



# The resurgence of *manufacturing*

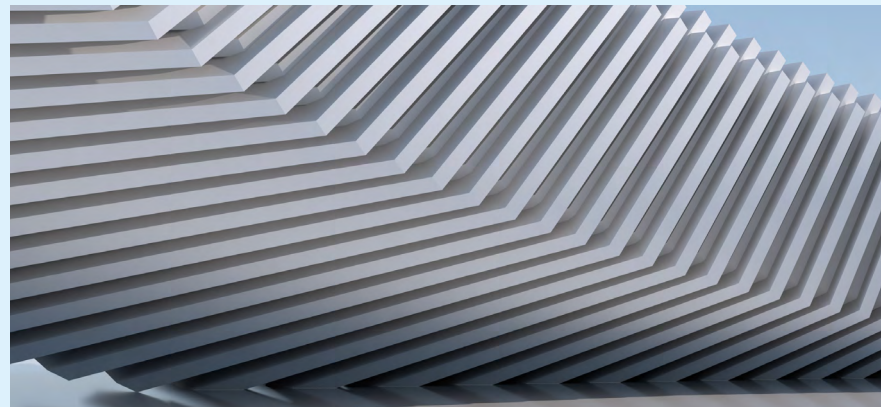
Reindustrialization strategies in Europe and the US

# Executive Summary

In recent times, Europe and the US have been significantly affected by unprecedented domestic and external disruption, from the global pandemic and geopolitical upheaval to sea changes in government regulation and game-changing technological advancements. The concept of “reindustrialization,” which we define as the reconfiguration of global supply chains and manufacturing capacity, often with the aim of bringing them closer to – or even within – domestic markets, has gained momentum in the international business dialogue. Driving this is the imperative to promote supply chain resilience and flexibility; increase both the availability and appeal of skilled manufacturing jobs; meet climate targets; re-establish national security in strategic sectors, and regain the manufacturing might that the industrial powerhouses of Europe and North America once enjoyed.

Within the past couple of years, most large organizations in our survey have begun to formulate strategies to revitalize their industrial sectors proactively calling for action from governments. The rapidity with which reindustrialization

has taken hold is remarkable. Our research reveals that total reindustrialization investment by European and US organizations is projected to reach \$3.4 trillion over the next three years. Among the organizations in our survey, this represents an average allocation of 8.7% of revenue.



# Executive Summary

## Organizations recognize the imperative to reindustrialize

- Seven in 10 organizations identify supply chain resilience – defined as the ability to adapt and respond quickly to operational disruptions – as a leading driver of reindustrialization
- Most organizations are active in reindustrialization. Seventy-two percent are currently developing a strategy for reindustrialization or already have one in place. The majority of organizations have initiated these strategies post-pandemic (i.e., within the past two years).
- Organizations anticipate that their reindustrialization endeavors will bring both competitive advantage and sustainability gains. In the next three years, organizations expect, on average, a reduction of around 14% in their carbon emissions, and improvement of around 13% in customer satisfaction rates.

## The rise of domestic manufacturing and onshoring

- A majority (63%) of organizations recognize the importance of establishing a domestic manufacturing infrastructure to ensure national security, and a similar percentage (62%) acknowledge its significance for strengthening strategic sectors/industries (e.g., electric vehicles (EVs); medicines and vaccines; and semiconductors).
- Nearly half (47%) of organizations have already invested in reshoring their manufacturing/production.
- Consequently, on average, onshore will represent 49% of total production capacity in the next three years, up from 45% today; offshore will decline from 26% to 17% in the next three years.

# Executive Summary

## Reindustrialization supports climate goals and decarbonization drives reindustrialization

- A majority (55%) of executives are optimistic that reindustrialization will help their organizations meet climate goals, especially in reducing their Scope 3 greenhouse gas (GHG) emissions, and 56% believe reindustrialization will drive a shift towards sustainable manufacturing.
- The rise of gigafactories is a key element in the journey towards sustainability – over half (54%) of automotive, battery, and energy executives in our survey say their organization is currently building a gigafactory or has plans to do so within the next five years.
- Beyond environmental sustainability, enhancing medicine and vaccine supply and manufacturing capacities promotes social sustainability and health security.

## Digital technologies are a critical enabler for reindustrialization

- Our research reveals a prevailing optimism among executives, with 68% confident that reindustrialization can drive innovation and technical advancement.
- Most organizations focus principally on the modernization of existing manufacturing facilities: among those deploying a brownfield strategy, 28% have begun an upgrade in the past year.
- In their reindustrialization efforts, organizations will rely extensively on technologies such as artificial intelligence (AI), machine learning (ML), automation, and data analytics.
- Use of emerging technologies such as 5G/edge, generative AI, and digital twin are poised for a substantial upswing in the coming three years.
- Organizations are investing in technologies to enhance sustainability within their reindustrialization initiatives, with 59% believing the success of their reindustrialization hinges on both enhanced digitalization and sustainability within their industries.



# Executive Summary

## Reindustrialization requires a highly skilled workforce

- Around half (53%) of executives expect reindustrialization to increase the number of manufacturing jobs, boosting employment.
- A majority (72%) of executives say that reindustrialization will create demand for a more skilled manufacturing workforce.
- Given an aging manufacturing workforce, nearly half of organizations (48%) recognize the need to engage the younger generation to make meaningful contributions to reindustrialization.

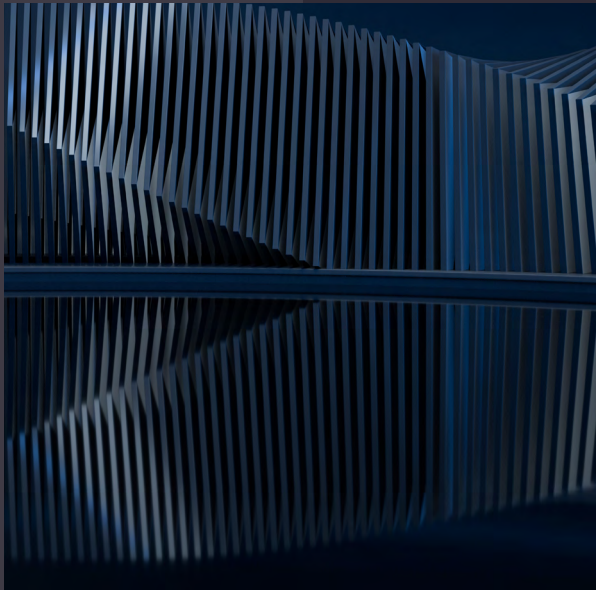
- Most (64%) executives believe the drive to reindustrialize will involve adjusting their skills mix, with the proportion of the manufacturing workforce with advanced digital skills projected to rise from 31% today to 53% in the next three years.
- About half (51%) of executives agree that they must upskill their current workforce.

To take full advantage of reindustrialization and accelerate their journeys, organizations will need to formulate and execute at speed a clear and effective strategy encompassing the geopolitical situation, embed sustainability into its strategic approach and deployment, invest in attracting new talent and upskilling their manufacturing workforce, integrate advanced technologies into manufacturing and production, and foster regional and global partnerships to enhance domestic capabilities and serve new value chains. Business leaders must also proactively engage with policymakers and regulators to anticipate and react quickly to legislation and incentives to take advantage of opportunities in the fast-paced reindustrialization race.

# Who should read this report and why?

This report offers in-depth insight into the factors driving reindustrialization in Europe and the US, including government legislation, regulation, and policy. It assesses the motivation for significant organizations to invest in reindustrialization initiatives. We also gauge the extent of their investment in reshoring, nearshoring, and domestic manufacturing and examines the link between sustainability and reindustrialization and the combined effect on the workforce. Digital and technology leaders across manufacturing, operations, supply chain, procurement, and R&D/innovation will find this report valuable, as will corporate leaders in sustainability, human resources, and finance. It will also be of interest to chief executives and European and US policymakers who want a holistic view of this highly relevant topic.

This report draws on original findings from an extensive industry survey of 1,300 senior executives (director level and above) from organizations with annual revenue above \$1 billion. Organizations are headquartered in France, Germany, Italy, the Netherlands, the Nordics (i.e., Denmark, Finland, Norway, Sweden), Spain, the UK, and the US. Please see the research methodology at the end of the report for more details.



# What is reindustrialization?

Reindustrialization refers to a country or group of countries' strategic effort to revive and strengthen its industrial sector. Its principal aims are to create jobs, boost production, and reduce dependency on external sources.

In this research, we define "reindustrialization" as the reconfiguration of global supply chains and manufacturing capacity, including reshoring, and nearshoring production, as well as diversifying and investing in domestic manufacturing/production. This could involve building new factories;

upgrading or modernizing existing factories by installing new technologies; building gigafactories (i.e., typically large-scale battery manufacturing), independently or as a joint venture; and/or onshoring supply chains.

Specifically, in this research, reshoring is defined as bringing manufacturing/production back to the domestic market/country of headquarters. Nearshoring is defined as moving manufacturing/production to a nearby or neighboring country.

# Introduction

Europe and the US have undergone a significant decline in manufacturing employment. Despite being a leading driver of employment growth for decades, manufacturing in the US has declined over the past half-century as the economy has shifted to service industries. US manufacturing employment peaked in 1979 at 19.6 million, falling to 12.9 million in 2023.

<sup>1</sup> Over the past quarter-century, Europe has followed suit: in 2001, manufacturing employment in Europe approached 27 million; by 2022, it had declined to under 24 million.<sup>2</sup> The contribution of manufacturing to European GDP decreased from 18% in 2000 to 15% in 2022.<sup>3</sup> A combination of factors has driven the decline, from globalization and offshoring to an aging workforce and the skills gap arising from the demands of operating new technologies.

Against this backdrop, recent economic and geopolitical shocks have exposed the fragility of global supply chains. Organizations in Europe and the US are recognizing the importance of reindustrialization for economic resilience, job creation, health security, technological advancement, and innovation. By revitalizing industrial sectors and shortening supply chains, organizations can promote sustainable

growth. At the same time, they must modernize existing manufacturing facilities and incorporate smart and advanced manufacturing technologies in order to boost domestic manufacturing.

This research explores the factors driving the reindustrialization of Europe and the US, and the motivation and strategic planning of large organizations to reconfigure global supply chains and manufacturing capacity. It gauges the extent of investment in reshoring, nearshoring, and domestic manufacturing, as well as whether organizations are upgrading existing manufacturing facilities or building new ones. It also examines the link between sustainability and reindustrialization and the combined effect on the workforce.

To address these themes, we conducted a global survey of 1,300 executives at organizations with annual revenue above \$1 billion. Organizations are headquartered in 11 countries: France, Germany, Italy, the Netherlands, Denmark, Finland, Norway, Sweden, Spain, the UK, and the US. Organizations surveyed operate across 13 key industries: aerospace and defense, automotive, battery manufacturing/energy storage,



# Introduction

chemicals, consumer products manufacturing, energy, electronics, industrial machinery and equipment, metals and mining, life sciences, transportation, utilities, and telecom.

We also interviewed supply chain and manufacturing executives. For more details on the survey sample, please refer to the research methodology.

This report comprises six sections:



1  
Organizations recognize the imperative of reindustrialization



2  
The rise of domestic manufacturing and onshoring



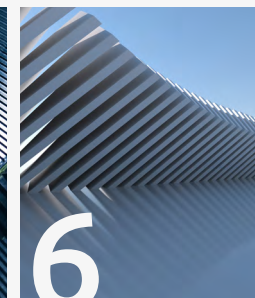
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Reindustrialization supports climate goals and decarbonization drives reindustrialization



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Digital technologies are a critical enabler of reindustrialization



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Reindustrialization requires a highly skilled workforce



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How to accelerate reindustrialization

01

**Organizations recognize  
the imperative of  
reindustrialization**

## Reindustrialization is at the center of business discourse today

Reindustrialization is seen as a multifaceted process to tackle various economic, security, technological, environmental, and political challenges prevalent in Europe and the US today. Our research highlights enhancing supply chain resilience as the primary driver of reindustrialization (see Figure 1). Additional noteworthy drivers of this strategic shift include climate concerns, escalating geopolitical tensions, and the imperative to bolster national security.

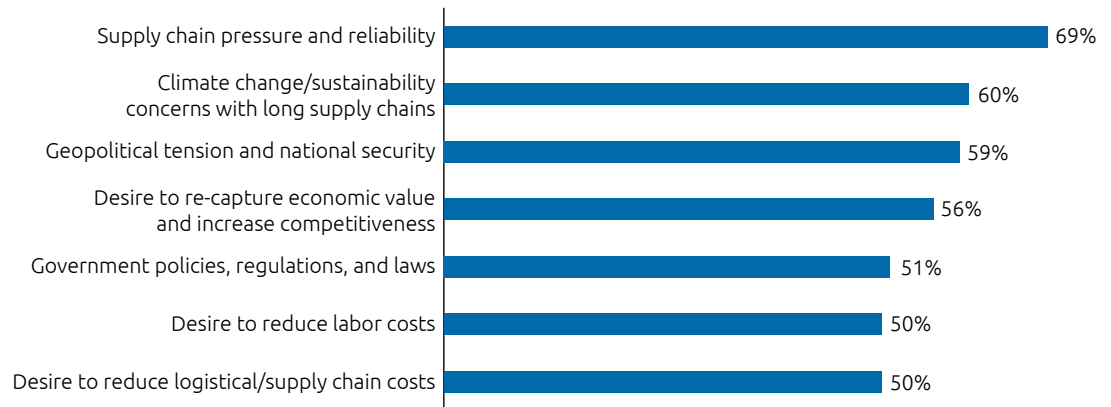
### Below, we explain the multiple factors driving reindustrialization as a topic of business dialogue:

- Supply chain resilience:** The COVID-19 pandemic exposed the vulnerabilities of global supply chains, motivating many organizations to rethink production and sourcing strategies. In addition, disruptions in key geographies continue to contribute to sourcing and logistical uncertainties, blocking the movement of goods. Organizations view reindustrialization as a means to bolster supply chain resilience, ensuring its stability and agility while managing the associated

**FIGURE 1.**

Nearly seven in 10 organizations identify supply chain resilience as a leading driver of reindustrialization

### % of organizations stating the below is a top driver of their reindustrialization strategy and initiatives



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

costs. The US Inflation Reduction Act (IRA) generates opportunities to develop projects, grow the workforce, and establish domestic manufacturing lines.<sup>4</sup> An executive from a high tech company in France says: *“A critical part of reindustrialization is bringing manufacturing and production closer to the end market. This means manufacturing the product where you have the most customers. This will reduce fluctuations while improving resilience and sustainability in the supply chain.”*

- **Sustainability considerations of long supply chains:** In addition to increased vulnerability to external disruptions, long supply chains involve increased carbon emissions and resource depletion. Our previous research on biodiversity revealed that supply chain disruptions can occur as a result of biodiversity loss, resulting in resource

# 69%

of organizations state supply chain pressure and reliability is a top driver for reindustrialization

scarcity, high or volatile prices for raw materials, and increased production costs.<sup>5</sup> In response, organizations are re-evaluating and shortening supply chains and establishing domestic manufacturing facilities to mitigate biodiversity loss; improve supply chain resilience; and reduce transportation-related and other indirect carbon emissions, especially Scope 3. The International Energy Agency (IEA) estimates that two-thirds of global battery-cell production takes place in China, while the US accounts for around 10%.<sup>6</sup> As of November 2023, driven by the IRA, there has been \$173 billion in investment in electric vehicle and battery manufacturing announced in the US (including investment from private companies and federal support).<sup>7</sup>

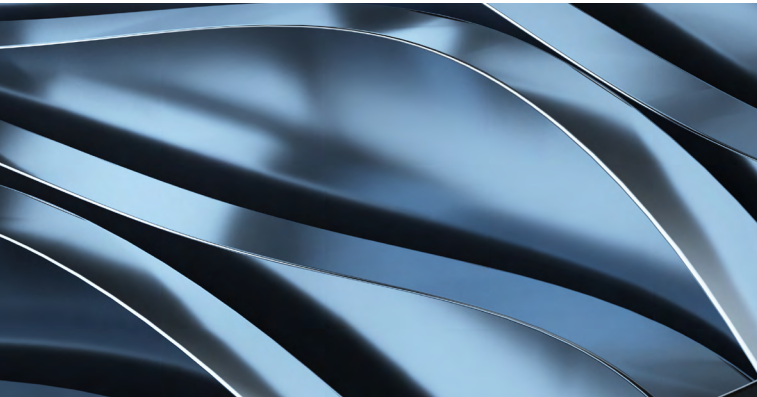
- **Geopolitical concerns:** Escalating geopolitical tensions such as US-China tensions, the war in Ukraine, and the European energy crisis have emphasized the risks of remote production. Across earnings calls and corporate filings, chief executives of S&P 500 companies referred to the word “geopolitics” 12,000 times in 2023, three times as much as they did in 2021.<sup>8</sup> The impact is moving towards rethinking globalization as countries seek to de-risk. The need to ensure the security of supply domestically or with like-minded nations is a compelling driver of onshoring and nearshoring.

- **Economic concerns:** Deindustrialization has led to job losses and damaged competitiveness, particularly in regions that, historically, were considered industrial hubs. These regions are responding with reindustrialization as a strategy to reclaim economic value and fortify competitiveness. France’s green industry bill introduced in 2023, for example, focuses on reindustrialization to boost economic value and competitiveness. The bill includes





green industry investment in tax credits for batteries and renewable energy, with the goal of driving economic growth.<sup>9</sup> The goal of the Infrastructure Investment and Jobs Act (2021) in the US, which includes provisions for tax breaks and subsidies across sectors, including EVs and charging infrastructure, is to promote economic growth, create jobs, and imbue the economy with greater resilience.<sup>10</sup>



- **Government legislation and incentives:** Government legislation and incentives have catalyzed the implementation of strategic frameworks and initiatives conducive to industrial growth and innovation. These policies often incorporate incentives for domestic production, streamlined regulatory processes, and targeted industrial investments, particularly in areas of national strategic importance, such as semiconductors, batteries, renewable energy, defense, and pharmaceuticals. The European Chips Act (ECA)<sup>11</sup> and the US CHIPS and Science Act<sup>12</sup> encourage localized semiconductor production.
- **Technological advances:** The rise of automation, AI, and advanced manufacturing techniques such as additive manufacturing and robotics supports reindustrialization by enhancing productivity while reducing manufacturing costs. In 2022, US consumer goods giant Procter & Gamble (P&G) forged a multi-year partnership with Microsoft to transform its digital manufacturing platform, harnessing the industrial internet of things (IIoT), digital twin, data analytics, and AI. The goal is to bring products to market faster, enhance customer satisfaction, improve productivity, and reduce costs.<sup>13</sup>

A strategy executive from a large European industrial manufacturer elaborates on these key drivers: *“Over the past three years, we’ve faced significant supply chain challenges, exacerbated by increased market demand post-pandemic. Our supply chain resilience was inadequate, leading to a failure to meet customer expectations. This crisis has rendered critical components and key materials inaccessible. In light of further rises in geopolitical tensions, we’re revising our reindustrialization strategy, shifting focus from Asia and low-cost countries to the US and Europe. We’re prioritizing local manufacturing agility to mitigate environmental and geopolitical risks.”*

# 60%

of organizations state sustainability concerns is a top driver for reindustrialization

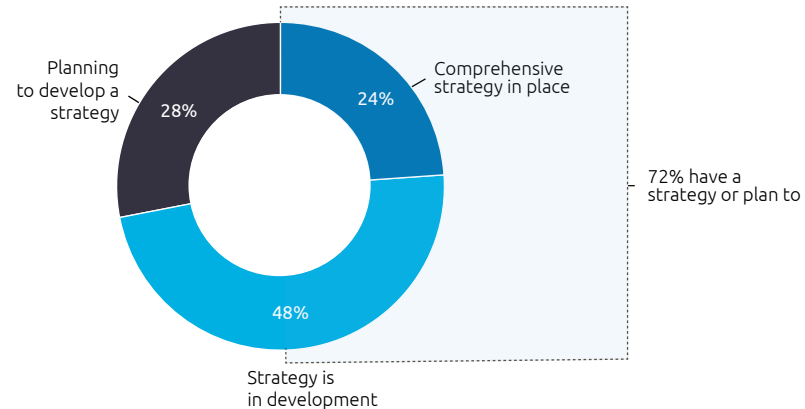
## Most organizations have a reindustrialization strategy or are developing one

Most organizations are active in setting a reindustrialization strategy. Nearly half (48%) say they are developing a strategy for reindustrialization and 24% have a comprehensive strategy already in place (see Figure 2). As defined earlier in this research, a reindustrialization strategy might encompass building new factories; upgrading or modernizing existing factories by installing new technologies; building gigafactories (i.e., typically large-scale battery manufacturing); and/or onshoring supply chains.

**FIGURE 2.**

A majority (72%) of organizations have a reindustrialization strategy or are currently developing their strategies

### % of organizations with a reindustrialization strategy

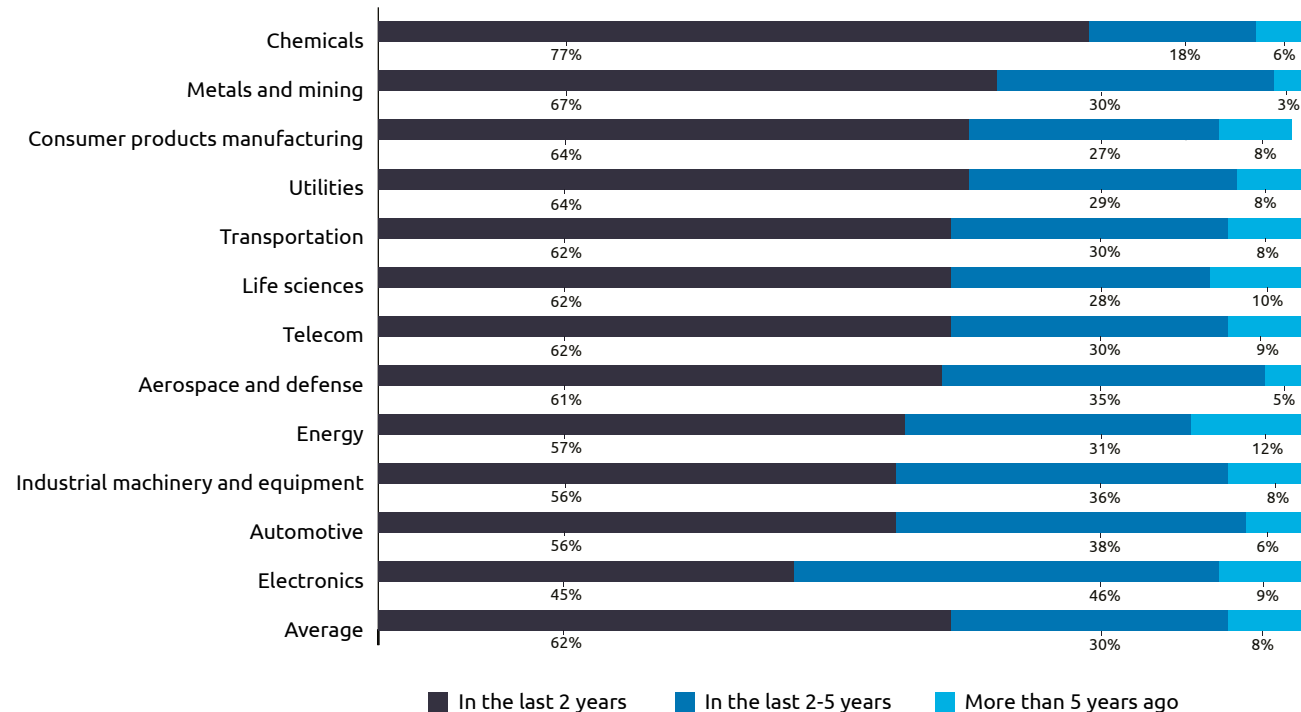


Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

**FIGURE 3.**

Most organizations across industries have recently started/developed a strategy for reindustrialization

### % of organizations on when they started to develop a reindustrialization strategy



Across industries, an average of 62% of organizations began developing their strategies within the past two years (i.e., post-COVID-19 pandemic; see Figure 3).

Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=934 executives from organizations that have a comprehensive strategy in place or are in the process of developing one.

Note: Battery/energy storage manufacturers are excluded from individual industry analysis owing to small sample size; Automotive includes both original equipment manufacturers (OEMs) and suppliers.

***“A critical part of reindustrialization is bringing manufacturing and production closer to the end market. This means manufacturing the product where you have the most customers. This will reduce fluctuations while improving resilience and sustainability in the supply chain.”***

#### **AN EXECUTIVE**

from a high tech company in France

Notably, organizations in industries like electronics, automotive, and energy have started developing their strategy slightly ahead of others. Potential reasons include:

- The automotive industry's pursuit of sustainability goals, especially in reducing carbon emissions, has accelerated the adoption of electric vehicles (EVs) over the past few years.
- The onset of the pandemic and increased global demand for remote working coupled with the growth of AI and technological advances in areas like cloud, IoT, 5G as well as demand for EVs and other electronic equipment across industries, has spurred aggressive growth in semiconductors over the past 2–3 years.
- The investment in renewable energy and clean technologies, supported by regulations like the IRA, likely accelerated an early start to reindustrialization planning in the energy sector.

An operations executive from a global automotive organization in the UK comments: ***“The past 2–3 years have highlighted shortcomings in our vertical integration, and we've recognized the risk associated with inadequate supply chains and the availability of essential components at the right place and time. Consequently, we are in the process of reevaluating the composition and structure of our supply chain.”***



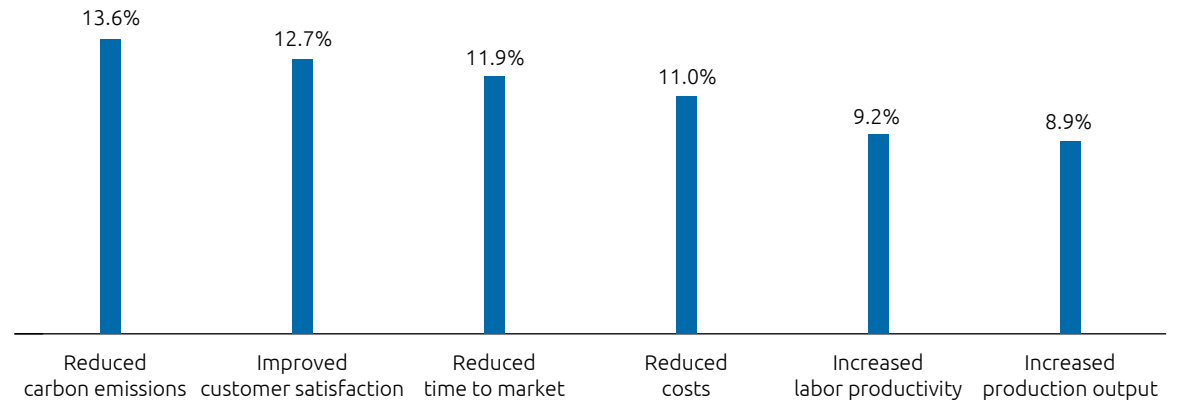
## Organizations anticipate their reindustrialization initiatives bringing not only business advantages but also sustainability gains

A diverse array of benefits encompassing both business and operational advantages, as well as a boost to sustainability credentials, are enticing organizations into reindustrialization. In the next three years, organizations expect a reduction of around 14% on average in their carbon emissions, and a nearly 13% average improvement in customer satisfaction. There is also an expectation that they will be able to reduce time to market by around 12% and costs by around 11% (see Figure 4). In addition to the projected quantitative benefits, 61% of organizations are optimistic about the prospects of reindustrialization providing supply chain resilience in the next three years.

**FIGURE 4.**

Organizations expect reindustrialization to bring a reduction in carbon emissions

### % improvements expected from reindustrialization in the next three years



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

Traditionally, organizations have outsourced supply chains and manufacturing to reduce costs. However, total cost of ownership, including factors such as escalating wages, rising transportation costs, and import duties in conventional offshore manufacturing hubs, is gradually eroding the cost advantage. Recent research conducted by the Reshoring Institute reveals that China, once perceived as a low-cost manufacturing destination, has experienced substantial increases in labor rates, even bringing it into line with some European countries. Reindustrialization involves capital investment in equipment, technology, and skill-building. This shift, however, renders domestic manufacturing more competitive, especially when considering increased wages and salaries of production workers, machine operators, manufacturing supervisors, and managers.<sup>14</sup> Reshoring and nearshoring initiatives trim transportation and logistics costs, addressing shipping, customs, currency fluctuations, and lead times, while reducing indirect overhead costs related to supply chain management.


Moreover, domestic production can simplify and reduce the cost of product quality management and, consequently, customer satisfaction. Additionally, the concept of local availability has the potential to attract new customers. Our research reveals that almost half of executives (46%) acknowledge that customers are willing to pay a premium for locally manufactured or sourced products. Further, a 2023 report revealed that around two-thirds of US respondents regularly sought products that were “made in America.”<sup>15</sup>

Below are examples of reindustrialization initiatives and their associated benefits:

- BishopSound, a UK audio equipment manufacturer, relocated part of its supply chain from China to Northern England, allowing it to offer lower domestic minimum order quantities and supporting quality control.<sup>16</sup>
- Whirlpool Corporation, a US home appliances manufacturer, shifted part of its production capacity from Asia to the US and Mexico, streamlining logistics and improving product availability.<sup>17</sup>

- General Electric (GE) Aerospace, a US aircraft engine manufacturer, invested over \$450 million in manufacturing upgrades in 2023, improving quality control, reducing lead times, and facilitating supplier collaboration.<sup>18</sup>
- Reshoring has enabled Bath & Body Works, a US retail store chain, to make its product fully made in America, additionally reducing production time for a bottle of hand soap from three months to 21 days.<sup>19</sup>
- Rheinmetall, a German automotive and defense equipment manufacturer, is building a new plant in Germany to strengthen national security preparedness. With an investment of €300 million, the factory will create 500 local jobs and will support Germany to be self-sufficient in artillery ammunition.<sup>20</sup>

A supply chain executive from a US-based global automotive organization comments: ***“Our commitment to reindustrialization extends beyond economic growth. It encompasses job security for future employees, the nurturing of local talent, imparting social education, championing environmental benefits, and diligently mitigating all risks – whether they stem from supply chain vulnerabilities, natural disasters, or ecological impact. Reindustrialization is not just about profits; it’s about shaping a sustainable and resilient future for all.”***



*“Reindustrialization is not just about profits; it’s about shaping a sustainable and resilient future for all.”*

**A SUPPLY CHAIN EXECUTIVE**

from a US-based global automotive organization



# 02

## The rise of domestic manufacturing and onshoring



## Organizations perceive domestic manufacturing as undergoing a pivotal strategic transition

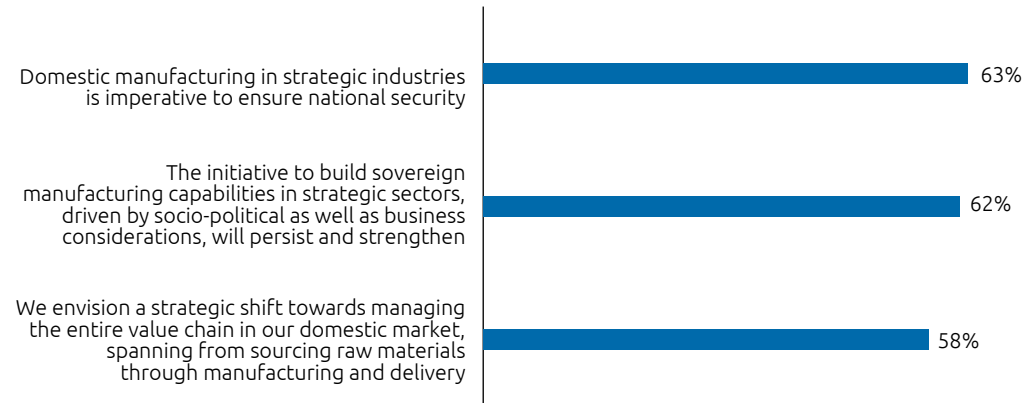
Geopolitical pressures are driving the establishment of sovereign manufacturing capabilities across sectors. Beyond mere economic considerations, the imperative to promote domestic manufacturing in strategic sectors is essential to re-establishing national security. Once a national sector has in place the capability to meet its own essential needs, it effectively minimizes its vulnerabilities during periods of economic uncertainty or geopolitical threat, by diminishing reliance on external sources. Around six in 10 organizations recognize domestic manufacturing as strategically significant and anticipate that significance increasing over time (see Figure 5).

Moreover, organizations are prioritizing oversight of the entire value chain within their domestic markets. This comprehensive approach extends from sourcing raw materials to manufacturing processes and final delivery.

**FIGURE 5.**

The majority of organizations believe in the strategic importance of sovereign manufacturing to ensure national security

### % of organizations who agree with the below statements



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

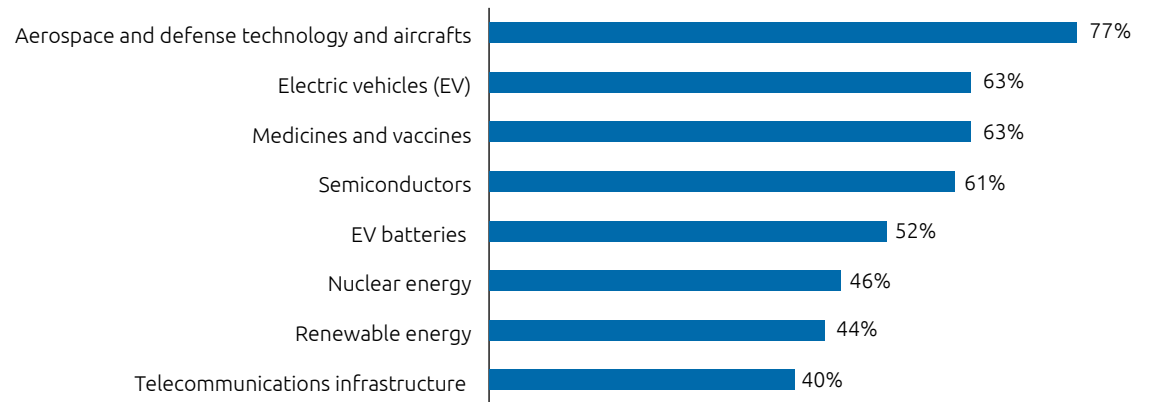
Further, organizations recognize the significance of cultivating sovereign manufacturing capabilities, particularly in crucial areas such as defense, EVs, pharmaceuticals, semiconductors, batteries, and beyond (see Figure 6). Stefan Wilhelm, associate director social impact at Bayer comments: *“The disruption of supply chains poses a significant challenge to the scarcity of essential medications. Given the grave impact on public health, especially during crises, nationalizing pharmaceutical production becomes crucial to ensure a more reliable and resilient supply chain.”*

Government support is pivotal in nurturing domestic manufacturing capabilities. Our research reveals that 49% of organizations acknowledge that government policies and regulations are supportive in aiding their reindustrialization endeavors. This share rises to 62% among organizations in Italy and 70% in the Netherlands.

### FIGURE 6.

Organizations emphasize the establishment of domestic manufacturing capabilities in defense, EVs, pharmaceuticals, and semiconductors

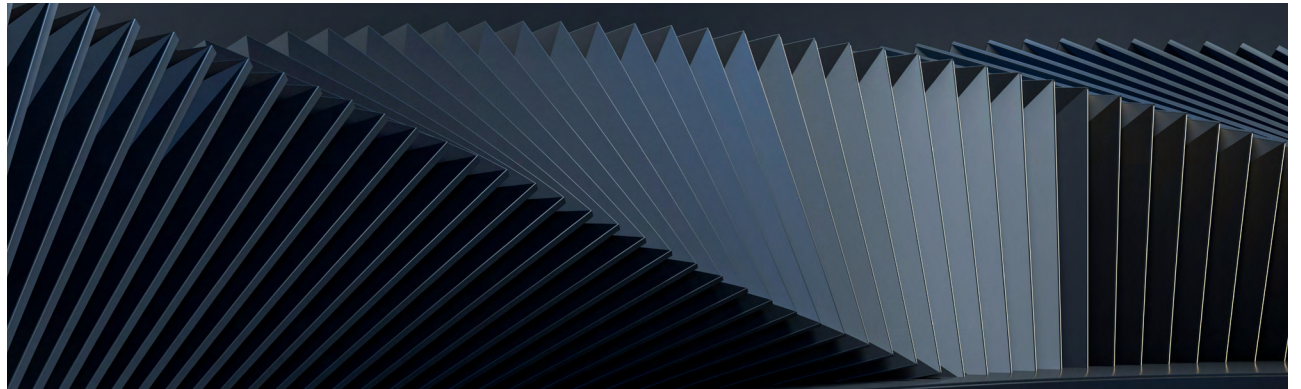
#### % of organizations that believe it is critical to build sovereign manufacturing capabilities in the sectors listed below



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

European and US governments have been actively encouraging and promoting domestic production. For example:

- The European Chips Act (ECA)<sup>21</sup> and the US CHIPS and Science Act<sup>22</sup> encourage localized semiconductor production for national security reasons.
- The Net Zero Industry Act (NZIA, 2023) intends to meet at least 40% of the EU's green technology needs through domestic manufacturing by 2030.<sup>23</sup>
- Similarly, the Critical Raw Materials Act (CRMA) aims to reduce dependency on the importation of critical raw materials by setting a domestic goal of producing at least 10% of the EU's annual extraction demand; 40% for processing; and 15% for recycling by 2030.<sup>24</sup>
- The EU FAB network was established to enhance domestic vaccine manufacturing capacities and comprises vaccine producers in the EU (Belgium, Republic of Ireland, the Netherlands, Spain).<sup>25</sup>
- Germany is preparing to subsidize the chip factories of Intel, Samsung, and Taiwan Semiconductor Manufacturing Company (TSMC) to the tune of €20 billion, as part of the €43 billion provided for in the ECA.<sup>26</sup>
- The US Inflation Reduction Act (IRA) allocates \$60 billion for clean-energy production, including domestic production of solar panels, wind turbines, and batteries.<sup>27</sup>
- The American Nuclear Infrastructure Act of 2021 aims to re-establish US global leadership in nuclear energy and revitalize the domestic nuclear energy supply chain infrastructure.<sup>28</sup>
- For a vehicle to be sold tariff-free in the region, the United States-Mexico-Canada Agreement (USMCA) requires at least 75% of the vehicle's components to be manufactured in North America.<sup>29</sup>
- The Americas Trade and Investment Act (ATIA) seeks to encourage the reshoring and near-shoring of manufacturing supply chains with a heavy footprint in China, such as textiles and apparel.<sup>30</sup>



## Nearly half of all organizations have made investments in reshoring

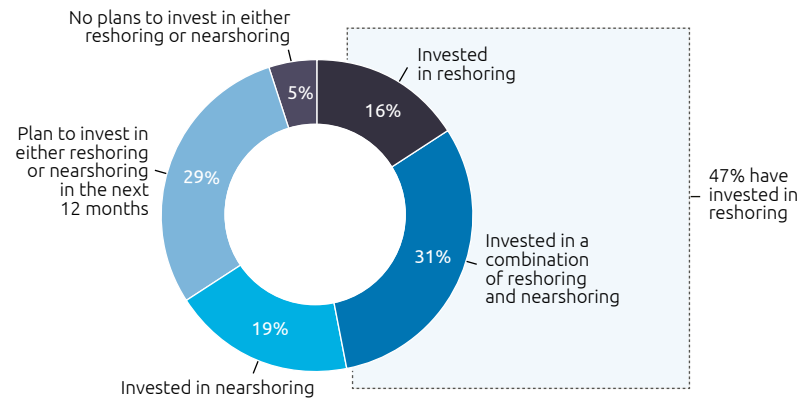
Among all organizations, nearly half (47%) have invested in reshoring. As shown in Figure 7, 16% have specifically invested in reshoring manufacturing back to the domestic market, while 31% have adopted a dual reshoring and nearshoring strategy. Looking ahead, 29% of organizations are poised to invest in either reshoring or nearshoring within the next 12 months, underscoring a continued trend toward strategic localization of operations.

In the 12 months to March 2024, as indicated by data from the US Census Bureau, there has been an 80% surge in manufacturing construction spending in the US.<sup>31</sup> Moreover, our recent research on investment trends uncovered a parallel trend, with 52% of organizations opting for nearshoring. This shift potentially aligns with the imperative to comply with increasingly stringent sustainability and ESG regulations, notably including the EU's Corporate Sustainability Due Diligence Directive (CSDDD) and its newly introduced Circular Economy Action Plan (CEAP), and the US's Uyghur Forced Labor Prevention Act (UFLPA).<sup>32</sup>

**FIGURE 7.**

About half of organizations have invested in reshoring

### % of organizations who have invested in reshoring or nearshoring the majority of their manufacturing/production



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

Note: Reshoring defined as bringing manufacturing/production back to the domestic market; Nearshoring defined as moving manufacturing/production to a nearby or neighboring country.

## Onshore and nearshore manufacturing facilities is expected to increase in the next three years

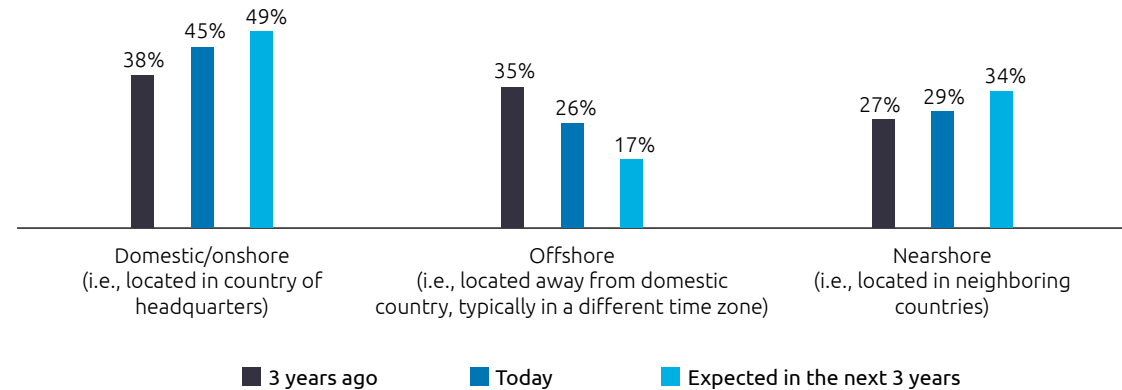
Three years ago, manufacturing/production facilities globally were distributed as follows: 38% onshore, 35% offshore, and 27% nearshore. In the interim, a marked increase in onshore and nearshore operations has been accompanied by a parallel reduction in offshore facilities.

In the coming three years, a further increase is expected in domestic operations, to 49%, and a rise to 34% for nearshore operations. Notably, offshore operations are anticipated to decrease by 18 percentage points compared with the level three years ago (see Figure 8). This evolving trend, consistent across countries and industries, signifies a clear emphasis on drawing operations back to the domestic market.

**FIGURE 8.**

Domestic manufacturing facilities to increase to nearly 50% in the coming three years

### Distribution of manufacturing facilities by location as a % of total production capacity



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.



Furthermore, organizations indicate their intention to engage in “friendshoring,” – locating manufacturing/production in countries that are geopolitical and mercantile allies of the organization’s home country. On average across all organizations in our survey, this strategy is anticipated to encompass 23% of total manufacturing/production in the next three years.

A sustainability executive at a US energy storage and energy-system solutions organization comments: *“We are streamlining and considering the potential closure of manufacturing facilities located outside the US and exploring a blend of nearshoring and reshoring. Regulatory requirements and economic considerations are driving us eventually to bring everything back within the domestic landscape.”* A general manager at a European automotive original equipment manufacturer (OEM) said: *“Nearshoring is a strategic goal for us. In view of political pressures and availability of raw materials, at least 75% of the supply chain needs to be nearshored or moved to domestic markets in the long run.”*<sup>33</sup>

Several organizations have notably prioritized onshoring manufacturing and production as well as new and advanced technologies. Here are some prominent examples from leading organizations in Europe and the US.

Organization	Type of reindustrialization initiative	Initiative details
<b>Intel Corporation</b> (Semiconductor chip manufacturer, US)	Reshoring production/ building new manufacturing facility	Announced a \$20 billion initial investment in 2021 and could invest up to \$100 billion in Ohio, US, to build the world’s largest chip-making complex, contributing to reshoring and strengthening US innovation. <sup>34</sup>
<b>Ford Motor Company</b> (Automobile manufacturer, US) and <b>SK Innovation</b> (Energy and petrochemical company, South Korea)	Reshoring production through partnership	Signed a memorandum of understanding (MoU) for a joint venture, BlueOval SK, with an investment of \$11.4 billion, to manufacture battery cells and arrays in the US. <sup>34</sup>
<b>Micron</b> (Semiconductor chip manufacturer, US)	Upgrading manufacturing facility	Announced a \$40 billion investment in memory chip manufacturing in the US, which will create up to 40,000 new jobs in construction and manufacturing. This is projected to bring the US market share of memory chip production from below 2% to up to 10% over the next decade. <sup>35</sup>
<b>Qualcomm</b> (Semiconductor chip manufacturer, US)	Reshoring production through partnership	With GlobalFoundries, a US semiconductor manufacturer, committed to a \$4.2 billion joint venture to manufacture chips in New York. Qualcomm announced plans to increase semiconductor production in the US by up to 50% over the next five years. <sup>36</sup>

*(Continued on the next page...)*

Organization	Type of reindustrialization initiative	Initiative details
<b>Volvo</b> (Automotive manufacturer, Sweden)	Nearshoring production and upgrading manufacturing facility	Opened a new plant in Slovakia to meet continued demand for EVs and establish good logistical and transport links to the rest of Europe. This is the first new European manufacturing site for Volvo Cars in almost 60 years and is expected to produce over 250,000 cars per year, offering thousands of new jobs in the region. <sup>37</sup>
<b>Infineon Technologies</b> (Semiconductor manufacturer, Germany)	Reshoring production/building new manufacturing facility	Investing €5 billion in a new semiconductor plant in Dresden, Germany. This project will create around 1,000 jobs and address the global demand for semiconductors. The plant is set to begin operations in 2026. <sup>38</sup>
<b>New Balance</b> (Apparel and sportswear manufacturer, US)	Building new manufacturing facility	Expanded its domestic manufacturing of athletic footwear by setting up a new factory in Skowhegan, Maine. Its \$65 million investment will add 200 new jobs and double the factory's production capabilities. <sup>39</sup>
<b>GlobalFoundries</b> (Semiconductor foundry, US)	Building new/upgrading manufacturing facility	In February 2024, received \$1.5 billion in funding through the US CHIPS and Science Act. The company will use the funds to expand its New York facility, modernize its Vermont facility, and build a new fabrication plant. <sup>40</sup>
<b>Sanofi</b> (Pharmaceutical and healthcare company, France)	Building new manufacturing facility	Investing €900 million over five years to create two new Evolutive Vaccine Facilities (EVFs) in Singapore and in France. These EVFs will be fully digitalized and will leverage advanced modular vaccine manufacturing to produce vaccines at scale. <sup>41</sup>

## Total investment in reindustrialization is expected to be sizeable

We asked executives in our survey how much their organizations had invested in reindustrialization initiatives over the past three years and what they expect to invest in the next three years. Total investment includes capital expenditure (CapEx) and operational expenditure (OpEx). Across all organizations headquartered in Europe (including the UK) and the US in our survey, cumulative investment over the next three years stands to increase by 18% to \$3.4 trillion, representing a compound annual growth rate (CAGR) of 5.8% (see Figure 9). Of this total, the projected US share is \$1.4 trillion, and projected European share (including the UK) is \$2 trillion.

**FIGURE 9.**

Total investment in reindustrialization in Europe and the US over the next three years is projected to be \$3.43 trillion



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives; Capgemini Research Institute analysis.

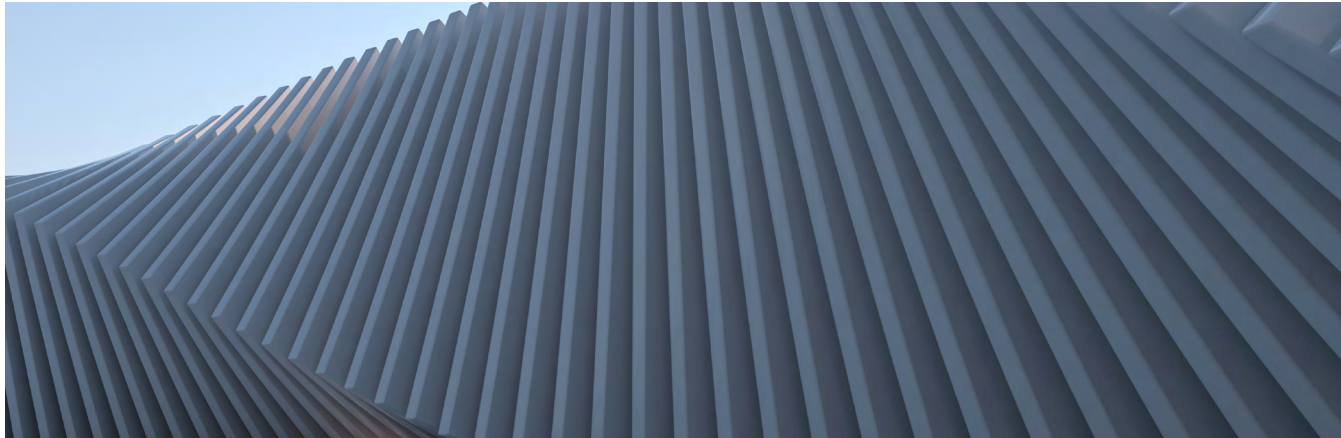
\*Total investment includes CapEx and OpEx and funds for building new and/or upgrading existing manufacturing facilities and supply chain initiatives in or outside domestic market.

With regard to the share of total reindustrialization investment allocated to the domestic market versus that outside the domestic market, on average:

- 54% of the cumulative investment from the past three years was allocated to domestic initiatives, and 46% was directed outside the domestic market.
- In the next three years, the share for domestic initiatives is projected to decrease to 49%, while the share outside the domestic market will rise to 51%.

As organizations progress on their reindustrialization journeys, the complexity of reconfiguring supply chains and localizing manufacturing will become evident. Hurdles such as skill shortages, scarcity of raw materials, and a lack of incentives in the domestic market will likely prompt a rise in short-term investments outside the domestic market, mainly through nearshoring and friendshoring. This approach allows organizations to fund an enhancement of their domestic capabilities and processes, with a strategy to increase local investments in the medium to long term.

Tiago Jorge Candeias, senior director operational planning at Infineon Technologies, a German semiconductor manufacturer comments: *“To enhance supply chain resilience and mitigate geopolitical risks, we are diversifying our production partners outside of Europe. Since this demands substantial CapEx, we are considering partnerships with suppliers renowned for their technology and prioritizing relationships with friendly nations.”*



**\$3.4** trillion

is the projected cumulative investment in reindustrialization over the next three years

## Organizations plan to allocate a larger share of revenue to reindustrialization initiatives over the next three years

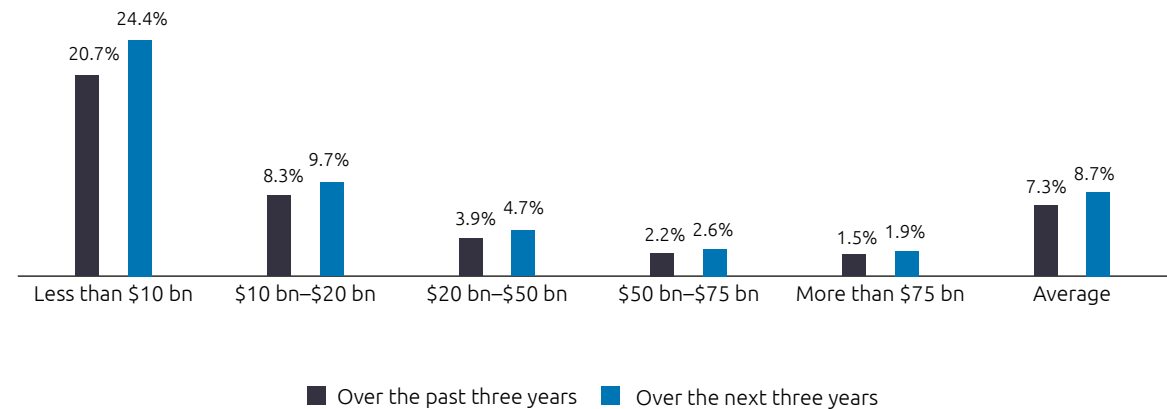
Our research indicates that organizations are actively committing to reindustrialization. Organizational investment, expressed as a percentage of revenue, is set to rise from an annual average of 7.3% in the past three years to 8.7% in the next three, covering both domestic markets and international initiatives (see Figure 10). Organizations in metals and mining, automotive, transportation, industrial machinery, electronics, and life sciences are poised to allocate greater levels of investment (as a percent of total revenue) to their reindustrialization initiatives compared with other industries in the next three years.

NB: This calculation entailed averaging the cumulative investment, covering both CapEx and OpEx, over the past three years and the next three years, as specified by the executives in our survey. The resulting values were subsequently divided by the organizations' average annual revenue.

**FIGURE 10.**

Organizations continue to increase their commitment to reindustrialization initiatives

### Average cumulative investment in reindustrialization initiatives as a % of revenue, by organizational size



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

## To reduce reliance on China, organizations are increasing their investments in emerging economies

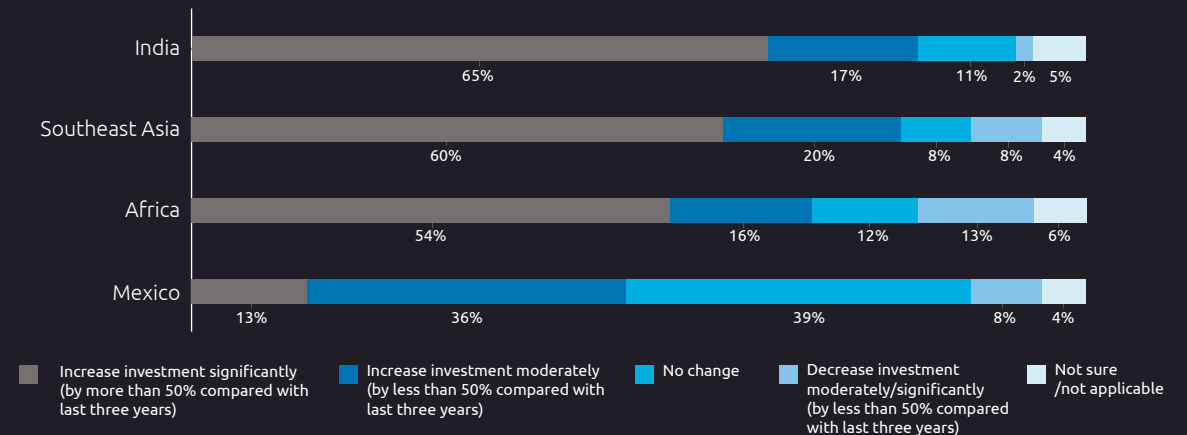
Mounting geopolitical pressures, stringent policies, and changing business dynamics have led companies with supply chains based in China to explore alternatives in other regions. In our research, 58% of executives said that they are de-risking their supply chains by investing in other emerging countries to reduce reliance on China.

To this end, businesses are distributing their critical assets (such as production facilities, warehouses, and logistics centers) across geographies such as India, Southeast Asia, Africa, and Mexico (see Figure 11).

**FIGURE 11.**

Investments in India and Southeast Asia are projected to increase significantly in the next three years

### Expected change in investment in emerging countries in the next three years to reduce reliance on China



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=759 executives from organizations who are de-risking their supply chains by investing in other emerging countries to reduce reliance on China.



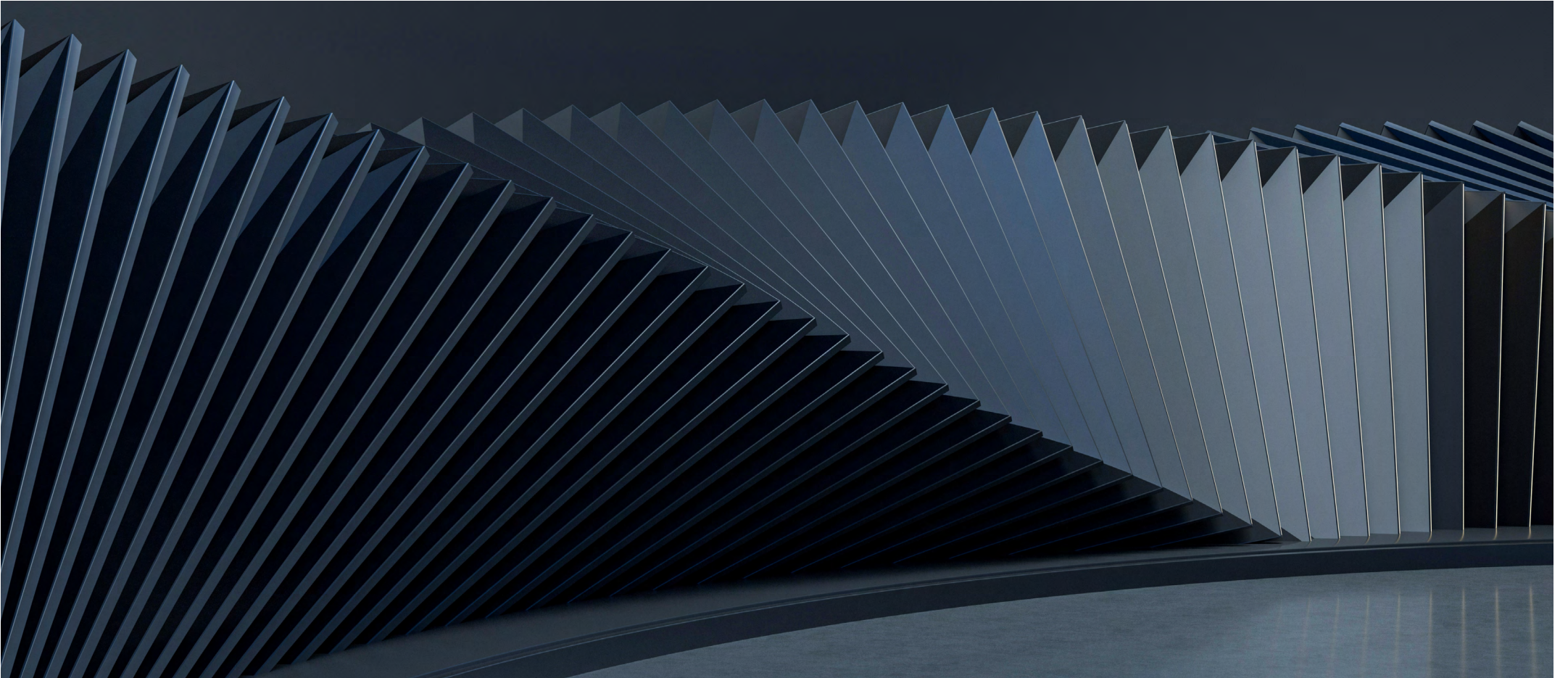
# 58%

of organizations are de-risking their supply chains by investing in other emerging countries to reduce reliance on China

Our research reveals that a significantly higher percentage (74%) of US organizations will increase investment in Mexico compared with 26% of organizations from continental Europe, owing to proximity and the United States-Mexico-Canada Agreement (USMCA).<sup>42</sup>

There are examples of companies seeking to diversify supply chains and reduce reliance on China. Over the past five years, Apple's suppliers have invested \$16 billion to relocate production away from China. Key players in this shift include Foxconn (Taiwanese chip-making giant and one of Apple's largest suppliers), which has moved some of its production capacity to India.<sup>43</sup> Nike has also been relocating production to South-East Asia and Africa over the past few years.<sup>44</sup>

Some companies are opting for the "China Plus One" approach: rather than attempt to eliminate China from their supply chains, they are diversifying by directing a portion of investments to other countries with closer ties to the US, including India, Mexico, and Vietnam.<sup>45</sup> BMW has embraced the China Plus One strategy and has made significant investments in India, establishing local manufacturing facilities. By doing so, the organization is tapping into the country's skilled workforce and favorable business environment. Moreover, this move allows BMW to reduce its reliance on China and the associated risks.<sup>46</sup> In 2022, the annual value of foreign direct investment (FDI) for greenfield projects in China amounted to around \$18 billion compared with \$80 billion in 2012, a considerable decrease.<sup>47</sup>





03

Reindustrialization supports climate goals and decarbonization drives reindustrialization

Our research reveals a two-way relationship between reindustrialization and sustainability. Reindustrialization efforts contribute to climate goals by fostering shorter and more sustainable supply chains, consequently mitigating carbon emissions, particularly Scope 3 emissions. Conversely, decarbonization serves as a catalyst for reindustrialization by spurring investments in climate technologies such as low-carbon or renewable energy like nuclear or wind power as well as in large-scale battery manufacturing facilities such as gigafactories.

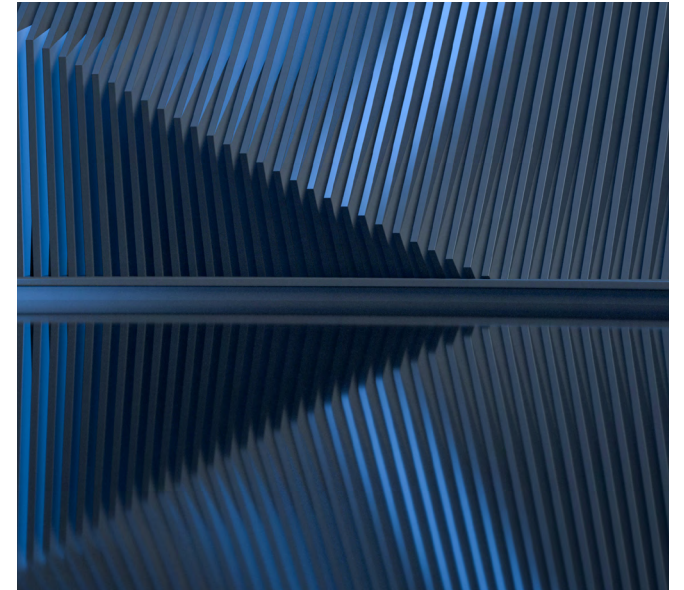
# 55%

of organizations believe that reindustrialization will help achieve their climate goals

## Optimism is strong that reindustrialization will help organizations achieve climate ambitions

During the reindustrialization process, a focus on sustainability ensures that economic growth is balanced by environmental responsibilities. Manufacturing has a tremendous carbon footprint. Global production sectors are responsible for one-fifth of carbon emissions and 54% of the world's energy consumption.<sup>48</sup>

Our research reveals that 56% of organizations believe that reindustrialization will drive a shift toward sustainable manufacturing. A similar percentage of executives (55%) believe that reindustrialization will help their organizations achieve their climate goals, such as achieving net zero GHG



emissions. Forty-nine percent also say that success in their reindustrialization efforts is essential to their organizations' achieving their climate goals (see Figure 12).

According to the Reshoring Initiative, a US advocacy non-profit, domestic supply chains are more transparent than offshore and less polluting, potentially reducing the world's environmental impact by up to 25%, depending on the products involved.<sup>49</sup>

There are notable examples of governments and countries focusing on sustainable reindustrialization. In 2021, French President Emmanuel Macron unveiled a €30 billion plan to "revitalize and reindustrialize" France, which included building a low-carbon plane, a small modular reactor as well as two mega factories for the production of green hydrogen by 2030.<sup>50</sup> German industrial manufacturer Thyssenkrupp Steel and energy company RWE are partnering to supply green electricity to the first direct reduction plant in Duisburg, Germany which will be generated by RWE's offshore wind farms.<sup>51</sup>

Beyond environmental sustainability, it is also paramount to address the urgent demand for enhancing supply and manufacturing capacities in medicines and vaccines. This is critical to address social sustainability aspects, especially health and wellbeing. Prioritizing sustainability within the healthcare sector is vital for securing long-term resilience and promoting equitable access to essential treatments and resources.

## FIGURE 12.

Over half of organizations are optimistic that reindustrialization will help them to meet climate goals

### % of organizations who agree with the below statements



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

## The establishment of gigafactories plays a role in the journey towards sustainability

In our research, we define gigafactories as large-scale manufacturing facilities that manufacture products associated with electrification and decarbonization technologies (e.g., batteries for EVs, solar panels).

Gigafactories are pivotal in optimizing the supply chain by strategically locating closer to demand centers, and facilitating the transition from internal combustion engines (ICEs) to electric vehicles (EV), significantly enhancing sustainability – a key catalyst for reindustrialization. ICEs rely on carbon-based fossil fuels emitting substantial pollutants like carbon dioxide. Electric vehicles offer a cleaner alternative. As economies prioritize sustainable transportation, the production of electric vehicles is rapidly escalating, with gigafactories playing a central role in producing EV batteries at scale.

**FIGURE 13.**

Over half (54%) of automotive, battery manufacturing, and energy organizations are building or have plans to build one or more gigafactories within the next five years

### % of organizations currently building or planning to build one or more gigafactories



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=269 executives from organizations in the automotive, battery manufacturing, and energy industries.

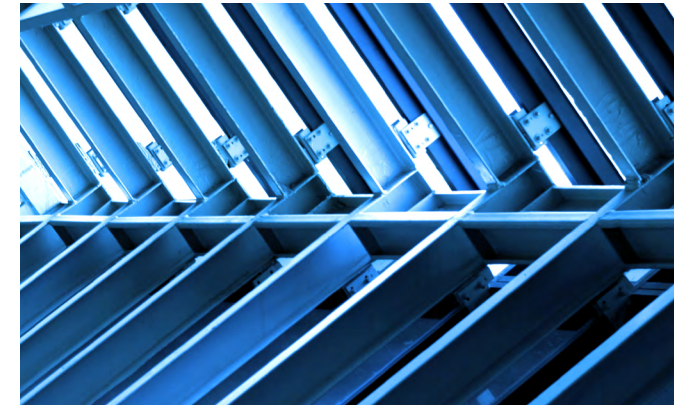


Among the surveyed organizations in automotive, battery manufacturing, and energy industries, reindustrialization strategies feature investments in and establishment of gigafactories. Nearly four in 10 of these organizations (39%) say that setting up gigafactories is critical to achieving net zero targets. Within these industries, over half (54%) are building or have plans to build one or more gigafactories. Specifically, 16% are currently constructing one or more gigafactories, while 38% plan to do so within the next five years (see Figure 13). Establishing local gigafactories not only advances sustainability goals but also mitigates supply

chain dependencies, ensures a consistent battery supply, and fosters sovereign manufacturing capabilities.

Gigafactories are also transforming battery manufacturing, driving innovation, and investing in R&D to improve battery performance, safety, and longevity. Tesla's Gigafactory Texas produced its 20-millionth 4680 battery cell (4680 cells offer higher energy density, and therefore greater energy-storage capacity per unit volume). This efficiency allows EVs to travel longer distances on a single charge, minimizing energy consumption.<sup>52</sup>

Increasingly, organizations are opting for collaborative approaches when it comes to establishing gigafactories, where they can pool resources, share expertise, and create synergies. Of the surveyed organizations in automotive, battery manufacturing, and energy industries who are currently building or planning to build one or more gigafactories, 93% are establishing all or most gigafactory(s) through joint ventures/partnerships with other organizations.



## The US is the top intended location for gigafactories, followed by continental Europe

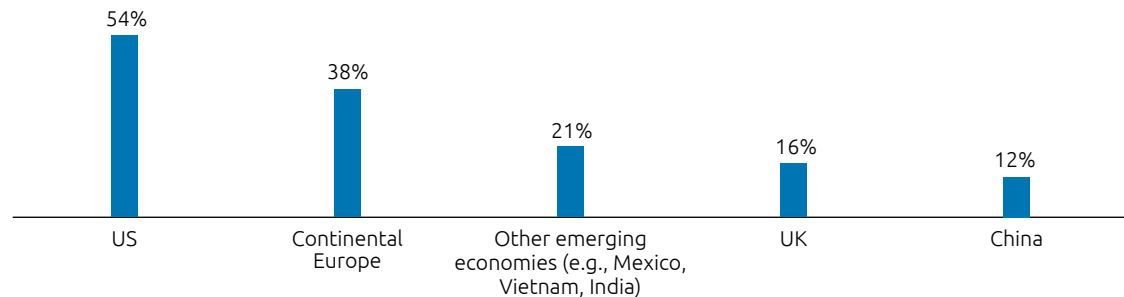
Moreover, our research reveals that among the European and US organizations in our survey from automotive, battery manufacturing, and energy industries, the US stands out as a top location for gigafactories for the automotive, battery manufacturing, and energy industries (54% stated this). Thirty-eight percent stated continental Europe at 38% (see Figure 14).

Even before the Inflation Reduction Act passed in the US in August 2022, there was interest in battery manufacturing. In 2021, US automakers announced the investment of \$36 billion in building facilities dedicated to manufacturing EVs and batteries. In the first five months of 2022, automakers announced \$24 billion in EV-related investments, almost double the value announced in the same period of the preceding year.<sup>53</sup> The passage of the Inflation Reduction Act (IRA) capitalized on this momentum and accelerated transportation electrification in the US.

**FIGURE 14.**

54% of organizations plan to set up a gigafactory in the US

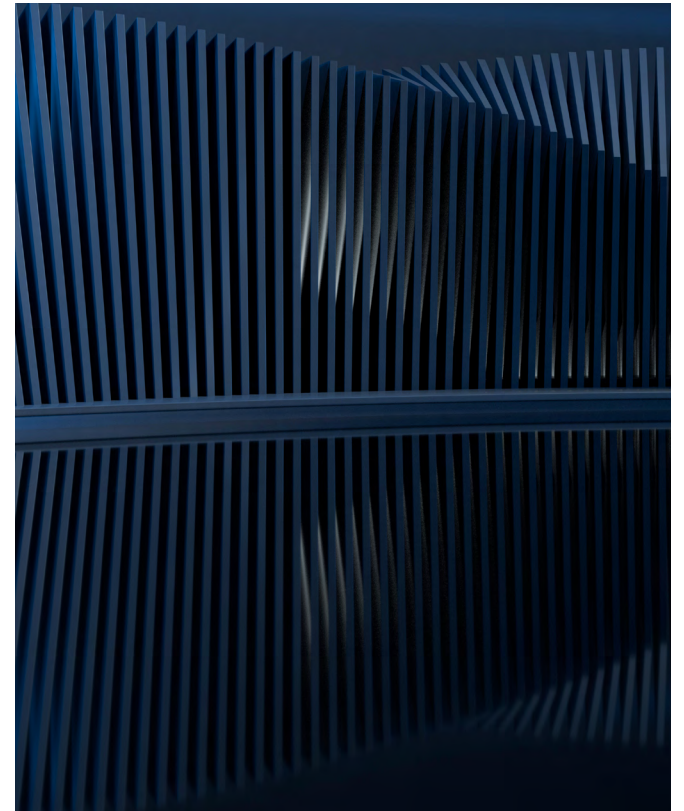
**% of organization's actual or intended location for building one or more gigafactory**



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=145 executives from organizations in the automotive, battery manufacturing, and energy industries, who are either currently building or planning to build one or more gigafactories.

### Factors that make the US a favored location for gigafactories include:

- **Tax credits and incentives from the US IRA:**
  - **Investment tax credits:** The Advanced Manufacturing Production Tax Credit (AMPTC) and Advanced Energy Project Investment Tax Credit (AEPITC) have reduced the cost of manufacturing high-performance batteries 30% on average.<sup>54</sup> This has resulted in more gigafactory announcements in the US. US gigafactory capacity in the pipeline through 2030 has increased from around 700 GWh in July 2022 (prior to the IRA) to just over 1.2 terawatt-hours (TWh) as of July 2023.<sup>55</sup>
  - **Consumer tax credits:** Credits vary based on the battery capacity of the vehicle and gradually phase out as manufacturers reach a predetermined sales volume. Up to \$7,500 in tax credit for EVs with a battery capacity of at least 16 kWh. (The credit amount decreases with lower battery capacity).<sup>56</sup>
- **State-level incentives, preferential loans, and other forms of support:**
  - Many US states offer rebates and tax deductions to make the transition to electric vehicles more attractive such as direct cash rebates upon purchasing an EV, waiving of sales tax or registration fees for EVs, allowing EVs to use high-occupancy vehicle (HOV) lanes, even with a single occupant, and discounts on monthly electricity bills. Also, rebates for the installation of level 2 home charging stations.<sup>57</sup>
- **Access to mineral resources:** The International Energy Agency (IEA) predicts a substantial increase in global mineral demand by 2040, driven by EVs and battery storage. North America holds a significant advantage in this industry owing to its abundant mineral resources; Canada is a top producer of essential minerals. The prospect of building North American supply chains from mineral exploration to production for these elements presents an important opportunity for job creation and economic growth while ensuring responsible mining practices and boosting battery production.<sup>58</sup>



### Notable examples of companies that have set up/or are setting up a gigafactory in the US:

- Tesla's Gigafactory Nevada, which produces batteries and Tesla Semi vehicles; Gigafactory New York, which focuses on solar roof tiles and superchargers; and Gigafactory Texas, which opened in 2022, and serves as Tesla's headquarters and assembly location.<sup>59</sup>
- FREYR Battery, a Norwegian organization specializing in clean, next-generation battery-cell production, is setting up a gigafactory in Georgia, US, for its multi-phase Giga America clean-battery manufacturing project. The organization is investing around \$1.7 billion in this initial phase.<sup>60</sup>
- General Motors and LG Energy Solution have formed a joint venture called Ultium Cells LLC. They are investing over \$2.3 billion to construct a battery-cell manufacturing gigafactory in Tennessee, US.<sup>61</sup>
- In October 2023, Toyota announced an \$8 billion investment that will create around 3,000 jobs at its Toyota Battery Manufacturing North Carolina (TBMNC) gigafactory. This brings total investment in TBMNC to around \$13.9 billion and job creation to more than 5,000.<sup>62</sup>

### Europe has also witnessed a gigafactory surge. The incentives driving this trend include:

- European gigafactory projects benefit from initiatives such as the EU's Innovation Fund, which aims to accelerate the development of low-carbon technologies, including those related to energy storage and electric mobility. In addition, the Important Projects of Common European Interests (IPCEI) scheme supports innovative projects, including gigafactories, which contribute to European industrial competitiveness.<sup>63,64</sup>
- The EU announced €4 billion in state aid investments to support the establishment of new factories producing electric batteries for cars, heat pumps, and solar panels.<sup>65</sup>

# 54%

of automotive, battery manufacturing, and energy organizations are building or have plans to build one or more gigafactories within the next five years

### Below are notable examples of companies that have or plan to set up one or more gigafactories in Europe:

- Northvolt AB, a Swedish battery developer and manufacturer, specializing in lithium-ion technology for EVs, has an active gigafactory in Northern Sweden. It began shipments of batteries in May 2021.<sup>66</sup> The German government approved state aid amounting to €902 million to assist Northvolt in building a gigafactory for EV batteries in Heide.<sup>67</sup>
- Eurocell, the British-Korean battery organization, is building its first European gigafactory in the Netherlands. This factory will supply battery cells across the continent. The organization plans to construct the gigafactory in two phases with planned initial investment of \$800 million, which could rise to \$2 billion by 2028.<sup>68</sup>





04

**Digital technologies are a  
critical enabler of  
reindustrialization**

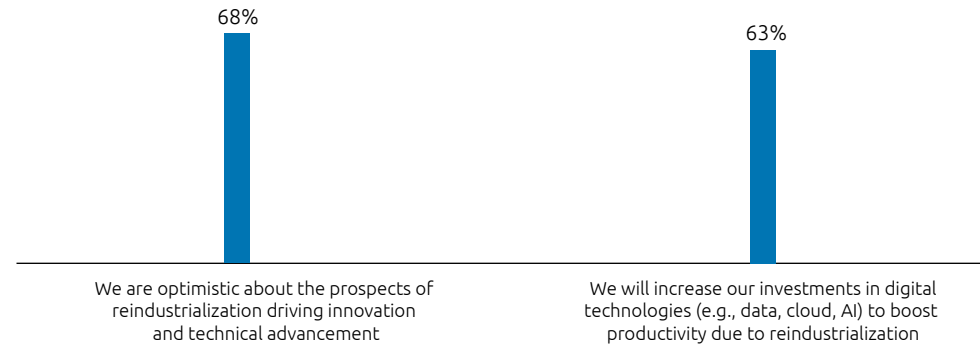
## There is a commitment to increasing investments in digital technologies to support reindustrialization

Organizations are committed to driving reindustrialization through investment in digital. Our research reveals a prevailing optimism, with 68% of executives expressing confidence in reindustrialization as a driver of innovation and technical advancement. This positive outlook underscores a shared belief that integrating digital technologies into reindustrialization will also boost productivity (63%) (see Figure 15).

**FIGURE 15.**

Organizations will amplify investments in digital technologies to bolster reindustrialization

### % of organizations who agree with the below statements



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.



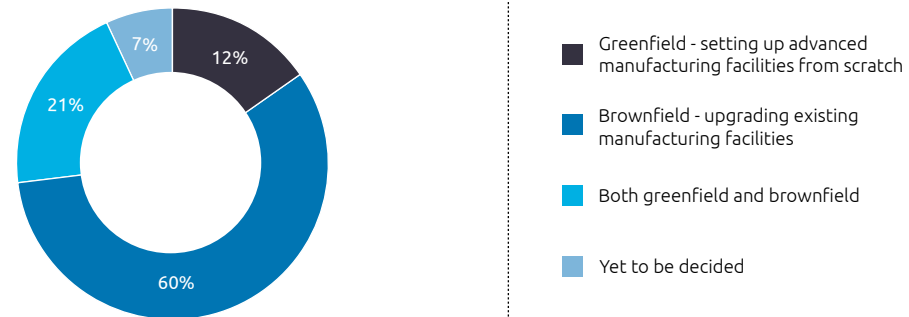
## Enhancing capabilities of existing manufacturing facilities is the primary focus

The immediate focus of industrial development seems to lie in augmenting the capabilities of current manufacturing facilities. A significant 60% of executives express a preference for the “brownfield approach,” which involves upgrading existing manufacturing facilities (see Figure 16). This strategy is indicative of the effort to harness digital technologies to optimize the efficiency of established infrastructure, boosting production.

**FIGURE 16.**

Organizations focus on upgrading manufacturing facilities as part of their reindustrialization efforts

### % of organizations specifying their strategy for smart and advanced manufacturing facilities



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

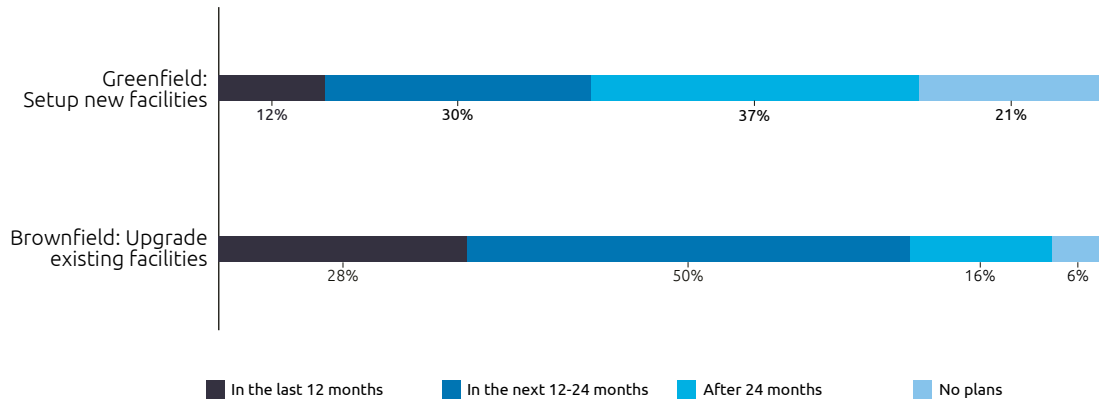
Among organizations deploying a brownfield strategy, 28% had upgraded their manufacturing facilities in the preceding year, with half gearing up to commence similar initiatives within the next year or two. Among organizations employing a greenfield strategy for establishing new factories, 12% have already built one within the last year, and 30% will embark on similar endeavors in the upcoming year or two (see Figure 17). German pharmaceutical and biotechnology company Bayer is investing €130 million in a new highly digitalized and highly automated manufacturing facility in Berlin. The facility serves critical manufacturing areas with high medical demand, such as products in the field of ophthalmology, and strengthens innovation in the region.<sup>69</sup>

This approach reflects a concerted effort to harness and enhance existing infrastructure through the integration of digital technologies, with the aim of amplifying efficiency, elevating production levels, and potentially establishing innovative smart manufacturing facilities.

**FIGURE 17.**

Nearly 30% of organizations have upgraded their existing manufacturing facilities within the past year

**% of organizations specifying their implementation plans for building and upgrading smart and advanced manufacturing facilities**



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,057 executives from organizations with a brownfield strategy, N=423 executives from organizations with a greenfield strategy.

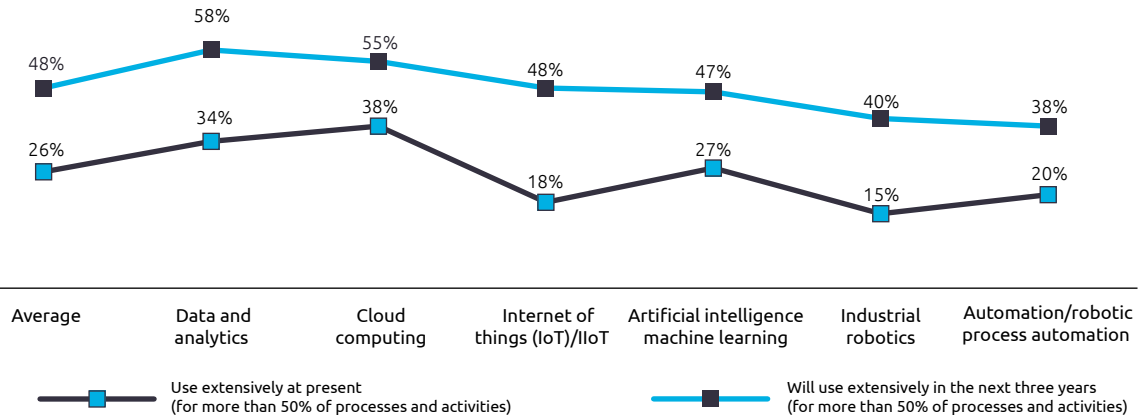
## Organizations will harness technologies such as AI, machine learning (ML), automation, and data analytics in their reindustrialization efforts

At present, nearly one-quarter of organizations surveyed use technologies extensively for more than half of processes and activities in their reindustrialization processes. This is expected to increase to almost 50% of organizations in the next three years (see Figure 18).

**FIGURE 18.**

Extensive use of technologies is expected to surge in the next three years

### % of organizations who use (or plan to use) technologies extensively for reindustrialization



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

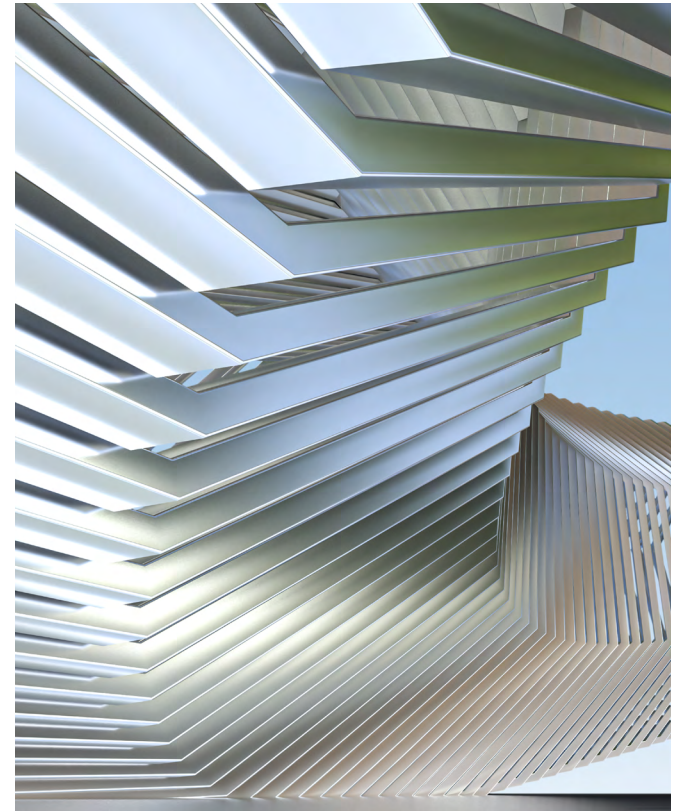
This reflects a trajectory toward a technologically empowered industrial landscape. The integration of AI/ML promises to enhance decision-making processes; automation and robotics are expected to streamline operations and reduce labor costs; and cloud and data analytics will play a pivotal role in extracting meaningful insights at speed. For example:

- Tesla has applied AI robotics to automate assembly operations. The company equips robotic arms with computer vision technology and ML, which has improved efficiency and reduced the number of errors.<sup>70</sup>

# 68%

of organizations believe reindustrialization will drive innovation and technical advancement

- Siemens is contributing to the acceleration of the additive manufacturing (AM) industry in the US supporting the local AM machine builder community, providing motion control, automation hardware, digitization software, and technology expertise. From its Charlotte Advanced Technology Collaboration Hub (CATCH), Siemens will offer an ecosystem platform for machine builders, machine users, and additive design engineers.<sup>71</sup>
- Procter & Gamble leverages collaborative robots or “cobots” to streamline their manufacturing processes. These versatile robots handle diverse tasks like assembling and packaging products while upholding stringent hygiene standards necessary in the industry.<sup>72</sup>
- BMW employs AI-driven automated guided vehicles (AGVs) in its manufacturing warehouses to streamline intralogistics operations. These AGVs follow predetermined paths, automating the transportation of supplies and finished products, thereby enhancing inventory management and visibility.<sup>73</sup>
- General Electric (GE) has incorporated AI algorithms into its manufacturing processes to analyze extensive data from sensors and historical records. This enables GE to identify trends, predict equipment issues, and enhance processes, leading to reduced downtime, improved equipment effectiveness, and increased manufacturing efficiency.<sup>74</sup>



Tiago Jorge Candeias from Infineon Technologies adds:

*“Currently, the majority of new factories are fully automated, with systems handling all transactional events autonomously. This generates vast amounts of data, and consequently, we are making significant investments in data analytics and AI to optimize workflows, processes, and tasks.”*

Moreover, in response to the growing threat of cyberattack, 60% of organizations are significantly ramping up their investments in cybersecurity solutions. The US government, for example, plans to invest billions in the domestic manufacturing of cargo cranes to counter fears that the prevalent use of Chinese-built cranes that feature advanced software at many US ports poses a national security risk.<sup>75</sup>



***“Currently, the majority of new factories are fully automated, with systems handling all transactional events autonomously. This generates vast amounts of data, and consequently, we are making significant investments in data analytics and AI to optimize workflows, processes, and tasks.”***

**TIAGO JORGE CANDEIAS**

Infineon Technologies

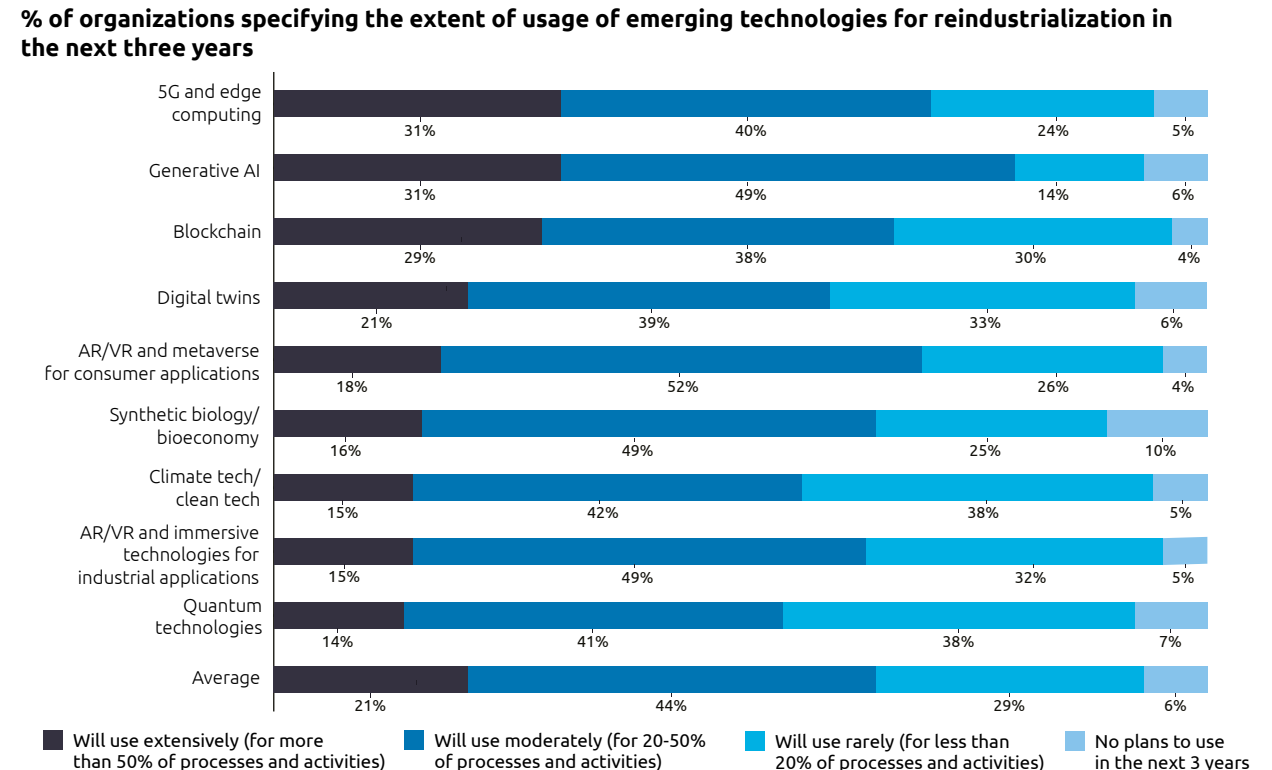
## Use of emerging technologies such as 5G/edge, generative AI, and digital twins is poised for a healthy upswing in the coming three years

Our research suggests that organizations will embrace emerging technologies to propel their reindustrialization initiatives forward. Twenty-one percent of organizations have strategic plans extensively to incorporate cutting-edge technologies such as 5G, edge computing, generative AI, blockchain, and digital twins into their daily operations and processes. Moreover, an additional 44% intend to adopt these technologies moderately as part of their reindustrialization endeavors (see Figure 19).

Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

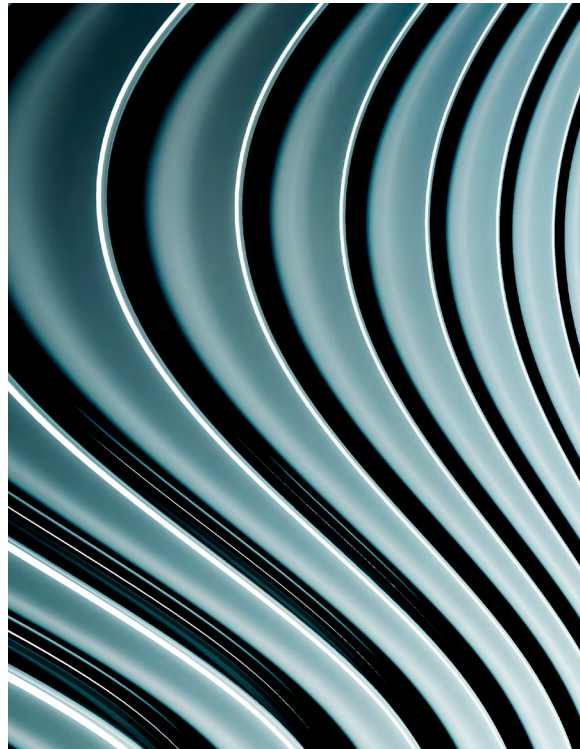
**FIGURE 19.**

Organizations plan gradually to adopt emerging technologies for reindustrialization in the next three years



These technologies are employed in various ways to enhance manufacturing:

- Siemens and Microsoft joined forces to integrate ML with industrial edge technology, facilitating the analysis of images and videos to create AI vision models for use on the shop floor. This showcases the potential applications of generative AI in manufacturing settings.<sup>76</sup>
- Mercedes-Benz is creating digital twins to design and operate its manufacturing and assembly facilities. The digital twin helps ensure that assembly lines can be retooled, configured, and optimized in physically precise simulations.<sup>77</sup> Additionally, Mercedes-Benz can synchronize plant locations anywhere in the world with its in-house MO360 Data Platform.



## Organizations are investing in technologies to enhance sustainability within their reindustrialization initiatives

Organizations recognize the vital connection between digitalization and sustainability in their reindustrialization endeavors. Close to 60% affirm that the success of their reindustrialization hinges on both enhanced digitalization and sustainability within their industries. Moreover, with a clear understanding of technology's pivotal role in addressing climate change, 62% of organizations are investing in digital technologies for reindustrialization in order to advance their sustainability objectives (see Figure 20). Our recent research on the eco-digital era™ shows that, by scaling up digital adoption, organizations have the potential to achieve a reduction of over 30% in GHG emissions over the next five years.<sup>78</sup>



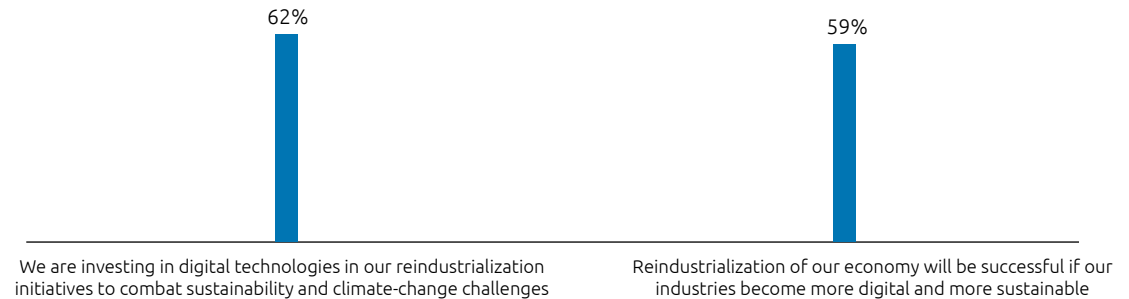
Examples below illustrate how digital technologies can enhance the sustainable reindustrialization:

- At its LeVaudreuil site in France, Schneider Electric uses digital twins of its plant installations. The digital twin is helping Schneider reach its net zero goal by 2025 by supporting greater efficiency and cost savings. For example, Schneider has reduced material waste 17%.<sup>79</sup>
- BMW utilizes AI to minimize waste in the production and use of batteries. Smart manufacturing processes guided by AI algorithms help reduce material wastage, making the production of batteries more environmentally friendly.<sup>80</sup>

### FIGURE 20.

A majority of organizations are investing in digital technologies for reindustrialization to combat climate change

#### % of organizations who agree to the below statements



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

05

**Digital technologies are a critical enabler of reindustrialization**

## Reindustrialization is expected to create jobs and raise wages in the domestic market

Sixty-four percent of organizations in our survey expect reindustrialization to increase wages for their domestic workforce and 60% expect a boost in manufacturing jobs. Around half expect an increase in employment in their industries (see Figure 21).

Reshoring and foreign direct investment (FDI) are continuing to bring jobs to the US, with 364,000 jobs announced in 2022, up from 238,000 in 2021. The total number of jobs announced since 2010 is now approaching 1.6 million. New investments in US manufacturing by domestic and foreign companies surged after the US IRA and Chips and Science Act were passed.<sup>81</sup>

**FIGURE 21.**

A majority of organizations believe reindustrialization will drive wages up and increase manufacturing employment

### % of organizations who agree with the below statements



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

## Organizations recognize that the shift to reindustrialization necessitates a highly skilled workforce

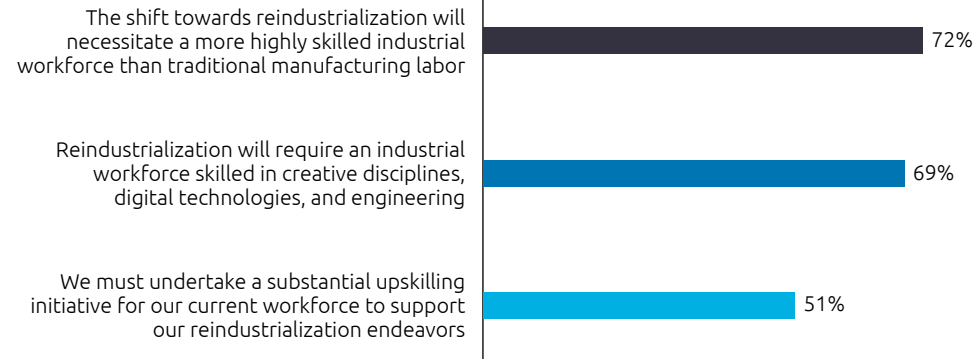
Our research reveals that the majority (72%) of organizations believe that reindustrialization will create demand for a more skilled manufacturing workforce. About half (51%) will need to upskill their current workforce to meet demand (see Figure 22).

Reindustrialization will require significant upskilling programs especially given the aging population of the traditional manufacturing workforce. Nearly half of organizations (48%) believe that they need to engage and prepare the younger generation for effective contributions to their ongoing reindustrialization due to the aging workforce. However, attracting young talent to the manufacturing industry poses

**FIGURE 22.**

Most organizations agree that reindustrialization will require a more highly skilled manufacturing workforce

### % of organizations who agree to the below statements



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.



a challenge. Angel Fraile, corporate social responsibility director at Endesa, a Spanish utility company, affirms:

*“Attracting new generations to pursue manufacturing jobs is difficult as there is a lack of enthusiasm for such roles. Making these jobs appealing to young potential workers is critical.”* Similarly, an operations executive from a global automotive organization in the UK adds: *“We face challenges in sparking enthusiasm among young people for careers in engineering and manufacturing. Extensive efforts are underway with colleges and universities to reignite excitement. Young talent have more of an appetite for these roles in India and other Asian countries.”*

Our research indicates that reindustrialization initiatives are expected to lead to an average 13.4% increase in domestic labor costs over the next three years. However, some of these costs could be offset by factors such as wage inflation in traditionally outsourced nations and the adoption of digital technologies, including automation, as discussed in the previous section.



*“There is a shortage of new talent in the automotive industry. We need skills such as molecular chemists and systems engineers to develop the next generation of EVs, batteries, and mobility experiences. It is important for organizations to foster the development of this kind of talent.”*

**LAURENCE MONTANARI**

Vice president transportation and mobility at  
Dassault Systèmes

## The manufacturing workforce's skill mix is anticipated to shift towards advanced digital skills over the next three years

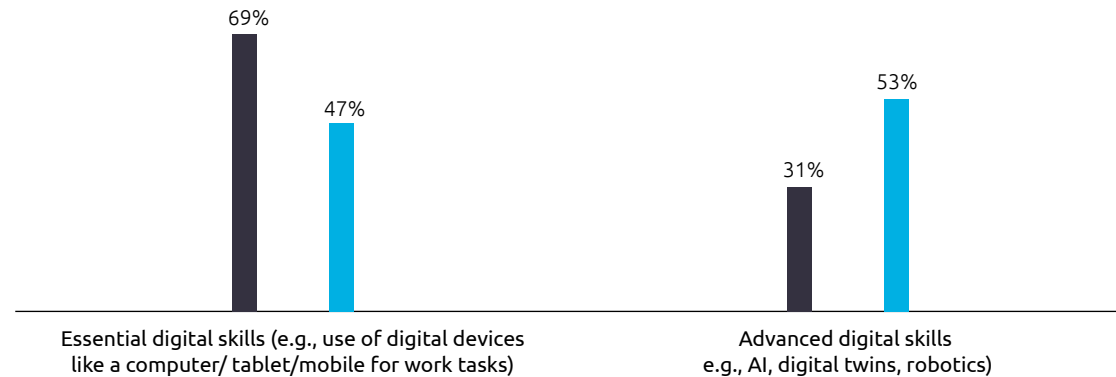
Most (64%) organizations believe reindustrialization efforts will change the skills mix of their manufacturing workforce. The share of the workforce with advanced digital skills is projected to increase from 31% today to 53% in the next three years (see Figure 23).

In March 2024, ABB, a Swiss automation technology provider, opened its \$20 million expansion of its US robotics headquarters increasing the plant's manufacturing capacity by 30%. Funds were also invested towards doubling the capacity of its training facility. It can now train 5,000 of its customers' employees annually on the latest robotics technologies.<sup>82</sup>

**FIGURE 23.**

The share of the manufacturing workforce with advanced digital skills is anticipated to increase from 31% to 53% in the next three years

### Average share of digital skills in manufacturing workforce, current vs three years' time



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.

\*Question asked was: Please estimate the share of your manufacturing workforce today that have the below skills and the share you anticipate needing the skills in the next three years.



Most organizations (77%) cited supply chain management as the skill most important to reindustrialization. Hard skills related to data analytics, digital twins, AI/ML, cloud computing, and robotics follow in terms of significance for reindustrialization efforts (see Figure 24).

Laurence Montanari, vice president transportation and mobility at Dassault Systèmes, a French company specializing in digital twins, adds: *“There is a shortage of new talent in the automotive industry. We need skills such as molecular chemists and systems engineers to develop the next generation of EVs, batteries, and mobility experiences. It is important for organizations to foster the development of this kind of talent.”* A supply chain executive from a US-based automotive organization comments: *“To bridge the skills gap within the organization, we are enhancing the capabilities of existing employees, fostering education in EV manufacturing, collaborating with universities, and advocating for science, technology, engineering, and mathematics (STEM) education.”*

In addition, there are soft skills that the manufacturing workforce must tackle. According to a report from the World Economic Forum, by 2025, 50% of all employees will require reskilling owing to the adoption of new technologies. Reskilling can take up to six months, depending on the industry and required skill set. Critical thinking and problem-solving will be the skills most in demand, along with self-management skills such as active learning and resilience.<sup>83</sup>

## FIGURE 24.

Supply chain management is the top critical skill for reindustrialization efforts

### % of organizations who say the skill is critical to reindustrialization efforts (top 10 skills)



Source: Capgemini Research Institute, Reindustrialization executive survey, February 2024, N=1,300 executives.



06

## How to accelerate reindustrialization

With insights based on our research, our discussions with industry experts, and our experience of driving intelligent industry transformations at global organizations, we recommended the following key steps for organizations to fully harness the opportunities of reindustrialization.

1	Undertake a strategic assessment to formulate an effective reindustrialization strategy
2	Prioritize environmental sustainability in the reindustrialization strategy
3	Invest in the skills development of the manufacturing workforce
4	Incorporate advanced manufacturing technologies into current and planned facilities
5	Foster collaborative initiatives with like-minded partners to enhance domestic industrial capabilities
6	Proactively engage with policymakers and regulators to anticipate and react quickly to dynamic legislation and incentives

# 1. Undertake a strategic assessment to formulate an effective reindustrialization strategy

Our research supports the idea that there is an ongoing shift in the traditional “rules” regarding geopolitics and globalization. More executives recognize the impact of geopolitics on their business and acknowledge globalization need not be the only path to growth. Indeed, our research reveals reindustrialization and a focus on domestic manufacturing can have significant business and sustainability benefits. Given how complex and potentially volatile reindustrialization is, organizations must begin their

journeys with a geopolitical evaluation to determine how politics and geography will influence their reindustrialization strategy and initiatives. Over half (52%) of organizations cite geopolitics as a challenge in formulating reindustrialization strategies. For example, it is crucial for organizations to consider market access and political relationships between countries, country stability and security, and trade policies and tariffs.

In today's dynamic business landscape, organizations should also conduct a meticulous bottom-up assessment of their supply chains and manufacturing footprints, creating a well-defined business case for reindustrialization. This involves a comprehensive evaluation of critical factors influencing operational effectiveness, including:

- Potential cost efficiencies
- Productivity gains
- Day-to-day impact on production
- Alignment with sustainability goals.

In this research, we focus on the positives of moving manufacturing and production closer to the domestic market, from sustainability and geopolitical to cost and resilience benefits. However, every organization should fashion its own approach to reindustrialization. For example, an organization with a string of operating factories in place could consider modernizing them with advanced technologies to strengthen its domestic operations. Equally, they might bring external operations closer to home or decide to maintain their offshore positions owing to cost constraints. The “why” of industrialization should be clear to all organizations, but the “how” will be unique to each particular organization.

A key challenge organizations must address is the need to launch reshoring initiatives while maintaining existing supply chains and supporting their transformation. All of this must be considered without negatively impacting products and customers. A manufacturing and supply chain executive from a prominent European chemical organization remarks: *“As an organization, we face the delicate task of serving our existing customers while simultaneously driving the reindustrialization journey. Managing these dual priorities with the same resources poses a significant challenge.”*

A strategy executive from a leading European industrial manufacturer says: *“Reindustrialization is indeed a multifaceted endeavor. When we consider aspects like the supply chain, industrialization, and the entire value chain, the complexity becomes evident. The challenge lies in sourcing qualified individuals, which is time-consuming. Additionally, configuring local SAP and ERP systems can be quite intricate. Key priorities include swift decision-making, assembling efficient project teams, and securing adequate investment, [which is] essential for allocating resources and funding.”*

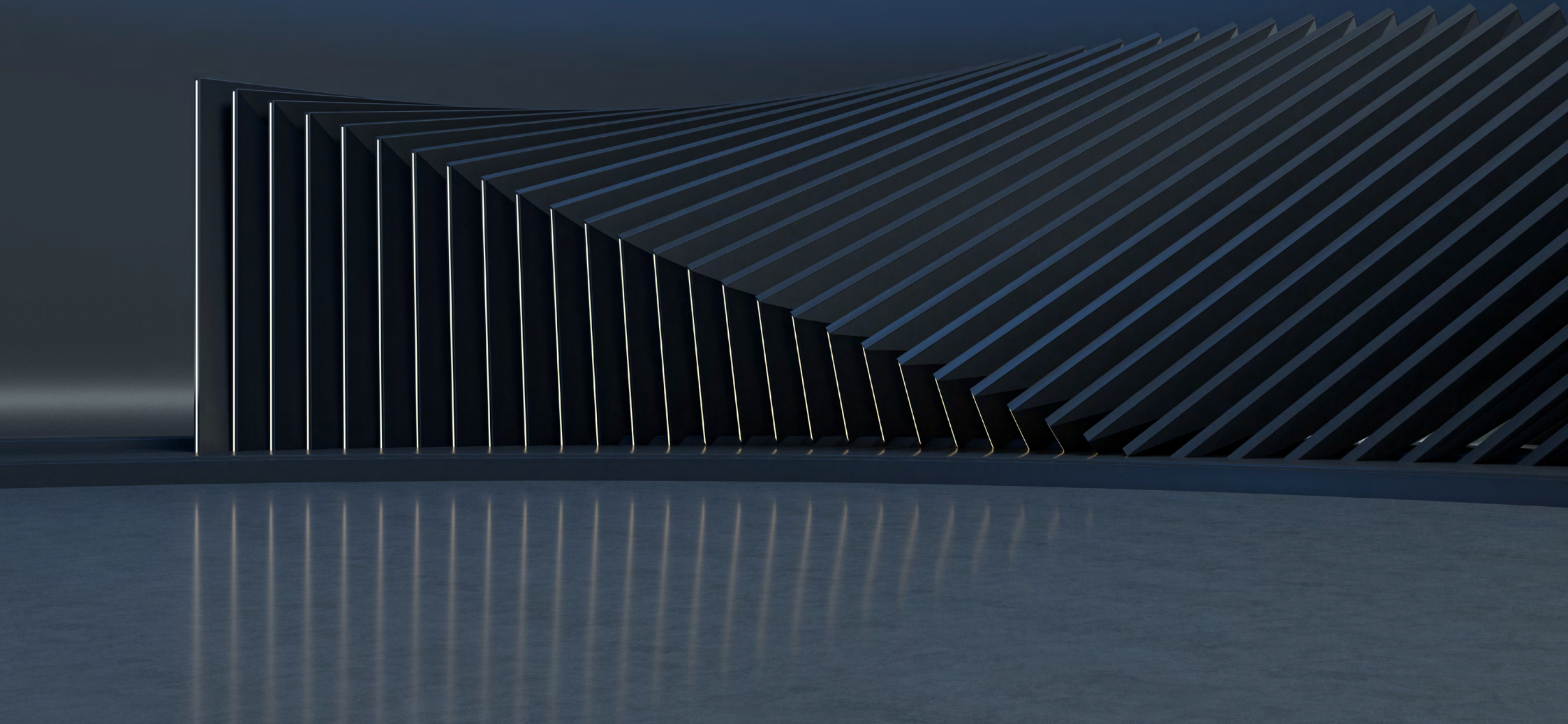
Evaluating the business value of various activities at a granular level, based on the needs of different customers, products, and distribution channels is also advisable. Factors such as supply chain resilience, market proximity, and workforce capabilities should inform this tailored approach.

A chief executive from a prominent US technology organization highlights a nuanced approach for their optimal operational outcomes: *“In our manufacturing process, there are assembly factories where key components are still imported from Asian countries, and then the final assembly takes place in newer facilities in Mexico via nearshoring. This approach allows for efficient production and distribution of goods.”*

It is crucial not to overlook the development of domestic capabilities in pivotal categories such as defense, EVs, pharmaceuticals, semiconductors, and batteries (as previously discussed in the report). This aspect should be actively incorporated into the overall long-term strategy to reduce dependencies on foreign markets.

Moreover, a comprehensive assessment of all these factors is essential, as 65% of organizations in our research identify capital investment challenges as a key hurdle in reindustrialization. This strategic evaluation should go beyond immediate gains, to foster a forward-looking perspective to ensure sustainable and resilient operations in the evolving industrial landscape.





## 2. Prioritize environmental sustainability in the reindustrialization strategy

Organizations face mounting pressure to minimize their carbon footprint and bolster environmental stewardship. Given the significant carbon footprint of production, there is an urgent need for manufacturing companies to implement decarbonization. Moreover, domestic supply chains are more transparent and less polluting than offshore ones. Global value chains frequently result in overproduction and waste.

Consequently, it is imperative for organizations to prioritize sustainability in their reindustrialization strategies. By reshoring or nearshoring, reindustrialization presents an opportunity to significantly reduce GHG emissions in the following impactful ways:

- Firstly, this approach minimizes long-distance transportation, reducing emissions, especially Scope 3 emissions from extended supply chains, and it also helps to protect biodiversity and raw material availability.
- Secondly, it provides organizations with greater control over their operations and production processes. Bringing supply chains closer to the domestic market enhances oversight, supporting more sustainable practices and adoption of circular models.
- Thirdly, organizations can transition away from carbon-intensive fossil fuels by adopting low/no carbon energy sources like biomass, heat pumps, and electric heating. Switching to renewable energy sources presents another impactful avenue for reducing carbon emissions.

Organizations can also monitor existing production processes and advocate for the use of sustainable materials and circular practices. By embracing practices like recycling, remanufacturing, repair, and refurbishment, companies can lessen reliance on scarce resources and component suppliers, fostering agile and resilient supply chains. Furthermore, embracing circular business models opens the door to the development of new value chains, aligning with the increasing emphasis on localized production capabilities. Technologies such as radio frequency identification (RFID), blockchain, and IoT can enhance such circular strategies.

For example, Fairphone manufactures mobile phones with a body crafted from recycled aluminum and a back cover composed entirely of recycled plastic. The company also has various reuse and recycle programs to ensure the sustainability of its devices.<sup>84</sup> A manufacturing and supply chain executive from a large European chemical organization remarks: *“Sustainability is a key agenda item across the firm. We are committed to recycling and promoting recycled products within our existing portfolio and are developing mid- and lower-priced products that incorporate reused materials.”*

Finally, active collaboration with existing supply chain partners is essential for exploring ways to minimize the carbon footprint throughout the production, transportation, and distribution processes. An operations executive from a global automotive organization from the UK adds: *“The demand for sustainability and ethical practices in supplier sourcing is rapidly increasing. Customers are questioning sourcing methods, and if we can't address their concerns, we risk losing their trust and loyalty. In today's market, reducing carbon emissions in our supply chain is imperative for maintaining relevance and credibility.”*





*“During reindustrialization, the focus remains on retaining talent. Our goal is to enhance our people’s skills, enabling us to repurpose their abilities in other roles or with new responsibilities.”*

**STEFAN WILHELM**

Associate director social impact at Bayer

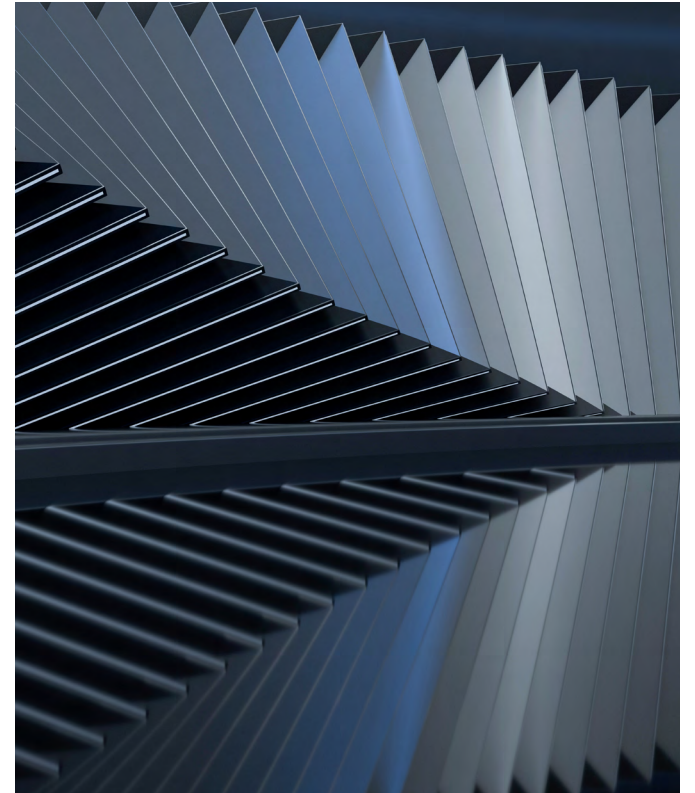
### 3. Invest in the skills development of the manufacturing workforce

A key obstacle to reindustrialization globally is a lack of skilled industrial workers in domestic markets, with 64% of organizations citing this. This challenge is compounded by the ongoing trend of reshoring advanced technologies in which skills have been primarily cultivated offshore, particularly in Asia. As highlighted earlier in the report, the shift toward reindustrialization necessitates an alteration in

the organization's skills mix for the manufacturing workforce, intensifying competition to attract talent.

Reindustrialization initiatives should commence with upskilling and expediting the training of both the existing and upcoming workforce.

- Excessive offshoring has led to a scarcity of qualified workers, complicating talent acquisition for organizations but they can ring promising but unskilled individuals into the workforce by offering essential skills training in industrial construction and manufacturing, and fundamental digital skills to meet the demands of basic manufacturing operations. A strategy executive from a large European industrial manufacturer remarks: *"In manufacturing jobs, a noticeable scarcity of fundamental skills is readily apparent. Furthermore, this deficiency extends beyond mere basics to advanced proficiencies."*
- Organizations must upskill those already in the workforce to align with the demands of advanced manufacturing, digital skills, and emerging technologies. Stefan Wilhelm from Bayer comments: *"During reindustrialization, the focus remains on retaining talent. Our goal is to enhance our people's skills, enabling us to repurpose their abilities in other roles or with new responsibilities."*



Technologies play a role in supporting employee skill enhancement. For example, generative AI can provide personalized training tailored to each employee's role, job site, or team, ensuring relevant content. It can also enable quick access to pertinent data to facilitate self-paced learning.

As previously highlighted, a primary challenge lies in attracting and retaining talent, particularly among younger workers. To address this and narrow the skills gap, organizations can:

- Highlight the advantages of working in today's manufacturing landscape (e.g., creating something tangible, advancing skills with the latest technologies, improving marketability) to appeal to the younger workforce.
- Implement incentives, such as higher wages and overtime pay, to counter the perception that manufacturing jobs are not lucrative.
- Collaborate with government agencies and workforce departments to offer training and development programs. Six in 10 (61%) organizations in our survey emphasize the importance of post-secondary education and training in advanced manufacturing.

Here are some examples of such public-private partnerships (PPPs):

- The Manufacturing USA network comprises 16 institutes and aligns workforce training with industry needs, defining new career paths in automation, robotics, AI, and data analytics.<sup>85</sup>
- The European Battery Academy will train, reskill, and upskill around 800,000 workers by 2025. The training programs cater to the demands of the evolving battery industry, including low-emission mobility and energy storage.<sup>86</sup>
- The US Department of Energy, the US Department of Labor, and the AFL-CIO have launched a national workforce development strategy for lithium-battery manufacturing.<sup>87</sup>
- Germany implemented its reworked Skilled Immigration Act in November 2023 to address the growing demand for skilled labor. The new act lowered the barriers to immigration for skilled workers outside the European Union (EU) and made it easier for skilled workers with vocational training and individuals with practice knowledge to immigrate.<sup>88</sup>

Lastly, because reshoring is a multifaceted strategic initiative, it demands well-trained and empowered leaders. A manufacturing and supply chain executive from a large European chemical organization underscores this point: *"A significant challenge lies in leadership empowerment. We aspire to shift decision-making downward within the organization and to train our leaders to empower their teams and enable effective decision-making at all levels."*

## 4. Incorporate advanced manufacturing technologies into current and planned facilities

Integrating advanced technology into existing and upcoming manufacturing facilities serves as a pivotal solution to the prevalent challenges in manufacturing, ranging from supply chain intricacies to production and labor issues.

To enhance their reindustrialization capabilities, organizations should actively embrace these technologies and cultivate strategic partnerships with technology providers. Additionally, focusing on upskilling and hiring for key skills highlighted in the report, such as supply chain management, data analytics, digital twin, AI/ML, cloud computing, and robotics, is crucial for staying at the forefront of industry advancements.

Tiago Jorge Candeias from Infineon Technologies comments: *“Digitalization, data analytics, and AI are no longer optional; they are essential. Over the next decade, these technologies will significantly differentiate successful companies from those that lag behind. Organizations that fail to embrace these technologies will struggle to remain competitive in the market.”*

Below are some ways in which technology is helping to enable reshoring:

- Proximity to local sites streamlines operations through technology, fostering efficiency, standardized processes, and improved decision-making. For example, additive manufacturing (i.e., 3D printing) enables affordable production, shortening processes and reducing reliance on distant suppliers.<sup>89</sup>
- Simulation enables the creation of digital twins and virtual commissioning for process, layout, and workstation design. It can also be used to reduce waste across the production process.
- Logistics technology aids in warehouse management, supply chain monitoring, and freight routing. It further supports collaborative inventory planning at network level; real-time goods tracking; consistently predictable and accurate lead times; and visibility into suppliers’ supply chains.
- Automated processes will help meet production demands and will assist in some areas of basic training. Cobots — robots that directly interact with humans in manufacturing facilities — combine AI and human intelligence to lower labor costs while retaining essential human oversight.<sup>90</sup>
- Automated data collection and real-time monitoring technology enhance quality and customer experiences, and help to reduce liability risks.
- AI technology guides workers in intricate tasks, ensuring accuracy, improving quality control, enhancing productivity, and providing valuable datasets for process improvement.
- Generative AI enables rapid responses to supply chain disruptions by automatically relaying information from market events and weather patterns, alerting stakeholders to potential impacts such as traffic delays or shipment risks.

Moreover, a primary reason for supply shortages during the pandemic was the absence of comprehensive end-to-end planning, particularly with long supply chains. To address this, it is imperative to invest in and upgrade demand, supply, and production planning processes enabled by digital technologies such as AI/ML and advanced analytics. Additionally, prioritizing inventory management is essential for mitigating future disruptions. A manufacturing and supply chain executive from a large European chemical organization remarks: *"We are currently focused on modernizing our advanced planning capability. This involves implementing an advanced planning tool that allows us to manage our end-to-end supply chain. All aspects will be integrated into a single tool, from procuring raw materials to planning finished goods and scheduling."*

## 5. Foster collaborative initiatives with like-minded partners to enhance domestic industrial capabilities

Initially, reshoring can trigger disruption to the supply chain. Transitioning production from offshore locations back to the domestic market may involve complex logistical challenges, including establishing new supplier relationships, re-establishing local supply chains, and adapting inventory management practices. Fifty-six percent of organizations state reallocating their manufacturing/production capacity through reshoring or nearshoring poses operational challenges.

Collaborative efforts between organizations spanning various industries can lead to shared resources, insights, and innovative solutions. Expanding this collaborative ecosystem

to include not only domestic suppliers but also those in close proximity can prove advantageous. These partnerships play a pivotal role in overcoming challenges related to accessing raw materials; nearly six in 10 (57%) organizations acknowledge difficulty in accessing or shortages of raw materials/inputs in their reindustrialization endeavors.

Further, driven by factors mentioned earlier in the report, organizations and countries are compelled to secure strategic positions across the entire value chain, particularly for critical products such as batteries, semiconductors, and medicines. Moreover, the manufacturing landscape has shifted from traditional products to technologically advanced innovations, a trend expected to persist.

Such manufacturing of next-generation products, particularly within circular business models, requires a new value chain. Finally, as illustrated earlier in the report, most gigafactories also aim to be established through partnerships both with other organizations and government bodies.

These initiatives thrive on continuous collaboration with regulators, governments, and organizations, ensuring the sustainability and expansion of emerging manufacturing products and value chains within local economies.



## 6. Proactively engage with policymakers and regulators to anticipate and react quickly to dynamic legislation and incentives

Remaining well-informed about and reacting quickly to dynamic policies and incentives is crucial for organizations aiming to uncover opportunities in reindustrialization. As

previously highlighted in the report, various governments are enacting laws and regulations to enhance the attractiveness of reshoring. Organizations must proactively foster, track, and comprehend changes in trade policies, tax incentives, and regulatory frameworks that can impact the appeal of bringing manufacturing operations back to domestic markets.

Furthermore, maintaining an ongoing dialogue with governmental bodies and industry associations empowers organizations to shape and influence policies that directly impact reindustrialization endeavors. An open dialogue should extend to policymakers within the countries supply chains and manufacturing are being moved from as well. This proactive engagement not only facilitates the alignment of government support with organizational objectives but also contributes to the creation of an environment in which domestic manufacturing can flourish again as part of a new industrial revolution.

# Conclusion

Reindustrialization has emerged as a compelling response to a complex interplay of global and national dynamics, ranging from the pandemic to geopolitics and technological advancements. With a shared recognition of its significance, business leaders are redefining manufacturing landscapes for a more resilient and sustainable future. This is a complex endeavor that requires geopolitical knowledge and adaptability as unforeseen crises can emerge when reconfiguring supply chains and manufacturing of such large scale. Our research underscores the momentum behind reindustrialization efforts, with European and US organizations mobilizing strategic initiatives to fortify supply chains, foster job and economic growth, reclaim manufacturing prowess, and drive innovation. As strategies take shape and reindustrialization accelerates, a notable shift towards domestic manufacturing and nearshoring is becoming evident, propelled by investments and the prioritization of

sovereign capabilities across strategic sectors. The shift is complicated by the need to effectively manage the transition of reshoring in Europe and the US while concurrently deindustrializing in other countries.

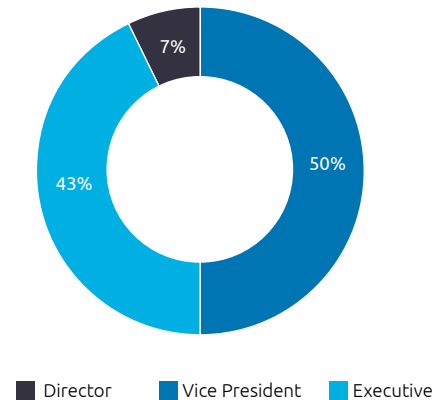
Crucially, digitalization and sustainability emerge as pivotal driving forces, igniting optimism for innovation and social and environmental stewardship. With an emphasis on upskilling and the integration of advanced technologies, organizations are poised to navigate this transformative period with agility and foresight. Yet, the journey ahead demands concerted action – from conducting a geopolitical assessment and crafting clear business cases to nurturing collaborative partnerships and harnessing government regulations and incentives – to accelerate the pace of reindustrialization and unlock its full potential in shaping a vibrant industrial landscape.

# Research methodology

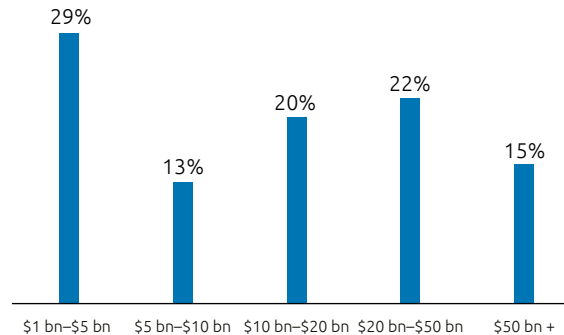
In February 2024 we surveyed 1,300 executives employed at organizations with more than \$1 billion in annual revenue across the US, the UK, and continental Europe, including France, Germany, Italy, the

Netherlands, the Nordics, and Spain. Organizations operated across 13 key industrial and manufacturing industries. Executives surveyed were director-level and worked across diverse business, technology, and manufacturing-related

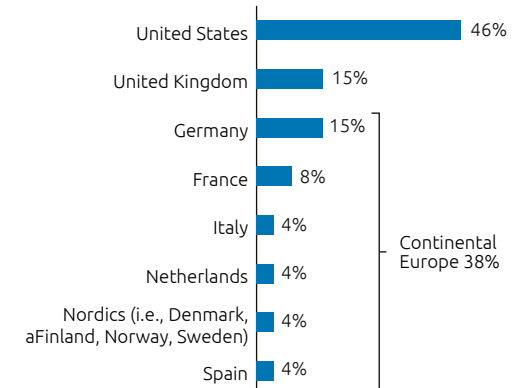
Executives by current job title



Executives by their organization's enterprise-level revenue, in USD



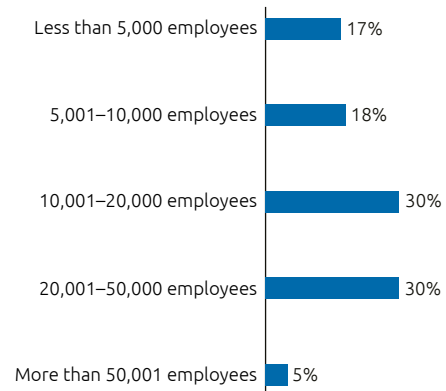
Executives by country in which current organization is headquartered



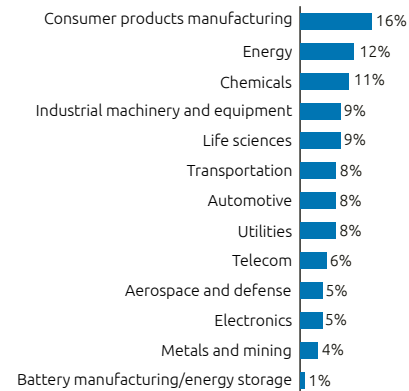
functions. The distribution of executives and their organizations is provided in the following figures. In addition to the survey, we interviewed supply chain and manufacturing executives and experts at large organizations globally.

The study findings reflect the views of the respondents to our online questionnaire for this research and are intended to provide directional guidance. Please contact one of the Capgemini experts listed at the end of the report to discuss specific implications.

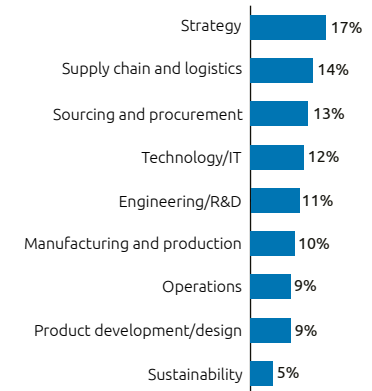
#### Executives by organization's total global workforce



#### Executives by industry



#### Executives by current department/function



# References

1. US Bureau of Labor Statistics, Industries at a Glance: Manufacturing: NAICS 31–33.
2. FRED, Economic Research, Employment by Economic Activity: Manufacturing: All Persons for the Euro Area (19 countries), accessed February 27, 2024.
3. The World Bank and OECD, Manufacturing, value added (% of GDP)- European Union, accessed February 27, 2024.
4. US Department of the Treasury, Inflation Reduction Act, 2022.
5. Capgemini Research Institute, Preserving the fabric of life: Why biodiversity loss is as urgent as climate change, September 2023.
6. CNN Business, “New US rules on Chinese batteries could push up price of electric cars,” December 4, 2023.
7. EV Hub, “47 percent of all EV manufacturing investment announced since IRA,” November 20, 2023.
8. Bloomberg, “The global economy enters an era of upheaval,” September 18, 2023.
9. Reuters, “France budgets 500 million euros annually for green industry tax credit,” May 2023.
10. The White House, Updated fact sheet: Bipartisan Infrastructure Investment and Jobs Act, August 2021.
11. European Commission, European Chips Act, 2023.
12. US Government, CHIPS and Science Act, August 2022.
13. P&G company website, “P&G & Microsoft are accelerating digital manufacturing,” June 2022.
14. SCMR, “Global Labor Rates: China is no longer a low-cost country,” January 2023.
15. Visual Capitalist, “Does ‘Made in America’ still matter to consumers?” July 2023.
16. CNBC, “Firms are bringing production back home because of the Ukraine war, China’s slowdown – and TikTok,” June 2023.
17. Mexico News, “Whirlpool to invest US\$120 million in Coahuila plant,” July 2021.
18. General Electric, “GE to invest over \$450 Million in US manufacturing in 2023,” March 2023.
19. The Wall Street Journal, “A soap maker cracks the code to ‘Made in America,’” July 2023.
20. European Security and Defense, “Rheinmetall breaks ground on new factory designed to make Germany self-sufficient in artillery ammunition,” February 2024.
21. European Commission, European Chips Act.
22. US Government, CHIPS and Science Act.
23. DownToEarth, “EU follows US by boosting its domestic green industry support, outcome for Global South uncertain,” March 2023.
24. Ibid.
25. European Commission, “Securing access to vaccines,” 2020.



26. Le Monde, "Reindustrialization: Whether they admit it or not, European leaders defend national interests first," May 2023.
27. Morgan Stanley, "Investment opportunities in shifting supply chains," April 2023.
28. Congress.gov, American Nuclear Infrastructure Act of 2021, July 2021.
29. Reuters, "Canada, Mexico win auto rules trade dispute with US", January 2023.
30. Textile Insights, "US bill aims to incentivize fashion reshoring & circularity," March 2024.
31. Forbes, "US manufacturers reshoring, but it will take a long time," August 2023.
32. Capgemini Research Institute, Embracing a brighter future.
33. Ibid.
34. Newmark Research, Thought Leadership series, "Manufacturing momentum," September 2023.
35. The White House, "FACT SHEET: CHIPS and Science Act will lower costs, create jobs, strengthen supply chains, and counter China," August 2022.
36. Reuters, "Qualcomm to spend \$4.2 billion more on chips from GlobalFoundries," August 2022.
37. Caffyns, "Volvo cars announces third manufacturing plant In Europe," July 2022.
38. EE Time Europe, "Infineon Breaks Ground on 300-mm Fab in Dresden," May 2023.
39. New Balance, "New Balance Skowhegan factory expansion groundbreaking celebrates company's commitment to U.S. manufacturing and Maine," June 2023.
40. GlobalFoundries, "GlobalFoundries and Biden-Harris Administration Announce CHIPS and Science Act Funding for Essential Chip Manufacturing," February 2024.
41. EDB Singapore, "Sanofi breaks ground on first-of-its-kind Evolutive Vaccine Facility in Asia," April 20, 2022.
42. Office of the United States trade representative, "United States-Mexico-Canada Agreement," July 2020.
43. Forbes, "Covid Is fading, but reshoring isn't," January 2024.
44. ARC Group, "Moving manufacturing from China to South-East Asia: An introduction," July 2022.
45. Free Press Journal, "China Plus One' supply chain diversification strategy creating opportunities for Indian players," March 2022.
46. Financial Times, "Carmakers quietly cut ties with China in supply chain shake-up," December 2022.
47. Statista, "Value of announced inward greenfield foreign direct investment (FDI) projects in China from 2012 to 2022," July 2023.
48. World Economic Forum, "Reducing the carbon footprint of the manufacturing industry through data sharing," October 2023.
49. Reshoring Initiative, 1H 2023 Report.

50. Reuters, "Macron unveils 30-bln euro plan for innovation and industrial revival," October 2021.
51. Thyssenkrupp, "thyssenkrupp Steel and RWE sign a contract for supply of green electricity to the first direct reduction plant," February 2024.
52. Electrek News, "Tesla announces 4680 battery cell production breakthrough," October 2023.
53. Center for Automotive Research, "Automakers invest billions in North American EV and battery manufacturing facilities," July 2022.
54. Columbia University, Center on Global Energy Policy, "The IRA and the US battery supply chain: One year on," September 20, 2023.
55. Benchmark Source, "Three-quarters of North American gigafactory 2030 pipeline capacity associated with automakers," August 8, 2023.
56. US Department of Energy, "Electric vehicle (EV) and fuel cell electric vehicle (FCEV) tax credit," August 2022.
57. Kelley Blue Book, "Electric car rebates and incentives: What to know by state," February 26, 2024.
58. Center for Automotive Research, "Automakers Invest billions in North American EV and battery manufacturing facilities," July 2022.
59. Business Insider, "Tesla Gigafactories: A look at the manufacturing hubs and their future," July 2023.
60. FREYR Battery company website, "FREYR Battery Announces Plans for US Gigafactory in Georgia," November 2022.
61. TechCrunch, "GM's second \$2.3B battery plant with LG Chem to open in late 2023," April 2021.
62. Toyota newsroom, "Toyota supercharges North Carolina battery plant with new \$8 billion investment," October 2023.
63. European Commission, "Important Projects of Common European Interest (IPCEI)"
64. European Commission, "Innovation Fund"
65. The Guardian, "EU announces €4bn state aid to back battery and green tech factories," January 2024.
66. Sifted, "It's not just Northvolt. Here are the other startups building gigafactories," March 2022.
67. European Commission, "Commission approves €902 million German State aid measure to support Northvolt in the construction of an electric vehicle battery production plant to foster the transition to a net-zero economy," January 8, 2024.
68. Electrify, "Eurocell to build battery factory in the Netherlands," August 2022.
69. Bayer company website, "Bayer invests EUR 130 million EUR in new production facility for innovative parenteral products," November 2023. Accessed March 2024.
70. Medium, "Exploring Innovative AI Use Cases in Manufacturing," August 2023.
71. MMSOnline, "Siemens expands additive manufacturing initiatives," January 2024.

72. AMFG, "The Impact of Cobots on Manufacturing", January 2024.
73. Appinventic, "How AI is proving a game changer in manufacturing – use cases and examples," February 2024.
74. Ibid.
75. Wall Street Journal, "US to invest billions to replace China-made cranes at nation's ports," February 2024.
76. Embedded, "Generative AI in factory automation and the edge," May 2023.
77. VentureBeat, "Nvidia teams with Mercedes-Benz to design digital twins for real-life factories," September 2023.
78. Capgemini Research Institute, "The eco-digital era™: The dual transition to a sustainable and digital economy," January 2024.
79. World Economic Forum, "Why manufacturers should use digital twins for sustainability not just productivity," May 2023.
80. The Coventry Observer, "Artificial intelligence at BMW, creation of more sustainable and efficient battery systems," January 2024.
81. Reshoring Initiative, 2022 Data Report: "IRA and Chips Act boost reshoring to another all-time high, up 53%," March 2023.
82. Wall Street Journal, "ABB opens revamped robotics center in Michigan amid growing demand for AI robots," March 2024.
83. World Economic Forum, "These are the top 10 job skills of tomorrow – and how long it takes to learn them," October 2021.
84. Fairphone corporate website, accessed on March 2024.
85. Casting Source, "Workforce skills gap threatens reshoring of supply chains critical to U.S. economic and national security," November 2022.
86. European institute of innovation and technology, "Launching the European battery academy to reskill thousands of industry workers," February 2022.
87. Ibid.
88. The Federal Government, Germany, "The new Skilled Immigration Act at a glance," Accessed March 2024.
89. Harvard Business Review, "Leveraging new tech to boost supply chain resilience," October 2022.
90. Ibid.

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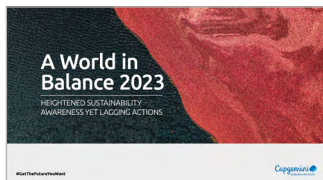
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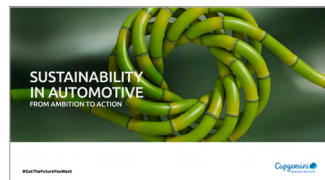
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