect output.

Technical training and documentation, selected by 50% of respondents, indicate that companies value supplier support in building internal capabilities. Proper training and clear documentation help ensure that equipment can be operated and maintained effectively over time.

Remote support capabilities were mentioned by 42% of companies, reflecting increasing interest in faster, more flexible service models that allow issues to be diagnosed and resolved without requiring on-site intervention.

Figure 41: What aspects of after sales support matter most to your organization?



N = 12; Multiple answers allowed

Existing supplier relationships are the primary channel through which companies become aware of new equipment and solutions, cited by 83% of respondents. This suggests a strong reliance on established networks and ongoing partnerships, where current suppliers play a key role in introducing new technologies or upgrades.

Industry events and trade fairs are also widely used, selected by 75% of companies. These platforms remain important for discovering new suppliers, comparing solutions, and staying informed about market developments.

Peer recommendations were mentioned by 42% of respondents, indicating that informal networks and industry contacts continue to influence supplier discovery, particularly where trust and proven experience are important.

Online research and digital channels were cited by 33% of companies, suggesting that while digital sources are relevant, they are less dominant compared to relationship-driven and event-based channels.

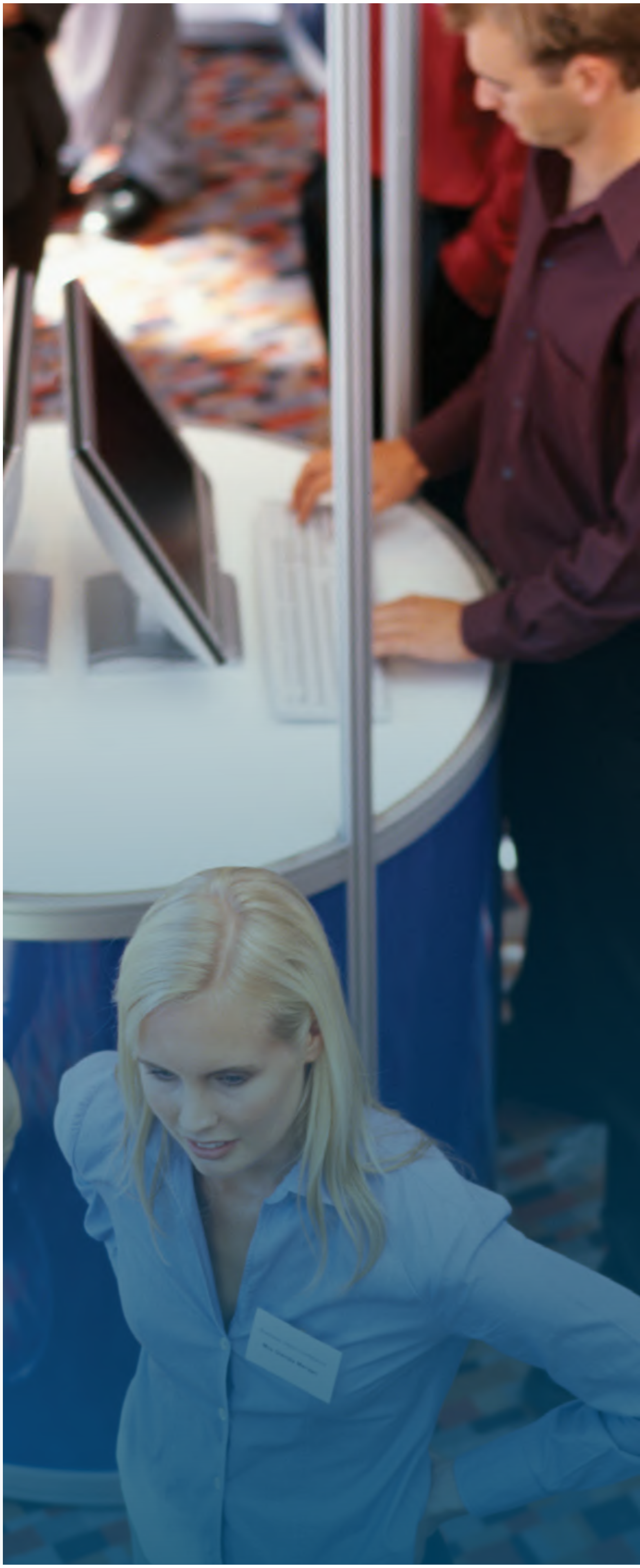
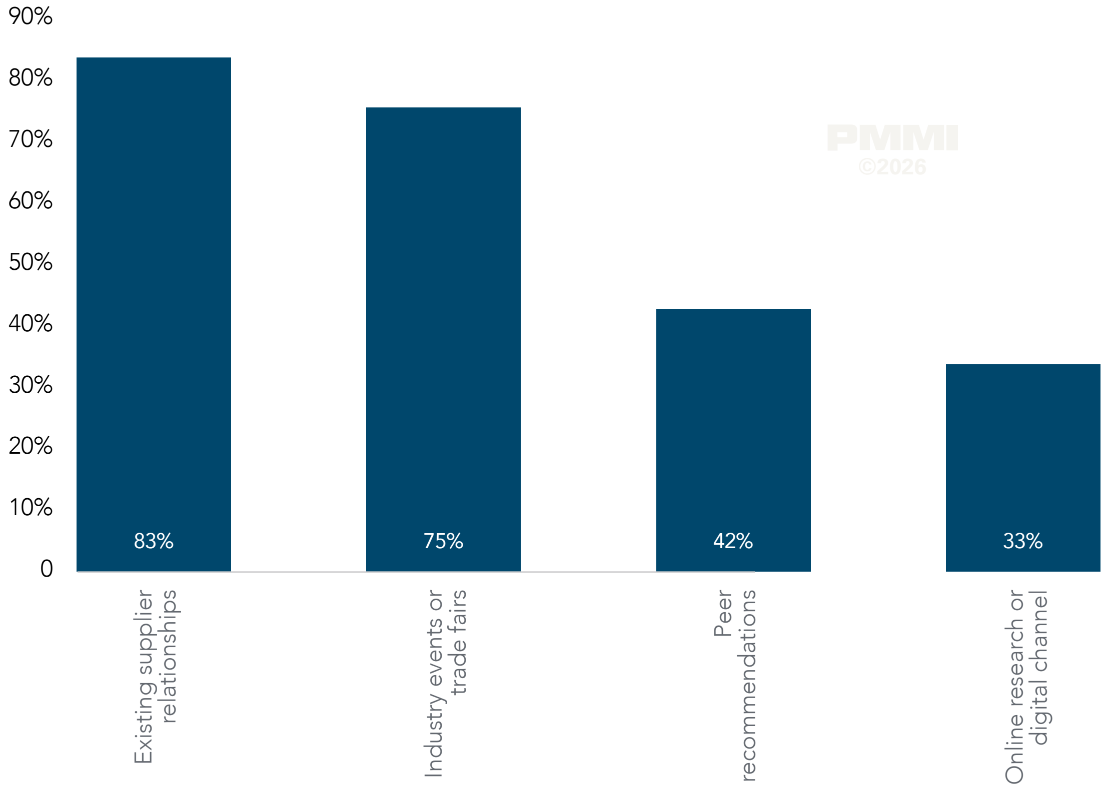


Figure 42: How do you typically become aware of new equipment suppliers or solutions?



N = 12; Multiple answers allowed

Respondents highlighted several unmet needs from equipment suppliers, with a strong emphasis on improved service capabilities and operational support. A recurring theme is the demand for more responsive and accessible after-sales service, including faster response times, better spare parts availability, and stronger local technical support. This reflects the importance of minimizing downtime and ensuring continuity of operations. For example, PT Yummy Food Utama emphasized the need for stronger local presence and support, noting challenges in scheduling timely assistance from regional technicians.

Another key gap relates to automation and advanced technological capabilities. Several companies expressed interest in solutions that can further reduce reliance on manual labor and improve efficiency, such as higher levels of automation and smarter systems.

Data integration and digital capabilities are also frequently mentioned. Respondents indicated a need for better real-time data visibility, more user-friendly interfaces, and advanced analytics tools that can support decision-making and improve operational performance. PT David Roy Indonesia, for instance, highlighted the importance of real-time data integration and AI-based analytics to improve efficiency and responsiveness.

In some cases, companies also pointed to the need for greater flexibility and compatibility, including machines that can be more easily upgraded or integrated into existing systems. Cost considerations were also highlighted, with some respondents expressing a desire for more cost-effective solutions or clearer value propositions.

Vietnam

END-USER SECTOR OVERVIEW

Import Overview

Vietnam's imports of packaging machinery grew from USD 245.4 million in 2020 to USD 344.2 million in 2024, reflecting sustained investment in the food, beverage, and manufacturing sectors. China dominated the market, increasing its share to USD 179.8 million in 2024, followed by Germany and Italy, which retained strong positions through technological offerings and project-based shipments. South Korea and Taiwan maintained mid-tier positions, while smaller European suppliers such as Sweden and the Czech Republic showed gradual increases. The United States had a minimal presence, ranking twentieth in 2024 with just USD 0.6 million in exports. US shipments declined from previous years, signaling very limited penetration and competitiveness in Vietnam's packaging machinery market compared with dominant Asian and European suppliers. Overall, the market is heavily concentrated in China and a few European countries, leaving little room for US suppliers.

Table 3: Vietnam's imports of packaging machinery

Partner	2020	2021	2022	2023	2024	2024 Ranking
World	**245.4**	**293.9**	**265.5**	**264.2**	**344.2**	**–**
China	112.4	136.6	138.4	133.9	179.8	1
Germany	28.1	45.5	14.4	22.0	44.3	2
Italy	12.3	40.0	34.0	27.5	31.4	3
South Korea	22.1	14.1	16.3	16.8	19.3	4
Taiwan	20.8	11.0	15.0	11.9	11.9	5
Sweden	5.9	9.0	7.9	7.6	10.3	6
Japan	20.0	12.3	17.8	20.3	9.2	7
Thailand	3.8	3.8	3.1	4.0	5.8	8
Malaysia	0.9	1.5	1.2	1.4	5.5	9
Czech Republic	0.4	0.4	0.6	0.3	4.5	10
United States	**1.7**	**1.3**	**1.5**	**0.9**	**0.6**	**20**

Note: HS codes considered are 842220, 842230, and 842240 | Unit: USD 1,000,000

Key Policies and Trends

One of Vietnam's central policies with relevance to the packaging sector is the Sustainable Consumption and Production Plan (2021–2030). This plan targets for measurable reductions in the use of raw materials and resource intensity across major manufacturing sectors, including plastics and paper, with an expected reduction in material use of 7–10% by 2030. A central deliverable is a staged shift in retail and distribution environments: by 2023, the plan expects a full uptake of environmentally friendly packaging in place of single-use, non-degradable plastics.

The strategy also seeks to embed sustainable and eco-design principles alongside promotion of green public procurement and ecolabelling that can advantage packaging with improved sustainability profiles. That framing covers all major packaging materials, but plastic has been a particular emphasis because of its volume and environmental footprint in the waste stream.

Under the Environmental Protection Law and Decree No. 08/2022/ND CP, Vietnam banned the production and import of small non biodegradable plastic bags. By December 31, 2030, most single use plastic products, including non biodegradable packaging such as bags and foam food containers, as well as products containing microplastics, are expected to be phased out nationwide.

Figure 43: Vietnam, generating over 3.7 million tons of plastic annually, is seeking environmental-friendly solutions

Source: World Bank

Implementation at the local level is also progressing, with some cities adopting their own timetables. In Hanoi, for example, single use plastic items in hotels and tourist facilities are banned from 2026. Free non biodegradable plastic bags will be phased out in markets by 2027, broader bans on single use plastic products including bags and foam containers will take effect by 2028, and a citywide ban on production and import is planned by 2031. Pilot initiatives have already begun in selected districts, targeting restaurants, cafes, and food vendors to reduce single-use plastics ahead of wider regulations.

Another important development is Vietnam's Extended Producer Responsibility (EPR) regime, introduced under the 2020 Law on Environmental Protection and detailed in Decree No. 08/2022/ND-CP, officially came into effect on January 1, 2024 for packaging and several other product categories. Under this framework, manufacturers and importers of consumer packaging, including primary and secondary packaging for goods such as food, cosmetics, pharmaceuticals, fertilizers and detergents, are legally required to take responsibility for the end-of-life management of their packaging waste.

EPR obliges these firms to organize or finance the collection, recycling or environmentally sound disposal of post-consumer packaging, either directly, through third-party recyclers or via financial contributions to the Vietnam Environmental Protection Fund. Compliance involves registration, annual reporting and payment of required recycling contributions based on the volume of packaging placed on the market.

As new environmental regulations and global market demands push sustainability to the forefront, Vietnam's packaging and recycling industries are undergoing a major transformation. Shifts in consumer behavior reinforce this trend, with surveys showing over 92% of Vietnamese consumers concerned about packaging waste and more than half willing to pay extra for eco-friendly alternatives. This change has accelerated demand for sustainable packaging, particularly in export-linked industries where compliance with international green standards is critical. Key developments illustrative of this trend include:

PRO Vietnam, a coalition of large companies from the consumer goods, packaging, retail, and import sectors, has committed to recycling 64,000 tons of packaging materials as part of its EPR obligations. In addition to its recycling initiatives, the organization plans to launch targeted environmental awareness campaigns aimed at educating the public and businesses about the importance of sustainable packaging practices. PRO Vietnam is focused on achieving a 100% collection and recycling rate for packaging materials brought to market by its member companies by 2030.

Local companies are expanding their packaging operations with a growing focus on sustainability. DUYTAN Recycling, for instance, has established a bottle-to-bottle plant in Tây Ninh with a 100,000-tonne annual capacity, while equipment makers such as Viet Dai Plastic Machine are upgrading technology to meet stricter environmental standards.

The same trend is observable among foreign companies operating in Vietnam. For instance, In July 2025, Tetra Pak added a second production line to its Binh Duong facility, increasing annual capacity from 12 billion to 30 billion packages to serve the Southeast Asian food and beverage market. The plant, located in the VSIP II-A Industrial Park in Binh Duong province, currently employs over 350 workers and was among the first in Vietnam to achieve LEED Version 4 Gold Certification for green building standards. Similarly, South Korea's SK Leaveo secured USD 40 million in financing to build a biodegradable plastics plant in Haiphong, targeting annual output of ~70 000 tons of reinforced PBAT for eco-friendly packaging.

Notable developments

Some key examples of end-users that have recently expanded their operations in Vietnam include:

In late 2024, PepsiCo Foods Vietnam commenced the construction of a major snack manufacturing facility in the Dong Van I Industrial Park, Ha Nam Province. With a total investment of approximately USD 90 million, this expansion is designed to produce over 23,000 tons of snacks annually, including the Lay's and Poca brands. Packaging operations are a core component of this facility, utilizing high-speed primary packaging lines that are integrated directly with the cooling and seasoning stages.

Vinamilk, through its subsidiary Moc Chau Milk, has advanced the development of the "Moc Chau Milk Paradise" complex in Son La Province, with Phase 1 reaching completion in 2024. This USD 130 million project includes a high-tech dairy farm and a processing plant with an initial daily capacity of 500 tons. The facility represents a significant capacity increase for Vinamilk's premium milk segment. The expansion integrates a "closed-loop" manufacturing process where raw milk is transferred via specialized pipelines directly to the processing and packaging units. Packaging is fully integrated into the manufacturing flow, featuring aseptic filling technology provided by international partners like Tetra Pak.

In April 2024, Suntory PepsiCo Vietnam broke ground on its largest Asia-Pacific manufacturing plant located in the Huu Thanh Industrial Park, Long An Province. The project carries an investment of over USD 300 million and is slated for completion by 2026. Spanning 20 hectares, the facility is designed for an annual capacity of 800 million liters. The expansion focuses on sustainable production, utilizing 100% renewable energy from solar and biomass sources. A critical feature of this plant is the integration of advanced packaging technologies, specifically 100% recycled polyethylene terephthalate (rPET) bottling lines.

In July 2025, Coca-Cola Vietnam officially inaugurated its largest and most advanced manufacturing facility in the Phu An Thanh Industrial Park, Long An. Representing a USD 136 million investment, this 19-hectare "Global Flagship Factory" leverages digital twins and smart manufacturing technologies to optimize output. The facility produces a wide range of beverages, including sparkling drinks and juices. The manufacturing process is seamlessly integrated with state-of-the-art packaging lines provided by Krones and KHS. Primary packaging includes high-speed canning and bottling, while secondary packaging is handled by automated robotic arms for palletizing.

Notable developments *(cont.)*

Heineken Vietnam is undergoing a multi-year expansion strategy, focusing on its Vung Tau and Tien Giang facilities. In 2024, the Vung Tau brewery, one of the company's largest globally, implemented significant upgrades, including a large-scale heat pump system to decarbonize thermal energy use. The expansion includes new high-speed canning lines to support the growing demand for premium products like Heineken Silver. Packaging is a primary focus of this expansion, specifically through the "Can-to-Can" circularity project. This initiative integrates aluminum recycling directly into the supply chain, where used cans are recovered and processed back into the manufacturing cycle.

Hayat Kimya, the Turkish FMCG giant, recently inaugurated its expanded manufacturing hub in the Becamex Binh Phuoc Industrial Park. This USD 250 million facility serves as the regional production center for Southeast Asia, focusing on hygiene products such as Molfix diapers and wipes. The nature of the expansion includes the addition of new production lines for tissues and detergents, scheduled to ramp up through 2026. The 32-hectare site employs advanced automation to manage the high-volume production of absorbent hygiene products. Packaging is deeply integrated into the manufacturing flow. For instance, diaper production lines transition immediately into primary bagging units that use sensor-guided quality checks.

Operating primarily out of its Binh Duong facilities, Marico has invested in new production lines for hair care and skin care under brands like X-Men and Thuan Phat. The expansion focuses on increasing capacity for liquid personal care products through automated mixing and filling technologies. Packaging is a central component of the manufacturing process, featuring integrated primary bottling lines that utilize decorative labeling and precision capping. The company has also modernized its secondary packaging operations to include eco-friendly cardboard shippers and automated palletizing.

DHG Pharma, a leading domestic manufacturer with Japanese investment from Taisho, expanded its operations the commissioning of a new Japan-GMP and EU-GMP compliant Betalactam factory in Hau Giang. This USD 29 million project increased the company’s total capacity by 25% for key product lines, including antibiotics and fever reducers like Hapacol. The nature of the expansion focuses on high-standard ethical drug manufacturing to increase market share in the hospital (ETC) channel. The facility integrates sophisticated primary packaging, such as blister packing and foil sealing, directly after the tableting and coating stages to prevent contamination.

Partnership for sustainable packaging for personal care and household products

In July 2025, Austria's MM Group and Vietnam's Tam Sen Group signed a strategic partnership to work together on packaging and printing projects, marking a step in Tam Sen's effort to grow internationally and support Vietnam's broader industrial and innovation goals. The agreement covers joint market development in sectors like consumer goods and pharmaceuticals, the creation of a joint venture in Vietnam, and the use of European technology to produce more eco-friendly packaging.

Figure 44: Tam Sen is investing in green packaging solutions

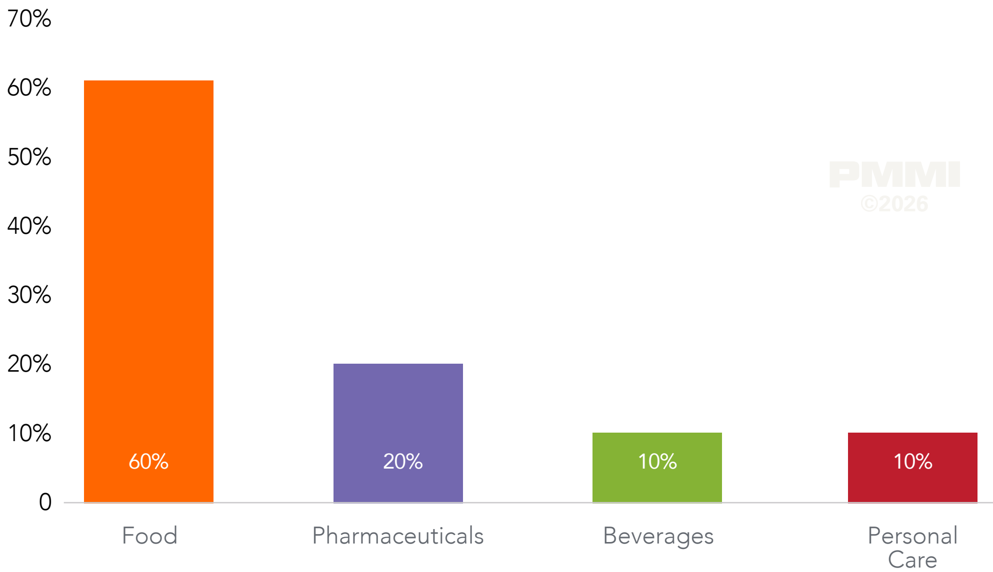
Source: Voice of Vietnam

The two companies plan to push digitalization across their design, production and supply chain processes and help Vietnam's packaging industry compete globally. MM Group, which has a large global footprint and expertise in sustainable packaging, sees Vietnam as a dynamic market with growth potential, while Tam Sen values access to advanced technologies and global standards.

PRIORITIES FOR PACKAGING AND PROCESSING OPERATIONS

We conducted interviews with 10 manufacturers in Vietnam to better understand their packaging practices, investment priorities, and operational challenges. Most interviewees belong to the food sector, which represents 60% of respondents. Pharmaceutical manufacturers make up 20% of the sample, highlighting the presence of firms involved in medical and healthcare-related production. Meanwhile, beverage and personal care companies each account for 10% of respondents, covering products such as drinks and consumer care items.

Figure 45: Sectoral breakdown of manufactures interviewed in Vietnam



Sector	Companies	Share
Food	ACECOOK Vietnam; Ba Vi Milk; Masan Consumer Holdings JSC; Mondelez Kinh Do Vietnam; Nestle Vietnam; Vinh Hoan Corporation	60%
Beverages	Saigon Beer Alcohol Beverage Corporation	20%
Pharmaceuticals	DHG Pharma; Traphaco	10%
Personal Care	Nature Story Company	10%

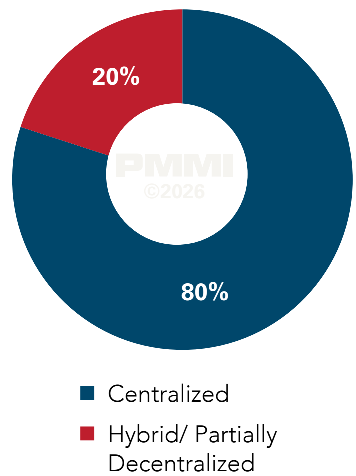
Interviewees in Vietnam primarily held roles closely tied to production, engineering, and operational management, such as plant managers, technical managers, production heads, and engineers involved in equipment selection and line operations. In some cases, respondents were also involved in procurement coordination or supplier evaluation.

Across the 10 companies interviewed, procurement for packaging and processing equipment is generally centralized, with most firms indicating that final purchasing decisions are made at the headquarters or corporate level. Central procurement teams or senior management are typically responsible for approving investments, particularly for high-value capital equipment.

At the same time, plant-level teams play an important supporting role. Technical managers and engineers are usually responsible for defining equipment requirements, assessing operational needs, and shortlisting suppliers. Their input is critical during the evaluation phase, but final authority remains with centralized decision-makers.

A smaller number of companies, such as Masan, indicated a more collaborative or partially decentralized approach, where local teams have greater influence in supplier selection or can initiate procurement discussions, although final approval is still escalated to senior management.

Figure 46: How centralized or decentralized are procurement decisions?



N = 13

Investment Plans and Capital Spending

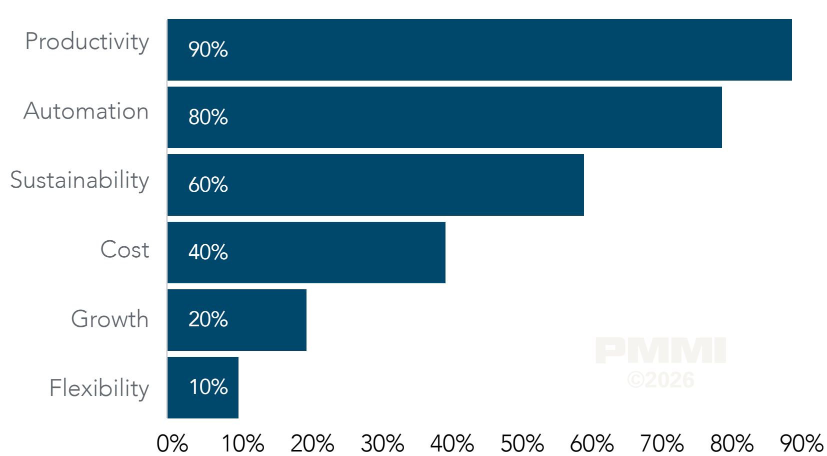
Vietnamese manufacturers place strong emphasis on improving operational efficiency and productivity, which emerges as the top priority across nearly all respondents. This is closely followed by a focus on cost reduction, reflecting ongoing pressure to manage input costs and maintain competitiveness.

A significant share of companies also highlighted the importance of maintaining product quality and consistency, particularly in regulated and export-oriented sectors. For example, DHG Pharma emphasized strict quality requirements in line with pharmaceutical standards.

At the same time, many respondents are increasingly prioritizing automation and digitalization to streamline operations and reduce manual intervention. For instance, Masan Consumer Holdings noted ongoing investments in modernizing production lines to improve performance and scalability.

While less prominent, sustainability and operational flexibility are also emerging considerations for some companies. Overall, the findings indicate that Vietnamese manufacturers are primarily focused on efficiency-driven improvements, while gradually incorporating more advanced capabilities into their operations.

Figure 47: What are your key priorities in packaging and processing operations?



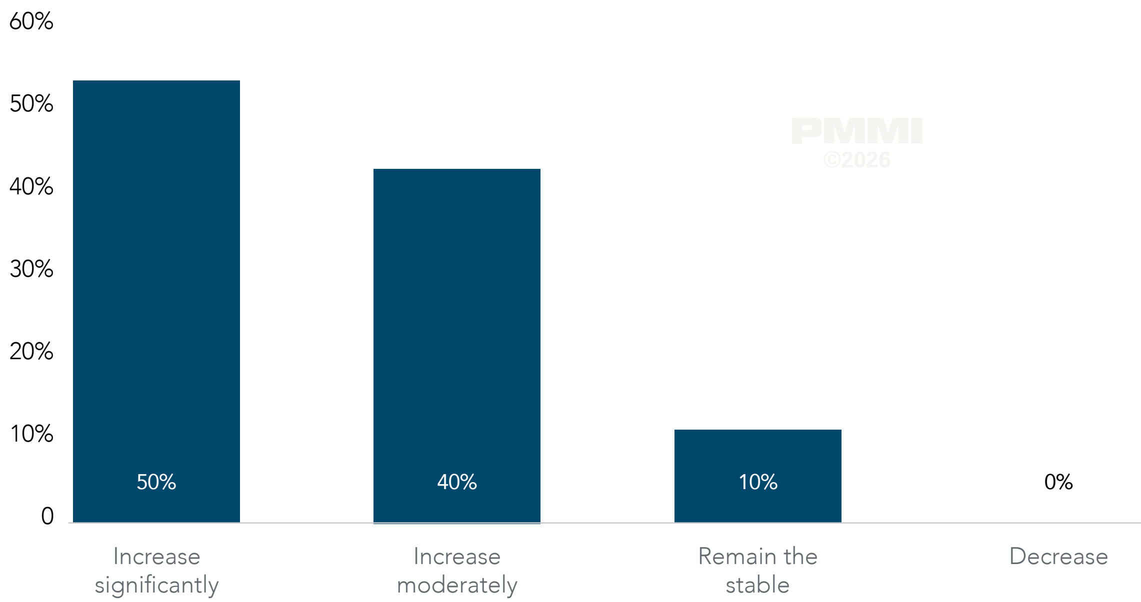
N = 10; Each company could select up to 3 answers

The outlook for investment in packaging and processing equipment among Vietnamese manufacturers is generally positive, although expectations vary in scale. Half of the respondents anticipate a significant increase in investment, while a further 40% expect moderate growth, suggesting continued but measured capital expenditure across the sample.

This trend reflects a combination of capacity expansion, replacement of aging equipment, and gradual upgrades to improve efficiency and product quality. For instance, Masan Consumer Holdings indicated ongoing investments linked to scaling production and modernizing lines, while DHG Pharma highlighted more targeted upgrades aligned with regulatory and quality requirements.

One company expects investment levels to remain unchanged, indicating a more cautious or already optimized position. Notably, no respondents reported plans to decrease investment.

Figure 48: Over the next 12 to 36 months, how do you expect your investment in packaging and processing equipment to evolve?



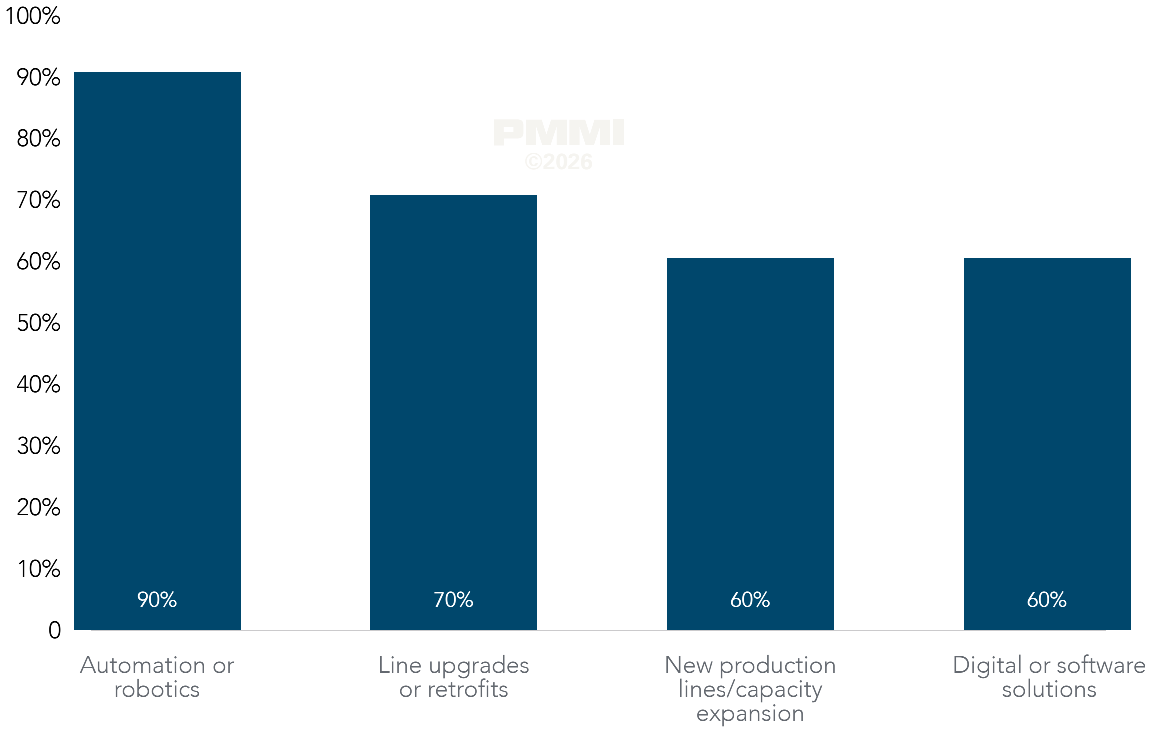
N = 13; Each company could select only one answer

Investment priorities among Vietnamese manufacturers reflect a strong focus on automation or robotics, which is the most widely cited area. This suggests a clear interest in reducing manual processes and improving operational efficiency, although the scale and pace of adoption likely vary across companies.

At the same time, a significant number of respondents are prioritizing line upgrades or retrofits, indicating continued reliance on existing production assets and a preference for incremental improvements rather than full replacement. Investments in new production lines or capacity expansion are also common, though slightly less widespread, pointing to selective expansion rather than across-the-board capacity increases.

Meanwhile, digital or software solutions are being adopted by a subset of companies, often alongside broader automation efforts.

Figure 49: Which types of investments are currently priorities for your organization?



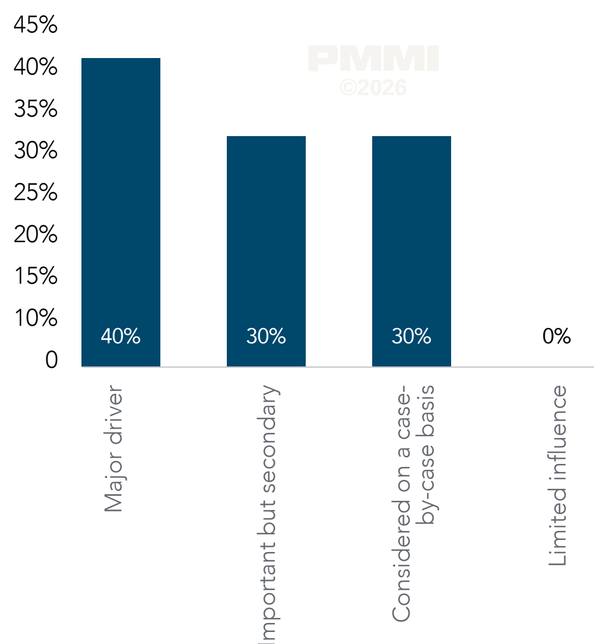
N = 10; Multiple answers allowed

Overall, all companies interviewed consider sustainability to some degree when making equipment investment decisions, with none indicating that it has no influence. However, only a portion treat it as a primary driver. Specifically, 40% of respondents identified sustainability as a major driver, while the remainder described it as either important but secondary or considered on a case-by-case basis.

For some manufacturers, sustainability is closely linked to broader corporate or operational priorities. For example, Vinh Hoan Corporation indicated that sustainability is a major driver, reflecting its focus on environmentally responsible production and export market requirements. In contrast, other companies adopt a more balanced approach, weighing sustainability alongside cost, efficiency, and performance considerations.

A majority of respondents fall into the categories of important but secondary or case-by-case consideration, suggesting that sustainability is integrated into decision-making but not always decisive. In practice, companies tend to prioritize investments where environmental benefits align with operational improvements, such as energy efficiency, waste reduction, or enhanced process performance.

Figure 50: To what extent do sustainability considerations influence your equipment investment decisions today?



N = 10; Each company could select only one answer

When presented with an open question, Thai companies indicated that market demand, financial performance, and operational efficiency gains are the main factors shaping capital expenditure decisions.

Across several companies, demand growth and business expansion were identified as key triggers for investment in packaging and processing equipment. Respondents frequently noted that increases in production volume, new product launches, or expansion into new markets would directly accelerate capital expenditure. For example, Masan Consumer Holdings indicated that investment plans are closely tied to scaling production capacity in line with market demand.

Financial performance and budget availability also play a critical role in shaping investment timelines. Several companies highlighted that capital expenditure decisions depend on internal financial conditions, with investments potentially delayed if profitability targets or budget constraints are not met. This reflects the relatively high cost and long-term nature of equipment investments.

A third factor relates to operational requirements and performance improvements. Companies emphasized that investments are more likely to proceed when new equipment can deliver clear gains in efficiency, quality, or reliability. In some cases, respondents also pointed to the need to remain competitive and meet evolving customer or export market requirements.

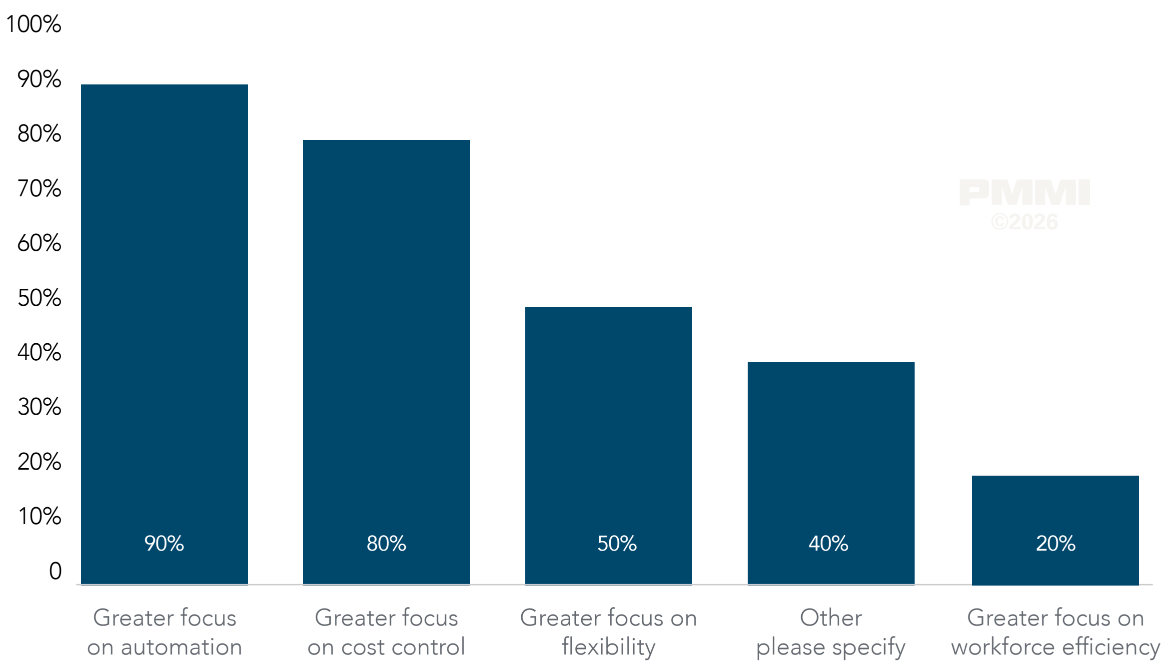
Operational Priorities and Performance Objectives

Compared with two to three years ago, Vietnamese manufacturers report a clear shift toward greater focus on automation and cost control, which are the most widely cited changes. This reflects increasing pressure to improve efficiency and manage rising input and labor costs, while maintaining competitiveness.

A notable share of companies also highlighted a greater focus on flexibility, suggesting a need to better handle product variety and changing demand patterns. In addition, several respondents selected "Other", which in all cases referred to sustainability, indicating that environmental considerations are becoming more prominent even though they were not listed as a predefined option.

In contrast, fewer companies reported a stronger focus on workforce efficiency, suggesting that while labor-related challenges exist, they are more often addressed indirectly through automation and process improvements rather than as a standalone priority.

Figure 51: Compared with two to three years ago, how have your operational priorities changed?



N = 10; Multiple answers allowed

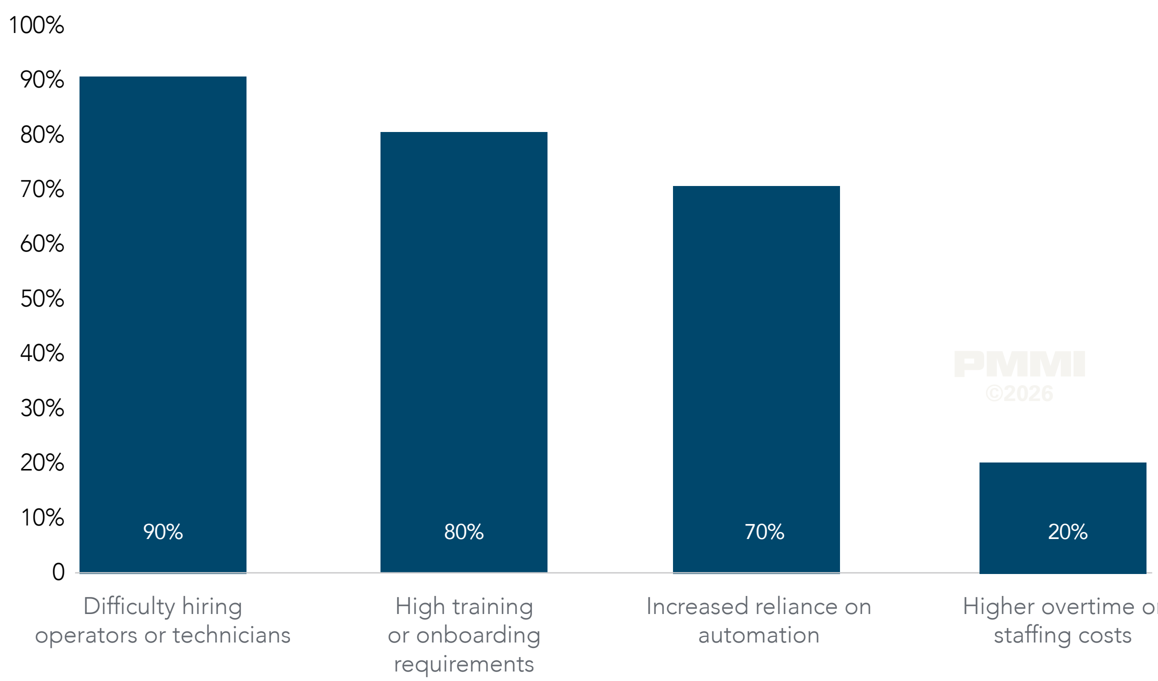
Workforce constraints are a significant issue for most Vietnamese manufacturers, with the vast majority reporting difficulty hiring operators or technicians. This suggests a tight labor market for skilled production roles, which directly affects operational stability and capacity planning.

In addition, many companies highlighted high training or onboarding requirements, indicating that even when workers are available, substantial effort is needed to bring them up to the required skill level. This adds time and cost pressures, particularly in more complex production environments.

As a result, a large share of respondents reported an increased reliance on automation, reflecting a shift toward reducing dependency on manual labor. For example, companies such as Nestlé Vietnam operate within structured systems where automation plays a key role in maintaining consistency and efficiency.

By contrast, fewer companies pointed to higher overtime or staffing costs, suggesting that while labor shortages are widespread, they are more often managed through hiring challenges and automation rather than extended working hours.

Figure 52: How do workforce constraints currently affect your production operations?



N = 10; Multiple answers allowed

A consistent theme across responses is the growing reliance on automation to address labor constraints and improve operational stability. Several companies explicitly linked workforce challenges, such as high turnover or labor scarcity, to increased investment in automated or semi-automated systems. For example, Acecook Vietnam highlighted rising wages and turnover as drivers for automating end-of-line tasks, while Nestlé Vietnam described a systematic rollout of robotic palletizing, automated packing, and vision systems across its plants.

Another important shift relates to production line design and flexibility. Some companies are adapting their operations to handle more complex product portfolios and changing demand patterns. For instance, Nature Story emphasized the need for flexible filling and packaging systems capable of handling a wide SKU range with fast changeovers and minimal waste, reflecting a move toward more adaptable production setups.

At the same time, companies in regulated industries pointed to constraints on operational changes. DHG Pharma noted that any modification to production systems requires formal validation and regulatory approval, which increases the time and cost of upgrades and limits how quickly operations can be redesigned.

In addition, several respondents highlighted efforts to strengthen workforce capabilities and reduce dependence on manual intervention. This includes structured training programs, as seen at Nestlé, as well as broader shifts toward "low-touch" or "no-touch" production models, such as Traphaco's smart factory approach aimed at minimizing human involvement to improve quality and consistency.

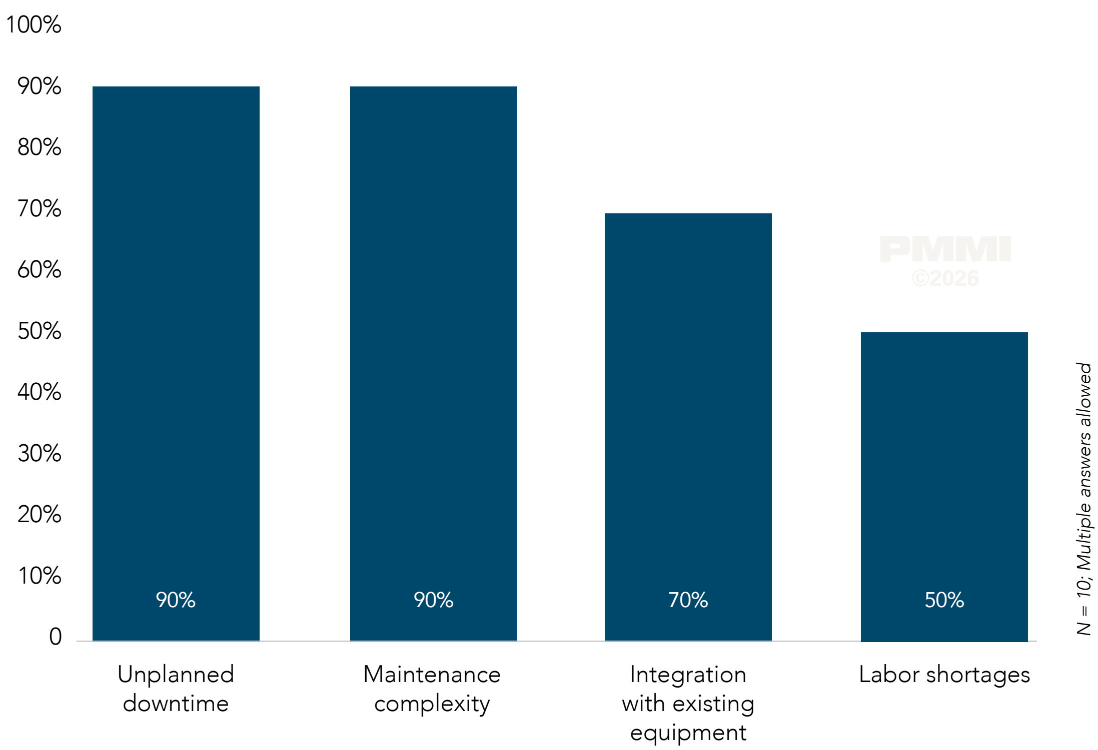
Operational Pain Points and Constraints

The most commonly reported operational challenges are unplanned downtime and maintenance complexity, each cited by nearly all respondents. This suggests that keeping equipment running reliably, and managing increasingly complex machinery, remains a central concern across industries.

A significant number of companies also highlighted integration with existing equipment as a pain point, indicating difficulties in aligning new technologies with legacy systems. This reflects the reality that many manufacturers are upgrading incrementally rather than replacing entire production lines.

In addition, labor shortages continue to affect operations for about half of the respondents, reinforcing earlier findings around workforce constraints. These challenges often interact, as limited technical personnel can make it harder to manage maintenance and reduce downtime effectively.

Figure 53: What are the most significant operational pain points in your packaging or processing lines today?

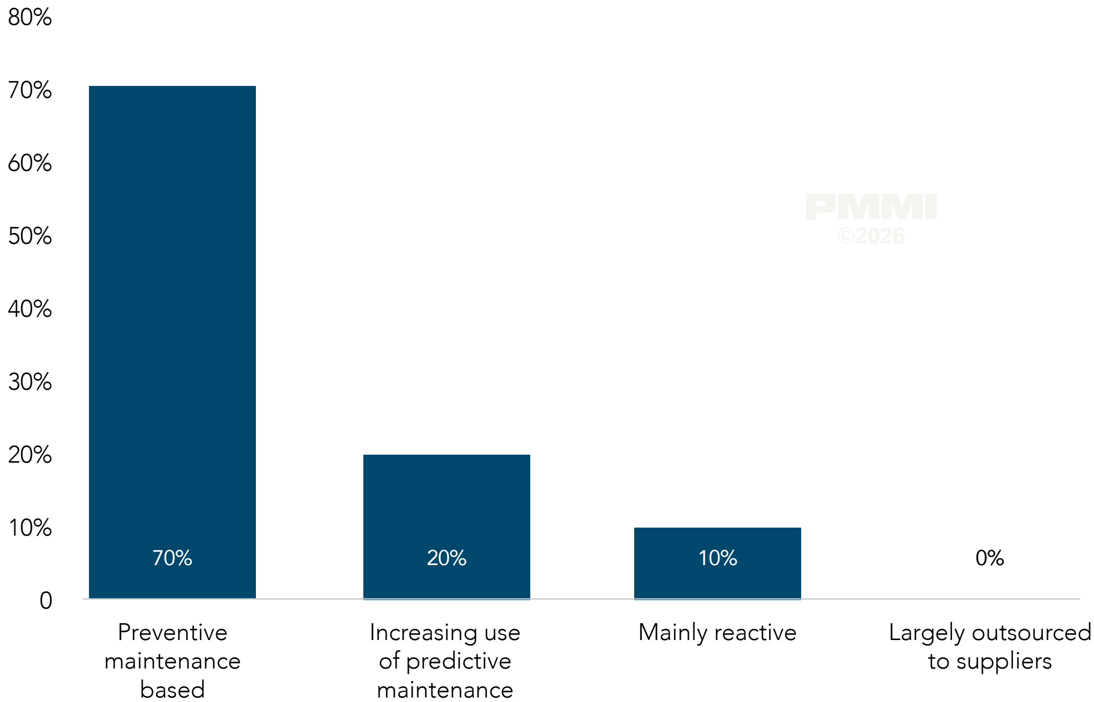


Most Vietnamese manufacturers operate under a preventive maintenance-based model, indicating a structured approach to maintaining equipment and reducing the risk of unplanned failures. However, several responses suggest that the maturity of these programs varies, with some companies still in earlier stages of implementation.

A smaller group of companies reported an increasing use of predictive maintenance, reflecting a gradual shift toward more advanced, data-driven approaches. For example, Nestlé Vietnam highlighted the rollout of predictive maintenance systems using sensor data to anticipate failures and optimize maintenance scheduling, although adoption levels differ across sites.

Only one company indicated a mainly reactive approach, suggesting that this model is now relatively uncommon among the sample. No respondents reported outsourcing maintenance as a primary model.

Figure 54: How would you describe your current maintenance model?



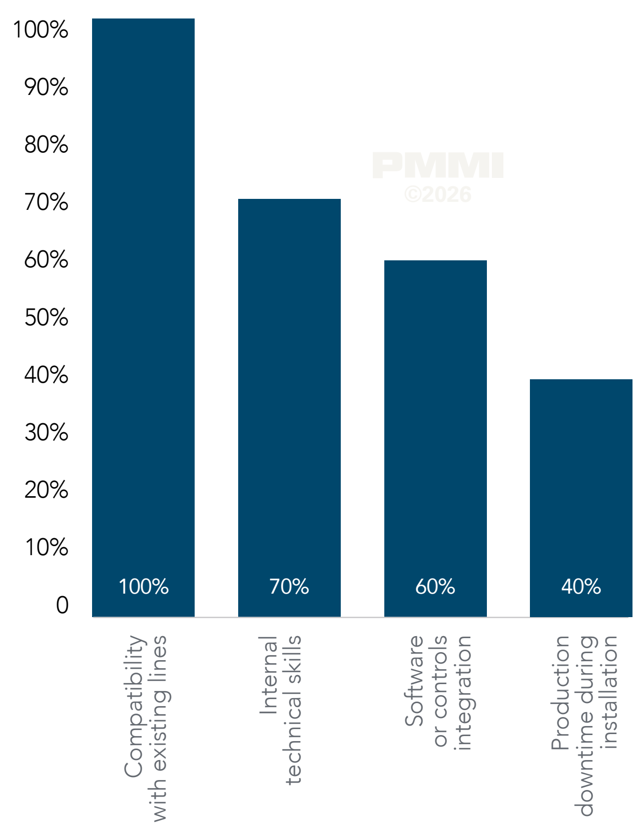
N = 10; Each company could select only one answer

The most universal challenge reported is compatibility with existing lines, cited by all respondents. This indicates that integrating new equipment into established production environments, often with legacy systems, is a critical and widespread constraint. It also reflects the prevalence of incremental upgrades rather than full line replacements, which increases the complexity of ensuring seamless interoperability.

A majority of companies also highlighted limitations related to internal technical skills, suggesting that in-house capabilities can constrain the speed and effectiveness of integration projects. This is closely linked to challenges around software or controls integration, particularly in facilities operating a mix of equipment from different suppliers, vintages, or control architectures.

Additionally, some respondents pointed to production downtime during installation as a concern, as integrating new equipment can disrupt ongoing operations and affect output, especially in continuous or high-throughput environments.

Figure 55: What challenges do you face when integrating new equipment or technologies?



N = 10; Multiple answers allowed

Across the interviews, integration with existing systems and the resulting operational disruptions emerge as the most significant factors affecting overall performance. Several companies emphasized that difficulties in aligning new equipment with legacy lines can substantially increase the time, cost, and complexity of upgrades. For example, DHG Pharma highlighted that integration challenges are compounded by regulatory requirements, as any modification to validated systems requires formal change control and documentation, significantly extending implementation timelines.

Production continuity and downtime risks were also frequently cited. Companies operating high-throughput or continuous production environments noted that even short disruptions can have cascading effects on downstream processes. Acecook Vietnam, for instance, explained that stoppages in noodle production immediately affect secondary packaging and overall throughput, illustrating the sensitivity of integrated production lines.

In addition, some respondents pointed to system interoperability and control integration as critical challenges. Differences in automation vintages, control architectures, and supplier standards can make it difficult to unify operations under a single system, reducing efficiency and complicating troubleshooting. Others highlighted operational inefficiencies linked to equipment design, such as long changeover times or reliance on suppliers with limited local technical support, which can lead to delays in maintenance and spare parts availability.

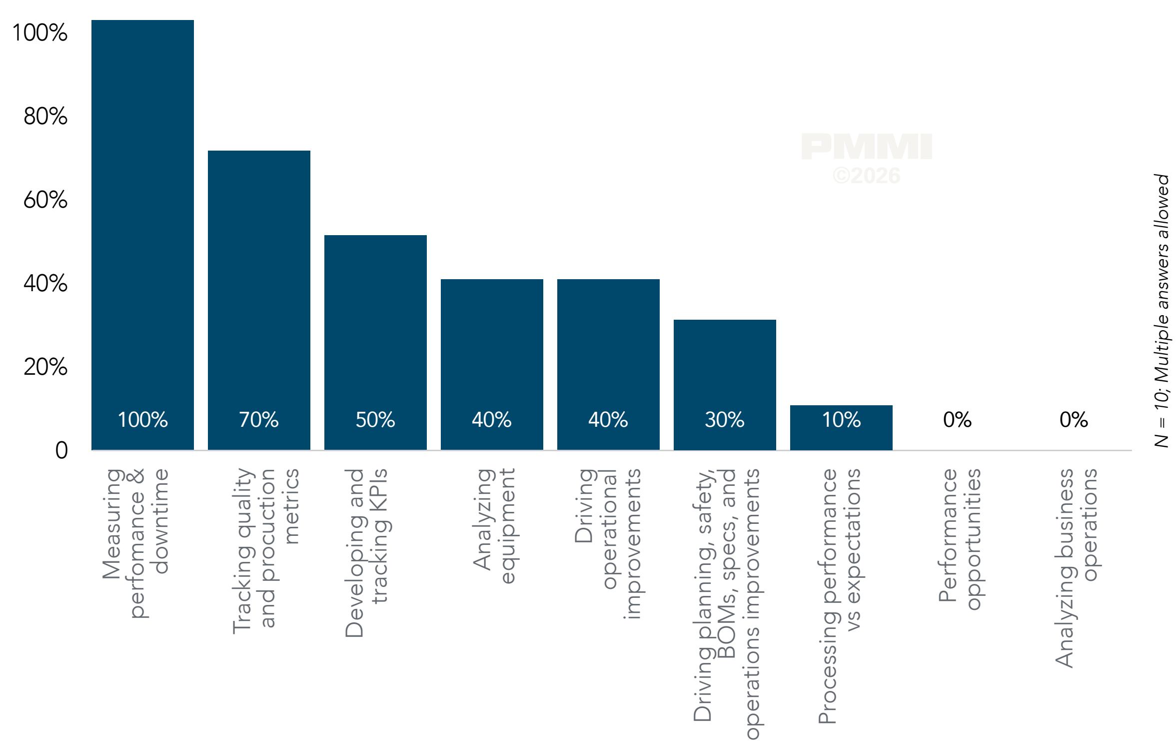
Technology Adoption and Emerging Demands

A clear priority across all respondents is measuring performance & downtime, cited by every company. This highlights a strong need for better visibility into production performance, particularly in identifying inefficiencies and minimizing disruptions.

A majority of companies also emphasized tracking quality and production metrics, indicating the importance of maintaining consistent output and meeting operational standards. This is complemented by a focus on developing and tracking KPIs, suggesting that many firms are working to formalize performance management systems.

At the same time, several respondents identified needs related to analyzing equipment and driving operational improvements, pointing to ongoing efforts to better understand asset performance and translate insights into tangible efficiency gains. More specialized objectives such as planning, safety, and specifications improvements were cited by a smaller group, reflecting more advanced or targeted operational initiatives.

Figure 56: For which of the following operational objectives do you currently have the greatest needs or priorities?

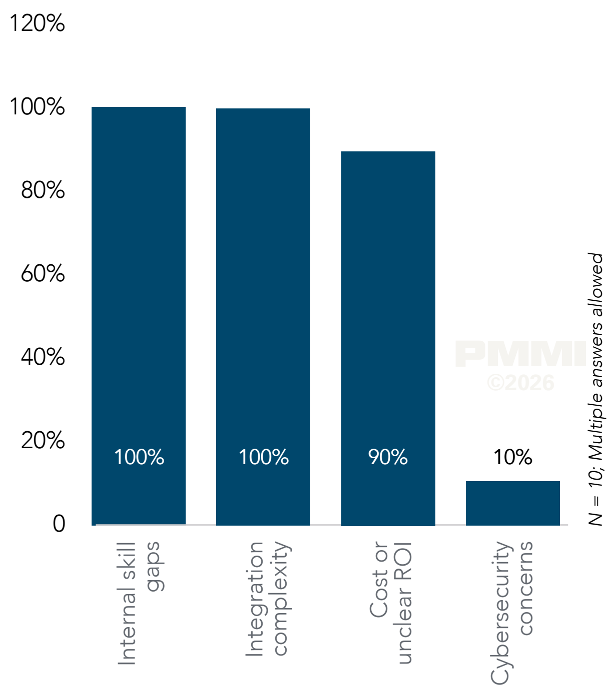


The most significant barriers to adopting advanced or digitalized solutions are internal skill gaps and integration complexity, both cited by all respondents. This indicates that companies face both capability-related and technical challenges when implementing new technologies, particularly in environments with legacy systems and varying levels of digital maturity.

Closely behind, cost or unclear ROI is also a major constraint, highlighted by most companies. This suggests that while there is interest in digital solutions, investment decisions remain highly dependent on clear financial justification and measurable returns.

By contrast, cybersecurity concerns were mentioned by only one company, indicating that this is currently a less prominent barrier compared to more immediate operational and technical challenges.

Figure 57: What are the main barriers to adopting more advanced or digitalized solutions?

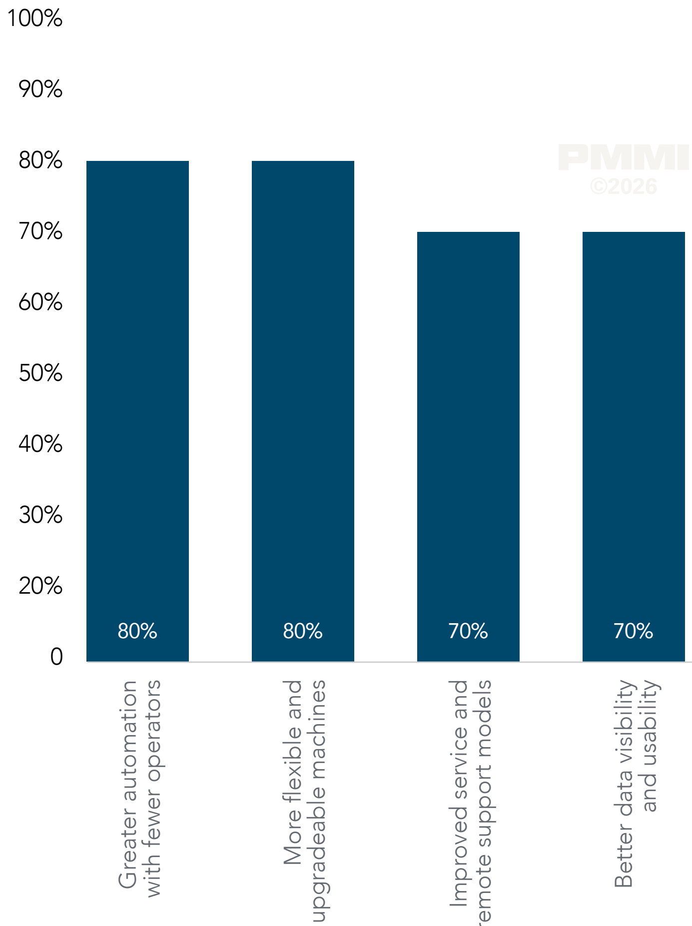


Looking ahead, Vietnamese manufacturers show strong interest in greater automation with fewer operators and more flexible and upgradeable machines, both of which were cited by a large majority of respondents. This reflects a clear need to reduce dependence on labor while also adapting production lines to handle a wider range of products and changing demand patterns. For example, Nature Story's emphasis on flexible, short-batch production aligns closely with the demand for more adaptable equipment.

At the same time, many companies emphasized the importance of improved service and remote support models, highlighting the need for faster troubleshooting, reduced downtime, and better access to technical expertise. This is particularly relevant in cases where companies rely on international suppliers with limited local presence, as noted by Vinh Hoan, where delays in spare parts or technical support can affect operations.

This is closely linked to demand for better data visibility and usability, as companies seek more actionable insights from their equipment to monitor performance and support decision-making.

Figure 58: Looking ahead, which innovations or capabilities would you most like to see from equipment suppliers?



N = 10; Multiple answers allowed

Vietnamese companies highlighted that success in digital or data-driven initiatives is primarily defined by tangible operational improvements and practical usability on the production floor. Several respondents emphasized that solutions must go beyond data collection and actively support decision-making. For example, Masan Consumer Holdings noted that dashboards are only valuable if they are used daily by plant managers and lead to changes in operator behavior, rather than remaining as static reports.

Another key dimension of success is predictive and proactive capability. One company highlighted that systems capable of identifying issues before failures occur, rather than reacting afterward, would represent a significant improvement in operational performance, particularly in reducing downtime and improving reliability.

Regulatory compliance and traceability also emerged as critical success factors, particularly in pharmaceutical and export-oriented sectors. DHG Pharma emphasized that digital systems must meet GMP requirements and reduce documentation burdens, while also enabling full traceability across production processes. Similarly, other respondents noted that the ability to demonstrate traceability to export customers is increasingly important.

In addition, companies assess value through performance metrics and integration with existing systems. For instance, Nestlé Vietnam highlighted the importance of tracking efficiency, waste, energy consumption, and quality, as well as ensuring compatibility with global ERP systems.

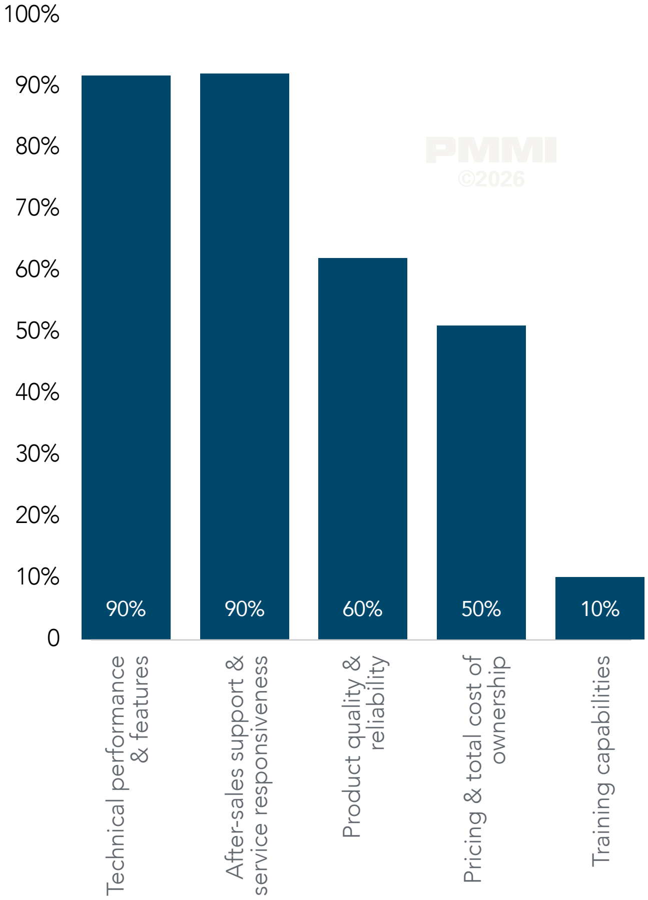
Vendor Selection and Procurement Decision Drivers

Vietnamese manufacturers place the greatest importance on technical performance and features and after sales support and service responsiveness, both of which were cited by nearly all respondents. This indicates that supplier selection is driven not only by the capabilities of the equipment itself, but also by the ability of suppliers to provide reliable and timely support throughout the equipment lifecycle.

A majority of companies also highlighted product quality and reliability, reflecting the need for consistent performance, particularly in high-volume or regulated production environments. In comparison, pricing and total cost of ownership, while still important, appear to be secondary considerations, suggesting that companies are willing to prioritize performance and support over upfront cost alone.

Only one company identified training capabilities as a key factor, indicating that while training is valued, it is typically considered part of broader service offerings rather than a primary selection criterion.

Figure 59: Looking ahead, which innovations or capabilities would you most like to see from equipment suppliers?



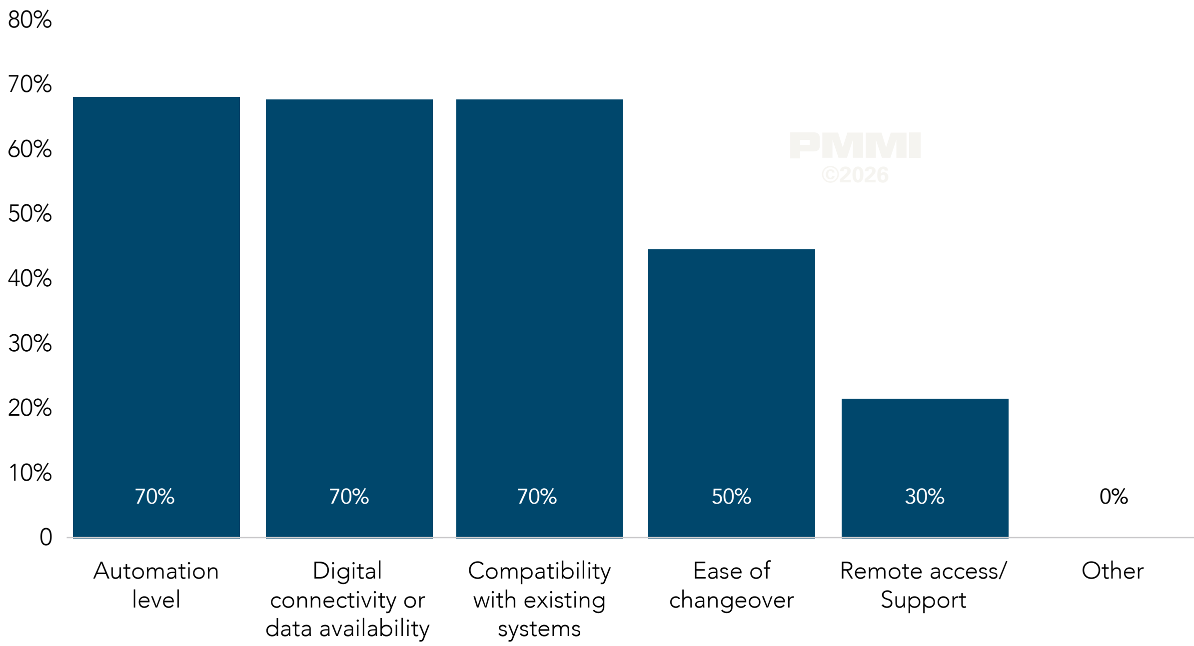
N = 10; Multiple answers allowed

Vietnamese manufacturers place strong emphasis on automation level, digital connectivity or data availability, and compatibility with existing systems, all of which were cited by a majority of respondents. This reflects the need for equipment that can integrate seamlessly into existing production environments while supporting increasing levels of automation and data-driven operations.

A significant number of companies also highlighted ease of changeover, indicating the importance of flexibility in handling multiple product formats and production runs. This is particularly relevant for companies with diverse product portfolios or shorter production cycles.

More specialized capabilities, such as remote access and support, were cited by a smaller group, suggesting that while these features are valued, they are not yet considered essential across all companies. One respondent also highlighted flexibility across packaging formats under "Other," reinforcing the broader importance of adaptability in equipment design.

Figure 60: Which technical capabilities are considered essential when evaluating new equipment?



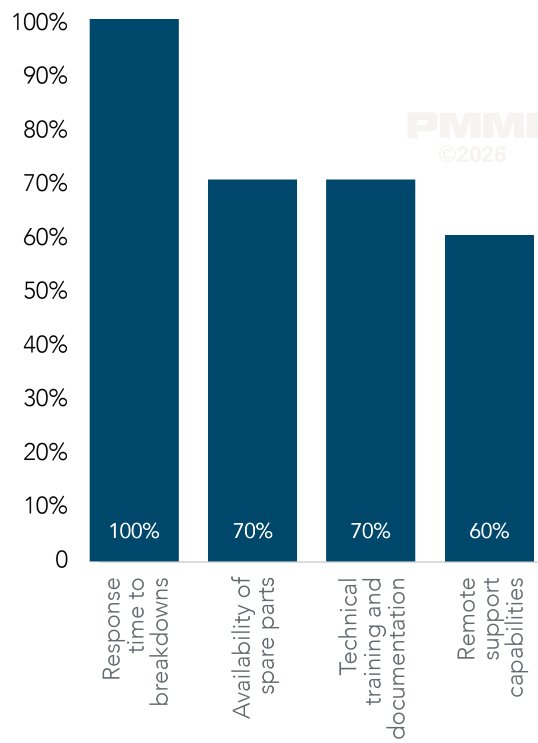
N = 10; Multiple answers allowed

The most critical aspect of after-sales support is response time to breakdowns, cited by all respondents. This highlights the importance of minimizing downtime and ensuring rapid resolution of technical issues, particularly in high-throughput production environments where disruptions can have immediate operational and financial impacts.

A majority of companies also emphasized the importance of availability of spare parts and technical training and documentation, indicating that both physical support infrastructure and knowledge transfer are essential for maintaining equipment performance over time. Delays in spare parts or insufficient technical guidance can significantly extend downtime and reduce operational efficiency.

In addition, many respondents highlighted remote support capabilities, reflecting a growing need for faster and more accessible technical assistance, especially when local expertise is limited or when equipment is sourced from international suppliers.

Figure 61: What aspects of after sales support matter most to your organization?



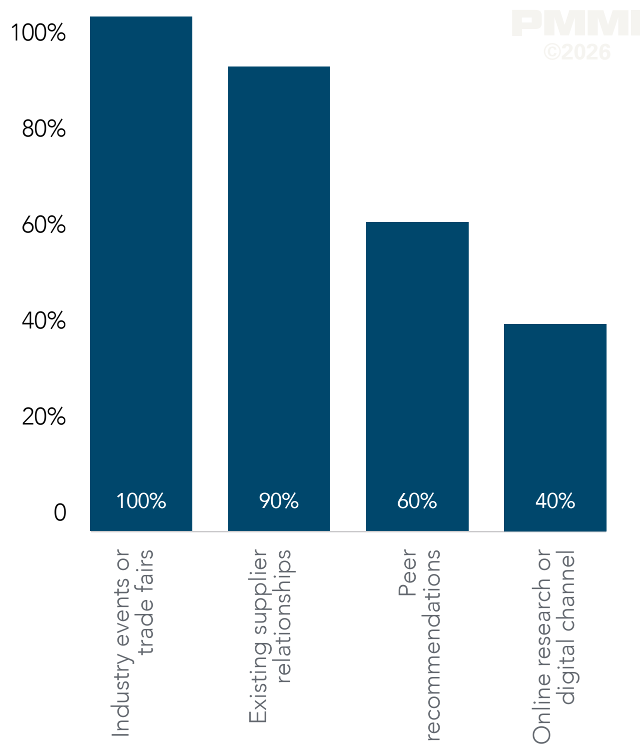
N = 10; Multiple answers allowed

The most important channel for discovering new equipment suppliers is industry events or trade fairs, cited by all respondents. This highlights the continued importance of in-person interactions, where companies can evaluate equipment, engage directly with suppliers, and compare solutions in a practical setting.

Closely behind, existing supplier relationships play a major role, indicating that companies often rely on established networks and trusted partners when exploring new solutions. This suggests a preference for continuity and proven reliability in supplier selection.

A significant number of respondents also rely on peer recommendations, reflecting the value of industry networks and shared experiences in identifying credible suppliers. In contrast, online research or digital channels are less widely used, suggesting that digital discovery remains secondary to more relationship-driven or experiential approaches.

Figure 62: How do you typically become aware of new equipment suppliers or solutions?



N = 10; Multiple answers allowed

Vietnamese companies highlighted several unmet needs from equipment suppliers, with a strong emphasis on greater flexibility, modularity, and compliance support. A recurring theme is the need for equipment that can be upgraded over time without full replacement. For example, Masan Consumer Holdings noted the value of modular upgrade paths that allow additional automation or data connectivity to be integrated into existing lines, reflecting a preference for scalable and future-proof solutions.

Another important gap relates to specialized equipment design for specific production requirements. Nature Story emphasized the need for compact and flexible systems capable of handling multiple packaging formats with minimal changeover, particularly for smaller batch sizes and diverse product portfolios. This highlights demand for equipment that can accommodate more complex and variable production environments.

Regulatory compliance and data capabilities were also identified as critical areas. Companies such as DHG Pharma stressed the importance of suppliers providing comprehensive validation support (IQ/OQ/PQ) and documentation, while others pointed to the need for GMP-ready data interfaces and improved traceability. In addition, cybersecurity-compliant remote access was mentioned as an emerging requirement, particularly for companies operating under global standards.

Malaysia

END-USER SECTOR OVERVIEW

Import Overview

Malaysia's imports of packaging machinery increased steadily over 2020 to 2024, rising from USD 102.5 million to USD 149 million, indicating sustained investment in manufacturing capacity. China strengthened its leadership throughout the period and remained the largest supplier in 2024, reflecting its cost competitiveness and broad product range. South Korea recorded a sharp rise in 2022 and a strong rebound in 2024, emerging as the second largest supplier, while Germany maintained a high value position despite some volatility. European suppliers such as Italy and Switzerland showed stable but moderate performance. In contrast, the United States played a relatively limited role. Although US exports to Malaysia briefly increased in 2023, they fell back in 2024, placing the United States only eleventh among suppliers. This suggests a marginal presence compared with Asian and European competitors.

Table 4: Malaysia's imports of packaging machinery

Partner	2020	2021	2022	2023	2024	2024 Ranking
World	**102.5**	**108.9**	**137.2**	**139.4**	**149.0**	**–**
China	36.5	41.0	41.7	39.5	47.5	1
South Korea	1.7	1.1	15.9	3.9	24.9	2
Germany	11.2	4.1	22.9	20.0	15.0	3
Italy	11.5	14.1	8.0	11.0	9.1	4
Singapore	5.6	10.4	7.7	16.3	7.2	5
Japan	9.0	7.6	8.2	7.2	6.6	6
Canada	0.0	0.0	3.1	2.5	5.7	7
Switzerland	1.5	1.5	0.4	3.4	5.2	8
Taiwan	9.3	8.0	6.6	7.6	4.9	9
Netherlands	1.5	5.1	1.6	3.1	4.2	10
United States	**3.0**	**1.4**	**1.5**	**5.8**	**2.9**	**11**

Note: HS codes considered are 842220, 842230, and 842240 | Unit: USD 1,000,000

Key Policies and Trends

Malaysia is finalizing an extended producer responsibility (EPR) regulation targeting packaging materials, including plastics, marking a major development in the nation's circular economy and waste-management policy. The Ministry of Housing and Local Government (KPKT), which oversees solid waste regulation, announced that the EPR framework will initially be introduced on a voluntary basis in 2026 before becoming mandatory by 2030 under the national environmental policy. Under this scheme, the KPKT has prioritized six specific categories of post-consumer packaging materials to improve national recycling rates and reduce landfill waste:

Categories of Post-Consumer Packaging Materials to Improve National Recycling Rates and Reduce Landfill Waste

Plastic
Includes various types such as PET (bottles), HDPE (rigid containers), LDPE/PP (films and bags), and other flexible packaging.

Paper and Cardboard
Covers fiber-based products like corrugated boxes and paper packaging.

Aluminum
Targets beverage cans and other aluminum-based food packaging.

Glass
Primarily focuses on bottles and jars from the food and beverage sectors.

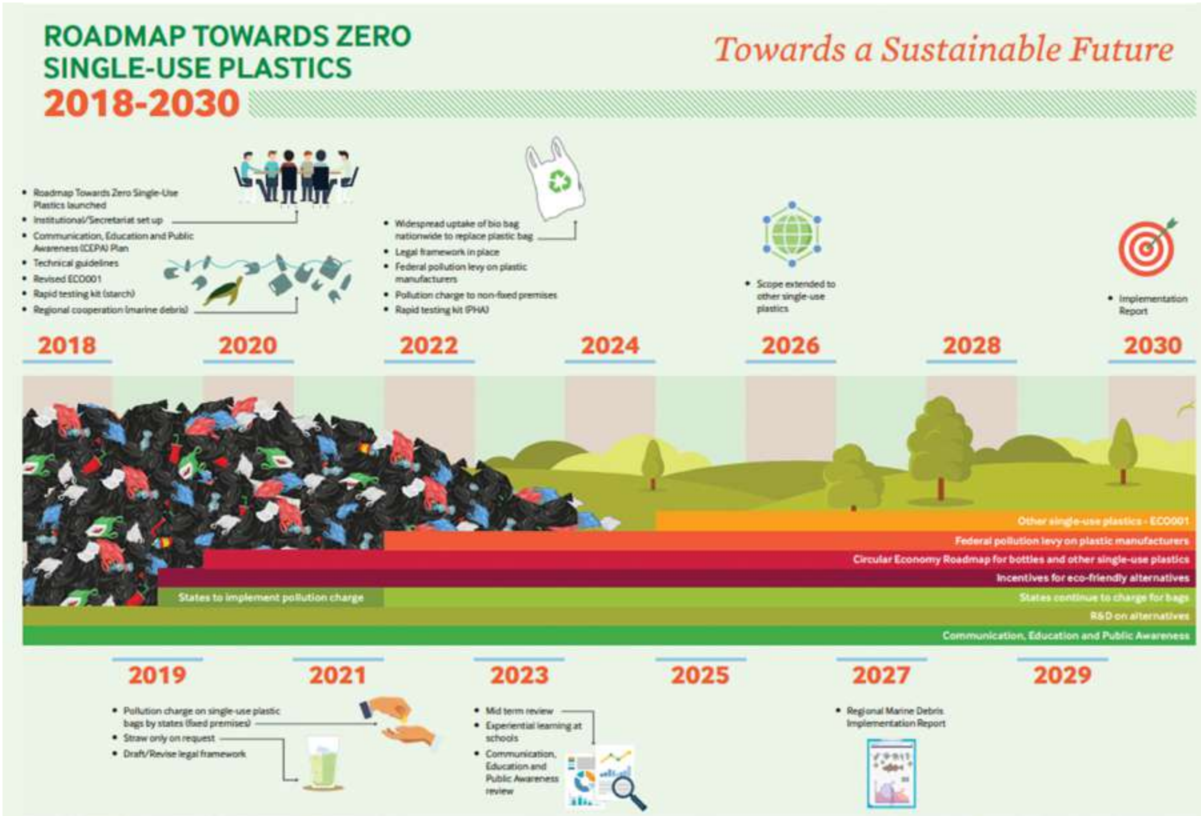
Metal Alloy with Iron
Includes steel cans and other ferrous metal packaging materials.

Cartons
Specifically refers to used beverage cartons (UBC) often used for dairy and juice products.

Malaysia's packaging recycling targets are integrated within the broader national goal of achieving a 40% overall recycling rate by 2025. This is a key milestone in the nation's Circular Economy Blueprint for Solid Waste (2025–2035). Specifically for plastics, the targets set in the Malaysia Plastics Sustainability Roadmap 2021-2030 are more granular. For 2025, Malaysia set a target to have a 76% average collected-for-recycling (CFR) rate and a 25% recycling rate for post-consumer plastic packaging. The ultimate packaging goal is for all plastic packaging in the market to be 100% recyclable by 2030.

Malaysia is currently in the decisive third phase (2026–2030) of its Roadmap towards Zero Single-Use Plastics, a strategic framework designed to eliminate non-essential plastics and transition the nation toward a circular economy. The upcoming EPR framework is part of this strategy. Under this phase, the KPKT has empowered local councils to enforce total bans on single-use plastic bags, moving beyond the previous voluntary period. Implementation is largely localized at the state level to ensure regional compliance before the 2030 national deadline. For instance, Penang began full enforcement of its "No Plastic Bag Every Day" campaign in late 2025, while Perak is implementing its own comprehensive ban starting March 1, 2026. These bans typically target fixed retail premises, including hypermarkets, pharmacies, and fast-food outlets, while encouraging consumers to utilize reusable alternatives.

Figure 63: Malaysia’s Roadmap towards Zero Single-Use Plastics



Source: KPKT

To support its zero plastic goals, the Malaysian government is expanding research and development funding for biodegradable and compostable alternatives, specifically for items that cannot easily enter the circular economy, such as feminine hygiene products and certain medical devices. These efforts are part of Malaysia's Thirteenth Malaysia Plan (RMK-13), which includes expanded R&D funding for "design-out" solutions for waste that cannot be mechanically recycled.

Notable developments

Some key examples of end-users that have recently expanded their operations in Malaysia include:

Dutch Lady has transitioned its primary manufacturing operations to a new, advanced facility known as DLMI@Enstek located in the Bandar Enstek Halal Hub, Negeri Sembilan. This USD 136 million investment represents a three-fold increase in capacity compared to its former Petaling Jaya plant. The facility manufactures a wide range of liquid milk products, including UHT and pasteurized milk. Packaging is fully integrated into the production process, featuring high-speed automated lines for primary aseptic carton packaging and secondary automated palletizing. The facility utilizes digital twins and smart logistics to optimize the supply chain from raw milk reception to final product distribution.

F&N is significantly expanding its footprint through the F&N AgriValley project and a new manufacturing plant in Butterworth, Penang. The Butterworth facility, which became operational in August 2025, focuses on drinking water and carbonated beverages to serve the northern Peninsular Malaysia market, reducing logistical costs from its Shah Alam hub. Concurrently, F&N is developing an integrated dairy farm in Gemas, Negeri Sembilan, which began milk production in 2025. The Butterworth plant integrates primary packaging (PET bottling and canning) with advanced secondary packaging systems. This vertical integration allows F&N to transition from an importer of dairy raw materials to a primary producer and packager of fresh milk for both domestic and Indochina markets.

Notable developments *(cont.)*

Nestlé Malaysia has expanded its Sri Muda factory in Shah Alam, Selangor, positioning it as a global hub for the "Ready-to-Drink" (RTD) and coffee concentrate categories. In 2024 and 2025, the company invested over USD 125 million to add new production lines, including the launch of the Nescafé Espresso Concentrate line. This facility utilizes advanced UHT technology and recycled polyethylene terephthalate (rPET) packaging. The manufacturing process is tightly integrated with primary packaging (bottling and aseptic cartons) and secondary operations (multipack shrink-wrapping). Nestlé's expansion specifically targets the growing demand for cold coffee solutions in Southeast Asia and Oceania, leveraging Malaysia's halal certification to export to the Middle East and Europe.

Duopharma Biotech has significantly boosted its manufacturing capabilities through the commissioning of its K3 facility in Klang, Selangor. Operationalized between 2024 and 2025, this new plant increased the group's overall manufacturing capacity by approximately 50%. The facility is designed to meet stringent international standards for the production of tablets and capsules, facilitating the relocation of 90% of production from legacy sites. Investment focuses include the expansion of small volume injectables at the neighboring K2 plant and the development of a biological facility at the K5 site. Packaging operations are a core component of the K3 integration, featuring automated blister packing and secondary cartooning lines that include serialization and track-and-trace technology to comply with global pharmaceutical safety regulations.

Pharmaniaga is currently undergoing a strategic manufacturing expansion focused on biopharmaceuticals and vaccine self-sufficiency. Located in Puchong and Shah Alam, Selangor, the company has invested in new production lines for human insulin and human vaccines, with process validation batches completed in mid-2025. These facilities are expected to reach full commercial production in 2026. The expansion aims to serve the Ministry of Health's Approved Products Purchase List. Packaging is integrated through high-precision sterile filling lines and specialized cold-chain secondary packaging. The integration of "fill-and-finish" capabilities allows Pharmaniaga to manage the entire manufacturing cycle, ensuring that vaccines and insulin are packaged in a temperature-controlled environment immediately following production.

Biocon, a global biopharmaceutical leader, has continued to expand its Johor Bahru manufacturing facility, which is recognized as Asia's largest integrated insulin hub. Between 2024 and 2026, the company has implemented capacity upgrades to meet local and international supply contracts, including the extension of its insulin supply agreement with the Malaysian government through 2025. The facility produces recombinant human insulin and insulin analogs. Manufacturing is vertically integrated with a sophisticated packaging suite that includes primary vial and cartridge filling under aseptic conditions. Secondary packaging operations are automated to handle high-volume labeling and boxing, primarily for export to over 20 countries. This expansion solidifies Johor's position as a critical node in the global diabetes care supply chain.

Hygr, a rapidly growing local personal care brand, is undertaking a manufacturing expansion throughout 2025 and 2026 to support its regional entry into Indonesia and Thailand. The company is investing in automation technology at its facility in Shah Alam, Selangor, to transition from labor-intensive processes to high-output machine-driven production. This expansion aims to double its SKU range, focusing on natural deodorants and sunscreens. Packaging is a key component of this expansion; Hygr is integrating automated filling and capping machines to handle its signature "balm" and "spray" formats. By automating primary packaging and secondary labeling, the company aims to reduce labor costs by 60% while maintaining the agility needed for rapid formula adjustments based on consumer feedback.

Wipro Consumer Care, which owns brands like Safi and Dashing, has expanded its manufacturing footprint in Subang and Kajang, Selangor, through 2024 and 2025. Following the acquisition of personal care brands from VVF in late 2023, Wipro has optimized its Malaysian plants to accommodate new production lines for personal wash and skincare products. The company focuses on "halal-to-the-core" manufacturing, integrating R&D with high-volume production. Packaging is deeply integrated into their process, utilizing world-class automated lines for primary liquid filling and secondary packaging (corrugated boxing). Wipro's Malaysian operations serve as a regional export hub, with the expanded facilities utilizing smart sensors to monitor packaging quality and reduce material waste.

As one of Malaysia's largest contract manufacturers for personal care and cosmetics, Eng Kah Corporation recently upgraded its facilities in Bayan Lepas, Penang. The expansion focuses on increasing capacity for color cosmetics, perfumes, and skincare for multinational clients. The company's manufacturing model is "end-to-end," meaning it handles everything from product formulation to final packaging. The expanded facility includes new cleanroom environments for sterile primary packaging (bottling and tube filling) and dedicated secondary packaging zones for gift-set assembly and retail-ready displays. This enables international brands to use Eng Kah as a "one-stop shop" for manufacturing and packaging products destined for the Southeast Asian and Singaporean markets.

Biodegradable packaging from rice straw waste

Free The Seed Sdn Bhd, a Malaysian biotechnology company that converts agricultural by-products like rice straw into fully biodegradable, compostable packaging products, collaborated with Bioeconomy Corporation, a government agency that nurtures and funds biotech and bio-based industry development in Malaysia. Using enzyme biotechnology to process rice straw at a facility in Gurun, Kedah, the partners started to produce eco-friendly packaging for food, medical, electronics and industrial sectors for both domestic use and export to countries including Germany, the Netherlands, Japan and the United Kingdom.

Figure 64: Free the Seed and the Bioeconomy Corporation are working on biodegradable packaging

Source: Packnode

The initiative aims to transform agricultural waste into commercially valuable products while supporting environmental sustainability and the circular economy. Initially focused on food packaging for export, the project has expanded its reach to serve other industries such as healthcare.

PRIORITIES FOR PACKAGING AND PROCESSING OPERATIONS

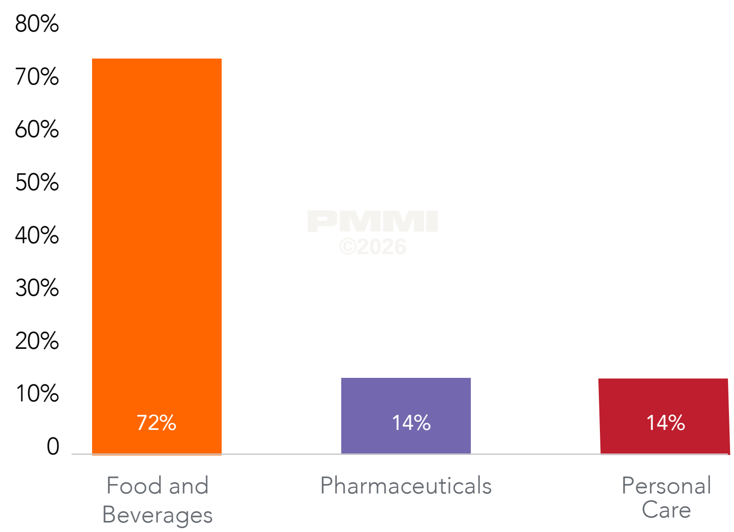
The companies interviewed in Malaysia are predominantly active in the food and beverage sector, which represents five of the seven profiles: Ajinomoto Malaysia, Coca-Cola, Etika Beverages, Nestlé Malaysia, and Sauce Empire Manufacturing. The remaining companies reflect adjacent industries, with Kimberly-Clark Malaysia operating in personal care and Thoyyib Pharma in pharmaceuticals.

Most of these companies operate large-scale, high-volume production facilities with diverse product portfolios. Coca-Cola, for example, manages an extensive operation serving over 200,000 customers and producing more than 80 beverage products, supported by advanced infrastructure such as automated storage and retrieval system. Etika Beverages similarly demonstrates a broad operational footprint, positioning itself as a "Total Beverage" provider across 20 countries, with a mix of global partnerships (PepsiCo) and in-house brands. At a smaller scale, Sauce Empire Manufacturing focuses on sauces and contract manufacturing, producing 3–4 tons daily, illustrating a more specialized but still industrial operation.

Across the companies, there is a strong degree of technical involvement in packaging and processing equipment. Roles often combine operational, engineering, and strategic responsibilities. Ajinomoto Malaysia, for instance, integrates R&D into packaging development, troubleshooting, and sustainability efforts, while Thoyyib Pharma emphasizes precision and regulatory compliance when evaluating machinery. In smaller organizations like Sauce Empire, decision-making authority is more concentrated, with direct oversight of capital expenditure.

In terms of organizational structure, procurement is largely centralized or guided by global frameworks, particularly among multinational firms such as Ajinomoto and Kimberly-Clark, where regional or global standards shape local decisions. However, some variation exists: Etika Beverages and Sauce Empire adopt more centralized, top-down approaches, while Coca-Cola combines global standards with more decentralized local execution.

Figure 65: Sectoral breakdown of manufactures interviewed in Malaysia



Sector	Companies	Share
Food and Beverages	Ajinomoto Malaysia, Coca-Cola (Malaysia), Etika Beverages, Nestlé (Malaysia), Sauce Empire Manufacturing	72%
Pharmaceuticals	Thoyyib Pharma	14%
Personal Care	Kimberly-Clark Malaysia	14%

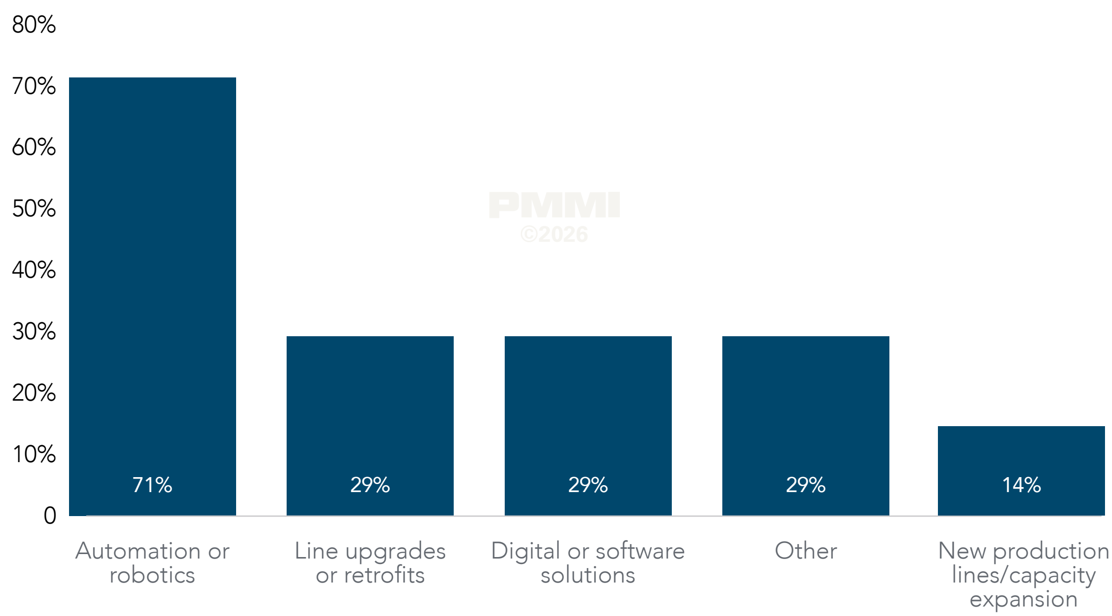
Investment Plans and Capital Spending

Across the companies, investment activity in packaging and processing equipment is generally active and forward-looking, with most organizations indicating ongoing upgrades or sustained spending levels. While some maintain stable investment, several are already engaged in improvements to enhance their operations.

Looking ahead over the next 12–36 months, the outlook is clearly positive: five out of seven companies expect investment to increase, either moderately or significantly, while only two anticipate remaining broadly stable. No companies indicate a reduction in spending, pointing to continued confidence in capital expenditure despite potential constraints.

In terms of priorities, automation and robotics stand out as the dominant focus, selected by the majority of respondents. Other areas such as line upgrades and digital or software solutions are each cited by smaller groups. Notably, companies that selected the "other" category explicitly referred to sustainability-related initiatives, highlighting a growing emphasis on environmentally driven improvements. Ajinomoto Malaysia, for instance, links its equipment decisions to broader sustainability and efficiency goals. Only one company prioritizes new production lines or capacity expansion, suggesting that most organizations are concentrating on optimizing existing operations rather than expanding production footprint.

Figure 66: Which types of investments are currently priorities for your organization?



N = 7; Multiple answers allowed

The main drivers behind these investments are consistently linked to efficiency, productivity, and operational performance improvements. Companies emphasize the need to streamline processes, enhance output quality, and remain competitive in increasingly demanding markets. Cost considerations and the pursuit of better performance are central themes across responses.

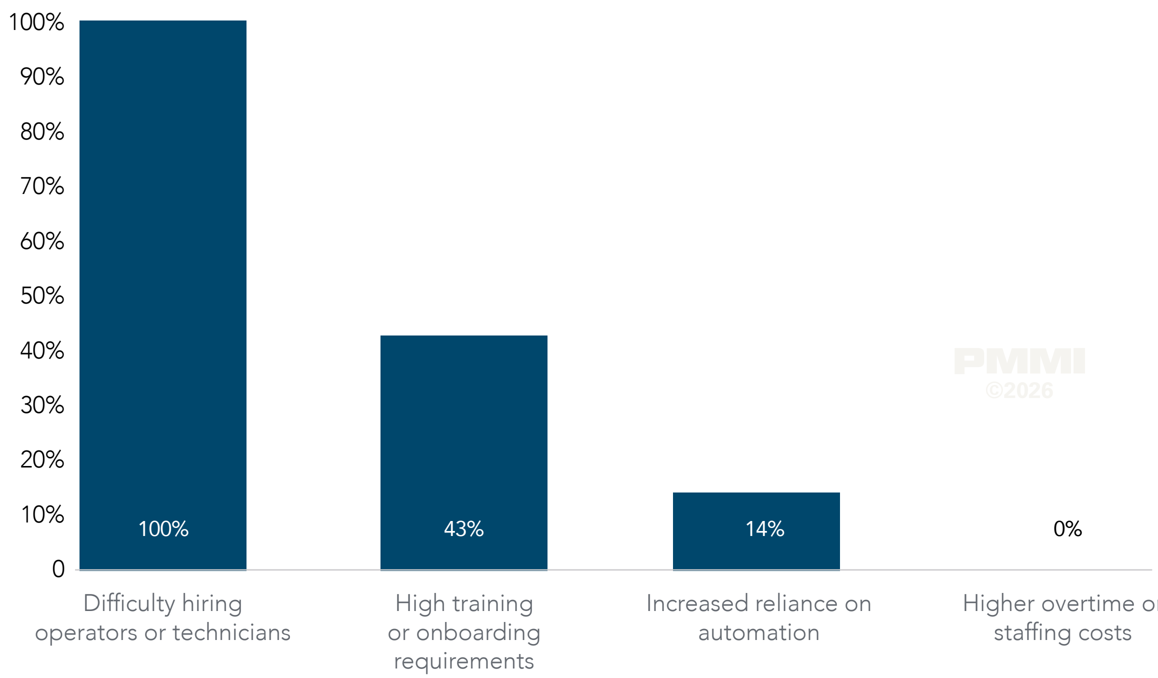
At the same time, investment decisions are shaped by several constraints. Budget limitations and cost pressures are commonly mentioned, along with internal approval structures that can slow or restrict spending. In some cases, companies also highlight challenges related to integrating new technologies into existing systems.

Operational Priorities and Performance Objectives

Across the companies, workforce dynamics play a significant role in shaping production operations and future planning. While overall staffing levels appear to support ongoing operations, several companies highlight challenges related to workforce availability and capability.

A key issue is the difficulty in hiring operators and technicians, which is reported by all companies in the dataset. This indicates a consistent constraint across industries, affecting both large multinationals and smaller manufacturers. In addition, a subset of companies points to high training and onboarding requirements, suggesting that even when hiring is successful, developing the necessary technical skills remains time-consuming and resource-intensive. In one case, workforce constraints are also linked to an increased reliance on automation, indicating a shift toward reducing dependency on manual labor where possible.

Figure 67: How do workforce constraints currently affect your production operations?



N = 7; Multiple answers allowed

These workforce challenges are closely connected to broader operational and investment considerations. Companies are increasingly recognizing the need to balance human resource limitations with technological solutions, particularly in environments that require precision, consistency, and efficiency. The emphasis on automation, already identified as a key investment priority, reflects this alignment between labor constraints and equipment strategy.

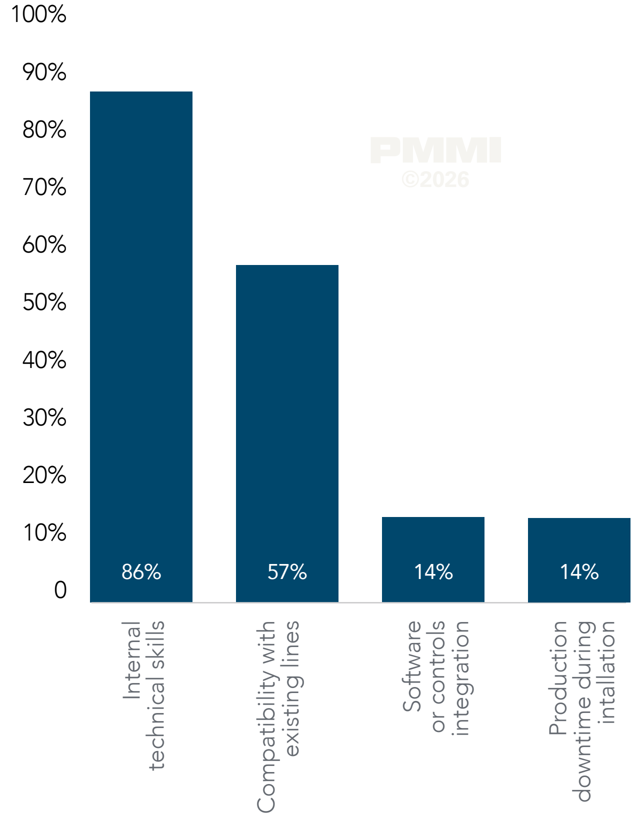
At the same time, organizations are adapting their approaches to workforce development and operational management. This includes placing greater importance on skills development, training processes, and workforce planning, especially in technically demanding roles. The need to ensure continuity in production while managing hiring difficulties is a recurring theme.

Operational Pain Points and Constraints

Across the companies, the adoption and integration of new equipment and technologies are shaped by both strategic intent and practical constraints. Organizations generally show a clear openness toward modernization, particularly when it aligns with efficiency gains, automation, and long term operational improvements.

At the same time, several challenges emerge when integrating new equipment. The most prominent issue is the availability of internal technical skills, highlighted by the majority of companies. Ajinomoto Malaysia, for instance, reflects this through its involvement in troubleshooting and technical evaluation, indicating the need for strong in house expertise. In addition, more than half of the companies report compatibility issues with existing production lines, showing that legacy systems can complicate upgrades. Less frequently, companies mention software integration challenges and production downtime during installation, though these remain relevant operational risks.

Figure 67: What challenges do you face when integrating new equipment or technologies?



N = 7; Multiple answers allowed

In evaluating new technologies, companies place strong emphasis on reliability, performance, and alignment with existing operational needs. Decision making tends to be structured, often involving technical assessments, internal validation, and in some cases alignment with regional or global standards. For example, Thoyyib Pharma highlights the importance of precision and regulatory compliance when assessing new equipment, reflecting the stricter requirements of pharmaceutical manufacturing environments.

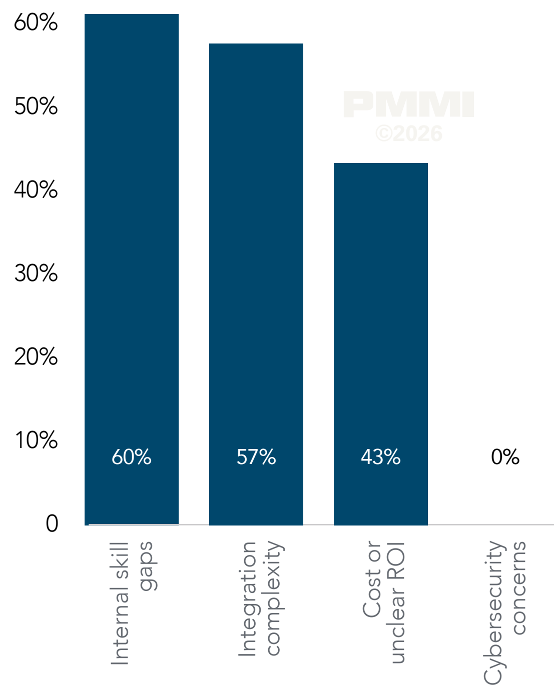
Support from suppliers and external partners also plays an important role. Companies value technical support, training, and after sales service, particularly in ensuring smooth implementation and minimizing disruption. Sauce Empire Manufacturing illustrates this need from a smaller scale perspective, where external support can help bridge internal capability gaps.

Technology Adoption and Emerging Demands

Across the companies interviewed in Malaysia, the use of data and digital tools is focused on monitoring performance and improving operational visibility. Several companies report using systems to track metrics such as downtime, production performance versus expectations, and quality indicators. For example, Thoyyib Pharma highlights the use of tools to monitor production performance against expectations and track quality metrics, reflecting a structured approach to operational control.

At the same time, the adoption of more advanced or digitalized solutions is constrained by a number of clear barriers. The most frequently cited challenges are internal skill gaps and integration complexity, each mentioned by four companies. This indicates that both human capability and system compatibility are central limitations. In addition, three companies highlight cost or unclear return on investment, reinforcing that financial justification remains an important consideration. Notably, cybersecurity concerns are not identified as a barrier by any of the respondents. Ajinomoto Malaysia also reflects these challenges through its emphasis on aligning new solutions with existing processes and capabilities.

Figure 68: What are the main barriers to adopting more advanced or digitalized solutions?



N = 7; Multiple answers allowed

Looking ahead, companies show interest in targeted innovations that can support operational flexibility and efficiency. Thoyyib Pharma identifies a need for more flexible and upgradeable machines, indicating a preference for solutions that can adapt over time rather than requiring full replacement. This aligns with the broader focus on incremental improvements rather than large-scale transformation.

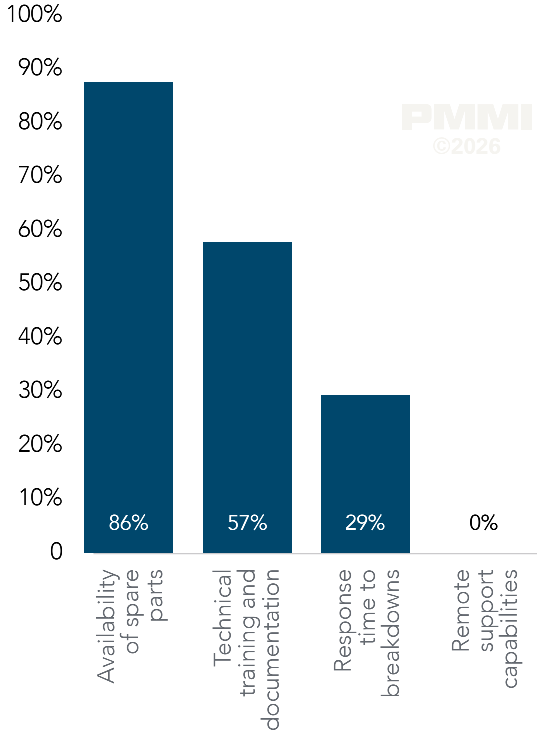
When defining success for digital investments, companies emphasize practical and operational outcomes. Thoyyib Pharma, for instance, evaluates value based on how effectively a tool supports decision-making and improves performance. Similarly, Nestlé (Malaysia) reflects a focus on measurable operational benefits when assessing new solutions.

Vendor Selection and Procurement Decision Drivers

Across the Malaysian companies interviewed for this study, supplier selection and equipment evaluation are driven by a combination of technical performance, reliability, and support capabilities. The most consistently emphasized factors include product quality, technical features, and after-sales service, indicating that companies prioritize solutions that can deliver stable, long-term operational value. For instance, Thoyyib Pharma highlights technical performance, reliability, and service responsiveness as key decision criteria, reflecting a strong focus on operational dependability in a regulated environment.

After-sales support emerges as a critical consideration. The most important aspect is the availability of spare parts, selected by the majority of companies, followed by technical training and documentation. This highlights the importance of minimizing downtime and ensuring that internal teams can effectively operate and maintain equipment. Response time to breakdowns is also relevant, though less widely cited. Ajinomoto Malaysia reflects this emphasis through its focus on ongoing support and technical alignment with operational needs.

Figure 69: What aspects of after sales support matter most to your organization?



N = 7; Multiple answers allowed

When assessing technical capabilities, companies place importance on features that support efficiency, flexibility, and ease of integration. Common priorities include automation level and ease of changeover, suggesting a need for equipment that can adapt to varying production requirements while maintaining productivity. These preferences reinforce the broader trend toward optimizing existing operations rather than expanding capacity.

Malaysian companies express interest in strengthening collaboration with suppliers that can offer reliable support, technical expertise, and long-term partnership value. There is a clear expectation that suppliers go beyond equipment provision to deliver comprehensive service, including training and troubleshooting assistance.

Philippines

END-USER SECTOR OVERVIEW

Import Overview

Philippines' imports of packaging machinery remained relatively stable from 2020 to 2024, fluctuating around USD 85–101 million, with a notable dip in 2023. Germany emerged as the top supplier in 2024 with USD 21.1 million, surpassing China, which declined slightly to USD 19.4 million. Italy and Japan held strong positions, reflecting the importance of European and Japanese technology in the market. Taiwan and India contributed moderate shares, while smaller Asian and European suppliers showed gradual growth. The United States maintained a marginal role, ranking tenth in 2024 with just USD 1.0 million in exports, down from a 2022 peak of USD 4.3 million. This indicates very limited influence in the Philippines' packaging machinery sector, where European and Asian suppliers dominate both in value and market presence.

Table 5: Philippines' imports of packaging machinery

Partner	2020	2021	2022	2023	2024	2024 Ranking
World	**100.8**	**101.2**	**101.0**	**83.0**	**85.1**	**–**
Germany	20.2	14.6	17.1	11.9	21.1	1
China	21.2	15.0	16.7	24.7	19.4	2
Italy	24.1	25.3	17.8	16.2	12.2	3
Japan	7.2	9.8	16.1	4.3	8.2	4
Taiwan	3.2	6.4	3.7	5.5	7.1	5
India	1.4	4.8	3.0	2.5	3.7	6
Thailand	2.0	1.7	0.9	1.4	2.6	7
Sweden	0.5	0.0	0.0	0.3	2.3	8
South Korea	9.1	3.6	3.9	3.7	1.2	9
United States	**0.8**	**1.1**	**4.3**	**2.5**	**1.0**	**10**

Note: HS codes considered are 842220, 842230, and 842240 | Unit: USD 1,000,000

Key Policies and Trends

The Philippines has one of the most advanced extended producer responsibility (EPR) frameworks in Southeast Asia, having enacted the EPR Act of 2022 ahead of most regional peers. Administered by the Department of Environment and Natural Resources (DENR), the law requires large enterprises, defined as those with total assets exceeding PHP 100 million (USD 1.7 million), to take responsibility for a progressively increasing share of their plastic packaging footprint. Recovery targets began at 20% in 2023 and are set to rise incrementally to 80% by 2028 and beyond.

'Tingi-tingi' is a Filipino cultural practice of buying goods in small, single-use quantities (sachets)

Source: FAST Logistics Blog

The law covers all plastic packaging used to carry, protect, or pack consumer goods, spanning rigid plastics such as PET and HDPE containers, as well as flexible plastics including sachets, laminates, and multi-layer films. The latter category is especially significant for the Philippines given the prevalence of the 'tingi-tingi' sachet culture, in which consumer goods are sold in small, single-use quantities to serve cost-sensitive households. The EPR Act specifically targets this format, providing incentives for producers to redesign packaging for reuse or recyclability and to establish product refill or take-back systems as alternatives to single-use disposable formats.

Notably, early results under the EPR framework have been encouraging. The DENR announced at its 2026 EPR Recognition Program that the national plastic diversion rate reached 56%, significantly exceeding the mandated 40% recovery target for the period, with a total of 246 million kilograms of plastic waste diverted. As of January 2026, 1,017 entities had registered 201 EPR programs with the National Ecology Center, reflecting strong industry participation. The DENR has signaled that 2026 priorities will include enhanced digital monitoring systems, standardized audit frameworks, and new incentive structures for sustainable packaging design, which will further shape packaging material selection and machinery investment decisions in the medium term.

At the local government level, single-use plastic restrictions are being applied with growing rigor. Quezon City introduced an executive order in April 2025 banning plastic bags, PET bottles, styrofoam, and other disposable packaging inside city hall buildings and government facilities, with non-compliance subject to formal sanctions. Sagay City in Negros Occidental enacted a total ban on single-use plastics effective January 1, 2026, covering all business establishments. These localized measures reflect a broader nationwide trend, as municipalities act ahead of a potential national anti-single-use plastics law, House Bill 26, the Single-Use Plastic Products Regulation Bill, which is currently advancing through Congress. A companion measure, House Bill 4102, proposes an excise tax of PHP 100 per kilogram on single-use plastic bags, with a 4% annual escalation from 2026, which if passed would accelerate the shift toward alternative packaging formats.

The government has also adopted the Philippine Action Plan for Sustainable Consumption and Production (PAP4SCP), establishing an overarching roadmap for phasing out single-use plastics and transitioning the economy toward environmentally preferable alternatives. This plan coordinates action across multiple agencies under the National Economic and Development Authority (NEDA), reinforcing the regulatory direction set by the EPR Act and local ordinances. Taken together, these policy initiatives are creating a substantial and sustained demand signal for packaging machinery capable of handling new sustainable formats, including compostable films, recyclable mono-material structures, and packaging designed to support take-back or refill systems.

In late 2025, the DENR finalized the National Plastic Action Roadmap, a strategic framework guiding the country toward a circular economy with an explicit emphasis on upstream reduction and recycling. The Roadmap adopts a lifecycle approach to plastic pollution, targeting intervention at the design, production, distribution, and end-of-life stages. It positions the EPR Act as the core compliance instrument while calling for expanded investment in domestic recycling infrastructure, development of local markets for recycled content, and enhanced material flow data systems. For the packaging machinery sector, the Roadmap's upstream focus is particularly significant: it encourages producers to move away from problematic packaging formats by design, rather than relying solely on downstream collection and recovery, creating forward momentum for machinery capable of running recyclable mono-material films, refillable formats, and packaging with higher post-consumer recycled content.

Notable developments

Some key examples of end-users that have recently expanded their operations in the Philippines include:

Coca-Cola Europacific Aboitiz Philippines (CCEAP) broke ground in September 2025 on what is envisioned to become the company's largest manufacturing site in the Philippines, located at the TARI Estate in Tarlac City, Central Luzon. While the full build-out is projected to span up to ten years, the company has indicated that production could begin within 18 months of groundbreaking. CCEAP, which currently operates 18 manufacturing sites across the country, reported double-digit volume growth in the Philippines in 2024, driven by its carbonated soft drink and water product lines. The new Tarlac facility is designed to integrate high-speed primary packaging lines for PET bottles and carbonated beverage cans with advanced secondary packaging and palletizing systems. Its strategic location is intended to optimize distribution logistics across Luzon and reduce supply chain costs to northern markets.

Universal Robina Corporation (URC) recently broke ground on a new mega plant in Malvar, Batangas, which will serve as a flagship facility for the Gokongwei Group's food and beverage operations. When completed, the facility is planned to cover 30.7 hectares and support up to 3,000 direct and indirect jobs. URC's president described the plant as showcasing 'cutting-edge manufacturing technology,' with high resource efficiency embedded into both the construction and operational design. The facility will be used to manufacture new, high-quality product lines across URC's branded snacks, beverages, and noodles portfolio. Packaging is a central component of the plant's design, incorporating automated primary filling, flexible film wrapping, and secondary boxing systems to support the company's broad SKU range across its Jack 'n Jill snacks, C2 beverages, and other consumer brands.

Monde Nissin Corporation announced investment in a new biscuit manufacturing plant in northern Luzon, which will significantly expand the company's production capacity for its SkyFlakes, Fita, and M.Y. San cracker lines. The new facility is expected to integrate automated primary packaging lines for flow-wrapped biscuits and crackers with high-speed secondary cartoning and retail-ready display packaging. Monde Nissin's investment also reflects its ongoing compliance obligations under the EPR Act, as the company is one of the Philippines' largest generators of flexible plastic packaging waste through its Lucky Me! instant noodle and biscuit product lines. The plant's design is expected to incorporate provisions for recyclable mono-material primary packaging formats.

Unilever Philippines has been systematically expanding and upgrading its local manufacturing capabilities, reinforcing the Philippines as a regional export hub within its global supply chain. Over 90% of the company's products sold domestically are now manufactured locally, with production concentrated at factories in Pasig City, General Trias in Cavite, and a collaborative facility in Cabuyao, Laguna. The company recently modernized its Cavite factory, increasing personal care production capacity by 15% to serve both the domestic market and export markets in the US, Southeast Asia, Africa, Australia, and the Middle East. This expansion upgraded primary liquid filling lines and secondary packaging systems for core brands including Sunsilk, Creamsilk, and Knorr. As an obliged enterprise under the EPR Act, Unilever Philippines has also invested in packaging redesign initiatives to transition high-volume SKUs toward more recyclable formats, which requires corresponding updates to filling, capping, and labeling machinery to accommodate new material specifications.

Notable developments *(cont.)*

San Miguel Foods Incorporated is expanding its poultry processing and food production footprint across the Philippines. A mega poultry farm has been established in Hagonoy, Davao del Sur, with additional production facilities under construction across the country. These new plants are being equipped with advanced technology and best practices in poultry farming, feed milling, and processed meat production. Packaging is integrated into San Miguel Foods' operations, with its Magnolia brand encompassing fresh poultry, processed meats, and dairy products that require a mix of vacuum-sealed primary packaging, modified atmosphere packaging for fresh produce, and secondary corrugated boxing for retail and foodservice distribution. The company's expansion reinforces demand for high-throughput automated packaging lines capable of handling both primary protein packaging and downstream secondary and tertiary logistics formats.

Unilab, Inc., the Philippines' largest pharmaceutical manufacturer, operates a vertically integrated production network through subsidiaries including Amherst Laboratories, Amherst Parenterals, Amherst Nutraceuticals, and Asian Antibiotics. The group has continued to invest in its manufacturing affiliates to support growing domestic demand for generic and branded prescription medicines, vitamins, and consumer healthcare products. Packaging is a key component of Unilab's operations, with automated blister packing, bottle filling, and secondary cartoning lines. As anti-counterfeiting regulations tighten, the group has invested in serialization and track-and-trace capabilities across its packaging lines, particularly for high-value prescription products. Unilab's broad domestic manufacturing footprint, combined with its regional presence in Indonesia, Thailand, Malaysia, and Vietnam, positions it as a major driver of pharmaceutical packaging machinery demand across Southeast Asia.

Foreign pharmaceutical manufacturers are actively expanding their presence in the Philippines, drawn by the country's incentive framework, and the government's push toward domestic drug manufacturing self-sufficiency. New entrants, especially Japanese and Indian companies, are expected to drive significant demand for high-barrier primary packaging formats including blister packs, vials, and tamper-evident bottles, as well as serialization-ready secondary packaging lines.

Connected packaging in the Philippines

In 2024, Goodday, a cultured milk drink owned by Asahi Beverages Philippines and distributed by Universal Robina Corporation, partnered with British creative technology studio Appetite Creative to build an interactive connected packaging experience.

QR codes on the packaging directed customers to a web app where they could win instant prizes, enter major draws, and access engaging content, with prizes including trips to Japan, GCash credits, and Goodday gift packs. Critically, the packaging itself became a live data-collection channel: the web app tracks real-time interaction including buying habits, product preferences, purchase location, average engagement time, scan rate, number of visitors, return visitors, and social media shares, with all personal data collected in a GDPR-compliant manner.

Figure 71: Asahi Beverages Philippines and Appetite Creative partnered creating connected packaging

Source: Appetite Creative

The initial 2024 campaign proved successful enough that Asahi Beverages Philippines and Universal Robina Corporation partnered again with Appetite Creative to revisit and refresh the experience in 2025, with over 22 million codes hidden under caps or labels.

Connected packaging of this type requires the integration of unique, serialized QR codes into primary packaging at line speed with each code individually linked to a backend database that registers redemption, prevents duplication, and logs consumer interaction data in real time. This is technically distinct from conventional batch-coded packaging and requires either purpose-built digital printing or inkjet coding systems capable of applying unique variable data at high throughput, or pre-printed serialized labels produced by specialist converters.

PRIORITIES FOR PACKAGING AND PROCESSING OPERATIONS

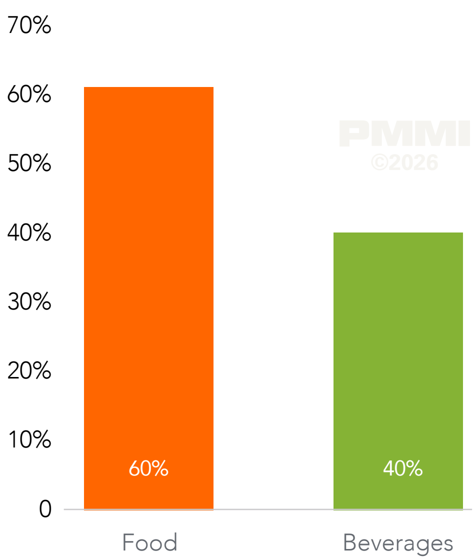
The companies that we interviewed in the Philippines are predominantly active in the food and beverage sector. BEPCO, Sysu International, and Virginia Farms belong to the food segment, while Coca-Cola Philippines and PETValue are positioned within the beverages space.

In terms of operations, the companies display a mix of integrated production, processing, and specialized industrial activities. Virginia Farms operates as a vertically integrated pork producer, covering multiple stages of the value chain. BEPCO functions as a shared processing facility focused on egg products. Coca-Cola Philippines represents a large-scale beverage operation with nationwide production and distribution. PETValue operates in PET recycling, highlighting a sustainability-driven industrial process, while Sysu International focuses on importation and distribution, indicating a more commercial and logistics-oriented role within the ecosystem.

Across the companies, responsibility for packaging and processing equipment is generally held by senior management or technical leadership, often combining strategic oversight with operational decision-making.

Regarding organizational structure, procurement for major equipment investments tends to be centralized or managed at a high organizational level, though the degree of centralization varies. Some companies rely on top-level decision-making for capital investments, indicating a centralized approach, while others incorporate structured processes that may involve multiple stakeholders.

Figure 72: Sectoral breakdown of manufactures interviewed in Philippines

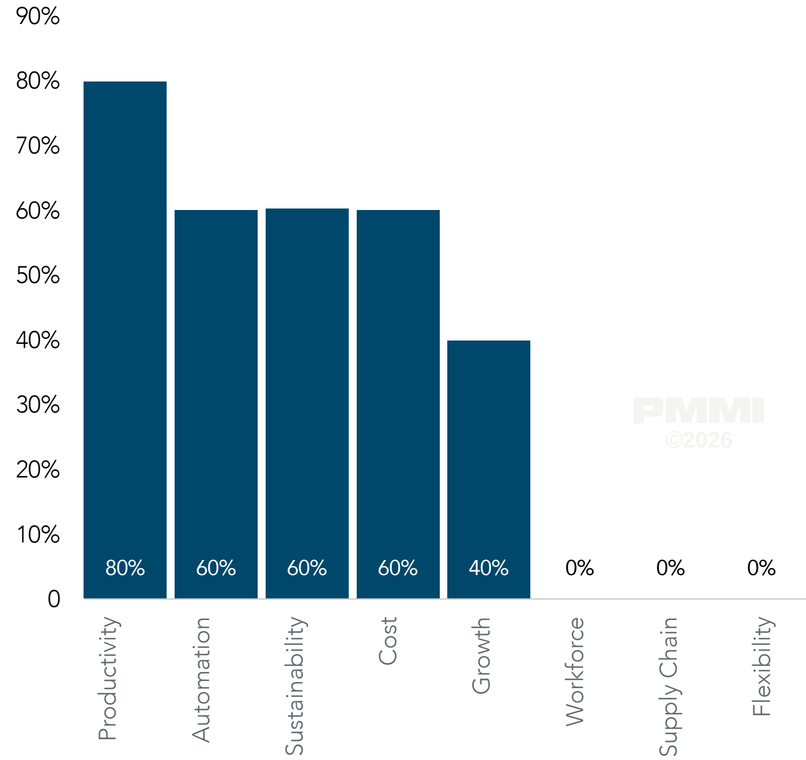


Sector	Companies	Share
Food	BEPCO, Sysu International, Virginia Farms	60%
Beverages	Coca-Cola (Philippines), PETValue	40%

Investment Plans and Capital Spending

Across the companies interviewed, priorities in packaging and processing operations are strongly centered on productivity, which is identified by four of the five companies: BEPCO, Coca-Cola (Philippines), Sysu International, and Virginia Farms. Other frequently cited priorities include automation, sustainability, and cost, each selected by three companies, indicating a balanced focus between operational efficiency, technological advancement, and resource management. Growth is mentioned by two companies, while workforce, supply chain, and flexibility are not identified as key priorities by any respondents.

Figure 73: What are your key priorities in packaging and processing operations?



N = 5; Each company could select up to 3 answers

All companies indicate a positive investment outlook in packaging and processing equipment over the next 12 to 36 months. Coca-Cola, Sysu International, and Virginia Farms state that they expect investments to increase significantly, while BEPCO anticipates a moderate increase.

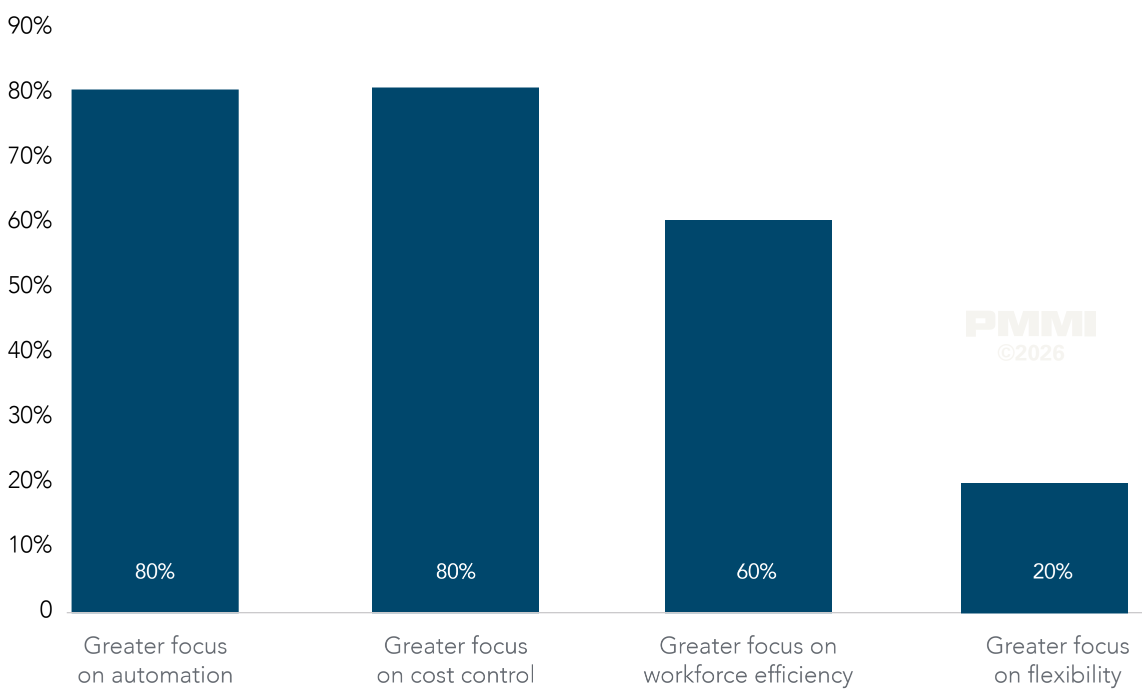
There is a strong emphasis on line upgrades or retrofits, selected by four companies, making it the most commonly cited investment category. Automation or robotics is also prioritized, selected by four companies, followed by new production lines or capacity expansion, identified by three companies. Digital or software solutions are mentioned by two companies.

Sustainability is generally described as "important but secondary," including by BEPCO, Coca-Cola, Sysu International, and Virginia Farms. Only PETValue identifies sustainability as a "major driver," specifically in relation to regulatory requirements such as Extended Producer Responsibility. Coca-Cola notes that while sustainability is part of corporate priorities, operational reliability and volume consistency remain the dominant factors in investment decisions.

Operational Priorities and Performance Objectives

Across the companies interviewed, operational priorities have shifted over the past two to three years toward greater automation and cost control, each cited by four companies. In addition, workforce efficiency has become more prominent, selected by three companies, while flexibility is mentioned by one company, suggesting a more limited but present adjustment toward adaptable operations.

Figure 74: Compared with two to three years ago, how have your operational priorities changed?



N = 5; Multiple answers allowed

In terms of challenges, companies consistently highlight cost-related pressures and operational constraints. Several responses point to the rising cost of inputs, including packaging materials and equipment, as well as broader budget limitations affecting investment decisions. Supply chain factors, such as lead times and availability of materials or equipment, are also identified as constraints. In some cases, companies note technical and integration challenges, including software compatibility and the risks associated with implementing new systems. Regulatory considerations, particularly in areas such as sustainability and plastics, are also mentioned as influencing operational conditions.

When considering support needs, companies express interest in solutions that can enhance efficiency, reduce costs, and support investment planning. This includes access to reliable and competitive suppliers, improved availability of equipment and materials locally, and technologies that can increase automation and throughput. Some responses also reference the importance of technical support, integration capabilities, and alignment with operational requirements, indicating a need for solutions that can be effectively implemented within existing systems and processes.

Operational Pain Points and Constraints

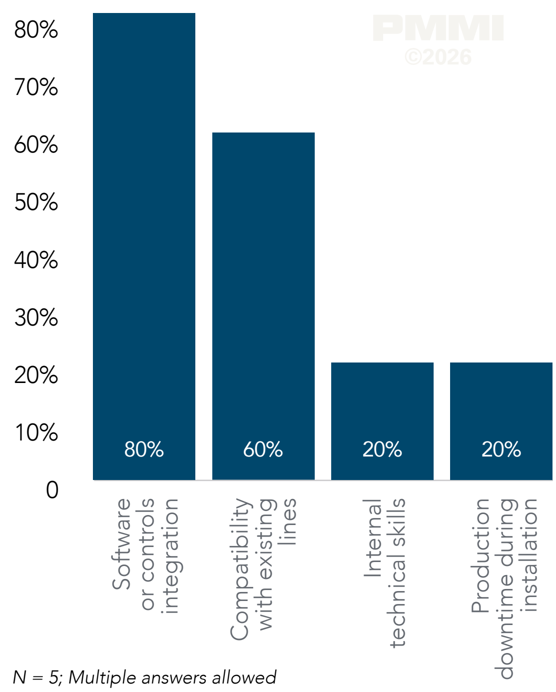
Across the companies, the integration of equipment and operational practices is influenced by a combination of day-to-day operational constraints and the need to align new solutions with existing systems. While companies continue to engage with equipment upgrades and technological improvements, the responses show that integration is closely tied to how well new solutions fit within current production environments.

Several challenges emerge consistently when integrating new equipment. The most frequently reported issues relate to software or controls integration and compatibility with existing production lines, indicating that alignment with existing systems remains a central constraint. Less frequently, companies mention internal technical skills and production downtime during installation, though these remain relevant factors affecting implementation.

Operational challenges more broadly also reflect this pattern of system-related constraints. Unplanned downtime and maintenance complexity are among the more commonly selected issues, pointing to ongoing concerns around equipment reliability and maintenance requirements. Other challenges, such as labor shortages and integration with existing equipment, appear less frequently but are still present in the responses.

Maintenance approaches vary across respondents, with several companies indicating a preventive maintenance–based model, while others reference predictive elements or describe their approach as hybrid.

Figure 75: What challenges do you face when integrating new equipment or technologies?



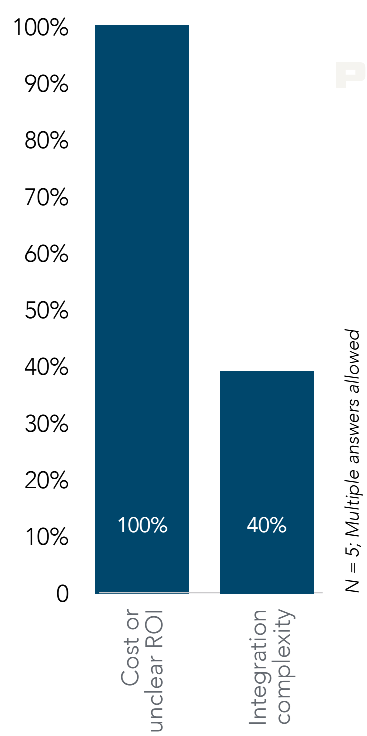
N = 5; Multiple answers allowed

Technology Adoption and Emerging Demands

Among the companies interviewed in the Philippines, the use of data and digital tools is primarily oriented toward monitoring operations and tracking performance metrics. Several respondents indicate the use of systems to follow indicators such as production output, downtime, and operational efficiency, reflecting a focus on visibility and day-to-day performance management rather than more advanced analytics or fully digitalized environments.

At the same time, the adoption of more advanced or digitalized solutions is constrained by a number of clear barriers. The most consistently reported limitation is cost or unclear return on investment, which is selected by all companies, indicating that financial justification is a universal consideration. Integration complexity is mentioned by a smaller number of respondents, showing that compatibility with existing systems remains a relevant but less widespread constraint. No companies identify internal skill gaps or cybersecurity concerns as barriers in the structured responses.

Figure 76: What are the main barriers to adopting more advanced or digitalized solutions?



N = 5; Multiple answers allowed

Looking ahead, responses to innovation needs point toward practical and incremental improvements rather than large-scale transformation. Companies refer to solutions that can support operational efficiency, system compatibility, and ease of implementation, indicating a preference for technologies that can be integrated into existing processes without major disruption.

When defining the value of digital or technological investments, companies emphasize tangible operational outcomes, including improvements in performance, efficiency, and reliability. The responses focus on how solutions contribute to measurable operational benefits, rather than broader strategic or transformative objectives.

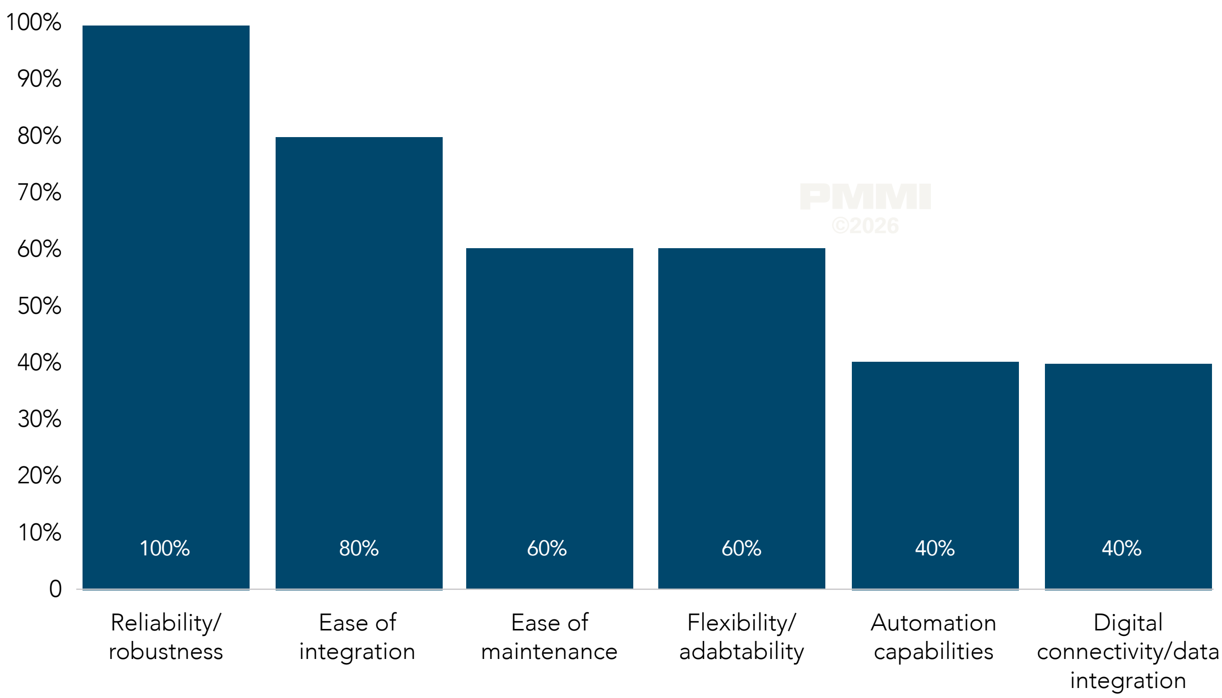
Vendor Selection and Procurement Decision Drivers

Interviews with companies in the Philippines indicate that supplier selection and equipment evaluation are primarily driven by reliability, technical performance, and alignment with operational requirements. Responses indicate that companies consistently prioritize equipment that can deliver stable and dependable performance within existing production environments. In addition to core technical features, considerations such as ease of integration and compatibility with current systems are also emphasized, reflecting the importance of minimizing disruption during implementation.

After-sales support emerges as an important factor in supplier evaluation. Companies refer to elements such as availability of spare parts, technical support, and service responsiveness, highlighting the need to ensure continuity of operations and reduce downtime. Training and documentation are also mentioned, indicating that companies value support that enables internal teams to effectively operate and maintain equipment over time.

When assessing technical capabilities, companies place particular importance on features related to reliability, ease of integration, and maintainability, which are selected by multiple respondents. Flexibility and adaptability are also cited, suggesting a need for equipment that can accommodate varying production requirements. More limited references are made to automation capabilities and digital connectivity.

Figure 77: Which technical capabilities are considered essential when evaluating new equipment?



N = 5; Multiple answers allowed

Looking at supplier relationships more broadly, responses indicate a preference for partners that can provide not only equipment but also ongoing technical support and implementation assistance. The emphasis on integration, maintenance, and support suggests that companies expect suppliers to contribute to long-term operational performance rather than focusing solely on initial equipment delivery.

Singapore

END-USER SECTOR OVERVIEW

Import Overview

Singapore's imports of packaging machinery show marked volatility over 2020 to 2024, reflecting project driven investments and shifting supplier dynamics. Total imports peaked in 2021 and 2022, declined sharply in 2023, and partially recovered in 2024 to just over USD 100 million, still below earlier highs. China consolidated its position as the leading supplier, recording steady growth and a clear lead in 2024. Germany remained a key technology partner, although imports fell from the 2022 peak. Regional suppliers such as Indonesia and Japan maintained mid-tier positions, indicating strong intra-Asian trade links. The United States ranked eighth in 2024, with imports declining steadily from a 2021 peak. This suggests a reduced competitive position, possibly linked to higher costs or stronger competition from Asian and European manufacturers.

Table 6: Singapore's imports of packaging machinery

Partner	2020	2021	2022	2023	2024	2024 Ranking
World	**89.6**	**137.8**	**130.9**	**92.9**	**100.2**	**–**
China	14.3	15.4	21.7	20.8	28.2	1
Germany	11.9	22.6	37.5	19.9	22.6	2
Indonesia	18.0	7.3	10.7	11.0	11.8	3
Japan	7.5	17.8	6.6	3.3	6.4	4
Italy	5.2	18.0	21.1	8.7	5.1	5
Taiwan	2.1	4.3	4.9	4.2	3.9	6
Malaysia	11.9	12.8	5.8	2.7	3.4	7
United States	**6.6**	**11.2**	**6.9**	**4.8**	**3.4**	**8**
Netherlands	1.0	1.7	1.2	0.9	2.7	9
United Kingdom	0.4	0.7	1.1	4.3	2.0	10

Note: HS codes considered are 842220, 842230, and 842240 | Unit: USD 1,000,000

Key Policies and Trends

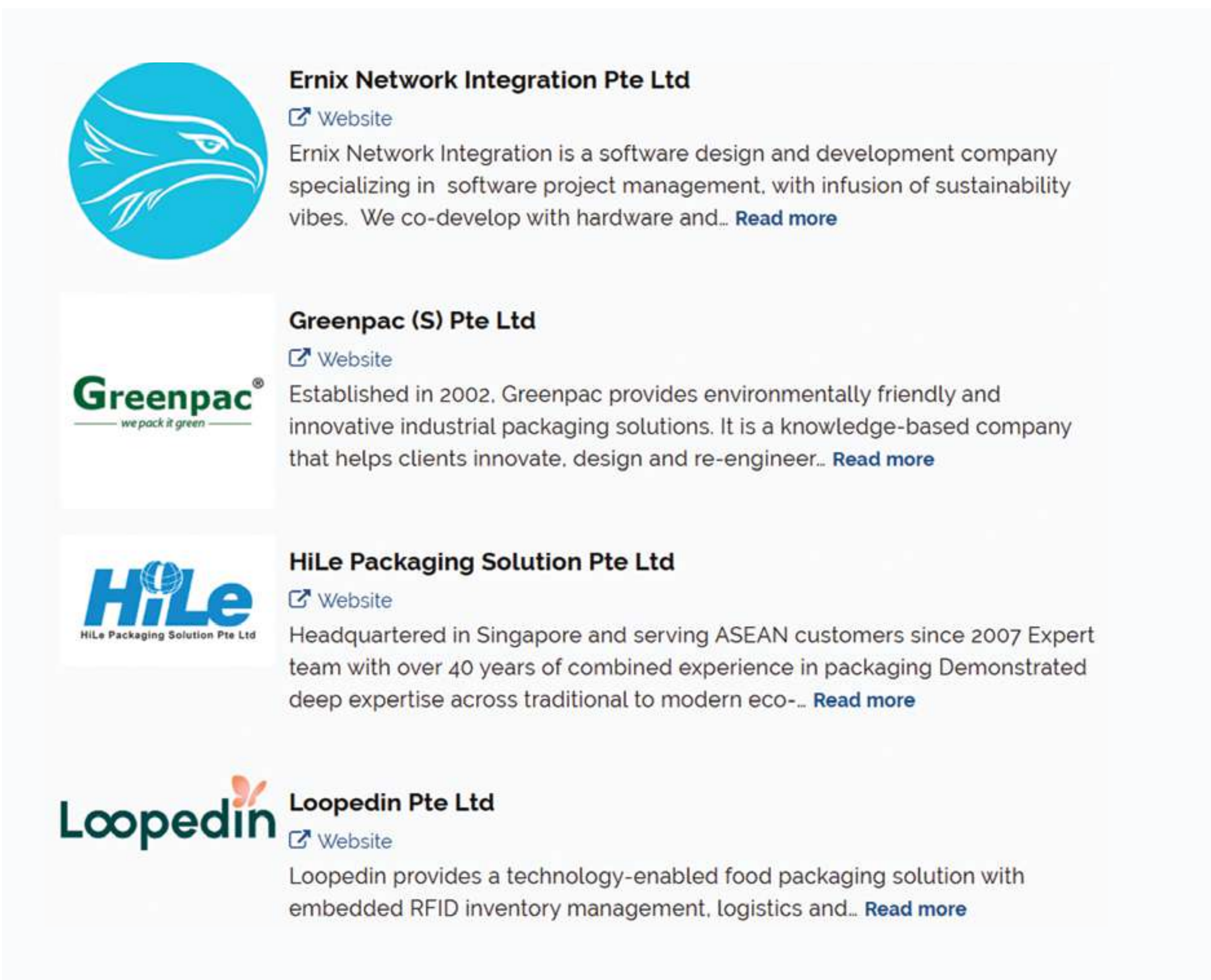
Government policies and initiatives

Singapore is set to roll out its Beverage Container Return Scheme (BCRS) on 1 April 2026, marking a significant regulatory shift aimed at boosting recycling rates and supporting circular economy goals. The program introduces an SGD 0.1 refundable deposit on all pre-packaged beverages in plastic and metal containers between 150 ml and 3 liters, which consumers will reclaim when they return empty containers to designated collection points such as reverse vending machines. Under the scheme, beverage products must carry a deposit mark and barcode to facilitate collection. There is a transition period from April to 30 September 2026 during which older stock without the deposit mark can still be sold, but full implementation from 1 October 2026 will require all regulated products to be labelled accordingly. BCRS Ltd., a not-for-profit company formed by local beverage producers, will operate the scheme, with targets to establish over 1,000 return points and achieve an 80% container return rate by 2028. Producers must register with the scheme operator and report detailed product metrics.

The BCRS is legislated as the first phase of Singapore's extended producer responsibility (EPR) strategy for packaging waste, building on the existing Mandatory Packaging Reporting (MPR) framework. Under the MPR Scheme, producers of packaged products, such as brand owners, manufacturers and importers, as well as retailers such as supermarkets, are required to submit packaging data and 3R (reduce, reuse, recycle) plans to the National Environmental Agency. Companies have to provide information on the packaging that they introduce into Singapore annually, broken down according to type of packaging material (e.g. plastic, paper, metal, glass), packaging form (e.g. carrier bags, bottles) and the corresponding weights.

Another important initiative is the Packaging Partnership Programme (PPP), an industry capability development program that supports companies in their journeys towards adopting sustainable packaging waste management practices. Efforts include supporting companies in fulfilling their regulatory requirements starting with the MPR scheme, as well as enabling the exchange of best practices in sustainable packaging waste management. The PPP is administered by the Singapore Manufacturing Federation (SMF) in partnership with the National Environment Agency. Some interesting resources of the PPP include a packaging benchmarks database established for the purpose of allowing companies to compare the weight of packaging of their products against that of similar products, and a list of sustainable packaging solution providers aimed at aims to assisting Singaporean manufacturers to find suitable solutions that can help them in their MPR obligations.

Figure 78: The PPP features a list of sustainable packaging solution providers



Singapore continues to advance its national sustainability agenda through the Zero Waste Masterplan and the Singapore Green Plan 2030, both of which explicitly prioritize packaging waste as a key focus area. Packaging materials, including paper and corrugated products, are identified as major contributors to the domestic waste stream and are therefore central to the country's transition toward a circular economy. Under these frameworks, Singapore targets a 70% overall recycling rate by 2030 and a 30% reduction in waste sent to landfill per capita.

Another important piece of legislation is Singapore's Food Safety and Security Act (FSSA), passed in January 2025, which consolidates and upgrades food laws, including tighter rules for food-contact materials like packaging, banning hazardous substances, enabling recalls, and improving traceability to protect consumers and secure supply, with phased implementation until 2028.

Notable developments

In August 2024, the National Environment Agency (NEA), supported by the Singapore Manufacturing Federation (SMF) and Singapore Post (SingPost), launched an industry-led Alliance for Action (AfA) on Packaging Waste Reduction for the e-commerce sector to address the rapidly growing environmental impact of online shopping packaging. The AfA brings together stakeholders across the e-commerce value chain, including marketplaces, retailers, packaging producers, trade associations and NGOs, to develop sector-specific voluntary guidelines on sustainable packaging tailored to e-commerce logistics and fulfilment contexts. The guidelines focus on materials and packaging formats unique to e-commerce, such as transit packaging, void-fill materials and labels. They provide concrete 3R solutions with practical actions, benefits, drawbacks, and case references to help companies make informed decisions on sustainable packaging strategies. Published in March 2025, the guidelines include tailored recommendations for common packaging types (e.g., cardboard boxes, mailers and fillers) and benchmark solutions by effort, cost and environmental impact, enabling businesses to select appropriate approaches for their operations.

In line with this, it is being reported that the Singapore packaging landscape is refocusing on sustainability. Shoppers, once unconcerned about the packaging encasing their purchases, are now scrutinizing its environmental impact. While consumers are driving this shift, with 95% of Singaporeans favoring sustainable packaging, per a 2022 study by the Singapore Environment Council and KPMG, as reported by The Straits Times, a significant hurdle remains, with over half of these consumers resist paying extra for it. Price sensitivity is a persistent challenge. Supply chain constraints worsen the problem. It has been noted that firms struggle with inventory shortages for sustainable materials, an issue echoed in customer feedback about uneven product availability. Shoppers accustomed to endless inventories at conventional retailers find this frustrating often. Moreover, consumer education poses a hurdle. Many lack understanding of the advantages of degradable bioplastics compared with traditional plastics or the worth of sustainable packaging. Addressing durability doubts demands clear and persuasive communication.

Sustainable packaging is gaining momentum in Singapore

Source: The Green Collective

A key event is the Singapore Packaging Star Awards (SPSA), a national awards program that recognizes excellence and innovation in packaging design and technology in Singapore. Organized annually by the Packaging Council of Singapore under the Singapore Manufacturing Federation, the SPSA highlights outstanding achievements across commercial, industrial, sustainable, and student packaging categories. The awards assess entries based on criteria such as design innovation, functionality, material efficiency, and environmental performance, reflecting industry priorities including sustainability and value creation. The 2025 edition stood out for its focus on eco-friendly and waste-reducing solutions. The table below provides some notable examples of awarded companies:

Table 7: Winners of the 2025 edition of SPSA

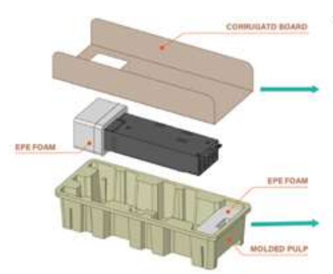
Company/ Solutions	Description	Image
Ho Nuts (Creativeans)	Traditional roasted peanut snack packaging reimagined with FSC-certified paper for sustainability, and incorporating Augmented Reality (AR) technology via a QR code scan to launch the brand story.	
V-Pouch	Designed for Pizza Hut Melts: A revolutionary takeaway box using 60% less material than traditional packaging, enhancing operational efficiency and featuring integrated napkin and sauce-tub holders for a mess-free consumer experience.	
Truserv® Pressed Tray (Westrock Singapore Pte Ltd)	A highly sustainable, fiber-based alternative to plastic frozen meal trays, maintaining food safety and dual-ovenable functionality. An LCA demonstrated a 93.5% reduction in plastic use and a 37% reduction in $CO2$ emissions.	
Hybrid Packaging Solution for Redundant Power Supply Using Molded Paper Pulp (Hewlett Packard Enterprise)	Utilizes molded paper pulp to protect high-tech components while achieving an 86% decrease in plastic foam weight, a 29% reduction in overall box weight, and critically optimizing pallet utilization by 86%, contributing to a 25% reduction in carbon footprint.	

Table 7: Winners of the 2025 edition of SPSA

Company/ Solutions	Description	Image
Bok-Up (Nanyang Polytechnic)	Repurposes corn cobs—a significant agricultural waste—into 100% plastic-free, biodegradable and compostable egg cartons.	
Noodles On The Go (Nanyang Polytechnic)	Features a flower lock mechanism that reduces packaging space by 60% and includes utensils made from wheat straw.	
Pizza Lab (Ngee Ann Polytechnic)	Packaging that secures condiments inside the box and features perforated plates on the cover to save consumers from using plastic plates.	

Source: SPSA

Some key examples of end-users that have recently expanded their operations in Singapore include:

Pfizer recently strengthened its global supply network with USD 743 million expansion of its Active Pharmaceutical Ingredient (API) facility at the Tuas Biomedical Park in Singapore. The 429,000-square-foot extension is one of the company's most automated sites globally, integrating digital twin technology and advanced process controls. This facility produces small-molecule APIs for critical treatments in oncology, pain management, and antibiotics, including ingredients for its leading breast cancer medication.
The manufacturing process is designed for end-to-end efficiency, where primary packaging is directly integrated. Bulk APIs are automatically filled into specialized, high-containment primary packaging systems within the cleanroom environment to ensure product integrity before being shipped to global markets for secondary processing and final drug formulation.

Notable developments *(cont.)*

American pharmaceutical company AbbVie invested USD 223 million in the expansion of its manufacturing site in Tuas Biomedical Park to bolster its global biologics capacity. This expansion, scheduled to be fully operational throughout 2026, adds 24,000 liters of drug-substance capacity to the existing facility. The new production lines are dedicated to manufacturing biologics for AbbVie's immunology and oncology pipeline, serving patients worldwide. The expanded facility operates as an integrated unit where the manufacturing of drug substances is closely coupled with on-site primary packaging. While the focus is on upstream biologics production, the site utilizes specialized cold-chain integrated packaging workflows to prepare large-scale biologic substances for secure transport and downstream finishing, ensuring that temperature-sensitive molecules remain stable throughout the transition from the bioreactor to the distribution container.

Novartis expanded its biopharmaceutical footprint in Singapore with a USD 256 million investment to increase the production of therapeutic antibody drugs. Also located in Tuas Biomedical Park, the expansion increases the facility's footprint from 370,000 to 450,000 square feet and introduces "next-generation" biomanufacturing technologies, including AI-driven automation. The facility is focused on manufacturing monoclonal antibodies (mAbs) and other mammalian-cell products. Packaging operations are highly integrated; the site features advanced aseptic filling and primary packaging lines that allow the company to transition drug substances into their primary containers immediately following the purification stage. This integrated approach reduces the risk of contamination and enhances the speed of delivery for breakthrough biotherapeutic treatments.

F&N Foods completed the full operational integration of its USD 63 million "Smart Factory" in Tuas. This multi-storey facility serves as a centralized hub for manufacturing, R&D, and distribution. The expansion focuses on the high-speed production of non-alcoholic beverages, including tea, soy milk, and isotonic drinks. The manufacturing process is unique for its vertical integration; an Automated Storage and Retrieval System (ASRS) is directly linked to the production and packaging lines. In 2025, the facility further updated its secondary packaging operations to incorporate automated "deposit-mark" labeling in preparation for Singapore's 2026 beverage container return scheme. This integration ensures that every bottle is processed from raw liquid to a labeled, shelf-ready product within a single automated workflow, optimizing both space and logistical efficiency.

Mondelēz International recently inaugurated a USD 5 million expansion of its Singapore Technical Centre in Jurong, adding a new Regional Biscuit and Baked Snacks Lab and Innovation Kitchen. While serving as an R&D hub, the facility includes a pilot manufacturing plant that conducts small-batch production for Southeast Asia, Australia, and Japan. The expansion focuses on creating product formats that align with "mindful snacking" trends. A critical component of this expansion is the integration of sustainable packaging manufacturing. The pilot lines are designed to test and implement new primary packaging materials, such as recyclable films and reduced-plastic barriers, directly alongside the snack production process. This allows for real-time testing of how new food formulations interact with sustainable packaging formats before moving to full-scale commercial production.

Following the 2024–2025 ramp-up of its nearly USD 30 million investment, IFF (International Flavors & Fragrances) has fully operationalized its "Flexiblend" plant and integrated Innovation Center in Tuas. The facility specializes in the high-tech manufacturing of customized biotechnology solutions, including enzyme blends and functional ingredients for grain processing and animal nutrition. The manufacturing process is highly flexible, allowing for rapid switches between different product formulations. Packaging is a core part of the automated manufacturing stream; the facility utilizes a "clean-label" packaging process where primary packaging, ranging from industrial-scale bulk bags to smaller, precisely measured pouches, is integrated into the blending line to prevent cross-contamination and ensure the potency of the bioactive ingredients during regional distribution.

In August 2025, German chemical specialist Evonik opened its first Asian alkoxide production plant on Jurong Island, marking a USD 60 million investment. The plant is expected to reach its full annual capacity of 100 kilotonnes by 2026. Alkoxides are essential catalysts used in the production of sustainable surfactants for personal care products like shampoos and soaps. This facility is the first of its kind in the region to operate entirely on electricity, aligning with Singapore's sustainability goals. As a business-to-business manufacturer, the plant integrates specialized primary packaging systems designed for high-purity chemical catalysts. The manufacturing line includes an automated, moisture-controlled filling station that packages the alkoxides into ISO tanks and drums, ensuring the chemicals remain stable and ready for use by personal care brand formulators across Southeast Asia.

P&G announced a major investment of over USD 100 million to establish a new manufacturing facility in Singapore. This facility complements P&G's existing perfume plant in Tuas and its global innovation center. The expansion focuses on high-value personal care and skincare products, leveraging Singapore's advanced digital ecosystem. The manufacturing process at this new site is designed with advanced standards, featuring highly integrated primary and secondary packaging operations. Bottles and containers are often formed, filled, and labeled in a continuous motion on the line. The facility also focuses on the integration of sustainable packaging, allowing for the real-time transition to recycled resin containers without slowing the primary production speed for brands like SK-II and Olay.

Between 2024 and 2026, the Singapore-based biotech firm Allozymes expanded its manufacturing footprint following a successful USD 15 million Series A funding round. The company uses a proprietary ultra-high-throughput platform to manufacture custom enzymes and bio-active ingredients for the "clean beauty" and personal care sectors. The expansion involved setting up specialized fermentation and downstream processing lines to produce high-value skincare actives. The facility integrates a "formulation-to-vial" primary packaging system. Because the products are often high-concentration bio-actives, the manufacturing process ends with an automated micro-filling and sealing line. This ensures that the enzymes are packaged in airtight, sterile primary containers immediately after extraction, preserving their efficacy for the final skincare product formulation.

Technologies for supply chain transparency

In 2025, Singapore-based packaging specialists Skypac Packaging and Aegis Packaging entered a strategic partnership with SMX (Security Matters), an Australian-headquartered digital platform technology provider. This collaboration focuses on integrating SMX's proprietary Plastic Circularity Technology (PCT) into flexible packaging solutions to address the persistent challenge of plastic waste and supply chain transparency.

Figure 80: Singaporean companies recently parented with the Australian SMX

Source: Packaging Gateway

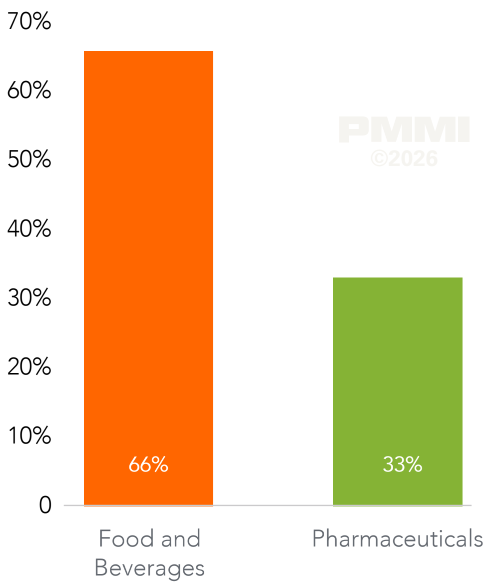
The initiative utilizes SMX's molecular marking system, which embeds a unique chemical signature into plastic resins. This enables materials to "self-verify" their origin and composition throughout their lifecycle, from initial production to recycling. By combining this physical marker with a blockchain-secured digital platform, the partnership ensures that sustainability claims are auditable and transparent. Skypac aims to use this system to enhance the circularity of its plastic products, while Aegis Packaging is integrating the technology with its O[illegible]X high-barrier coatings. These coatings allow monomaterial packaging to perform at the level of traditional multi-layer laminates, making them significantly easier to recycle. Together, these companies are moving away from manual oversight toward a data-driven model that simplifies compliance and ensures that post-consumer plastic can be accurately identified and reused.

PRIORITIES FOR PACKAGING AND PROCESSING OPERATIONS

The companies represented in the dataset for Singapore are primarily active in the food sector, with Lim Kee and Rudi's Fine Food focusing on products such as sauces, condiments, and processed meats, while Greenlife operates in the health supplements space within pharmaceuticals.

Interviewees highlight that procurement is generally centralized or handled by a small group of decision-makers. Lim Kee notes that its procurement process is fully centralized, and Greenlife also describes a centralized approach.

Figure 81: Sectoral breakdown of manufactures interviewed in Singapore



Sector	Companies	Share
Food and Beverages	Lim Kee, Rudi's Fine Food	66%
Pharmaceuticals	Greenlife	33%

Investment Plans and Capital Spending

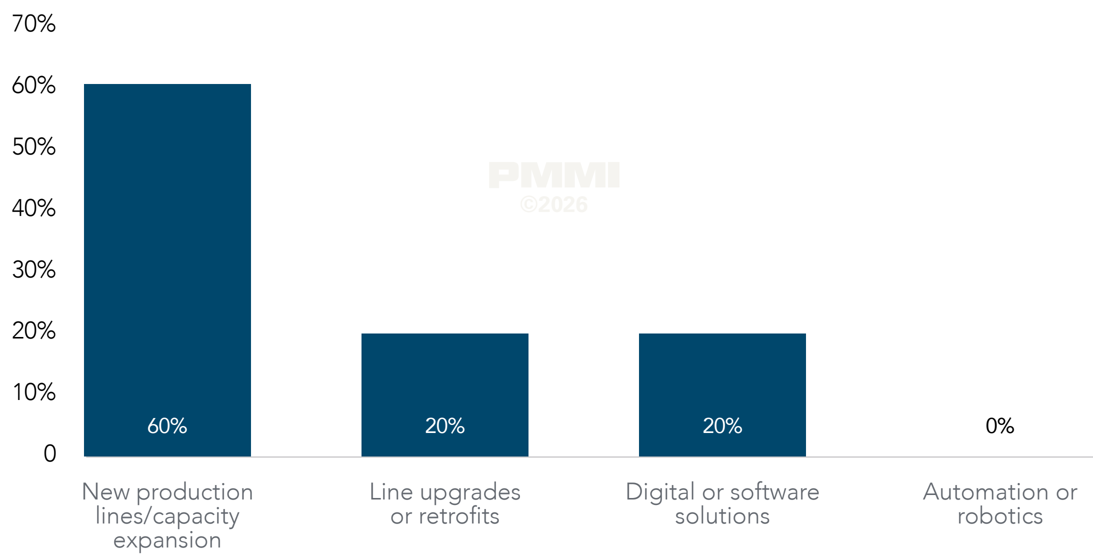
Across the companies, priorities in packaging and processing are strongly centered on cost, which is selected by all respondents, indicating that financial considerations are the most consistent factor guiding decisions. Alongside this, there is a recurring focus on operational improvements.

Looking ahead over the next 12–36 months, the overall investment outlook appears stable rather than expansionary. Both Rudi's Fine Food and Greenlife indicate that spending will "remain broadly stable," and there are no responses pointing to increased investment.

Sustainability plays a limited role in influencing decisions. Rudi's Fine Food describes it as important but secondary, while Greenlife indicates it has limited influence, and no company identifies it as a primary driver.

In terms of investment focus, there is a clear alignment around new production lines or capacity expansion, which is selected by all three companies. At the same time, some companies complement this with more targeted initiatives: Lim Kee includes line upgrades or retrofits, while Greenlife points to digital or software solutions.

Figure 82: Which types of investments are currently priorities for your organization?

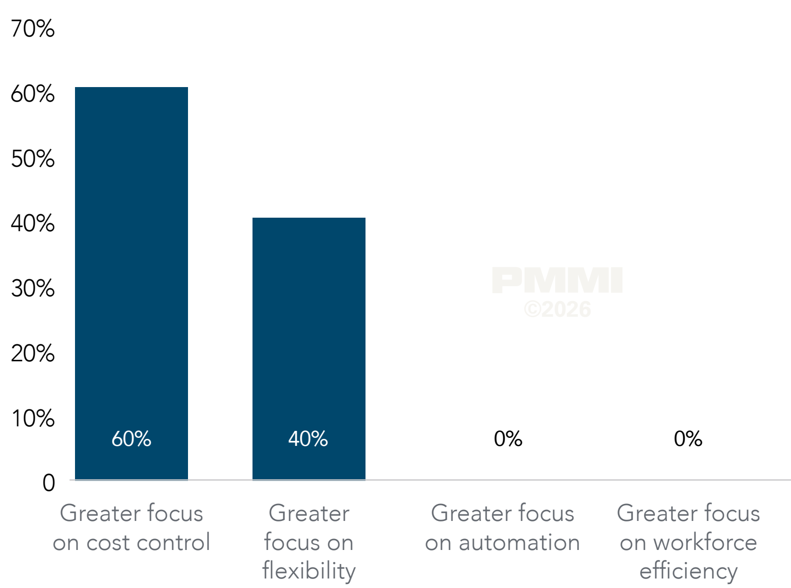


N = 3; Multiple answers allowed

Operational Priorities and Performance Objectives

Across the companies, there is a clear shift toward greater focus on cost control and operational efficiency. All respondents indicate that managing costs has become more important compared to two to three years ago, while some also highlight an increased emphasis on flexibility.

Figure 83: Compared with two to three years ago, how have your operational priorities changed?



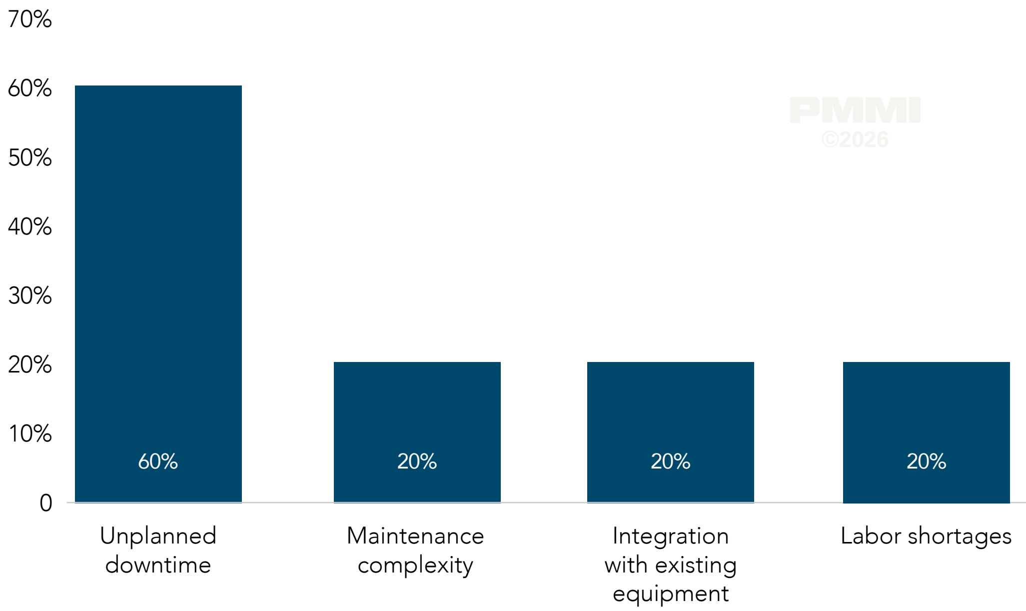
N = 3; Multiple answers allowed

Workforce-related challenges are present but vary across companies. These challenges are directly influencing how companies manage and optimize their operations. There is evidence of efforts to streamline production processes and improve efficiency, including redesigning workflows to reduce manual steps and dependence on labor. In some cases, companies are also moving toward greater use of automation combined with flexibility to better respond to operational demands.

Operational Priorities and Performance Objectives

Across the companies, operational challenges in packaging and processing are strongly linked to equipment performance, maintenance practices, and integration issues. The most consistent pain point is unplanned downtime, reported by all respondents, indicating that disruptions to production remain a critical concern.

Figure 84: What are the most significant operational pain points in your packaging or processing lines today?



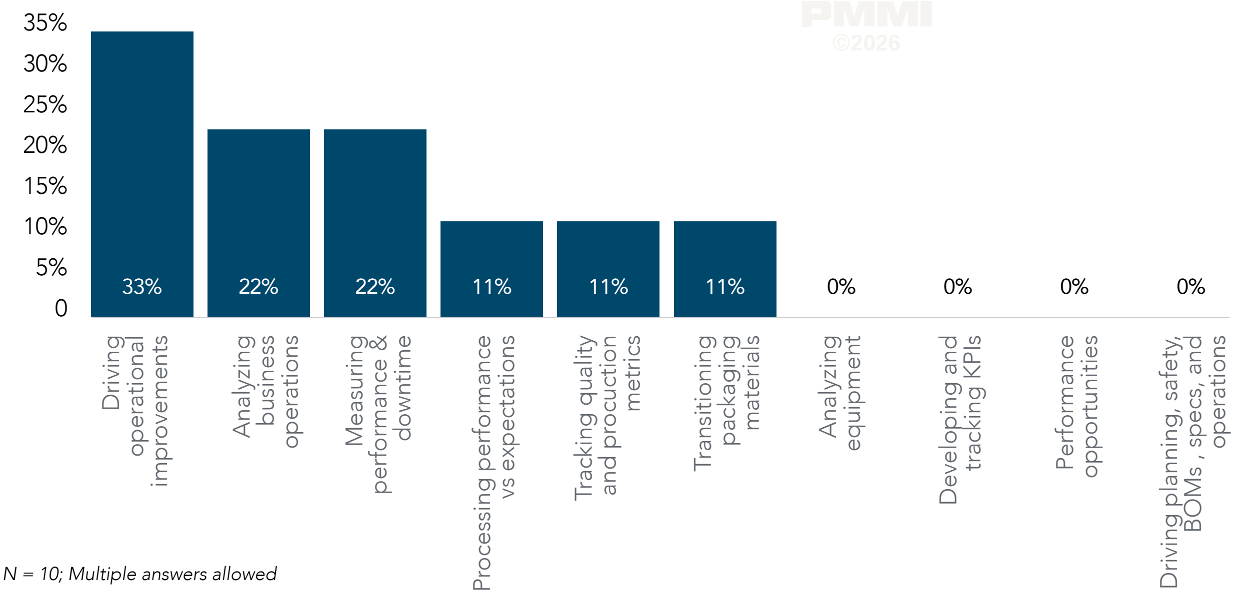
N = 3; Multiple answers allowed

When integrating new equipment or technologies, several constraints emerge. Internal technical capability is one of the recurring challenges, with companies indicating gaps in skills required to manage or adapt to new systems. Additionally, issues such as production downtime during installation and compatibility with existing lines are highlighted, pointing to the complexity of introducing new equipment into established operations.

Technology Adoption and Emerging Demands

Across the companies, operational priorities are strongly focused on driving improvements and increasing visibility into performance. All respondents highlight the need to improve operations, while some also emphasize analyzing business performance and monitoring downtime. In addition, a smaller number point to needs such as tracking production metrics, assessing performance against expectations, and transitioning packaging materials.

Figure 85: For which of the following operational objectives do you currently have the greatest needs or priorities?



N = 10; Multiple answers allowed

At the same time, the adoption of more advanced or digitalized solutions is constrained primarily by cost and return on investment considerations, which are highlighted by all companies. In addition, some respondents point to internal skill gaps and integration complexity as barriers, indicating that both human capabilities and system compatibility can limit adoption.

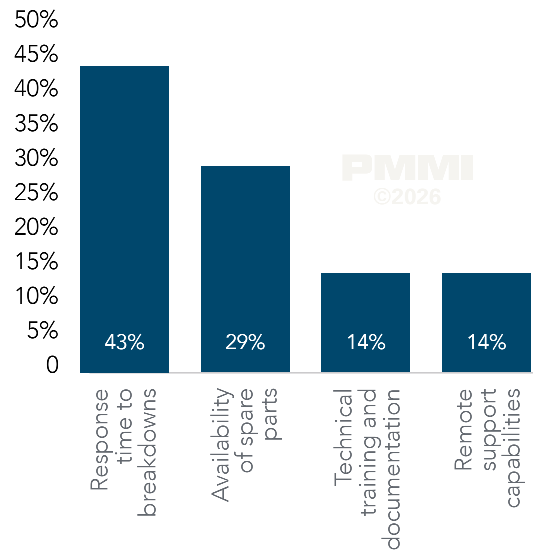
Looking ahead, companies express interest in targeted innovations that support efficiency, flexibility, and usability. Some respondents highlight the need for greater automation with fewer operators, while others emphasize more flexible and upgradeable machines, improved service models, and better data visibility.

Vendor Selection and Procurement Decision Drivers

Across the companies interviewed in Singapore, supplier selection is driven by a combination of cost considerations, reliability, and service support. Pricing and total cost of ownership are important factors for multiple respondents, while others emphasize product quality and reliability or after-sales responsiveness.

After-sales support plays a particularly important role, with all companies highlighting the importance of fast response to breakdowns. Availability of spare parts is also a key factor for some respondents, while others point to the need for technical training, documentation, and remote support capabilities.

Figure 86: What aspects of after sales support matter most to your organization?



N = 3; Multiple answers allowed

When evaluating technical capabilities, companies focus on features that support operational flexibility and integration. Ease of changeover and compatibility with existing systems are recurring priorities, alongside interest in automation and digital connectivity in some cases.

In terms of how companies identify new suppliers or solutions, existing relationships are the most common channel, complemented in some cases by industry events or peer recommendations.

Looking ahead, companies express a need for suppliers to provide more practical, user-oriented, and locally supported solutions. This includes equipment that is appropriately scaled to their production needs, stronger local technical support, and more intuitive, worker-friendly interfaces.

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