



TOWARDS A SUSTAINABLE, DIGITAL AND HUMAN-CENTRIC INDUSTRY

10 KEY TRENDS IN THE MANUFACTURING INDUSTRY

Industry 4.0 report

FLANDERS
MAKE

DRIVING INNOVATION IN MANUFACTURING

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A. Introduction and background

Industry 4.0 represents a transformative wave across the manufacturing sector, with substantial shifts in how industries operate. We recognize the need to understand the breadth and depth of these changes. Therefore, every other year we conduct a survey to map out the evolving landscape of the manufacturing industry.

This survey seeks to paint a detailed picture of the sector's progression towards Industry 4.0 by collecting and analysing data from a wide range of manufacturing entities. The questions explore important areas such as digital transformation readiness, sustainability efforts, human-centric approaches, the integration of innovative technologies and the economic repercussions on business operations and strategic decision-making.

The insights gained are intended to inform both current industry practices and future strategies, empowering businesses to navigate the Industry 4.0 ecosystem with greater efficiency and foresight.

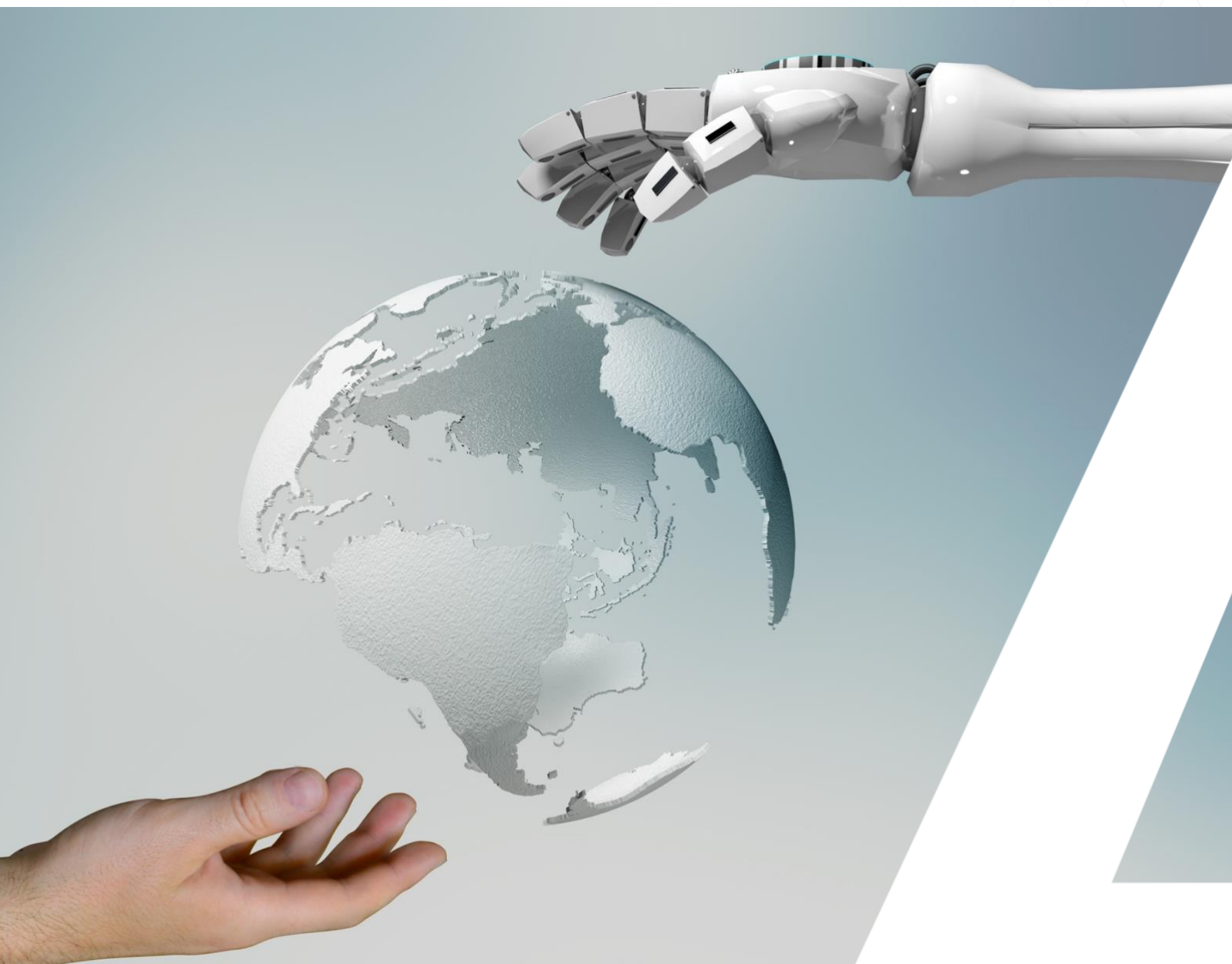
The primary objective of the survey conducted by Flanders Make is to acquire an understanding of the state of the manufacturing industry in relation to Industry 4.0. It targets several key objectives:

- **Assessing Industry 4.0 readiness:** Evaluating where companies stand in their journey towards becoming smart, automated, and interconnected.
- **Understanding the digital transformation:** Gaining insight into the extent to which firms are adopting digital technologies and their strategies for such transformations.
- **Evaluating sustainability actions:** Investigating the strategies companies are employing to integrate sustainable practices into their operations.
- **Exploring human-centricity:** Identifying how manufacturing businesses are prioritizing the human element in their economic activities.
- **Identifying technological adoption:** Determining which new technologies businesses believe will significantly impact their operations in the coming years.
- **Analyzing economic impact:** Exploring the anticipated economic challenges and the actions companies are considering in response.

B. Methodology

The results presented in this report are based on a survey that was conducted in the summer of 2023, through an online questionnaire that targeted 120 small and medium-sized enterprises (SMEs) as well as large corporations, with an approximate 50-50 distribution between these two categories. Out of these participant companies, 50% are members of Flanders Make. The survey comprised a total of 40 questions, a mix of multiple-choice options and rating scales, designed to capture a wide range of data relevant to the companies' practices and perspectives.

The respondent demographic was diverse, encompassing various levels within the organizational hierarchy. Specifically, 35% of the participants were from management or C-level positions, including company executives and board members, providing insights from the top echelon of corporate decision-making. In addition, 27% of the respondents were researchers, offering a perspective grounded in scientific and technical expertise. The remaining 38% represented other key roles within the organizations, such as sales, marketing, IT, and more, ensuring a comprehensive view from different functional areas that influence and drive the business operations.



C. Executive summary

In an era marked by rapid technological advances and shifting global dynamics, the manufacturing industry stands at a critical juncture. Our comprehensive survey captures the essence of this transformation, spanning digital innovation to sustainability, customer demands to supply chain evolution and the pressing need for a human-centered economic approach. We delve into ten important areas where the industrial landscape is rapidly evolving. The outcome of this survey proves that our industry is evolving and is firmly grounded in resilience and foresight.

1. The digital transformation is speeding up

Organizations consistently commit to digital transformation, with a modest uptick in prioritization for 2023. Strategic execution plans are also on the rise, and while operational efficiency dominates digitization drivers, the quest for new digital revenue streams is gaining traction. Companies largely match industry peers in Industry 4.0 readiness, with a slight decrease in those considering themselves 'advanced', hinting at a competitive recalibration.

2. The digital shopfloor as the greatest opportunity for digitalization

The digital shop floor continues to emerge as the prime opportunity for digitalization in the manufacturing sector, with 55% of companies recognizing its enhanced value in driving operational efficiency and technology adoption, a notable increase from 45% in 2021. This trend underscores the industry's focus on leveraging real-time data, AI, and IoT for process optimization and strategic business development, maintaining the digital shop floor's position as a cornerstone of industrial innovation.

3. AI and robotization are changing the game

Artificial Intelligence (AI) and robotization are identified as the most transformative technologies, with more than 70% of companies expecting them to have a major impact on future business operations. Alongside, digital twins and the Internet of Things (IoT) are increasingly recognized for their role in enhancing business processes and product development. Despite the potential, the adoption of 5G technology is proceeding cautiously, with many companies still not convinced of its immediate benefits and waiting for clearer returns on investment before integrating it into their infrastructure.

4. Sustainability is no longer optional

The survey underscores that 83% of industrial companies now see sustainability as a primary objective, actively integrating it into their strategic plans by adopting greener materials, methods, and supply chains to promote the circular economy. Recognizing the dual pressures of moral responsibility and market demand, businesses acknowledge that sustainable practices are essential to long-term competitiveness and viability, making environmental stewardship non-negotiable.

5. Changing customer demands are impacting operations

Companies expect 'Evolving Customer Demand Preferences' to significantly influence their operations in the coming ten years, with 70% foreseeing a substantial effect as

consumers demand a broader variety of products and favour high mix, low volume manufacturing. Moreover, 84% of businesses view the looming shortage of labour and skills as a critical issue, spurring them to undertake prompt workforce education and skill enhancement to align with evolving market demands, while also acknowledging the importance of technological innovation, sustainable practices, and supply chain resilience as crucial to their continued competitive edge.

6. Acceleration of production activities

Business priorities have shifted slightly since 2021, with a continued focus on exploring new markets, while the emphasis on survival has slightly increased amidst economic challenges. Notably, concerns over supply chain disruptions have diminished, leading to a 6% rise in companies aiming to expedite production, whereas interest in international business has waned a bit, possibly due to current geopolitical tensions.

7. Persistent shortage of labour and skills

Currently, companies are concentrating on reducing operational costs, enhancing employee training, and diversifying products or services, with more than half actively engaged in such measures. Looking ahead, a significant shift towards establishing circular value chains is planned by over 80% within the next year, reflecting a strategic move towards sustainability, while the majority are avoiding hiring freezes and not downsizing, suggesting confidence in resolved supply chain issues and a commitment to workforce retention, due to the persistent shortage of labour and skills.

8. Towards a human-centered economy

There's a growing focus within companies on fostering a human-centered economy, evidenced by the significant rise in prioritizing the enhancement of work environments to improve employee satisfaction and to create workable work. Additionally, there's a notable trend toward upskilling and reskilling, indicating a strong recognition of the need for continuous employee development to keep pace with evolving technologies and business strategies in an aging workforce.

9. Increasing willingness to collaborate

Companies increasingly engage in project-based and structural collaborations, while still emphasizing self-reliance, only seeking external partnerships when essential. Most collaborate with established businesses and research centers for innovation, with less frequent partnerships with NGOs and governments, suggesting opportunities for expansion in these sectors.

10. Changes in supply chain strategies

The manufacturing sector demonstrates resilience amid the Ukraine crisis, with most companies reporting no impact on investment budgets and turnover and maintaining stable employment levels. Significant strategic shifts include a move towards localizing supply chains and adopting strategic stock management, indicating a proactive response to global uncertainties and a transformative period for supply chain resilience.

D. Results

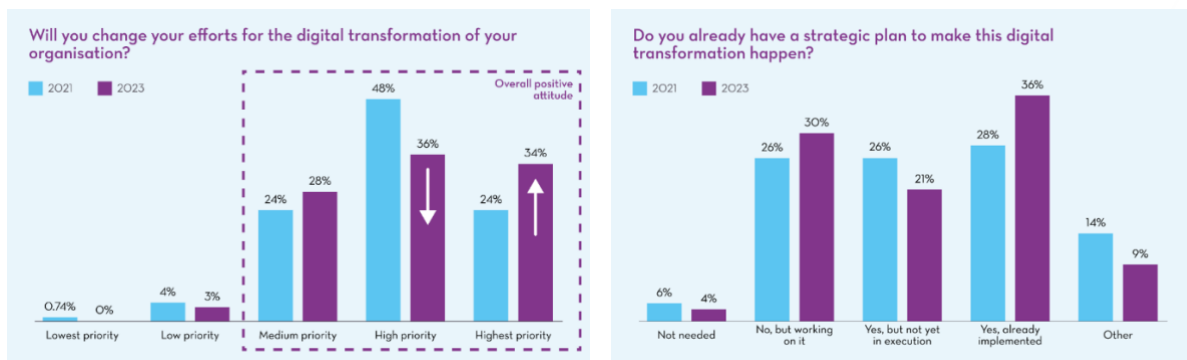
10 key trends in the manufacturing industry

1. The digital transformation is speeding up

Examining the survey data, a slight trend emerges in the prioritization of digital transformation efforts within organizations. While the graph indicates a meaningful shift from companies that previously assigned a *high priority* to innovation towards making it their *highest priority* in 2023 compared to 2021, it's important to note that this shift represents a relatively minor nuanced difference.

In essence, the overall willingness to emphasize digital transformation within organizations appears to have remained relatively stable over the past two years. While the specific focus areas or strategic nuances may evolve, the overarching goal of harnessing digital technologies to drive innovation, enhance operational efficiency, and meet evolving customer expectations remains a constant.

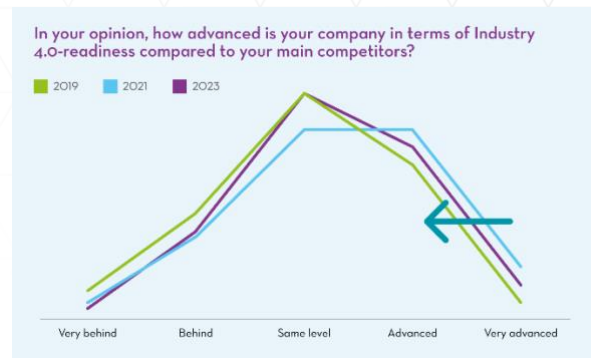
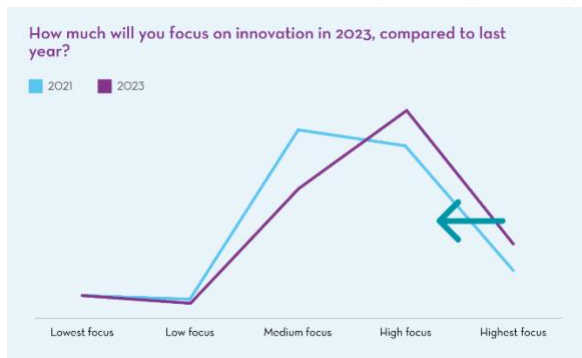
We also see a significant and positive shift in the number of companies that have **strategic plans for digital transformation already in execution**. In 2021, only 28% of companies had such plans in execution, but this figure has increased to 36% in the current survey. Additionally, the survey indicates that more companies are actively working on formulating strategic plans for digital transformation, with the percentage rising from 26% in 2021 to 30% in the current survey. This increase underscores the growing recognition among businesses of the importance of strategic planning in navigating the complexities of digital transformation.



Approximately 45% of businesses identify achieving greater operational efficiency as the foremost objective for implementing digital transformation initiatives in their business processes. This consistency in the prioritization of efficiency suggests that companies recognize the enduring value of streamlining operations through digital means.

In addition to efficiency gains, another significant driver of digitalization is the potential for generating new revenue streams through digital products and services. About 22% of respondents highlight this as a crucial area of focus, signaling a growing awareness of the revenue-generating opportunities that digitalization can unlock. Companies are increasingly exploring innovative ways to expand their offerings and tap into digital markets.

Furthermore, "lowering costs" remains a substantial driver of digital transformation efforts, with 19% of respondents emphasizing its importance. Cost reduction has long been a central objective for businesses seeking to optimize their operations and enhance competitiveness. Digitalization offers avenues to achieve cost efficiencies, whether through process automation, resource optimization, or better resource allocation.



When examining how companies indicate their level of Industry 4.0 readiness in comparison to their primary competitors, we see that the majority of companies (40%) still perceive themselves to be operating at the same level as their competitors. However, there seems to be a shift which is particularly noticeable in the 'advanced' and 'very advanced' categories, each showing a 3% decrease in the companies believing they are ahead of their competitors in terms of Industry 4.0 adoption. While the difference might appear marginal, it signifies that companies are slowing down a bit their efforts for the transition towards Industry 4.0, or they could be sensing an acceleration in the pace of Industry 4.0 adoption among their competitors, prompting them to reassess their standing in the field.

Our survey provides insights into how companies plan to prioritize innovation in 2023 in comparison to the preceding year. Notably, half of the respondents express their intention to place a greater emphasis on innovation in 2023 than they did in 2021. Within this group, 9% specifically state that they intend to significantly increase their investment in innovative initiatives, signifying a substantial commitment to fostering innovation within their organizations.

Otherwise, 45% of the companies surveyed indicate that they will maintain a neutral stance, implying their intent to sustain a similar level of innovation as the previous year. Only a small minority, constituting 5%, anticipate a decreased focus on innovation in 2023 compared to the previous year.

Note that in 2021, a significantly larger proportion of companies, 67%, expressed their intention to intensify their focus on innovation, showcasing a higher degree of investment readiness. The contrast with the current survey, where 50% express a heightened focus on innovation, suggests a marginal decrease in investment enthusiasm. More companies now adopt a neutral or wait-and-see approach regarding innovation.

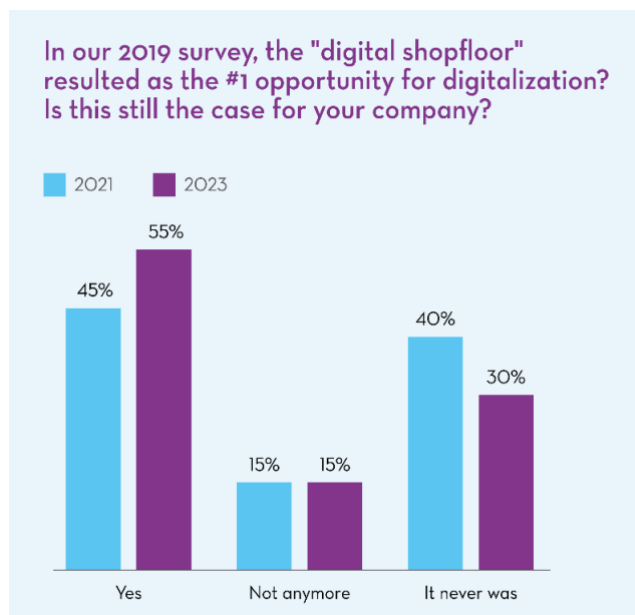
2. The digital shopfloor as the greatest opportunity for digitalization

In our survey, the importance of investing in a digital shop floor has seen a significant increase, indicating a growing recognition among 55% companies of the substantial opportunities offered by digitalization in the industrial production environment (compared to 45% in 2021).

The benefits of digitalizing the shop floor are multifaceted and include process optimization, enhanced real-time data analysis and management, increased operational efficiency, and a robust platform for adopting advanced technologies such as the Internet of Things (IoT), artificial intelligence (AI), and machine learning (ML). These digital innovations enable companies to be more agile and responsive to flexible market demands and intricate production challenges.

Furthermore, a digital shop floor contributes to improved decision-making through real-time access to precise production data and key performance indicators (KPIs), which is vital for maintaining a competitive edge in a dynamic market. By interconnecting machines and systems, collaboration across various departments and even between companies within the supply chain is facilitated.

The growing interest and investment in digital shop floor technologies reflect an understanding that these advancements are essential not only for short-term gains but also for long-term strategic business development. The sustained position of the digital shop floor as the prime opportunity for digitalization is not by chance, but a testament to its critical role in both current and future industrial landscapes.



The accelerating pace of digitalization is also leading organizations to embrace a broad spectrum of opportunities that extend well beyond the traditional scope of the shop floor. Businesses see it as an opportunity to innovate in product development (35%), to explore new digital business models (20%), to enhance customer access (16%) and to create digital products (15%). This transformation underscores the strategic importance for companies to harness advanced technologies to unlock new value propositions, deepen customer engagement and secure a competitive edge in a dynamic industrial environment.

3. AI and robotization are changing the game

AI is the new normal

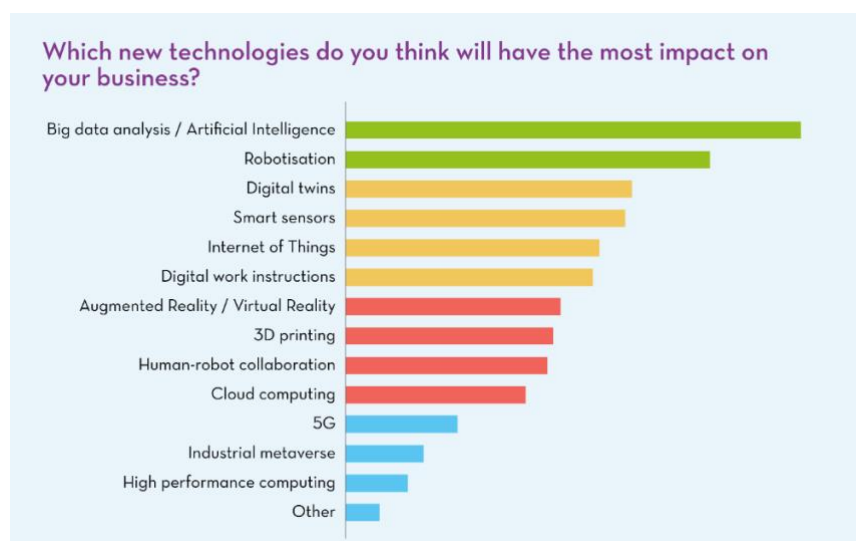
Artificial Intelligence (AI) has strengthened its status as the new norm, with more than 70% of companies acknowledging it as the most transformative technology, marking an increase from 57% in 2021. This trend underscores AI's growing impact and importance across various industries. While AI leads the charge, other technologies like robotics, digital twins, smart sensors, and the Internet of Things (IoT) are also expected to have a significant impact on the way businesses operate. However, emerging innovations such as 5G, the industrial metaverse, and high-performance computing, though recognized, are still considered to have a lesser immediate impact.

Adoption of Digital Twins

In terms of the adoption of digital twins, there has been a noticeable shift. The technology has seen a 10% rise in its perceived importance, coupled with a 7% decrease in the number of companies not utilizing them. Digital twins are becoming a mainstay for tasks such as design validation, maintenance support, and scenario analysis. This demonstrates their increasingly crucial role in enhancing product development and operational strategies, allowing for more sophisticated and nuanced business processes.

5G usage in business activities

Regarding the utilization of 5G in business operations, its uptake remains modest. Only 5% of businesses are using 5G in a functional capacity, and a significant 75% have either varying levels of engagement or do not see a requirement for it within their operations. Despite several pilot projects testing the waters, companies are adopting a cautious approach. They are waiting for more convincing applications and a clearer understanding of the potential return on investment before committing to widespread adoption of 5G. There are specific contexts, such as in greenfield projects and expansive production environments, where 5G can be particularly advantageous. Nevertheless, for many companies, the cost of broad application of 5G technology remains a substantial barrier.



4. Sustainability is no longer optional

The survey results overwhelmingly indicate that sustainability is no longer a secondary concern but a core strategic priority for industrial production companies. With 83% of businesses either already possessing a strategic plan or in the process of developing one, sustainability transformation is imperative. These companies are actively engaged in making their products more sustainable, sourcing alternative materials with a lower environmental impact, innovating to enhance sustainable production methods, aiming to minimize the ecological footprint of their supply chains, and striving to prevent waste, thereby contributing to the circular economy.



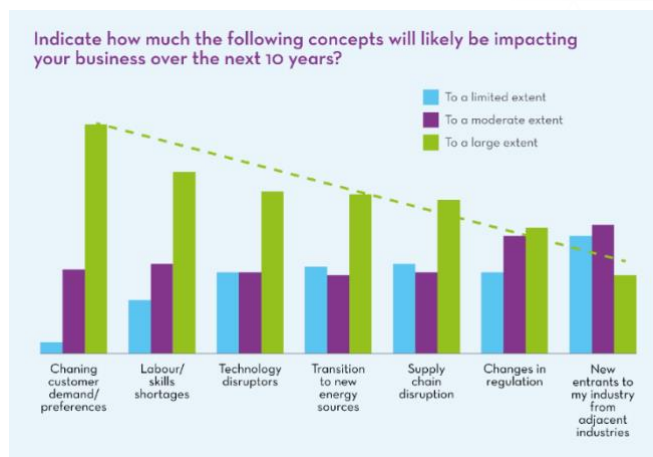
This pervasive focus on sustainability reflects an understanding that industrial production must adapt to the pressing demands of environmental responsibility and resource conservation. There is a moral obligation to future generations to preserve natural ecosystems, and there is a business imperative as consumers, investors, and regulators

increasingly prefer companies with sustainable practices. In this context, neglecting sustainability is no longer optional for companies that aim to be competitive and viable in the long term.



5. Changing customer demands are impacting operations

The survey results reveal that businesses are aware of inevitable changes in their operational landscape and the potential impact of these changes. A prominent trend is that 70% of respondents indicate that 'Changing Customer Demand Preferences' will largely impact their business, while an additional 26% acknowledge that it will have a moderate degree of influence. These findings signify that companies are increasingly confronted with customers with rising demands, expecting greater flexibility from manufacturing firms. Customers are especially opting for smaller production volumes with diverse offerings (high mix, low volume).



Another concern arising from the survey results is the anticipated shortage of labor and skills. An overwhelming 84% of respondents expect this to have a moderate to substantial impact in the next 10 years. This concern directly translates into action plans for businesses, with 84% indicating that they are already engaged in initiatives or planning to start activities within the next 12 months aimed at enhancing training and investment to support

employee growth and keeping pace with significant trends. This underscores the urgent need to update employee skills and capabilities to stay up to date with market trends. In key trend number 7 we see this confirmed in the current focus of respondents in actions against potential economic challenges.

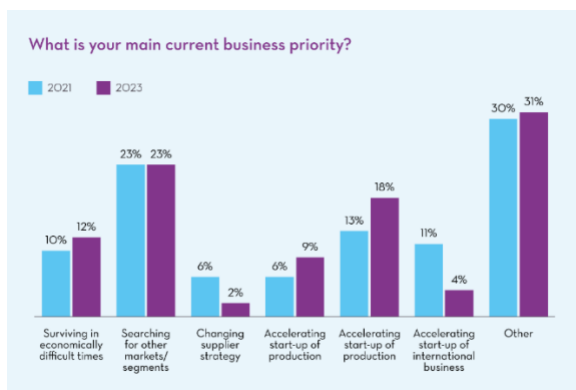
Besides those concerns, businesses are also aware of the potential turnaround in the market caused by technological disruptors like AI, advanced technology, and blockchain, emphasizing their expectation of a "significant impact" and the need for investment in technological innovation to maintain competitiveness. Also, the anticipated challenges posed by the energy transition and disruptions in supply chains underscore the importance of sustainability, energy efficiency, and adaptability in business operations. Lastly, it is notable that companies show less concern regarding legislative changes and new market entrants, indicating a higher level of confidence in their adaptability to regulatory shifts and market competition, or that these factors are presently perceived as less pressing compared to other evolving trends.

6. Acceleration of production activities

When examining the primary focus of businesses today, we observe significant similarities to the 2021 survey results, with some minor shifts. Much like in the 2021 survey, the greatest emphasis remains on seeking new markets and segments, with a quarter of companies identifying this as their primary business priority. Furthermore, over 12% of companies continue to indicate economic difficulties and a focus on survival in challenging times, surpassing the 9% reported in 2021. While this percentage is relatively modest overall, it underscores the importance of monitoring this declining trend.

In contrast to 2021, when a significant proportion of companies expressed a focus on changing their supplier strategy, issues related to supplier disruptions appear to have largely subsided (2%). Instead, there is an approximately 6% increase in the number of companies now prioritizing expediting their production processes. This shift in emphasis towards the scaling up and acceleration of production reflects a strategic response to the apparent resolution of supply chain issues, aiming to ensure efficient and rapid product deployment.

Additionally, there is a noticeable decline in the emphasis on international business, dropping from 11% to 4% of companies focusing on this area. This shift is likely caused by the current geopolitical crises. Remarkable: more than 30% of companies indicate pursuing different priorities altogether.



In comparing the current survey findings to those of 2021, a significant shift emerges in the challenges caused by electronic chip shortages. Approximately half of the companies reported issues with electronic chip supply in 2021, but this number has now grown to nearly two-thirds of the surveyed businesses. This escalation suggests that electronic chip shortages have become an even more pressing concern for organizations in recent times.

While the responses indicate that supply chain problems related to other materials have largely improved, the situation is strikingly different for electronic chips. It appears that the challenges associated with electronic chip supply have not only persisted but have intensified. One potential contributing factor to this scenario is also an increase in demand for electronic chips. In 2021, 21% of companies expressed that they did not require chips, but this figure has dropped to 14%. This shift underscores a growing reliance on electronic chips across various industries and applications.

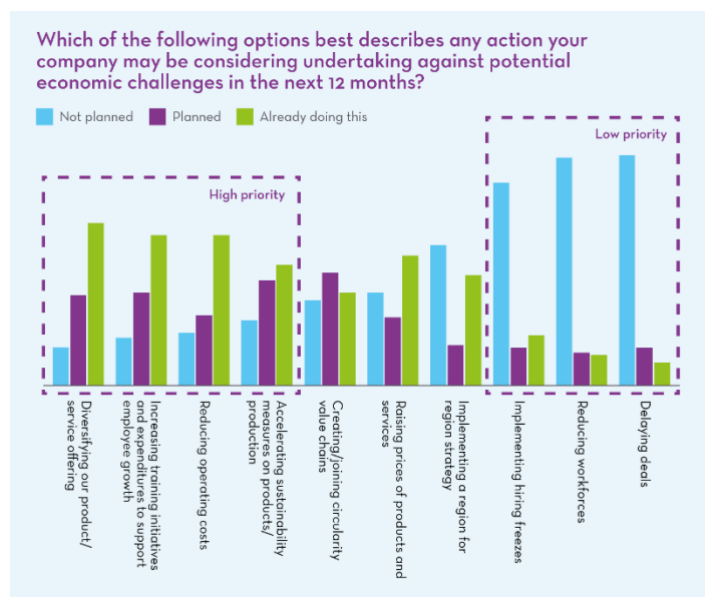
The consequences of this trend are multifaceted. The increasing scarcity of electronic chips can lead to delays in production, disrupting manufacturing schedules and potentially impacting product availability in the market. Companies may also face challenges in meeting customer demands, which can have broader consequences for customer satisfaction and market competitiveness. Additionally, the persisting chip shortages may necessitate a reassessment of supply chain strategies, with companies exploring alternative sourcing options and seeking to build more resilient supply chains.





7. Persistent shortage of labour and skills

When examining the main focus areas of most companies, it becomes evident that the primary strategies being pursued include 'reducing operating costs,' 'increasing training initiatives and spendings to support employee growth creation and tracking main trends,' and 'diversifying our product/service offering.' More than half of the companies are already actively engaged in these initiatives today.



It's also a positive trend that the overwhelming majority of companies do not intend to implement hire freezes or reduce their workforce. Instead, they express their focus on training initiatives to retain their employees. This indicates that companies are still mitigating against the persistent shortage on labour and skills. Additionally, postponing new contracts is not on the agenda, indicating that most of the supply chain issues have likely been resolved.

These findings suggest a proactive approach by businesses in addressing potential economic challenges. Strategies like reducing operating costs and diversifying offerings reflect a commitment to operational efficiency and adaptability. The emphasis on training initiatives

demonstrates an investment in human capital to ensure that the workforce remains well-equipped to navigate changing market dynamics. The strong focus on circularity value chains underscores a growing commitment to sustainability and environmental responsibility.

8. Towards a human-centered economy

The survey data reveals a significant trend towards the creation of a more human-centered economy within companies, as evidenced by the shifting focus on key strategies over the two-year period from 2021 to 2023. In 2021, 65% of companies prioritized creating workable work environments, and by 2023, this figure rose sharply to 78%, indicating a strong move towards enhancing the quality and satisfaction of work life for employees.

While there was a slight decrease in the emphasis on rethinking repetitive labor, from 60% in 2021 to 58% in 2023, it remains a prominent strategy, suggesting that companies continue to explore how to best restructure monotonous tasks to be more engaging and less labor-intensive. This slight dip may imply a shift from the initial exploration of possibilities to the actual implementation of solutions that contribute to creating more fulfilling work experiences.

The strategy of using physical and cognitive augmentation has seen a decrease in focus, dropping from 40% to 35%, which might reflect a realignment of priorities or a reassessment of how augmentation technologies are adopted in the workplace. It is possible that companies are becoming more selective about the types of augmentation they invest in, focusing on those that most effectively complement human workers.

Significantly, there has been a dramatic increase in the focus on upskilling and reskilling employees, soaring from 32% in 2021 to 64% in 2023. This suggests a strong recognition of the importance of continuous learning and development as critical factors in a human-centered economy. Companies are increasingly investing in their workforce to ensure that employees evolve alongside emerging technologies and business models.



A human-centered approach in industrial production is increasingly vital in the context of an aging workforce, where modifications in job design and workplace ergonomics are essential to accommodate older employees. Such accommodations ensure that the physical needs of workers are met, reducing the risk of injury and enabling these employees to maintain their productivity and

contribute their valuable experience. Beyond the well-being of the aging population, ergonomics plays a critical role in creating an environment that minimizes strain and injury for all employees, thereby enhancing overall productivity and job satisfaction.

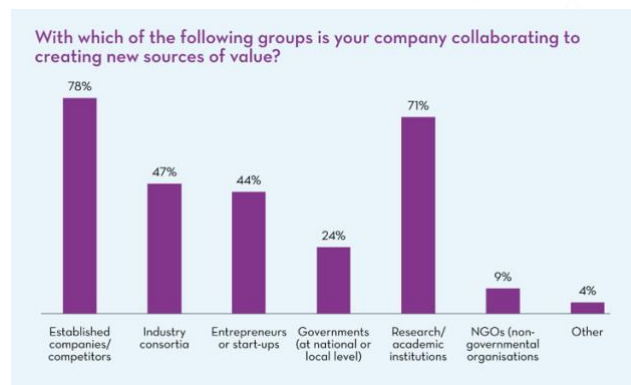
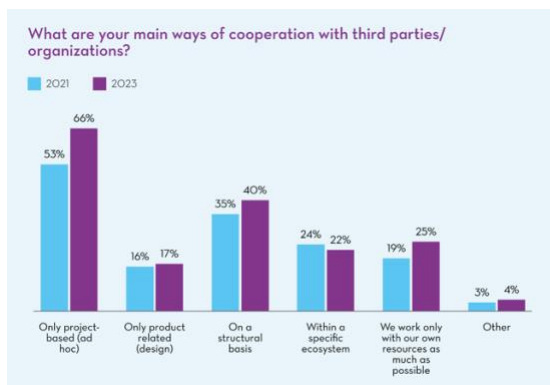
This approach is also key to fostering a resilient and adaptive workforce, with benefits that extend to worker satisfaction, retention, and a culture of innovation. Companies that prioritize the well-being of their workers not only uphold a societal and ethical responsibility but also position themselves as attractive places to work for prospective talent.

9. Increasing willingness to collaborate

The ways in which companies collaborate with other organizations align with the findings of the 2021 survey. Two-thirds of the companies indicate a preference for ad hoc collaborations (project-based), marking a 13% increase since 2021. But upon examining the graph, an increase can be observed in nearly every form of collaboration. This is due to respondents having the option to select multiple answers.

On one hand, this suggests that collaboration has intensified. On the other hand, a quarter of the companies express a preference for achieving as much as possible with their own resources and expertise, representing a 6% increase. This may explain why the number of companies engaging in ad hoc project-based collaborations has seen the most significant relative increase. Companies that prefer to handle most tasks in-house may turn to ad hoc collaboration when the need arises.

Encouragingly, 40% of companies have indicated their involvement in structural collaborations, marking a 5% increase. It is important to note that companies engage in structural collaborations for certain processes while opting for ad hoc arrangements for others, indicating that one approach does not exclude the other.



The survey results reveal a significant willingness among companies to engage in collaborations aimed at creating new value streams. Approximately three-quarters of the companies indicate their collaboration with other established businesses, and in some cases even competitors, as well as research centers. This is a remarkable yet very positive signal. Furthermore, half of the companies participate in consortia or partner with startups to foster innovation and value creation. Despite the growing emphasis on sustainability, only 10% of the surveyed companies currently collaborate with NGOs. Similarly, partnerships with governments are relatively low, with only 25% of companies engaged in such collaborations.

These findings underscore an increase among businesses to explore diverse collaboration opportunities. The presence of consortia and startup partnerships reflects a proactive approach to innovation. However, the relatively low levels of collaboration with NGOs and

governments may suggest untapped potential in these areas. As sustainability and corporate responsibility continue to gain importance, it is possible that we may see an increase in partnerships with NGOs and governments in the future as companies seek to address environmental and social challenges more effectively.

10. Changes in supply chain strategies

The data conducted in our survey provide a nuanced understanding of the economic challenges faced by the manufacturing sector due to the geopolitical crises and other market dynamics. The findings point to a significant resilience within the sector, reflecting a mix of impact levels and adaptive strategies.

Minor impact on investment budget, turnover and employment

Interestingly, the geopolitical crises seem to have had a limited impact on investment budgets and turnover within the sector. A majority, 64% of companies, reported no impact on their investment budget, suggesting a strong position or the effectiveness of risk mitigation strategies already in place. Only a quarter have reduced their investment budget, with a mere 6% making drastic cuts. This indicates a certain level of confidence and stability within the manufacturing industry, despite external pressures.

The turnover aspect further corroborates this resilience, with 25% of companies experiencing no impact, and a substantial 70% expecting a normalization by 2024. This forward-looking optimism signals that, while the crisis has indeed affected the industry, the repercussions may be temporary or less severe than initially anticipated.

Employment within these companies also appears relatively stable in the face of the crisis. Forty percent of the companies surveyed have not experienced any impact on employment levels. This is in line with the expected turnover normalization, suggesting a retention of workforce and potential recovery from any downturns.

Changing supply chain strategy to be less dependent on international sourcing

Although it is not a top priority of most companies, there's a significant shift, due to economic challenges, in supply chain strategies, with over half of the companies considering changes to reduce dependency on international sourcing. This is a clear move towards reshoring and nearshoring, with 9% looking for suppliers within Belgium and 18% seeking more European suppliers to replace global ones. Moreover, a quarter of the companies are diversifying their global suppliers to mitigate risk. This strategic split, with half of the companies considering onshore and the other half nearshore options, reveals a strategic turn in the supply chain approach to foster resilience against global disruptions.

Strategic stock management is a new trend

There has also been a notable shift in stock management strategies. In the face of supply chain uncertainties, companies are increasingly moving away from minimal stock levels aimed at cost-optimization. Instead, they are investing in strategic stock to ensure availability. The significant jump from 17% of companies holding strategic stock in 2021 to 36% now underlines a proactive approach to mitigate supply chain risks and prioritize business continuity.

Focus on cost-efficiency (minimal stock)	Neutral	Focus on availability (maximal stock)
-21%	+3%	+19%

E. Conclusion

In concluding the Industry 4.0 survey report, conducted by Flanders Make in 2023, we have been afforded a panoramic view of the manufacturing sector's evolution amid the Industry 4.0 revolution. The findings reveal a strategic embrace of digital transformation, with a specific focus on the digital shop floor as a beacon for driving operational excellence and technological advancement.

The rise of artificial intelligence and robotics is acknowledged as a defining factor in the future of industrial operations, pointing out a significant transformation that extends across the manufacturing landscape. Meanwhile, the integration of 5G technology is approached with measured caution, as firms await clearer demonstrations of its economic impact.

Sustainability has transitioned from a mere trend to a central pillar in strategic planning, with companies integrating eco-friendly processes and materials to forge a path towards a circular economy. This strategic shift resonates with a broader industry acknowledgment of the intrinsic link between environmental stewardship and long-term business success.

Addressing the industry's labour and skills gap, companies are highlighting the urgency of developing a skilled workforce and retaining talent. The human element has risen in prominence, with an emphasis on creating supportive work environments and offering opportunities for employee development, resonating with the drive towards a more human-centric economic model.

Collaborative efforts are also on the rise, with companies seeking innovation through partnerships, particularly with established businesses and research institutions. This collaborative spirit, however, has yet to fully extend to engagements with NGOs and government entities, suggesting untapped potential in these areas.

Supply chain strategies reflect a sector that is increasingly adaptive and resilient. The focus has slightly shifted toward localizing supply chains and optimizing inventory management, indicative of a forward-thinking approach to overcoming the challenges of a volatile global market.

Overall, the survey paints a picture of a sector in active transition, engaging with the challenges of technological change, environmental responsibility, and the complexities of a globalized economy. Companies are not only adapting to the new paradigms of Industry 4.0 but are also shaping them, positioning themselves to leverage these shifts for competitive advantage and sustainable growth. As we look to the future, the insights gleaned from this survey will undoubtedly inform both the strategic imperatives of individual companies and the collective direction of the manufacturing industry.