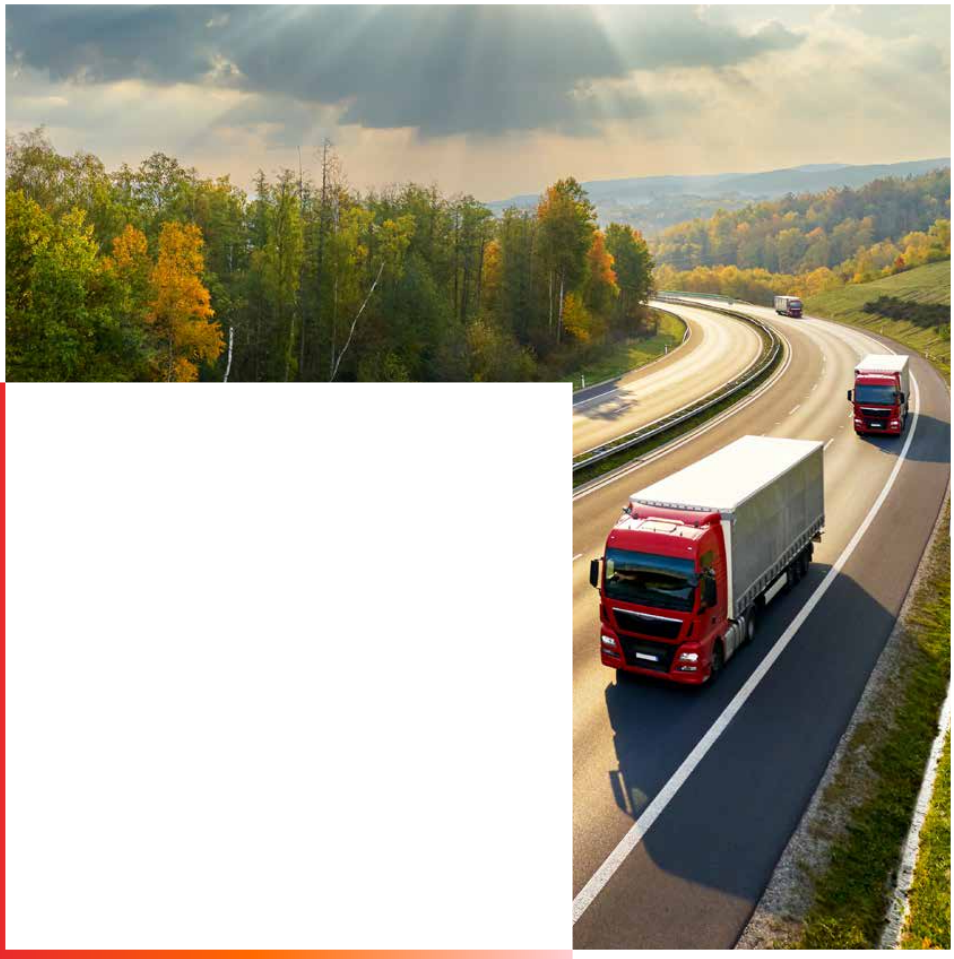


Accelerate digitization to reinvent for the future

Introducing CGI's digitization framework for transportation and logistics

April 2022

Introduction

Most transportation and logistics leaders face a paradoxical situation. On the one hand, many continue to experience the impacts of the COVID-19 pandemic, and the war in Ukraine has added additional humanitarian and economic impacts that will further affect industry trends. On the other hand, the future and role of transportation and logistics companies remain uncertain. Organizations are asking several strategic questions: Is there still a role for us to play in 10 years? Or, will everything be driven by algorithms, designed from technology hubs, and run in the cloud? And, will we be relegated to just moving goods or people?

Added to this is an urgent impetus to address sustainability (Intergovernmental Panel on Climate Change (IPCC), 2022)—a shift that requires new ways of thinking and doing. Optimizing operations remains a top focus as customer expectations continue to rise and faults and disruptions still occur too frequently. At the same time, the pandemic's impact on some transportation and logistics companies is more severe than others. The passenger transport segment, for instance, is struggling with significantly lower passenger numbers, compared to pre-pandemic levels. Meanwhile, the long-term impact of continued work from home models and how they will affect passenger transport demand remains uncertain. At the same time, supply chain disruptions persist due to a high volume of goods to move, container dislocations and workforce shortages.

Reducing costs and improving agility will be the driving forces of change as sustainability and digitization transform businesses. Given this combination of factors, we see a huge need for organizations to reinvent themselves to remain competitive. Those who do will survive and thrive, while others risk falling behind.

Due to the scale and complexity of change required, there is no one-size-fits-all approach. Your organization will need to develop its own unique approach to the current challenges—one that encompasses your mission, strategy, culture and organizational models, in addition to existing and new technologies.

This whitepaper introduces CGI's transportation and logistics digitization framework to help you develop your own approach and roadmap to accelerate your transformation. It draws upon insights from the 2021 Voice of Our Clients and the work of our experts across the globe to share the levers for making digitization a reality in your organization.

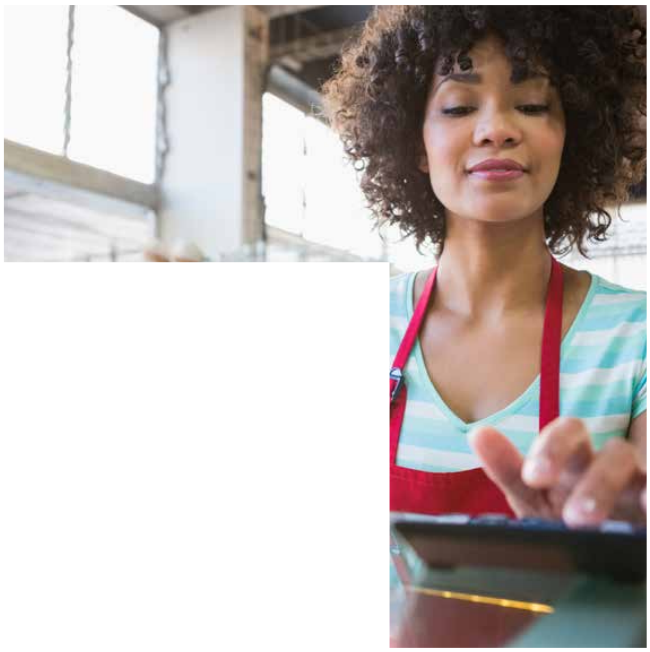
Contents

Our world is changing rapidly

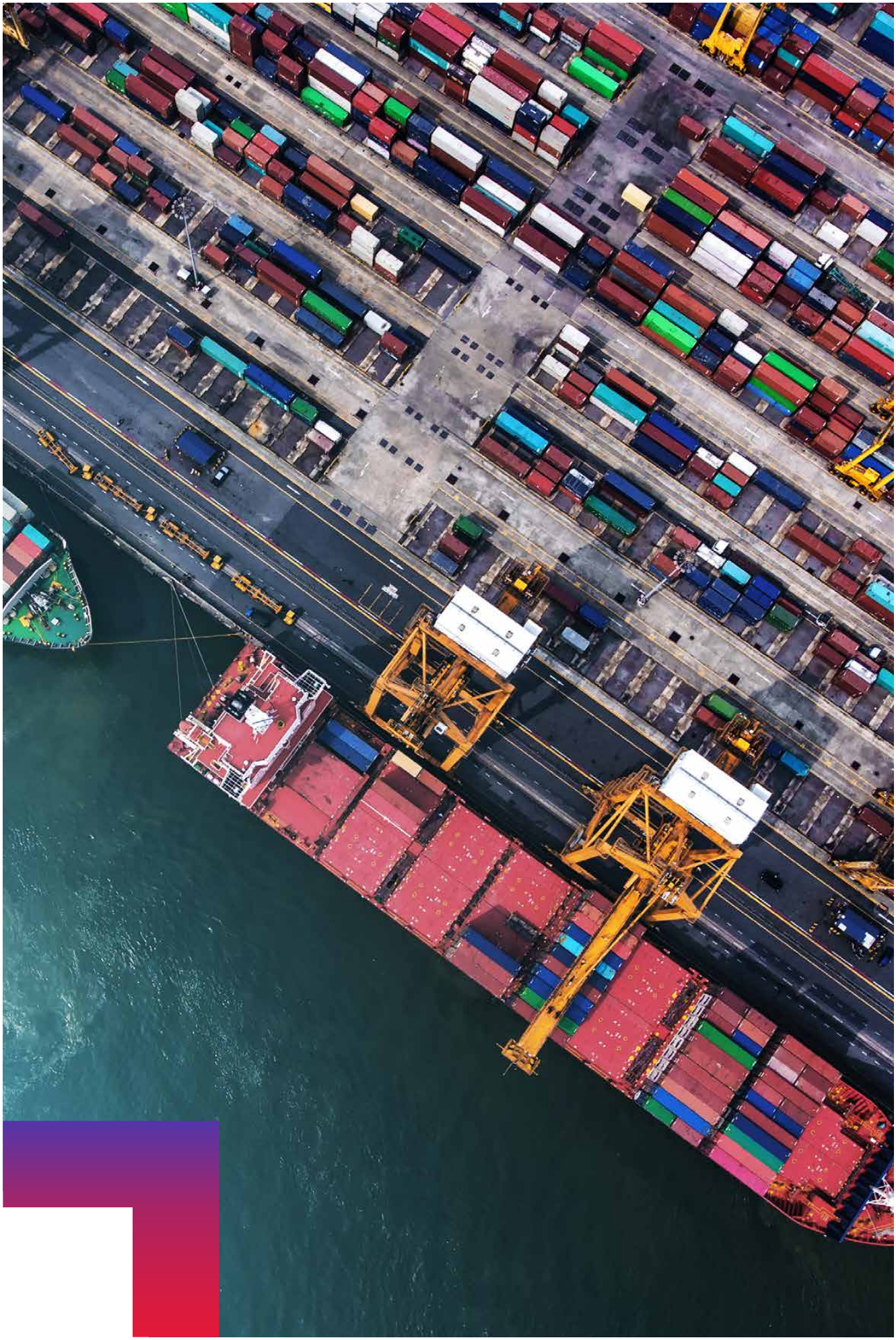
The COVID-19 pandemic illustrated the hyper-interconnectedness of our world and the importance of well-functioning logistical systems. It also revealed the weaknesses of a globalized system, where synchronized and lean transport flows lack resilience. The ongoing global container and computer chip shortages are constant reminders of the effects of global supply chain disruptions. Consequently, local-for-local discussions have intensified, fueled by the challenge of reversing the effects of climate change. In addition, a new conversation is taking place as a result of the evolving effects of the humanitarian crisis and economic impacts brought about by the war in Ukraine, and the impact on global economies, trade patterns and transport and logistics operations.

Even before the pandemic, dramatic change was underway in the transportation and logistics industry, triggered by digitization. More than two decades into the new millennium, the influence of a global marketplace is everywhere. Not only do people and goods traverse the world, but digitally empowered businesses do as well. For instance, digital-first companies like Alibaba, Amazon, and Uber rapidly change markets and geographies. This evolution goes hand-in-hand with rising consumer expectations. Nowadays, it is entirely normal to order something just before midnight and have it delivered the following morning. Meanwhile, the challenges related to climate change and sustainability, further highlighted by the April 2022, IPCC report, are pressuring organizations to transform into truly sustainable businesses.

Together, these factors have led to a complex situation. Companies must take steps to emerge from the pandemic's impacts, while also examining and mitigating the evolving humanitarian and economic crisis resulting from Russia's invasion of Ukraine. In finding solutions, it's important to do so in conjunction with planning sustainability and digitization actions across their value chains.



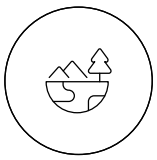
More than two decades into the new millennium, the influence of a global marketplace is everywhere. Not only do people and goods traverse the world, but digitally empowered businesses do as well.



What's happening now

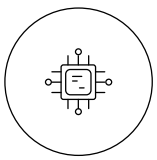
Every year, through the Voice of Our Clients program, our leaders meet with business and IT executives across the industries and geographies we serve to hear the trends affecting their enterprises. In 2021, 1,695 executives participated in these interviews, of which 77 were from the transportation and logistics industry. Here are some of the top trends and priorities from our discussions.

1. **Sustainability is core to value creation.**



Sixty-one percent of executives say environmental sustainability is core to creating value for customers in the future. This topic resonates more strongly with the business side (70%) compared to the IT side (51%) and with C-level executives (68%) compared to operations executives (50%). There is ample proof that sustainability isn't just good for the environment or society; it is also good for the business, as it reduces costs, enhances reputation, provides a competitive advantage and improves the bottom line. The recent Sixth Assessment Report of the United Nations Intergovernmental Panel on Climate Change (IPCC) has clearly shown that doing nothing is no longer an option.

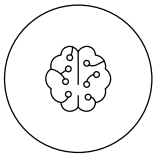
2. **Digitization is driving business model change.**



The impact of digitization on business models is growing. Fifty-four percent of executives say digitization impacts their organization's business models to a high degree, and this number rises to 63% for C-level executives.

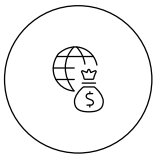
There is ample proof that sustainability isn't just good for the environment or society; it is also good for the business, as it reduces costs, enhances reputation, provides a competitive advantage and improves the bottom line.

3. **Digital strategies are in place but are not yet paying off.**



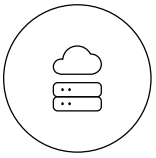
In 2021, 93% of transport and logistics executives interviewed said they have a digital strategy in place, up from 87% in 2020, an acceleration that is likely a result of the pandemic. However, less than one in five say that they are achieving expected results from their digital strategies. Only 44% of executives see themselves ahead of their competitors when it comes to digitization. Moreover, many executives point to the threat from new digital-first companies who are applying big data and analytics to outmaneuver traditional players.

4. **Fewer are increasing budgets, especially for IT infrastructure.**



After years of rising, fewer executives are increasing overall spend on IT. Operations and maintenance (O&M) budgets show the most significant difference, with just 10% of executives saying they are increasing O&M budgets, down from 28% in 2020. This new reality is driving organizations to reorganize or reconsider their costs. There are notable differences between organizations within subsectors, with a significant number citing either increases or decreases of 10% or higher. We see this due to the (positive or negative) impact experienced during the pandemic.

5. **Use of cloud and managed services rise further in importance.**



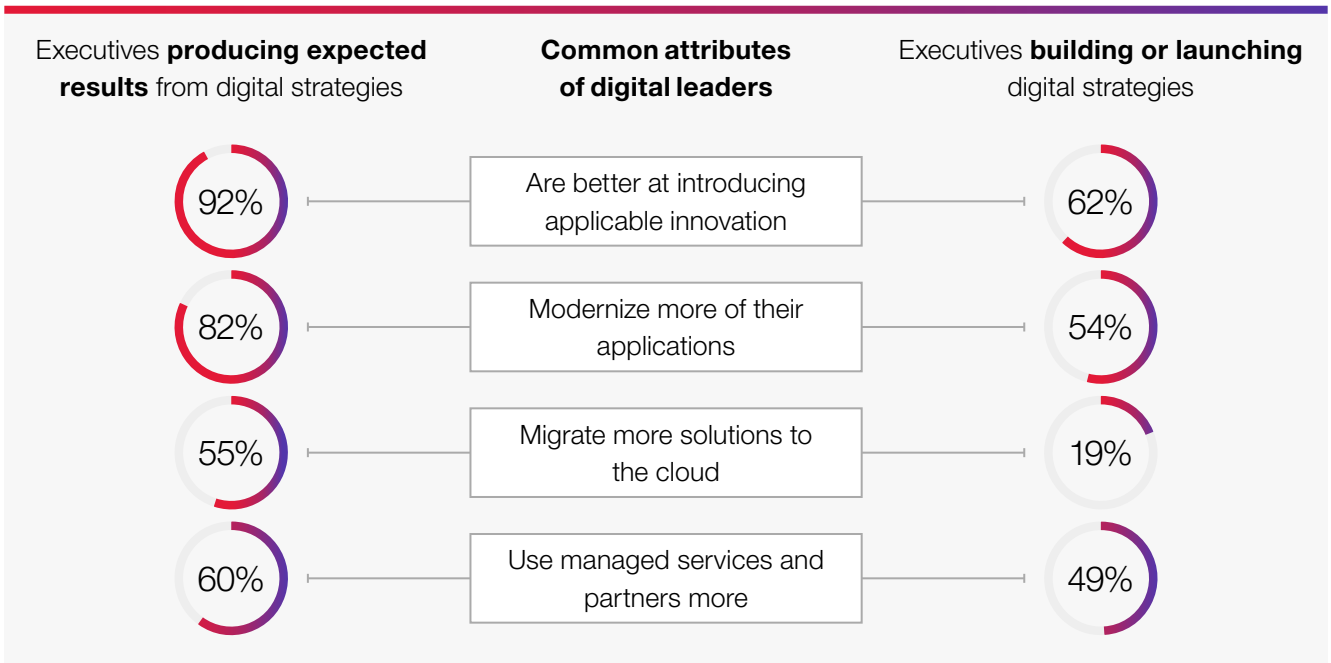
This year, 29% of executives say they plan to rely on a fully managed services model for IT applications services in three years, compared to 9% now. Furthermore, 57% expect to migrate a substantial number of existing applications to the cloud in the next two years. In addition to improved quality and efficiency, sustainability, resource elasticity and capacity planning, these enablers can result in substantial cost reductions, which is an advantage when budgets are cut, even as organizational ambitions grow.

Digital leaders are reinventing for tomorrow

As demonstrated above, the pandemic's impacts and sustainability are accelerating organizations' digital transformation to benefit from much-needed cost reductions, agility and higher customer satisfaction. Notable is that most digital transformation programs have been in progress for many years. Yet, just 19% of transportation and logistics executives interviewed for the 2021 CGI Voice of Our Clients indicate they are achieving expected results from their digital strategies. Among this 19%, whom we define as digital leaders, we see several common attributes that explain their success.

Globally, across industries, digital leaders consider the digital acceleration of their organization as core to achieving their overall business strategy. They also view transformation holistically across the entire value chain—encompassing cultural change and ecosystem touchpoints.

The framework we share visualizes a holistic approach to digitization that covers all these elements and lessons learned from digital leaders.



A framework for digitization

Our digitization framework enables transportation and logistics organizations to manage the disruption caused by the pandemic while accelerating digitization and sustainability efforts. It consists of six elements that combine today's top business priorities with enabling actions.

The three top priorities are:

1. Optimize operations by reducing costs and improving agility to react faster to changes in demand, faults and disruptions (or even avoid them).
2. Enhance the customer relationship to offer a seamless omnichannel experience that meets rising customer expectations.
3. Collaborate with the wider ecosystem to improve the customer experience further and drive down cost levels.

As these priorities require enterprise-wide efforts, including addressing legacy systems and cybersecurity concerns, the framework also includes three enablers:

1. Creating an environment within the organization where digitization can flourish. This includes embracing new ways of working such as Agile/ SAFe, data-driven decision-making, and a culture of innovation and experimentation.
2. Adopting an approach to reinvent processes and modernize legacy systems to advance agility and innovation, and achieve tangible business outcomes.
3. Protecting your organization and stakeholders from new and complex cyber risks and threats resulting from greater connectivity and wider and more open ecosystems.

Each organization must develop a mix of the six elements from the framework that best suits their current situation. While the weightage given to the elements may differ, incorporating all six is integral to a mature digitization strategy.

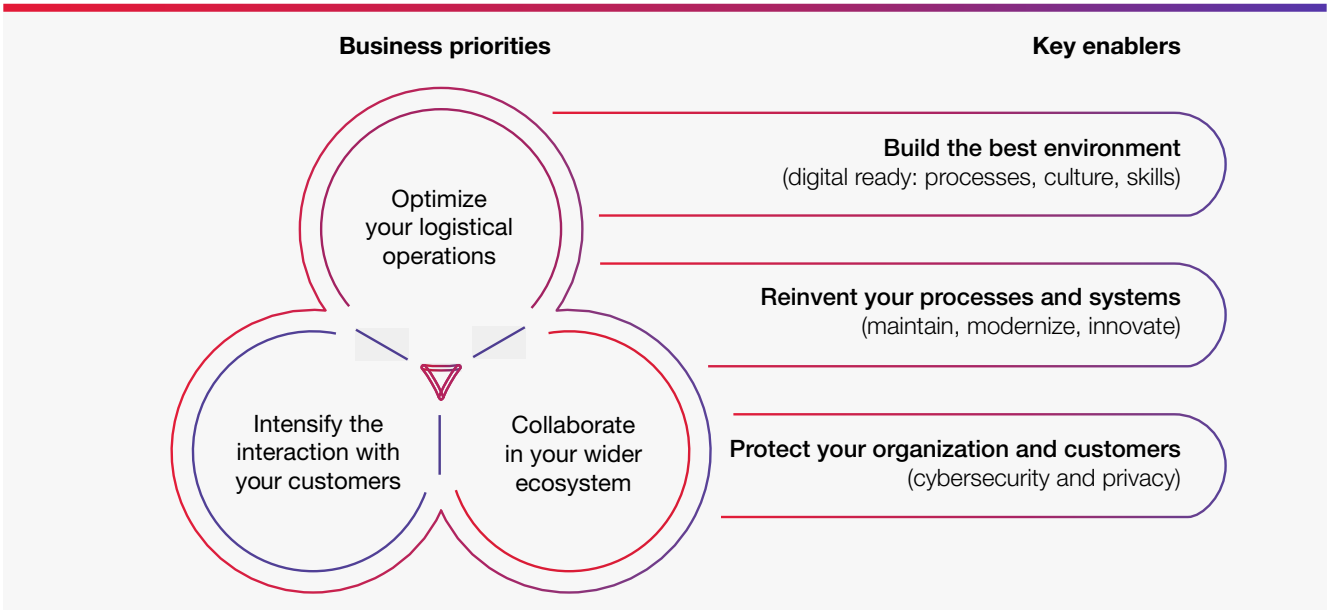


Figure 1: CGI's Transportation & Logistics Digitization Framework

Priority #1
Optimize your operations

Optimizing operations remains the top business priority for transportation and logistics companies. Organizations that have succeeded in their sustainability activities have already made related investments in the digitization and modernization of their operations.

Optimization requires achieving real-time insight into what is happening in operations. What capacity is available and where? What information is known about the demand side? Is it possible to ascertain why things are happening? How do actuals compare to plans and forecasts? How can we become more sustainable in our operations? Where can processes be improved? And, what is considered part of operations?

High-quality operational data is instrumental in answering such questions and establishing data-driven decision-making processes. Processes can be powered by simulators and solvers to study what-if scenarios, evaluate the impact of certain decisions and provide operational decision support in control towers to correct disturbances and flaws in the operation.

Digitization offers an increasing number of technologies to understand what is happening in your processes and even predict events in the near future (predictive analytics). To make decisions that will improve operations and address sustainability challenges, organizations often need to combine several technologies.

Today's toolbox for optimizing operations is primarily digital, as illustrated in Table 1.

Why	How	What
Benefit from a range of smart applications	Digitize the physical world using **IoT devices** and **digital twins**	Digital twins are a digital replica of a living or non-living physical entity. The physical entity is replicated as a virtual entity for use in a range of smart applications. With digital twins, it is easy to deploy smart applications for advanced track and trace functionality, instant payments and to reduce idle times, among other benefits.
Understand what is happening	Nurture a **business intelligence** environment to measure organizational performance	Determining the current state is crucial for understanding and improving operations. Review your processes, flows and activities and start measuring demand and supply timestamps, quantities and qualities. How do actual values compare with planned and even expected values based on real-time updates (for example, from IoT devices such as GPS sensors)?
Understand why and how things happen	Apply **process mining**, **artificial intelligence** and **machine learning** for deeper insights	More advanced forms of analytics offer enormous value to optimize logistical processes. Analyzing transactional data can reveal patterns that explain (future) actions and events, and support predictive and prescriptive forms of analytics.
Detect the things that matter	Combine data to deduce **events** that matter	Complex events cannot be measured or detected by a system directly. Here's where combining data from a combination of other events can help to infer or deduce an event.
Simulate different situations	**Simulate** different process designs to understand the mechanics	Simulation is a powerful tool to gauge the effects of alternative conditions and courses of action. In logistics, discrete event simulation is often used and sometimes extended by a type of agent-based pedestrian simulation. Another method that can be applied is the Monte Carlo simulation, which provides numerical results.
Optimize planning decisions	Deploy **advanced planning systems (APS)** and solvers to optimize operations	APS software helps create smarter schedules and plans, eliminating inefficiencies. However, to avoid misapplication, define the business drivers upfront, redesign existing processes (don't just optimize them), and prepare for different futures and usage scenarios.
Automate processes	Explore new forms of **automation** such as robotic process automation (RPA)	RPA and more advanced forms of intelligent automation make it possible to automate processes that could not be automated before, including those related to identifying and measuring environmental, social, and governance (ESG) data.

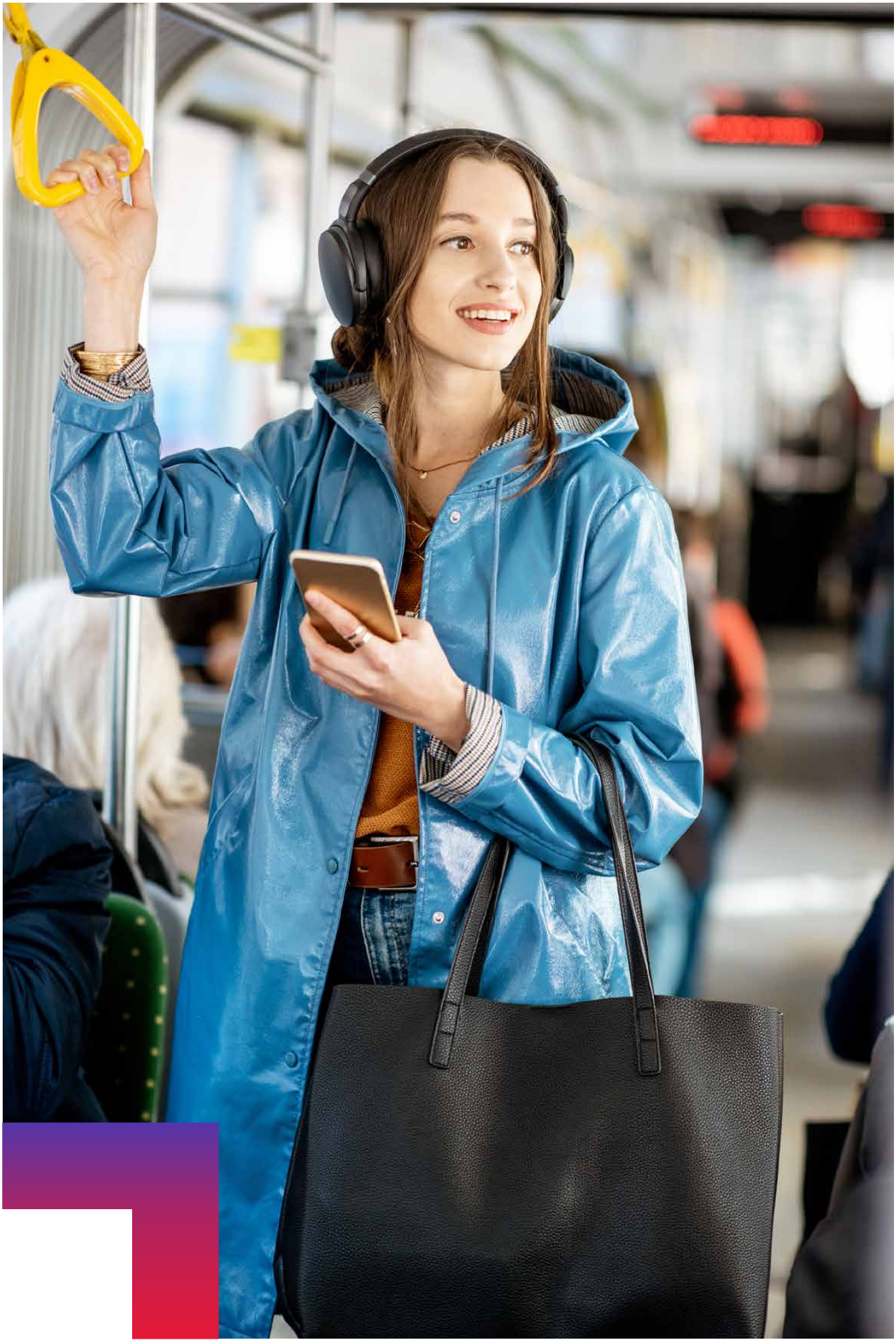
Table 1: How digital technologies can help optimize operations

CASE IN POINT

Digital twin of passenger trains helps reduce downtime, cut costs and improve passenger satisfaction

Nederlandse Spoorwegen (NS) is the principal passenger railway operator in the Netherlands. As part of the digital transformation of their entire operation, NS needed access to real-time data from a diverse fleet of trains to provide passengers with relevant real-time updates and proactive information to manage their journeys. To help, we developed a virtual train environment as part of the wider passenger information program. Each train now has a digital twin in the cloud that provides valuable insights from data used for analysis, monitoring/alerting and easy interfacing. This includes information streams for real-time monitoring and location services to improve the safety of critical systems, such as a driver warning system that alerts drivers if they go over the prescribed speed. In addition to real-time access to technical and operational information, NS benefits from higher passenger satisfaction due to reliable and real-time travel information, reduced costs from proactive maintenance and lesser equipment downtime, improved rail network efficiency, and compliance with the required legislation.

Each train now has a digital twin in the cloud that provides valuable insights from data used for analysis, monitoring/alerting and easy interfacing.



Priority #2
Intensify the interaction with your customer

Intensifying customer interactions is a growing priority for transportation and logistics companies. Customer expectations are rising every year, and they expect to be digitally informed and in control of the entire (cargo or passenger) journey.

Transformation starts with understanding and aligning on the results required to deliver value for customers. Therefore, digitization must include designing the customer experience across the complete customer journey. Organizations that offer impeccable customer journeys can benefit from enhanced customer and employee satisfaction, reduced churn, increased revenues and lower costs, and improved collaboration within the organization. All these, in turn, positively influence the priorities of optimizing operations (Priority #1) and collaborating across organizational boundaries (Priority #3).

This is illustrated in a recent study of a third-party logistics provider by Giannikas et al (2019). The study examines the development of information systems to offer flexible logistics offerings to the end-customer and the impact of providing these offerings on a company's performance. Offering customers more flexibility throughout the journey can be at odds with the emerging trend of shortened delivery times, which leaves less flexibility to make changes.

Demand management is an effective tool for organizations to better balance demand with available supply and reduce inefficiencies. Differentiated pricing for plane tickets and hotel rooms (revenue management) has proven to work. Successful differentiated pricing strategies for home delivery include offering customers options for smaller or larger delivery windows, discounts for less popular delivery slots and specific time windows to combine nearby deliveries. Offering other value-added information such as the environmental impact, increasingly demanded by consumers and investors, can also be a game-changer.

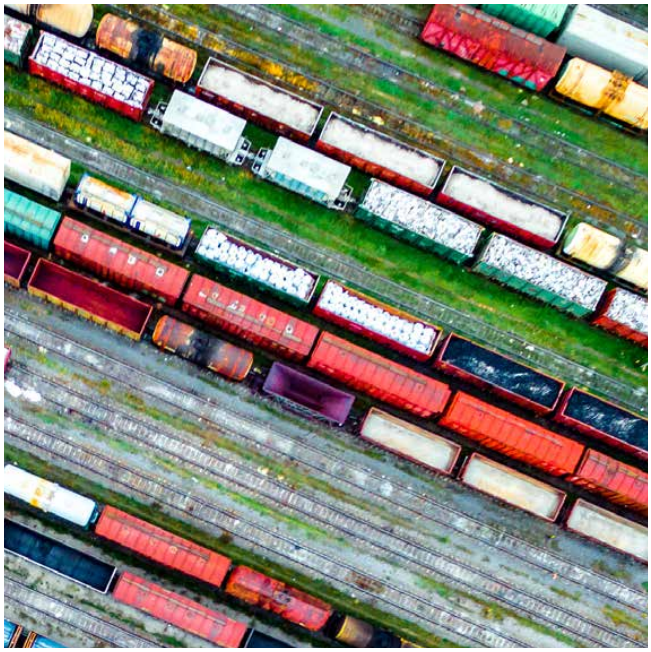
All these strategies require insight into your operations and demand, as well as customer reactions to differentiated prices or information. Properly deployed, demand management is a powerful tool to improve operations, increase customer satisfaction and strengthen customer relationships.

CASE IN POINT

Transforming operations and customer satisfaction with modern IT and automation

DB Netz AG owns and operates the majority of the German railway network. The company's main task is to provide more than 420 train operating companies (TOCs), most of which are cargo railway companies, with high-quality and available railway paths and to manage infrastructure operations. However, the company faced a week-long manual process for scheduling the path of cargo trains. In addition, ad hoc train paths are often required in response to short-term traffic requests. DB Netz wanted to digitize the route planning and quotation process to provide faster proposals for cargo requests to over 400 railway companies.

CGI helped design and construct an advanced planning system that digitizes and automates most of the planning process. By taking an integrated agile, DevOps and secure cloud approach, we created a highly automated environment for continuous integration and development. As a result, DB Netz achieved 3% more rail cargo train path capacity on the core cargo network, improved network utilization with 5% lower average transport time and the functionality to schedule and book train paths online within just three minutes.



DB Netz achieved 3% more rail cargo train path capacity on the core cargo network, improved network utilization with 5% lower average transport time and the functionality to schedule and book train paths online within just three minutes.

Priority #3 Collaborate in your wider ecosystem

Few organizations own and manage all aspects of their value chain. Instead, they build an ecosystem of internal and external stakeholders, including technology partners, with shared values that bring complementary capabilities to the table to help them achieve their business objectives. For this reason, simply optimizing one's own operations isn't enough and may even result in suboptimal performance. Therefore, it is essential to consider redesigning processes together with ecosystem partners. Furthermore, customers, especially end-consumers, expect digital interaction capabilities.

Competition no longer comes from traditional competitors but rather converges into a battlefield of ecosystems. This makes it essential to collaborate with your ecosystem of suppliers, clients, and competitors. Frequently, this implies (new) joint processes, information exchange, synchronization of decisions, and profit-sharing with ecosystem partners.

We recommend involving ecosystem partners in the design and execution of planning and optimization processes to improve solutions. Since the late 1990s, large retailers have experimented with their FMCG providers on Collaborative Planning, Forecasting and Replenishment (CPFR), a GS1 concept. CPFR aims to improve supply chain integration by supporting joint practices like cooperative inventory management through collective visibility and replenishment of products throughout the supply chain. Simply put, supermarkets coordinate their actions with their suppliers. In physical distribution, however, this is not yet the case. Parcel distributors know the volume of parcels to be shipped, but not the physical dimensions of these parcels. This information is available; it just isn't shared. One way to overcome this is by incentivizing data sharing among parties.

Recent initiatives such as (the Dutch government-funded) iShare and Industrial Data Space (IDS)—one of the offshoots of the Industry 4.0 initiative in Germany—aim to keep data at the source, by implementing a uniform set of agreements/schemes that enable organizations to access each other's data. Organizations that are part of this program employ the same identification, authentication and authorization methods. This ensures new agreements are not required every time data is shared. In addition, data sharing does not require costly, time-consuming integrations. Each party maintains full control over their own data and the terms of sharing, including what part of their data will be shared, why, with whom, for how long and under what conditions.

In summary, collaboration in your wider ecosystem can lead to better transparency, faster decision-making, lower cost, quicker delivery, and increased customer understanding. This will, in turn, lead to higher customer satisfaction and profit levels.

Key enabler #1
Build the best environment

Digitization is much more than just new technology. Strategy, organizational culture, new skills and an agile operating model are all aspects that must be considered and designed carefully.

Holistic digital transformation is more far-reaching than just the traditional IT department as technology is no longer a support function but has become a strategic value creator. Transformation and innovation are not initiatives that can just be dropped off at the CIO's desk. The entire organization needs to be aligned and involved (see Figure 2), and the gap between business and IT needs to be closed further, for instance, by running an IT awareness program for non-IT staff.

Digital transformation starts with ambition and strategy. As the Voice of Our Clients research illustrates, nearly all organizations want to become digital enterprises. However, only 45% have a digital strategy across their enterprise, 22% have a digital strategy that includes their ecosystem partners. When asked how agile their organization is to address digital transformation, only 17% scored themselves at 8 or higher (on a scale of 1-10). In addition, 95% identified cultural change and change management as the main obstacle to their digital transformation.

All this points to the fact that digitization goes beyond just applying new technologies. It also demands carefully considering and designing the right strategy, culture, processes, systems and skills. Strong portfolio management needs to be in place to seamlessly translate business goals into digital initiatives and ensure that these initiatives produce the best value for the organization. It's critical to learn by doing, recognize what works elsewhere and act on it fast.

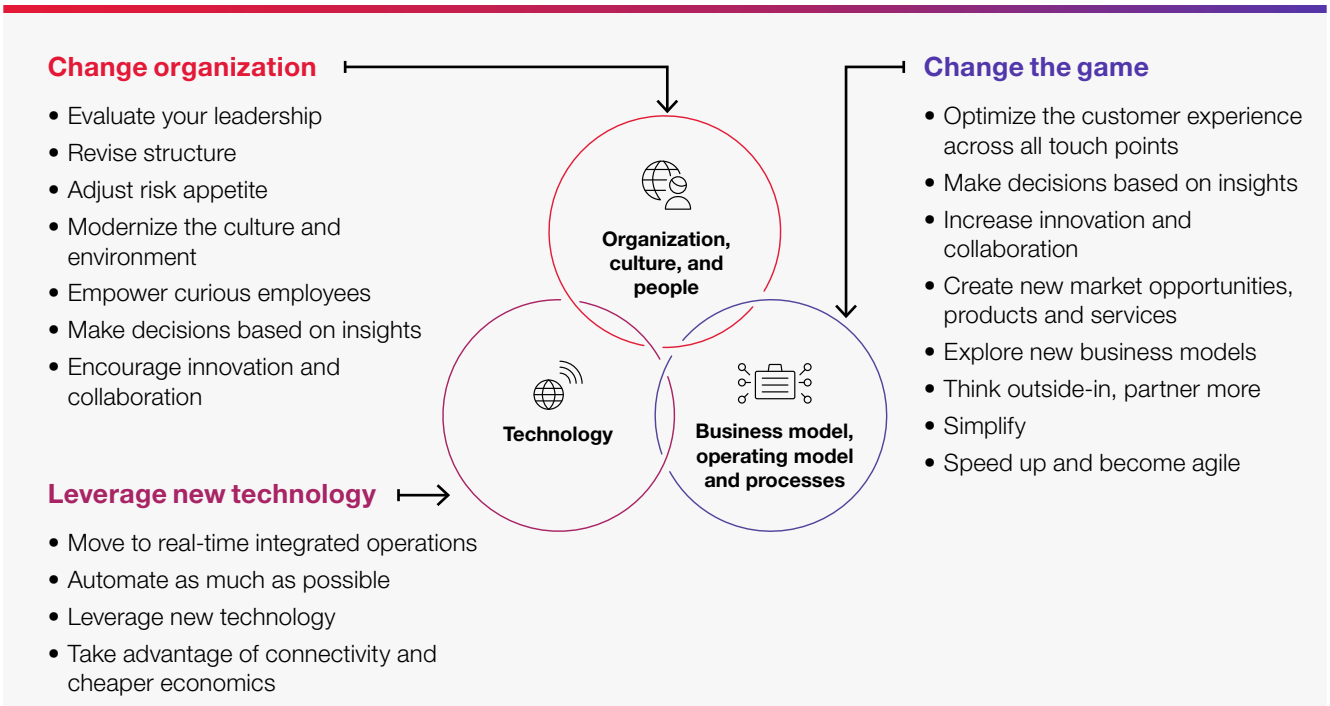


Figure 2: Digitization touches all aspects of an organization

CASE IN POINT

Using a digital twin to transform into a data-driven organization

To meet the increasing mobility needs of the Dutch economy, ProRail, which manages the Dutch railway infrastructure, aims to facilitate 30% more train movement on the existing network by 2030 at the same cost level. To help achieve this strategic goal, our business consultants worked together with ProRail to shape their vision to become a data-driven organization. As part of their digitalization program, ProRail also wanted to completely digitalize their operational and linked asset rail chains. In doing so, they could benefit from a digital twin of the physical network and operations. The digitalization program has enabled passenger trains to run every 10 minutes on several main lines with rollouts planned for other parts of the network. First trials with Automatic Train Operation (ATO) and the nationwide ERTMS rollout are underway. Shunting yards are becoming fully digital, while a digitalization initiative in asset management delivery has already resulted in controlled costs. In addition, to help ProRail achieve their on-time and safety commitments and aid them in predicting and simulating certain operational situations, our experts produced a 3D map table that integrates real-time information with geospatial data to provide an overview and insights into daily operations and planning. The maptable can also be used for training simulations for ProRail operators and engineers.

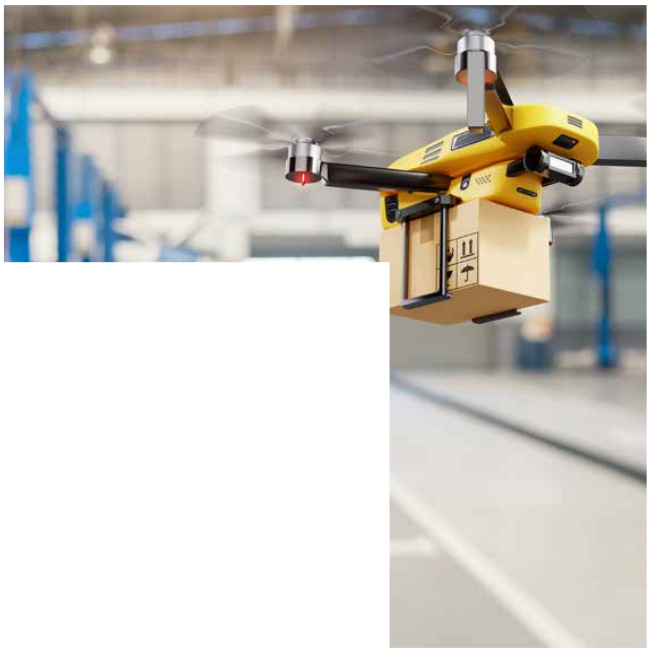
Our experts produced a 3D map table that integrates real-time information with geospatial data to provide an overview and insights into daily operations and planning.

Key enabler #2
Reinvent your processes and systems

Digital leaders have evolved how they acquire, deliver and operate their systems toward business agility. Many existing transportation and logistics organizations struggle with legacy processes and systems with hundreds of applications, data sources and internal/external integrations that have grown over time. These landscapes frequently come with serious technical debt that drains the resources needed for innovation.

Processes and systems will need to be modernized and even reinvented to empower tomorrow's digital needs. After years of experimentation with new applications, front-ends and emerging technologies, executives foresee more significant investments in their operational backbones to empower customer-facing digital services. This includes system upgrades and replacements (such as ERP), IT modernization and application rationalization, and process redesign. For instance, low-coding or no-coding applications (citizen development), containerization and the deployment of microservices can help to reduce costs and improve the agility of the IT stack.

We help organizations become more agile by modernizing their approach to architectural design. Our research highlights the importance of balancing collaboration and autonomy in design practices. Both are fundamental principles to being more responsive and collaborative in an agile context (Poort, 2019). CGI's Responsive, Collaborative Digital Architecture (RCDA) is an agile architecture approach that helps organizations respond to change continuously at speed while driving innovation, performance and results. Traditional architecture frameworks like TOGAF tend to focus on governance and control from a central CIO office. While a certain level of governance is necessary for risk and cost control, an agile architecture function creates a balance between centralized and decentralized design decisions. It combines small up-front design with evolutionary architecture, using quick feedback cycles to pivot when the world changes or new insights come to light.



Low-coding or no-coding applications, containerization and the deployment of microservices can help to reduce costs and improve the agility of the IT stack.

CASE IN POINT

Enabling real-time rolling stock monitoring

A Finnish transportation and logistics organization needed a real-time picture of rolling stock usage, location and movements on the rail network to identify and manage exceptions. Combining, processing and enabling the use of data generated by source systems was critical, as the system needed to handle real-time processing of approximately eight messages per second, totaling more than 20 million location data entries per day. We provided a real-time system that tracks trains and monitors tasks by connecting the vehicle units to the configuration and scheduling information of the background systems. During incidents, the developed automation generates ready message templates that can be tailored and sent to users via push notifications through a mobile app. Deployed using Agile methods, the tailored implementation met business needs by using open-source products and existing architecture and infrastructure to maximize cost-effectiveness. Due to its micro-service architecture, the application can be scaled as load increases and can check its own status. The data generated is used in all business operations and public services. In addition, the open interface allows third-parties to develop new services. The solution also enables cooperation at the national level to support the development of consumer services.

During incidents, the developed automation generates ready message templates that can be tailored and sent to users via push notifications through a mobile app.

Key enabler #3
Protect your organization and stakeholders

Protecting the enterprise, which includes cybersecurity, privacy compliance (e.g., GDPR), and information about goods/people being moved, has board-level accountability, especially as organizations become more digital and the specter of cyberattacks widens. However, cybersecurity and data privacy are often bolted on rather than baked in. CGI Voice of Our Client research indicates that, across industries, those executives who accelerate digital also accelerate regulatory and security priorities. They build risk mitigation directly into their customers' digital journeys and embed proper safeguards and processes for handling personal data. Rather than constrain agility, security and data privacy facilitate customer and citizen adoption and avoid the costs of breaches.

Transport and logistics organizations are increasingly being held accountable for who/what they move. Information about the goods and people being moved requires non-repudiation and measures around authentication and authorization. This can be a challenge with the increasing use of cloud solutions and a network of external partners.

Cybersecurity has been a core business and IT focus for the transportation and logistics sector since the massive ransomware attacks in 2017. While organizations have taken steps to protect themselves against similar attacks, this cannot be a one-off activity. Instead, it must be part of a continuous cycle in which new and existing risks are assessed, protective actions are taken and operations are monitored. Risk assessments can help identify the business impact, threat actors and organization vulnerabilities. The continuous cycle also requires embedding security and privacy into all aspects of your organization and ecosystems.

Figure 3: CGI's three-step approach to ensure cybersecurity controls are baked in, not bolted on

We recommend conducting periodic, comprehensive assessments to identify, quantify and prioritize cyber risks (see Figure 3). This should be followed by a cybersecurity information classification assessment for comprehensive data/information discovery and classification activities. Transportation and logistics organizations depend on IT systems and their operational technology (OT) systems. The assessment phase should be followed by developing or updating a holistic, integrated strategy that encompasses the convergence of IT and OT and the move to the cloud.

Once a strategy is in place, it is time to implement policies, standards and governance frameworks to ensure compliance. Turn these frameworks into action by implementing secure systems engineering and design practices, secure software life cycles, security by design, secure digital labs, etc. Even when organizations integrate security during design, continuous monitoring of threat actors and vulnerabilities using, for example, a security operations center focusing on both IT and OT is essential.

CASE IN POINT

Using satellite communications to deliver critical services and improve staff and passenger safety

Our client, a large UK owner and operator of rail infrastructure, is responsible for ensuring the safety of trains and track-side workers. This increasingly requires the use of continuously-connected remote sensors and specific functions like train tracking across a highly dispersed network. Our client wanted to use satellite communications and 5G to transform their existing network capability and build toward the Future Rail Mobile Communications System (FRMCS) envisaged to offer multi-bearer capability. This has led to joint development of the Satellite for Digitalization of Railways (SODOR) project. As part of the initiative, we are developing and installing satellite communications systems, and providing the management platform with our innovative AI-based IoT aggregation platform. Our initial use cases include ride comfort monitoring, train positioning, track-side sensor monitoring and passenger WiFi. The solution targets 100% communication coverage for the UK rail network and will be agnostic to the satellite operator. Passengers will be able to enjoy consistent coverage with a bandwidth 10x the current average on UK trains, while operators will have live access to sensor data.

Learn more about how we're supporting the Satellite for Digitalization of Railways (SODOR) project.

Turning vision into reality

Companies have approached digital transformation in different ways. Some separated old and new technologies and built new departments with names like “digital solutions” or “innovation lab” focused purely on experimentation with new technologies, often working as or with start-ups and external funding. Too often, these groups worked in silos, disconnected from the larger organization, its processes and (existing) systems. Other organizations chose to make digital the new theme for the IT department, requiring a new mindset and way of working. Frequently, these programs are viewed as discrete technology projects rather than a business transformation initiative, exacerbating traditional business-IT alignment challenges.

The simple act of thinking transversally and bringing together different departments—business, operations and IT—to discuss and agree on the experience you want to deliver can be transformational in and of itself.

Chanis, Myers and Hess (2019) note: “Involve the entire organization in digitization: don’t make it driven out of silos (chances are big that internal politics hinder success)”.

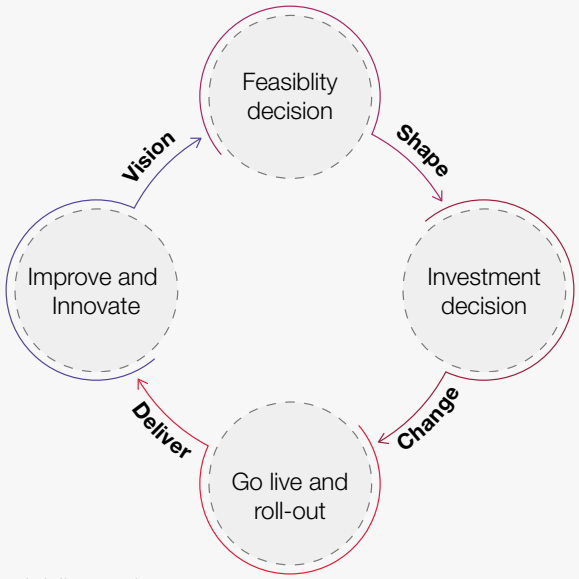


Figure 4: The vision, shape, change and deliver cycle

Here are some key lessons learned from our experience in helping clients across the world accelerate their digital transformation:

1. Identify your overall business goals. What are your organization's goals regarding costs/revenue, agility, customer satisfaction and sustainability?
2. Start with the BHAGs (Big Hairy Audacious Goals). Don't let the scale of the reinvention overwhelm you. It is OK to begin with pilots and experiments but execute them quickly and learn from them. Work in short-iterative cycles (see Figure 4), starting with strategy and quickly moving to the processes to shape, change and deliver functionality and services needed for a sustainable future.
3. Use your overall business goals to reevaluate your current project portfolio, focusing on the value these projects produce in relation to achieving your goals.
4. Stay up-to-date with technology, but don't go at it alone. The speed of new technology advancements is fast and full of opportunities. Build an ecosystem of peers, technology partners and knowledge organizations to reap the benefits of new technologies.
5. Assess and renew your strategies regularly. Develop and maintain your digital, cybersecurity, cloud, data, and advanced analytics/AI strategies, and most of all, communicate them to your employees.
6. Assess and renew your (digital) assets regularly. Are your processes and applications up-to-scratch, or are they entering the legacy zone and need renewal?
7. Train and develop your workforce in digitization with the new skills sets and tools to make them digital-ready.

The journey to digital entails a (steep) learning curve that calls for experimentation and learning fast. Failure is an option, but it's important to learn from it and to also learn from what works in other organizations and/or industries, and understand why it works.

We're here to help

Digital-native newcomers have the data, algorithms and ability to scale quickly. This does not mean that there is no room for existing players who have served their clients successfully for decades and bring knowledge that new entrants do not (yet) have. Existing transportation and logistics organizations need to reconsider their ways of working, customer interactions and the longer-term future. Fortunately, they have effective levers to pull by using the six elements encapsulated in the framework to optimize their operations, intensify customer interactions, and leverage their wider ecosystem of partners and suppliers.

We partner with you through our in-depth industry and technology experience and end-to-end capabilities to drive forward your holistic digital transformation that avoids hype and is grounded in proven, scalable customer-centric solutions.

Contact us to discuss how we can discover and advance your sustainable and digital future, together.

References

2021 CGI Voice of Our Clients | webpage

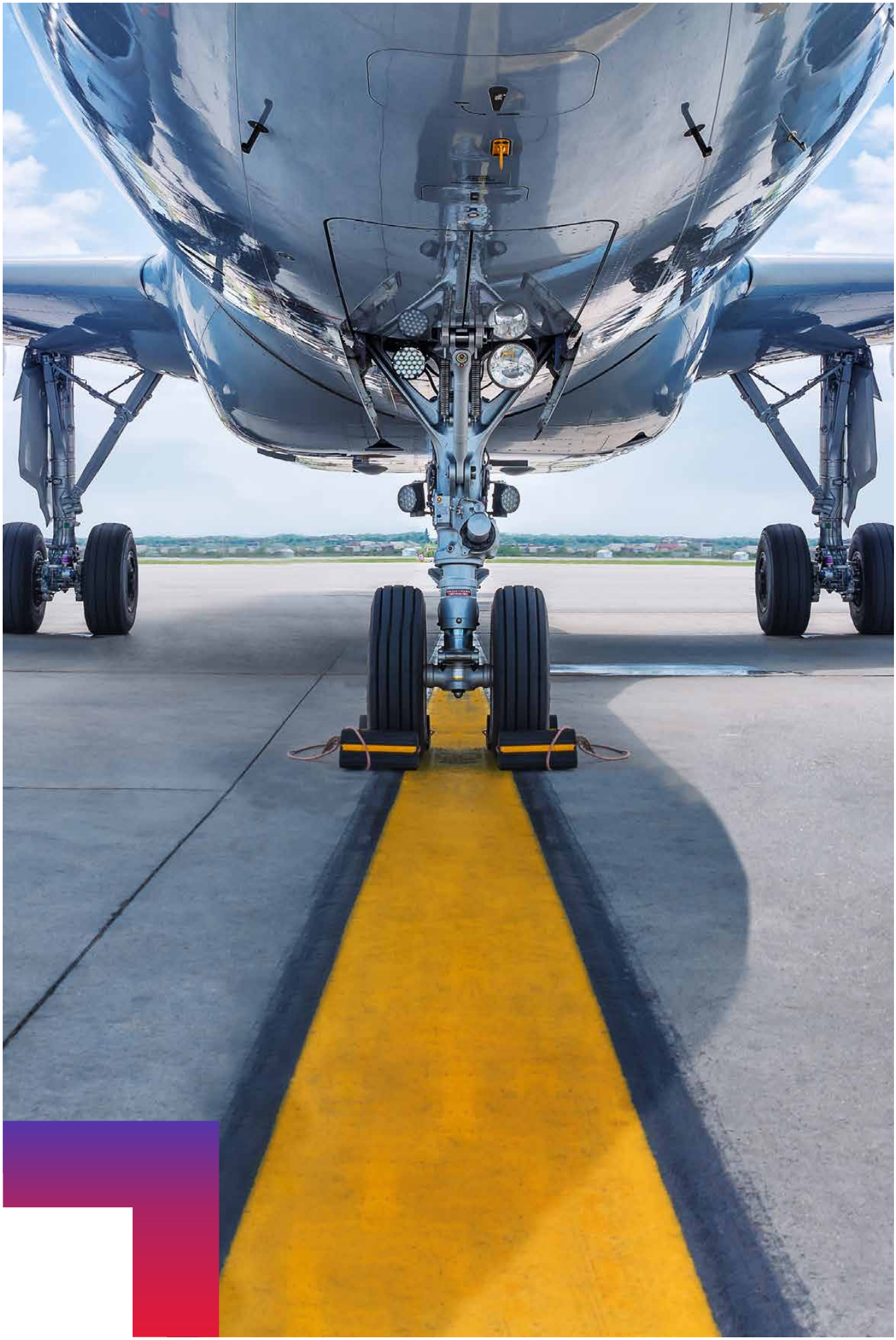
IPCC 2022 report: Climate Change 2022: Mitigation of Climate Change | webpage

Giannikas, V., D. McFarlane, J. Strachan (2019), "Towards the deployment of customer orientation: A case study in third-party logistics," Computers in Industry, 104, 2019, pp 75-87

IDS | International Data Spaces Association | webpage

iShare | webpage

Poort, E. (2019) "Between the Waterfall Wasteland and the Agile Outback," IEEE Software, vol. 37, no. 1, pp. 92-97, Jan-Feb 2020



About CGI

Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across hundreds of locations worldwide, we provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

Learn more at cgi.com
or contact us directly at info@cgi.com.