



2020 CIO Survey

Industrial Manufacturing industry insights



IT in the new reality for industrial manufacturing

“Manufacturers are being tested as never before. The enterprises that do best in these severely adverse conditions will likely be the ones that are most agile across a wide range of endeavors. In particular, the current acceleration of the digital transformation is critical to improve operational efficiency and increase competitiveness accordingly.”

Stéphane Souchet, Global Head of Industrial Manufacturing, KPMG International

For many industrial manufacturers, the COVID-19 pandemic posed sudden and drastic challenges as demand for products fell and geopolitical trade conditions severely disrupted access to markets, distribution channels, and suppliers. The shock to the Aerospace & Defense industry, for example, has been swift and painful due to reduced travel. Bailouts and financing packages are being offered by many governments around the world. Another key sector, Automotive, has also seen greatly reduced demand for new vehicles as consumers have reduced spending and trade tensions have increased tariffs. An area of opportunity for industrial manufacturing companies has been M&A of distressed companies. The speed of recovery for industrial manufacturing is highly dependent on recovery from the pandemic and what becomes the new reality for commuting and travel. Companies in this sector will need to utilize key market data to inform long-term strategic decisions based on shifts in demand and their downstream impacts. Investing in their digital transformation will be paramount.

For IT leaders in the sector, especially in discrete manufacturing, instilling organizational agility and adaptability to prevent shocks to the system must be a priority along with implementing fully integrated processes, systems and data that connect all parts of the enterprise — from the manufacturing shop floor to the extended supplier and customer ecosystem, and administrative and support functions. The ability to use insights from data to predict supply chain risks, dynamically manage inventory to unlock value and ensure just in time operations will be key as companies in this sector enter the new reality.

Board priorities & investment

Priority areas for long-term change are common across industrial manufacturing, including increasing automation and manufacturing equipment monitoring technology, along with the gradual shift from global manufacturing footprints to a regional hub (multi-local organization) model for greater resilience and agility. Right-sizing operations with the right plants in the right locations and reducing overhead have also become mission critical to maintain the right level of fixed costs. With the sector’s largest costs in input materials and parts, smarter use of technology can help achieve optimization of these variable costs. Operational efficiency (65 percent) is the number one attribute that executives are looking to IT to deliver — but it is noticeable that stable and consistent IT performance (34 percent) is also a top three item for this sector, while it doesn’t feature on a cross-sector basis. This underlines the critical importance of an always-on operating technology (OT) architecture of a modern manufacturing environment. Customer centricity and the growing consumer expectation of a seamless digital experience have also accelerated due to the pandemic with 36 percent placing improving customer engagement in the top three business issues for IT to address.

Top three business issues that management boards are looking for the IT function to address:

Industrial Manufacturing vs. overall

Industrial Manufacturing:

- 1. Improving operational efficiency
- 2. Improving customer engagement
- 3. Delivering stable and consistent IT performance

Overall

- 1. Improving operational efficiency
- 2. Improving customer engagement
- 3. Enabling the workforce

Three most important technology investments:

Industrial Manufacturing vs. overall

Industrial Manufacturing:

- 1. Security and privacy
- 2. Customer experience and engagement
- 3. Infrastructure/Cloud

Overall

- 1. Security and privacy
- 2. Customer experience and engagement
- 3. Infrastructure/Cloud

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

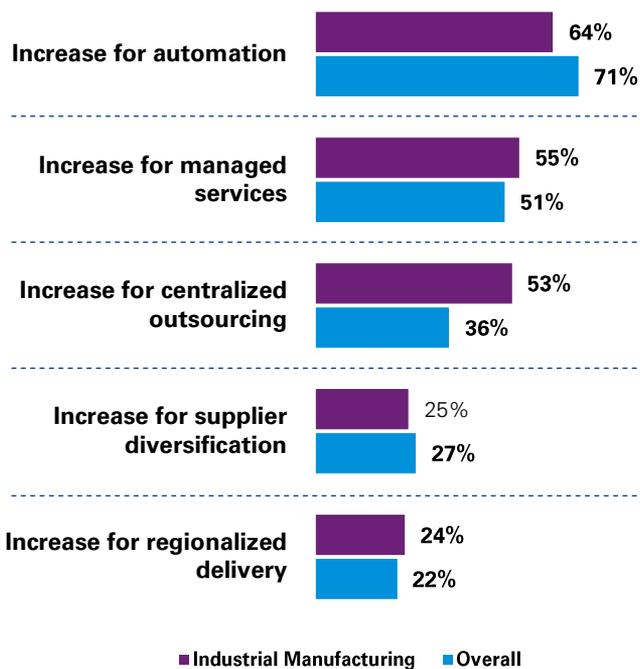


Strategy & operating model

Manufacturers have a strong focus on digital transformation to become more agile and drive up production efficiency, utilizing Fourth Industrial Revolution techniques including AI, RPA and augmented/virtual reality. Smart manufacturing based on 5G, advanced predictive analytics and 3D printing are likely to predominate. A successful digital transformation in industrial manufacturing means delivering a digital platform that is fully integrated across the front, middle, and back office functions and reduces time and waste throughout the supply chain. Automation is a priority for 64 percent of IT leaders to help enable digital transformation. There is also an emphasis on managed services (55 percent) and centralized outsourcing (53 percent). CIOs are increasingly making strategic decisions on what core technology competencies they will grow internally versus buying from the open market.

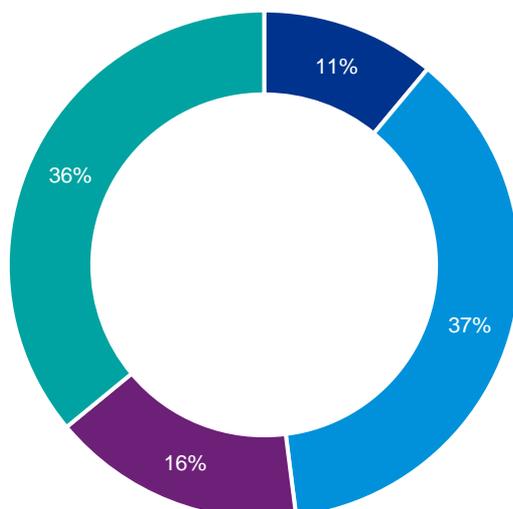
The harder impact of the COVID-19 pandemic on the industry relative to other sectors is shown in a higher number who say their business is now in 'hard reset' mode (11 percent in industrial manufacturing vs 7 percent overall) while the percentage of those facing 'modified business as usual' is significantly higher (36 percent vs 26 percent). Many companies are facing the dichotomy of slashing IT operational budgets while still needing a significant investment in next generation technology. Through these challenges, digital leaders who invested early in cloud and automation are markedly better placed than their peers, ranking significantly higher for operational efficiency, time to market and employee experience.

Change to service delivery model: Industrial Manufacturing vs. overall



Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

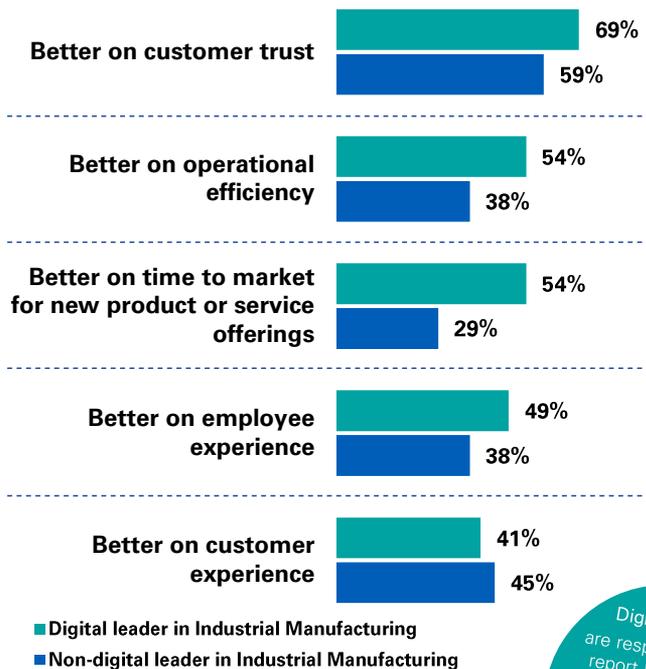
Four economic recovery paths: Industrial Manufacturing



Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Organizations performing better or significantly better than competitors on the following metrics:

Digital leaders vs non-digital leaders in Industrial Manufacturing



Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Digital Leaders are respondents who report being "very" or "extremely" effective at using digital technologies to advance their business strategy

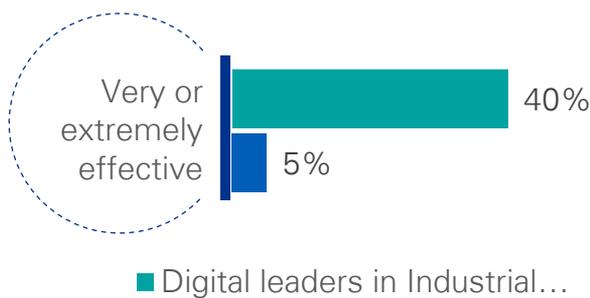
- **Hard Reset** — companies that struggle to recover from COVID-19 due to 'permanently' lowered demand for offerings, insufficient capital to ride out extended recession, and/or poor execution of digital transformation.
- **Transform to Re-emerge** — companies that will recover but along a protracted path requiring reserves of capital to endure and transform operating models to emerge stronger and more in line with changed consumer priorities.
- **Surge** — companies that scale post-COVID-19 as consumer behavior that was altered during the crisis is sustained in their favor. Investors sense their potential to lead and provide capital to scale aggressively during recovery.
- **Modified Business-as-usual** — companies seen as daily essentials will suffer effects of the consumer shutdown recession but are expected to recover more quickly as consumer demand returns in similar volumes.

Delivering value at speed

As the factory floor becomes more virtualized, the middle office needs to focus on automation and agility with the ability to turn the supply chain on and off and scale up or down. We may see a shift from 'just in time' to 'just in case': global supply chains were already under severe strain in the wake of trade wars and economic nationalism, and there has been a growing focus on boosting local manufacturing for critical industries. Once again, digital leaders are in a position of strength relative to their peers, with 40 percent very or extremely effective at pivoting and scaling digital channels compared to just 5 percent of others. They are also significantly more effective at improving customer satisfaction and gathering data. The industry shows widespread investment in large-scale implementation of emerging technologies such as distributed cloud, edge computing, AR/VR, and AI — these are likely to be expensive given the sophistication required in the manufacturing environment and therefore increases the need to find efficiencies and cost reductions elsewhere.

Effectiveness at pivoting and scaling digital channels:

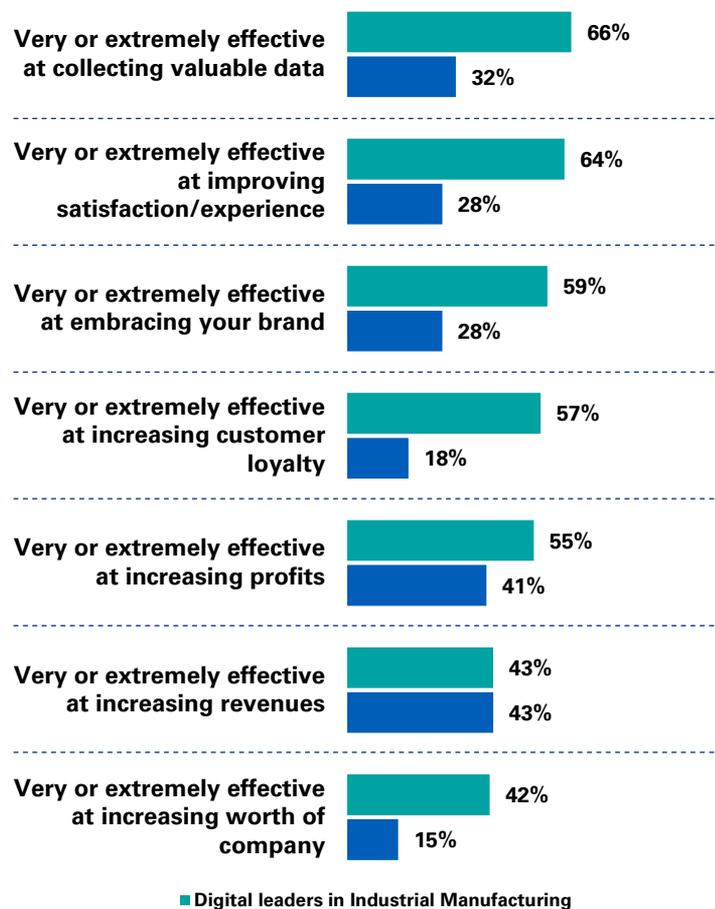
Digital leaders vs non-digital leaders in Industrial Manufacturing



Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Effectiveness of most successful digital offering:

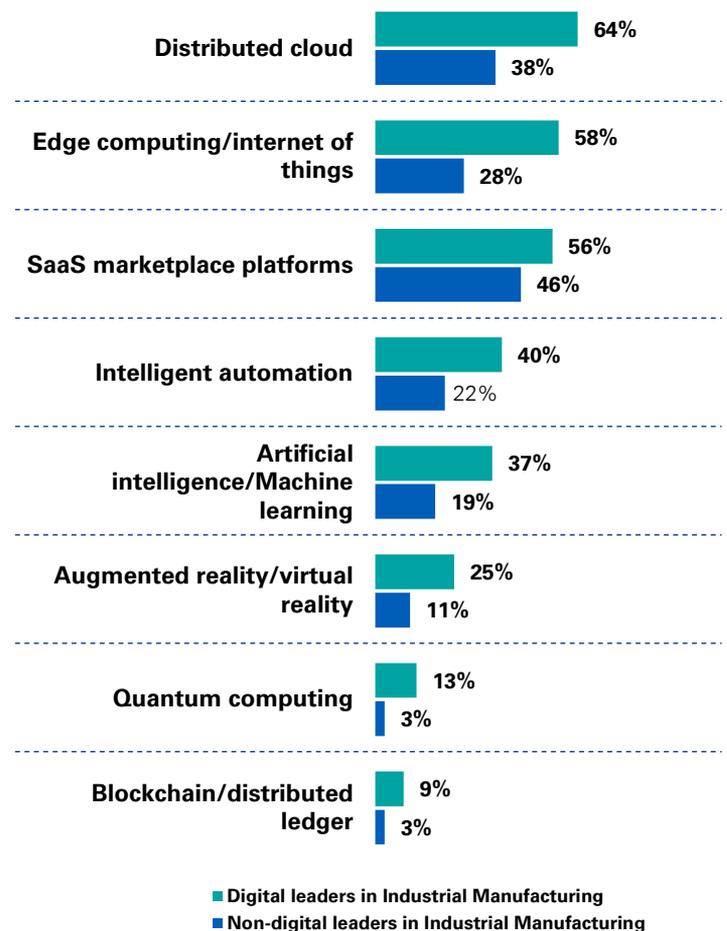
Digital leaders vs non-digital leaders in Industrial Manufacturing



Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Large-scale implementations of emerging tech:

Digital leaders vs non-digital leaders in Industrial Manufacturing



Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

People & culture

With so much resting on technology, addressing skills shortages in the IT team must be a key priority. Key skills requirements in industrial manufacturing follow the cross-sector norm — with cyber security the most in-demand area, followed by organizational change management and advanced analytics. Brand & reputation features in the top-list of criteria for attracting and retaining technology talent — environmental, social, and corporate governance (ESG) and decarbonization commitments are likely to play an important role here, in an industry often questioned for its impact on the environment. Digital leaders typically recognize the opportunity to invest early in ESG managed service solutions like blockchain to analyze climate risks associated with asset valuations and better assess and employ systems to offset their emissions.

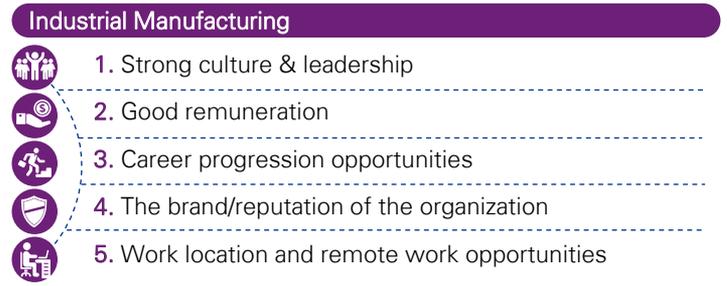
Most in demand skills:

Industrial Manufacturing vs. overall



Top factors in engaging/retaining technology talent:

Industrial Manufacturing vs. overall



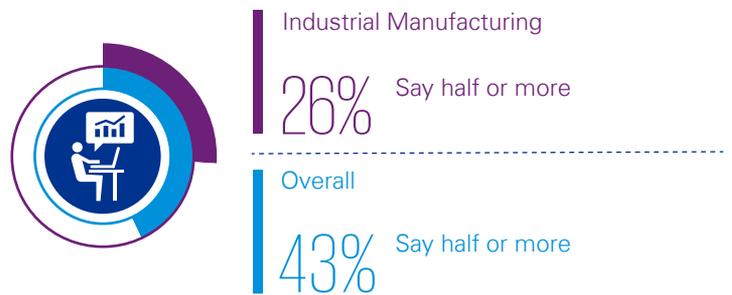
Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

47 percent in Industrial Manufacturing believes **COVID-19** created a **culture** of inclusivity in the **technology team**

More than 70 percent in Industrial Manufacturing believes **promoting diversity** improves **engagement with the business, trust and collaboration, innovation, and access to the right skills**

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Proportion of enterprise that will remain predominantly working from home post COVID-19:



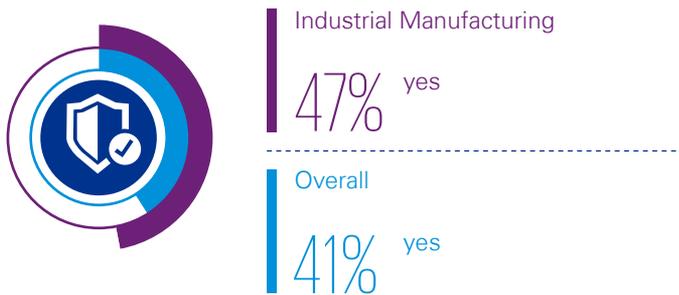
Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

The rise of cyber

With COVID-19 causing the mass relocation of workers from corporate networks to studies, bedrooms and kitchen tables around the world, organizations' attack surfaces also dramatically grew. As a result, more than four in ten organizations have experienced an increase in cyber security incidents with phishing (85 percent) and malware attacks (67 percent) the most prominent for industrial manufacturers — and slightly higher than the cross-sector average. Corporate workers and business systems were the most common target, while operational or manufacturing systems remained fairly steady. No manufacturer can afford to risk the possibility of cyber criminals blocking or even hijacking production facilities: robust cyber defenses must be a permanent priority with 50 percent of companies in this sector naming it as their top investment.

Organizations that experienced an increase in security or cyber incidents due to remote working

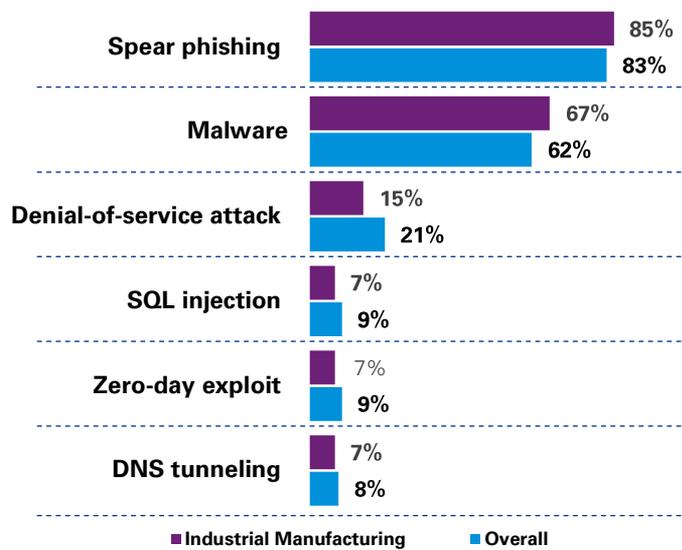
Industrial Manufacturing vs. overall



Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Increase in types of attacks:

Industrial Manufacturing vs. overall



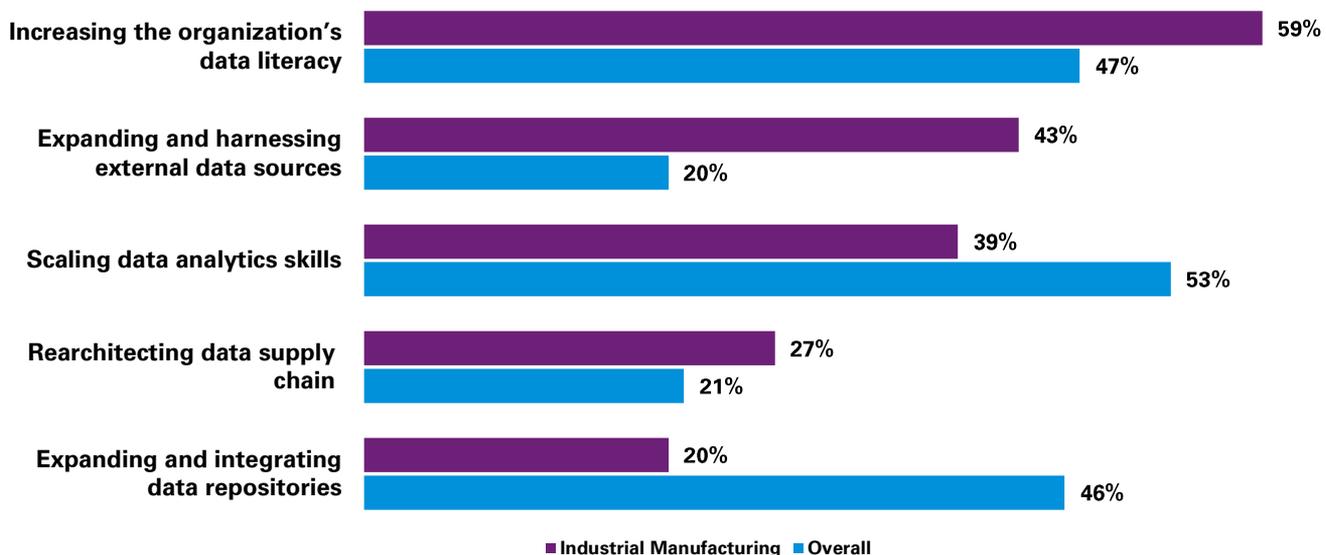
Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Analytics & insight

To recognize the efficiency and productivity gains mandated by the Board, CIOs in this sector recognize that advancing the business' data fluency and technical acumen will become a new core competency. The challenges are real with data being spread across a wide variety of disparate systems and legacy platforms, often unstructured and in different formats. This is particularly important through the supply chain, with real-time decision making needed on a continual basis. Only through the ability to access and read external data signals can manufacturers stay ahead and keep their agility. With increasing the organization's data literacy a priority for a high proportion of IT leaders in the sector (59 percent), there is clearly further to go.

Priorities for your organization's data strategy:

Industrial Manufacturing vs. overall



Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

What now?

COVID-19 has changed the landscape. With technology more important than ever to organizations' ability to survive and thrive, the opportunity has never been greater for CIOs to work as strategic partners with the business. Seven in ten IT leaders report increased collaboration between the business and technology teams — this relationship is something that CIOs must build on to ensure their organization's digital transformation success.

For CIOs in industrial manufacturing, now is the time to act as strategic partners to the business given the scale of the challenge that some organizations face. Leanness, agility, operational efficiency must be the watchwords — along with highly targeted investments in cutting edge technology to make crucial marginal gains in the manufacturing process.

How KPMG can help

While KPMG firms are some of the largest providers of services to industrial manufacturing organizations globally, we take a boutique approach to client issues with a focus on flexibility, adaptability, and innovation. We recognize that there are many on-ramps to supporting IT transformation and we've tailored our services accordingly:

Transform the business

- Strategy and operating model
- Organizational design
- Enterprise architecture
- Portfolio planning
- Merger and acquisition
- Integration and separation

Run the business

- Scaling agile
- Product management
- DevOps tooling
- IT financial management
- IT service management
- IT asset management

Modernize and protect

- Cloud strategy
- Data center strategy
- Continuity and resiliency
- Workplace transformation
- Network modernization
- Cyber, risk, and compliance

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