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Digital maturity index:
Accelerating digital adoption in
the manufacturing industry

The journey towards digital maturity

In today's fast-paced and competitive business environment, digitization is key to long-term survival and competitive edge. Beyond helping to improve productivity, product quality, and innovation, it has the potential to reduce costs and time-to-market.

Across the different sectors in the manufacturing industry, these advantages lead to competitive differentiation. However, realizing these benefits is easier said than done. Digitization, like many things, is a journey. It takes time and resources to adopt effective automation, data collection, data visualization, and data analytics processes and to translate those digital efforts into cost savings, accelerated time-to-market, and increased profits.

But how long, on average, does the journey take—and how can manufacturers accelerate the process?

That was the question Deloitte Germany set out to answer in 2019, when the first survey analyzing the digital maturity of global manufacturers was conducted. The aim of the survey was to develop a quantitative measure of digital maturity in a bid to understand what levers organizations must pull to enhance their digital progress.

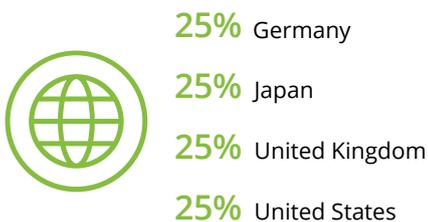
In collaboration with the University of Duisburg-Essen, Deloitte Germany developed a Digital Maturity Index (DMI) that assesses organizations across 90 operational and strategic parameters to determine where they fall within six digital archetypes—from Digital Laggards to Digital Champions. The intention was to use this tool to assess digital progress across the manufacturing industry.

As the COVID-19 pandemic began to spread, disrupting global supply chains, the digitization roadmap was hit hard, making it difficult to monitor clear trends on an annual basis. Now that the pandemic is predominantly in our rear-view mirrors, we've revisited this survey using the 2019 data as the baseline.

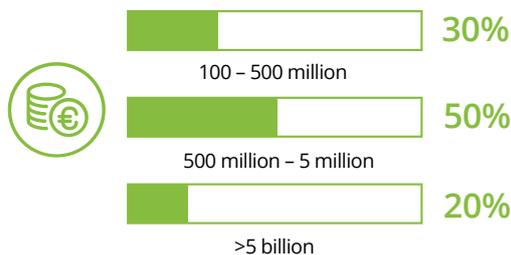
For the 2023 survey, over 800 C-level and business unit leaders were interviewed across four manufacturing sectors, with a primary focus on industrial products and automotive, to analyze how companies are shaping their digital futures. The survey focused on four countries: Germany, Japan, the United Kingdom, and the United States. The respondents in 2019 and 2023 were predominantly made up of top management levels and the selection of respondents was based on the same criteria in both surveys, however there were variations in the companies that participated in 2019 and 2023.

Figure 1: 2023 survey demographics

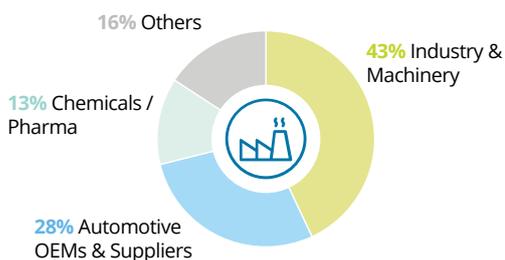
PARTICIPANTS BY COUNTRY



PARTICIPANTS BY REVENUE: IN US\$



PARTICIPANTS BY INDUSTRY



PARTICIPANTS BY # EMPLOYEES



Source: Deloitte Germany

Strategic index indices:

- **Digital business:** This index considers parameters such as an organization’s relationship network, value architecture, digital investment, and software-enabled services.
- **Dynamic capability:** This index considers parameters such as an organization’s product lifecycle management, new asset investment, technology monitoring, and hybrid-agile approach.

Operational index indices:

- **Digital activity:** This index considers parameters such as an organization’s investment in smart facilities and equipment, smart planning, connected customer applications, and intelligent supply.
- **Digital capability:** This index considers parameters such as an organization’s digital DNA, the extent of its CXO sponsorship, the clarity of its digital roadmap, and its reliance on intelligent key performance indicators (KPIs).

After analyzing each company's self-assessment for these 90+ parameters across all four indices, it can be determined where the organization falls within six digital archetypes:

- **Champions** combine a consistent digital strategy with operational excellence to achieve a flexibility advantage.
- **Potentials** focus on developing their digital strategies hand-in-hand with operational excellence to achieve cost advantages.
- **Innovators** show distinct advances in digital business through innovative portfolios yet realize only average operational successes.

- **Operators** focus on digitalizing their core value chains, hinging their successes on flexibility through innovative solutions.
- **Followers** seek to consistently advance their digital skills both strategically and operationally.
- **Laggards** lack both strategic and operational digital skills and do not consistently use digitalization to improve overall efficiency.

Once assigned a score, organizational digital maturity can be visually tracked using the below grid.

Figure 2: Digital Maturity Index grid



Source: Deloitte Germany

The survey identified four top-level findings:

1. Since 2019, companies have become more digitally mature—with 16% of companies, on average, experiencing increases in digital maturity.
2. Higher digital maturity translates into higher EBIT and revenue, supporting a trend that was already underway in 2019.
3. Adopting an ecosystem approach can help companies accelerate their digital maturity—and reap the benefits faster.
4. Additional investment is needed to drive future progress.

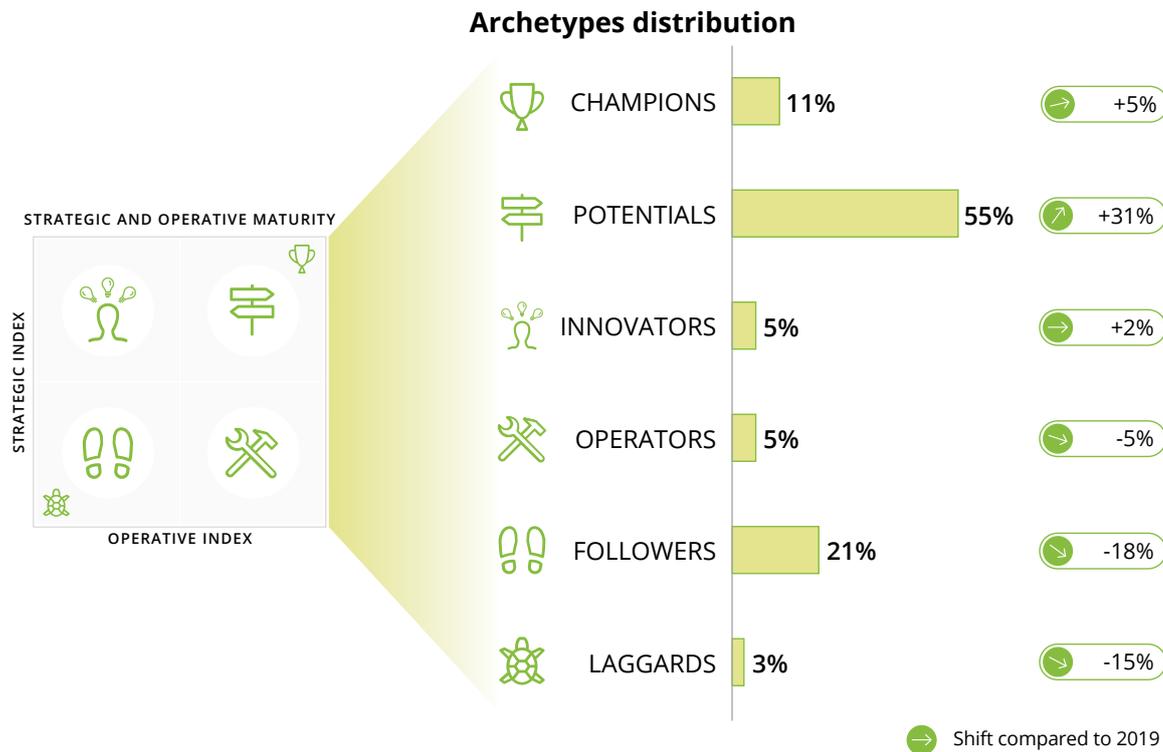
The Digital Maturity Index further identified four trends to help manufacturers advance their digital journeys.

Trend 1: Digital maturity rises

Digital transformation has progressed significantly since 2019, with 98% of survey respondents saying they have started transforming digitally, compared to 78% in 2019. Despite many beginning their digital transformations during the COVID-19 pandemic, satisfaction rates with digital progress also rose—from 47% in 2019 to 81% in 2023.

During the same time period, companies increased their digital maturity by an average of 16%.¹ In 2019, 18% of companies were considered Laggards and 39% were Followers, while only 24% were Potentials and 6% were Champions. In 2023, only 3% of companies are now Laggards and 21% are Followers, while 55% are Potentials and 11% have become Champions.

Figure 3: Archetypes distribution: 2019-2023



The automotive industry saw the biggest gain, moving from a DMI score of 0.46 in 2019 to a score of 0.77 in 2023 with a linear score where a score of 0 represents a non-digitized state and 1 represents the north star of a fully digitized organization. The sector's digital progress is largely attributable to its investment in building digital talent, refining its planning processes, and scouting for new technologies from competitors and suppliers.

Despite the consistent pursuit of digital initiatives, the industrial products sector realized slower gains,

moving from a DMI of 0.53 to 0.77. This sector's focus areas have largely been on adopting intelligent connected services, conducting target market analysis, and leveraging active decision-making processes.

For its part, the chemicals and pharmaceutical sectors moved at the most incremental pace, with a DMI score that rose from 0.54 to 0.71. These sectors have predominantly focused on enhancing the performance of their production, logistics, and procurement processes.

Figure 4: Digital maturity by industry



Source: Deloitte Germany

In terms of the activities that drive higher DMI scores, two key areas were identified: (1) the implementation of digital technologies to modernize an organization's product or service architecture and (2) the adoption of structured decision-making tools. Notably, these two areas ranked in second and third places as drivers of digital maturity in both 2019 and 2023. Yet, while management support for a digital transition was considered the number one driver of digital maturity in 2019, that has now been surpassed by a focus on introducing new digitized services.

Certain focal areas have also jumped higher in the rankings since 2019. Companies driving digital maturity are increasingly focused on finding ways to balance digital innovation with ongoing support of legacy technologies, using digital technologies to enhance research and development (R&D) productivity, and creating multi-channel customer solutions.

Trend 2: Higher digital maturity translates into higher EBIT and revenue

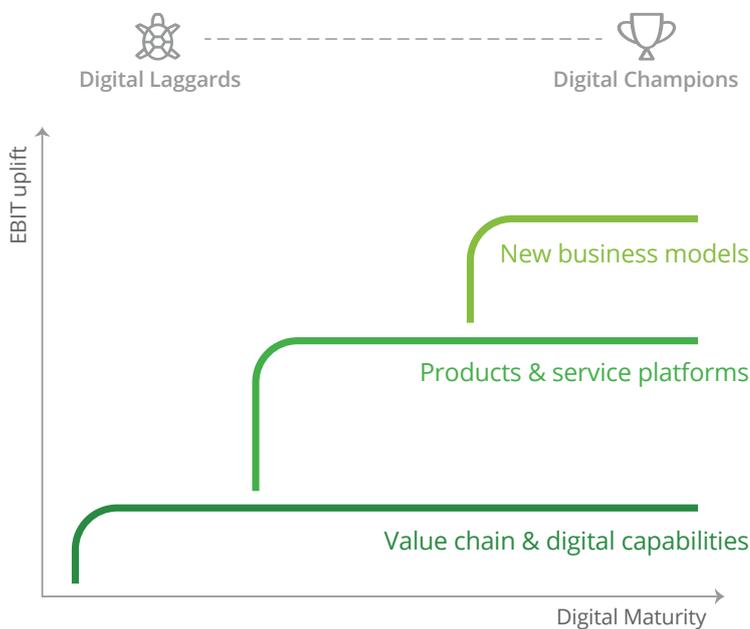
In 2019, we found that digitally mature companies realized 10% higher EBIT than digital laggards. That remains true for 2023, with digitally mature companies seeing 6% higher EBIT than companies that lag.

This trend holds across the four countries we focused on in this survey. Overall, companies in Germany, Japan, the UK, and the US saw an average EBIT uplift of 12.5% and an average revenue uplift of 21% due to investments in digital technologies.

The correlations between digital maturity and higher EBIT and revenue are in large part linked to the impact digitally mature companies can exert in three primary areas:

- **New business models:** The more digitally mature a company, the faster it can create digital products/ services or adopt new business models. These companies also do so more efficiently, leading to a higher level of goal achievement.
- **Product and service platforms:** Digitally mature companies are more inclined to make significant investments in digital platforms and define clear organizational prerequisites for such investments. This strategic approach helps them to realize higher EBIT impact.
- **Value chain and digital capabilities:** Digitally mature companies use technology to increase efficiency along the value chain, which can drive up EBIT and revenue.

Figure 5: Three playing fields for EBIT impact

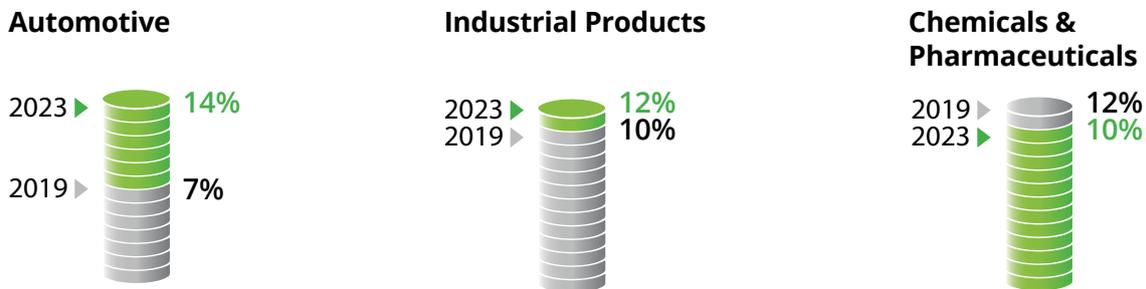


Source: Deloitte Germany

From a sectoral perspective, the automotive sector saw a seven percentage points EBIT uplift since 2019 (from 7% to 14%), likely due to its increased focus on digital progress. The industrial products sector realized

a 2% EBIT gain (from 10% to 12%). The chemicals and pharmaceuticals sectors, however, saw its EBIT uplift decline by 2% (from 12% to 10%) due to the effect of rising raw material costs.

Figure 6: EBIT uplift



Source: Deloitte Germany

At the same time, overall EBIT uplifts from digitization (across all companies, regions, and sectors) have only increased by an average of 1% since 2019, likely due to the extent of market disruption manufacturers have faced over the past four years.

Several disruptive forces including geopolitical disruption, the ongoing global shortage of semiconductors (or chips), soaring energy costs, and inflation coupled with rising interest rates. Many companies are also struggling to support the enormous capital investments required to implement robust back-end software systems and to create a sustainable hardware infrastructure.

Despite these uncertainties, digitalization remains a major investment focus for companies, 30% of which point to the recent crisis environment as an impetus to accelerate their digital investments. Notably, Champions and Potentials are investing roughly 10% more than the global average, which is likely the core driver for their above-average performance. On the flip side, Followers and Laggards are experiencing outsized effects related to the chip shortage and inflation/interest rate hikes, slowing their short-term digital progress—a gap that could threaten to widen over time due to ongoing economic volatility.

Trend 3: An ecosystem approach can help accelerate digital maturity

While many factors contribute to digital maturity, one area worthy of particular focus is the adoption of an ecosystem approach. Since 2019, collaboration across corporate networks has increased by 34%, resulting in a 33% uptick in cross-company value creation. At the same time, defining a fixed circle of collaborators is now considered the third most important area of focus to drive top line growth—underscoring the importance organizations are placing in forming strategic relationships.

While industry ecosystems can take many different forms, many companies still appear to be focusing on less formal types of collaboration, such as software connections, joint cloud initiatives, and data sharing. Case in point: over 30% of survey respondents said they are now collaborating with other industry participants to create joint ecosystems capable of meeting the needs of their combined customer bases.

Regardless of which ecosystem approach these companies pursue, their efforts appear to be paying off. Many companies are driven by the potential return of added value—particularly in joint go-to-market initiatives, as well as joint product and service development, which have the potential to generate uplifts in sales.

To build an effective ecosystem, many companies are focusing their efforts in three key areas:

- **Governance for joint economic activities.** This involves the implementation of systems and processes that consider the needs of ecosystem participants, support collaboration, and facilitate effective steering initiatives.
- **Value creation for modularization in cooperation.** This is about following a dynamic, open, and flexible approach to support the continuous creation of value.
- **Value distribution across the ecosystem.** The even distribution of joint resources, combined with effective steering, are basic prerequisites for long-term collaboration between ecosystem participants. These criteria are of higher importance for those companies striving for above-average profitability (>16%).`

Overall, ecosystems serve as catalysts for digitization by facilitating collaboration, providing access to diverse digital capabilities, fostering innovation, and expanding market reach. They enable companies to overcome challenges, accelerate their digital transformations, and unlock new value in the digital era.

Trend 4: Additional investment is needed to drive future progress

Although much progress has been made on the path toward digital transformation, future progress continues to hinge on additional investment across a range of areas.

For instance, data analytics has proven to be a success factor in manufacturers' quests towards improved digitalization. In 2019, 86% of companies were already leveraging data analytics in some capacity. In 2023, that number has risen to 98%. Not surprisingly, 99% of Champions and Potentials now use data analytics as part of their standardized processes, while 48% of Followers and Laggards still use data analytics only occasionally.

Other areas ripe for investment include digital initiatives designed to:

- Improve the customer experience
- Develop or improve existing products
- Enhance the employee experience
- Boost operational efficiency
- Optimize costs

Although many organizations struggle to allocate sufficient capital to implement back-end software solutions and streamline their hardware infrastructures, those that have pursued some of these digital initiatives believe the payoff was worth the cost. For instance, 68% of companies that launched digital initiatives to develop new, or improve existing, products said they met or exceeded their goals. The same is true among those companies that pursued digital initiatives to improve operational agility (68%), improve the customer experience (67%), accelerate speed-to-market (64%), and transform their business models (63%). Similarly, during the course of digitalization, over 70% of companies say they successfully developed new customer solutions and business models—putting them on a path toward long-term digital maturity.

As companies look to become more digitally mature, they could be well-served to focus future efforts on the following areas:

- **Customer-centricity:** Invest in understanding customer needs, preferences, and pain points and leverage digital channels to enhance customer experiences. Use data-driven insights to help personalize offerings, streamline processes, and deliver value.
- **A digital-first mindset:** Encourage a cultural shift within the organization that prioritizes digital transformation as a strategic imperative. This involves fostering a mindset that embraces innovation, agility, and continuous learning in the digital realm.

- **Digital infrastructure and capabilities:** Allocate resources to build a robust digital infrastructure, including modernizing IT systems, implementing cloud-based solutions, and leveraging emerging technologies like artificial intelligence and machine learning. Develop in-house digital capabilities or work with external stakeholders to help execute digital initiatives.
- **A culture of experimentation and collaboration:** Encourage experimentation and risk-taking within the organization. Create cross-functional teams that collaborate to ideate, test, and iterate digital solutions. Establish feedback loops to help capture insights, learn from failures, and optimize digital strategies. Encouraging an open and inclusive environment where employees feel empowered to contribute and adapt to digital change is key.

Key success factors to achieving digital maturity

To operationalize a digitalization strategy, companies should define a dedicated transformation program with a clear roadmap and regularly track the progress of their digital initiatives relative to key performance indicators (KPIs). Together, these investments of both time and resources have allowed 34% of companies surveyed to increase their operational efficiency.

That said, the development of a strategy and commitment of targeted investments may not be enough. Companies should also embed a digital-first model into their business cultures. By fostering a digital mindset within the workforce, companies can lay the foundation for true transformation.

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