

Skyhigh

Going above and beyond limits



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Editorial

Welcome to Edition 11 of Operations.Insights, where operations management meets insight.

When I sat down to write this editorial, I was looking at the cover picture of this edition. Although such movements are unimaginable for me to perform, I really feel connected to this parkour artist who moves with grace, jumps over the next abyss, and faces danger with only a small margin of error. Sometimes when working in supply chain and operations, it feels like we need to be able to perform similar tricks day-in and day-out to stay on top.

Reflecting on these past years, I see that the past two were dominated by a variety of global macro events and various crises that pushed us to our limits. With COVID-19 infections spiking again around the globe in November, we see how much the pandemic is still felt around the world.

In addition, we must face disruptions from natural disasters caused by climate change, the growth ambitions of developing countries which are changing the status quo, and political conflicts that result in humanitarian crises. The UN Climate Change Conference in Glasgow showed how hard it is to unite everyone for change. But one thing is clear: These global developments cannot be managed by one individual party alone. We as a society need to take responsibility.

That's why in our last editorial for the 10th edition of Operations.Insights, I emphasized that companies need to consider 360-degree value creation to account for the holistic impact they are having on societies and the environment.

We cannot expect for things to settle down. The events of the past few years indicate that the speed of change will stay the same or increase. That means our supply chain and operations environment will be even more complex and will bring frequent challenges and other obstacles into our lives that companies will need to spin around or jump over, just as the parkour artist on the cover does. But considering the impact of the events of the past years, the difference will be that we must be able to jump "sky high," which means we must be able to adapt to new situations and scale solutions quickly. With our 11th edition of Operations.Insights, we are focusing on how we can jump higher by leveraging the possibilities offered by technology in the domain of supply chain and operations.



We begin with a perspective on how cloud technology can increase efficiency through access to IoT technology and improve lead times through data continuity across the entire value chain. Next, we resume the story of the digital thread from our previous edition and highlight which building blocks are essential to drive transformation from an end-to-end perspective. We continue with a spotlight on the termination of SAP's APO and how business and IT need to work as an integrated team to make the transformation journey successful before diving into the topic of large-scale business transformations.

E-commerce has been in the spotlight for the past two years and got a boost from COVID-19. In this edition, we explain the crucial elements for a successful e-commerce platform and how they create value. Afterwards, we analyze the degrees and maturity levels of service-oriented and product-as-a-service business models and how they can change your business. Within an excursion into the supply chain area, we explain how customer-centric supply chains drive profitability in the chemical industry and how the "Lieferkettengesetz" will impact business in Germany.

Last but not least, we focus on indirect procurement and how it can drive resilience in multiple areas.

I wish you an insightful read. As always, we look forward to getting your feedback and discussing the challenges you face within the domains of supply chain, operations and sustainability.

Best regards,

A handwritten signature in black ink, consisting of several vertical and diagonal strokes, representing the name Michael A. Meyer.

Michael A. Meyer

The sky is not the limit

Cloud technology can deliver concrete business value for supply chain and operations



Embracing cloud technology is crucial to lift your supply chain and operations to the next level, but how do you navigate through its technological complexities and identify the areas to focus on for maximizing business value?

Introduction

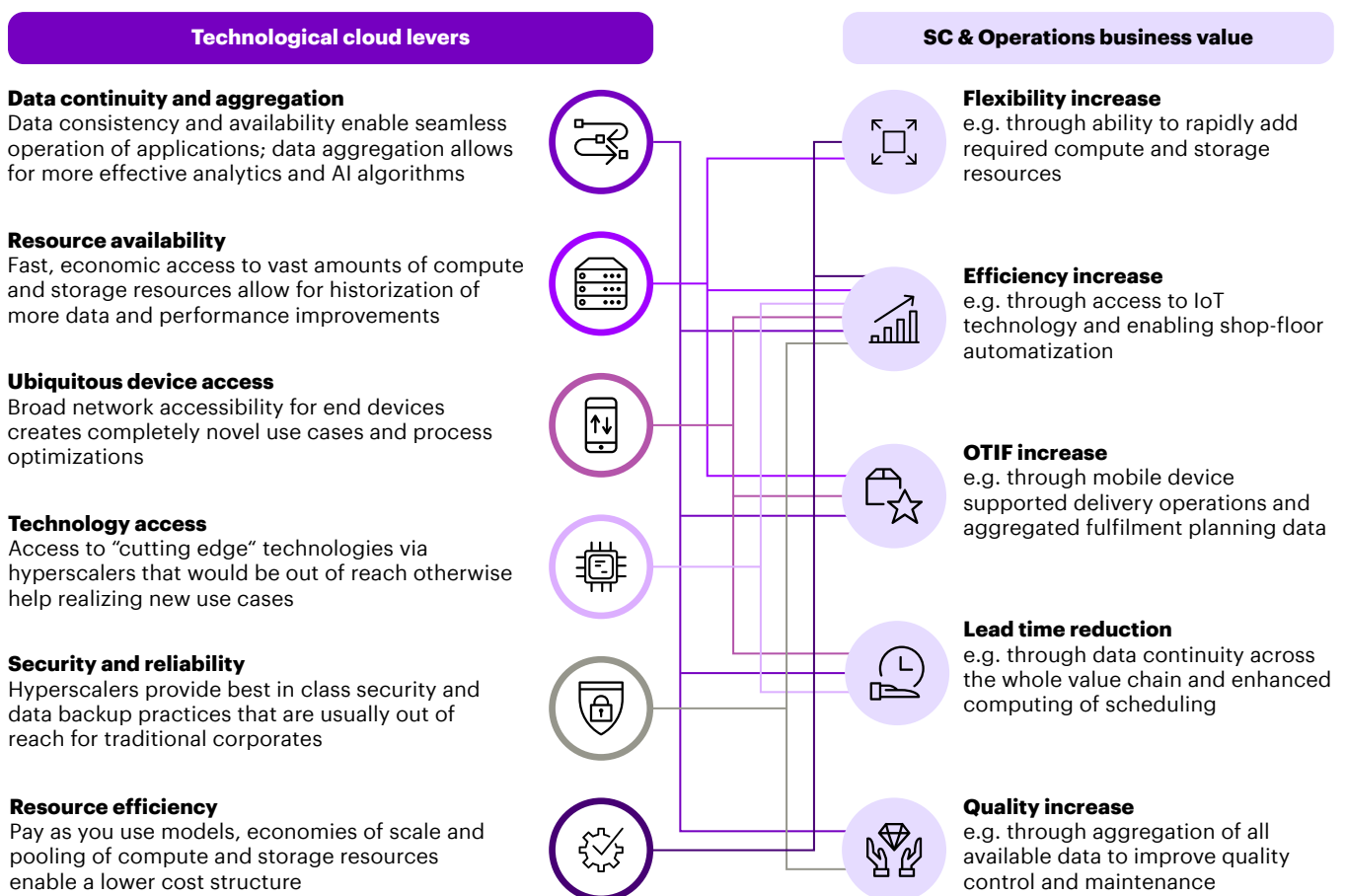
The journey to the cloud is one of the hottest topics when it comes to digital transformation. While related technologies have been available for many years, most companies have not completed their digital transformation agendas. In a Gartner survey, 53 percent of 1,877 CIOs said they are increasing investment in cloud services and solutions.¹ COVID-19 has created a new inflection point: Every company must dramatically accelerate their move to the cloud. This is the foundation required for digital transformation, enabling resilience, new experiences and products, speed and structural cost reduction. This specifically applies to supply chain and operations, an area that can benefit significantly from new opportunities enabled by the cloud. But what are the value areas and how can cloud technology help deliver value in logistics, planning, manufacturing and other departments?

Cloud's astronomical rise

The global cloud computing industry is projected to grow from \$371 bn in 2020 to \$832 bn in 2025, at a CAGR of 17.5 percent.²

For helping its clients to become "cloud first" businesses and accelerate their digital transformation to realize greater value at speed and scale, Accenture is investing \$3 bn over three years.³

Figure 1: Complex interplay between technological cloud levers and supply chain and operations business value



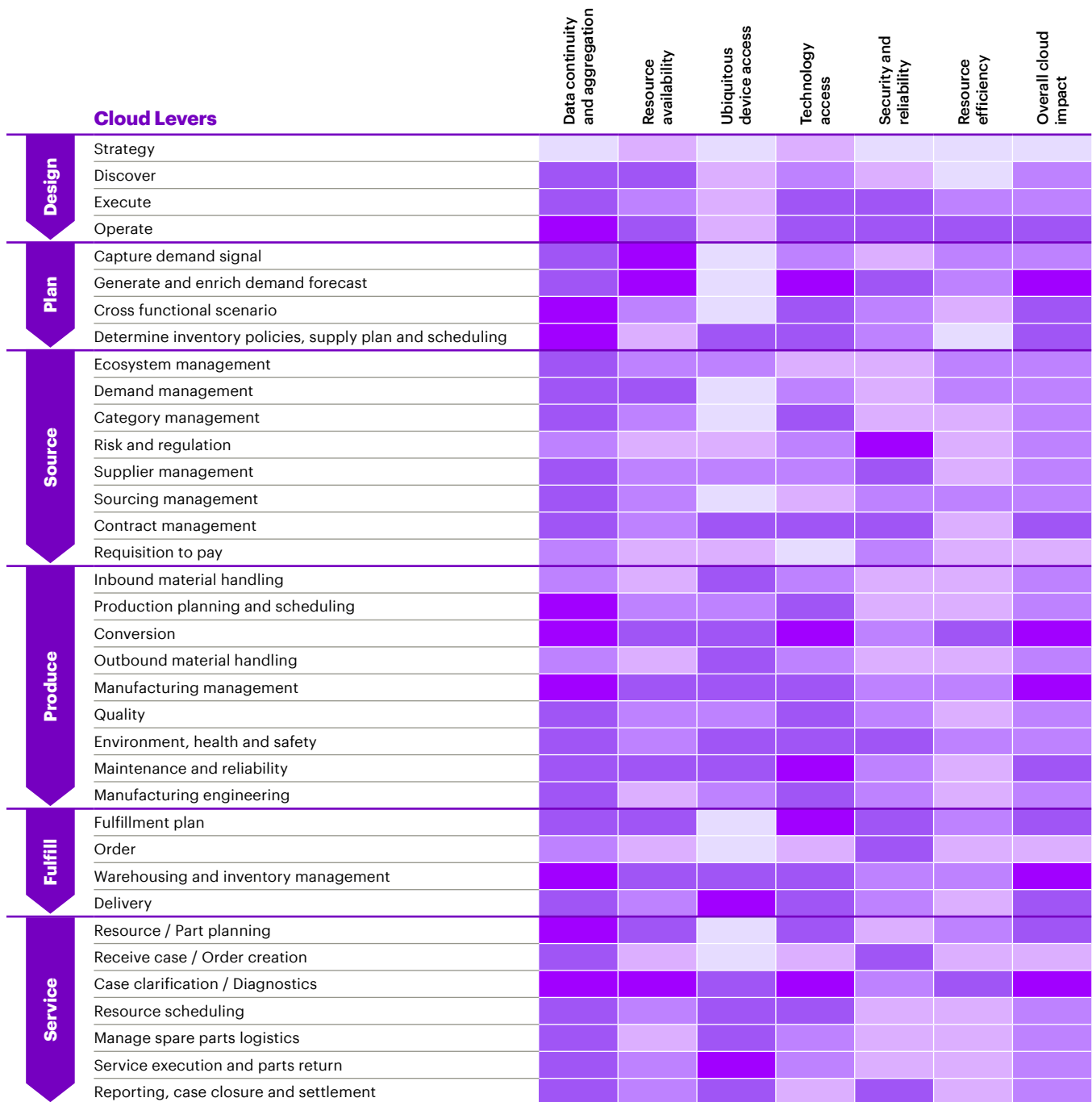
Demystifying cloud technology for supply chain and operations

To fully comprehend the potential impact of cloud technology, we first need to have a common understanding of how cloud technology is defined. At Accenture, we believe it is characterized by six technological levers that drive improvements in the business: data continuity and aggregation, resource availability, ubiquitous device access, technology access, security and reliability, and resource efficiency.

We also must understand how cloud technology can generate business value for supply chain and operations. For this purpose, we need to understand how the six technological cloud levers can have a positive and tangible impact on supply chain and operations.

One key factor to understand is that there are no clear one-to-one connections between the cloud technological levers and business value. A complex interplay of the technological levers contribute to increased value within supply chain and operations (see Figure 1).

Figure 2: Heatmap to determine cloud's biggest impact areas along the SCOR chain



Low impact potential High impact potential

For instance, an overall efficiency increase can be driven by access through internet of things (IoT) technology, access to mobile devices (enabling new use cases) and leveraging of data continuity and aggregation.

Translating opportunities for cloud technology into business value

To untangle the complex relationship between the cloud technological levers and business value, we typically follow a three-step approach to capture the full business value:

1. Identify the client's pain points and priorities within supply chain and operations
2. Analyze the impact of the technological cloud levers on supply chain and operations to determine the cloud's biggest impact areas from a pure technological perspective
3. Identify value added through the cloud based on cloud-relevant "flagship" use cases

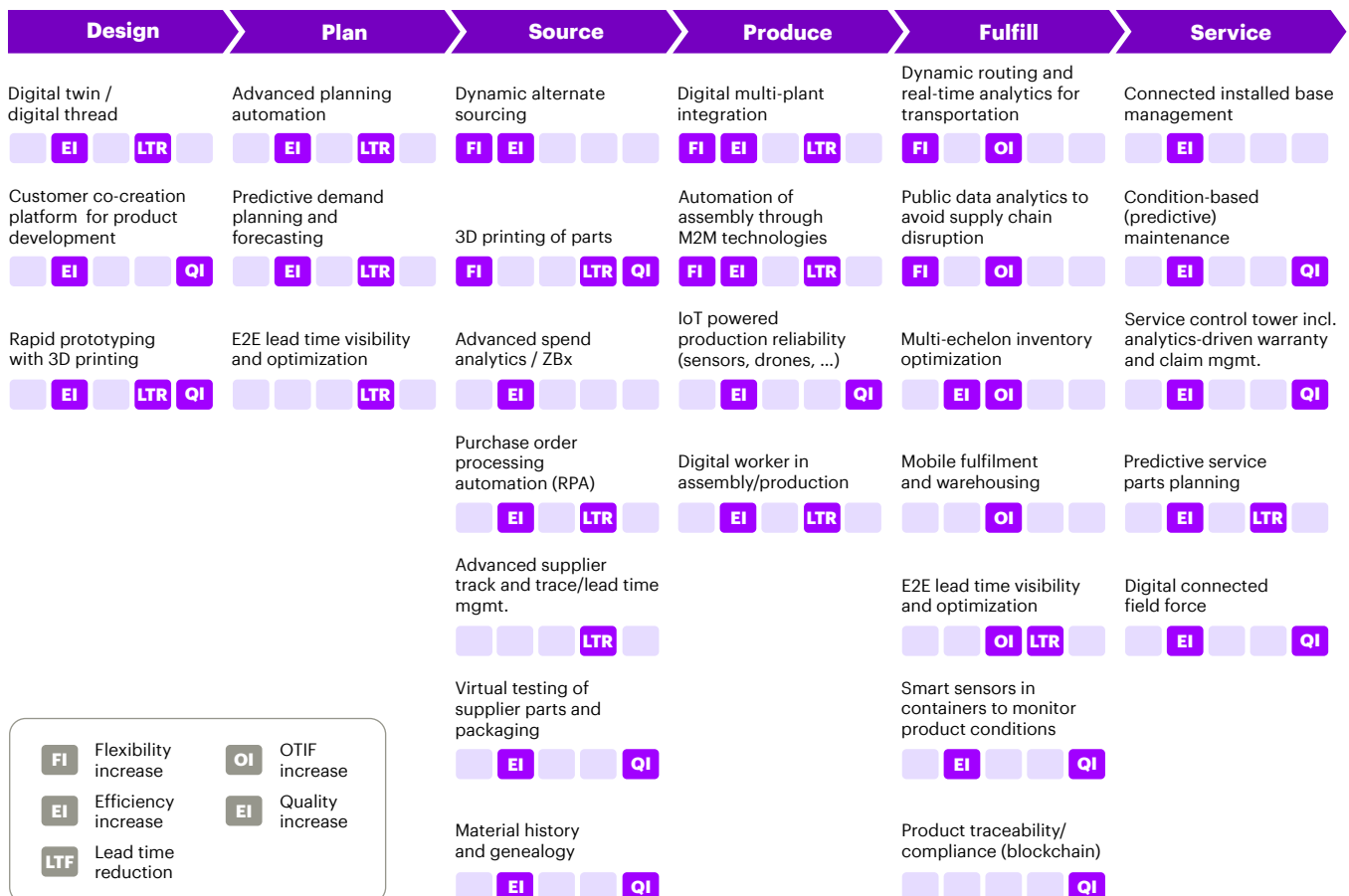
Based on the client's pain points and priorities in the supply chain and operations (SC&O) context and a tailored question catalogue, the potential impact of the six technological cloud levers is determined for all capabilities along the supply chain operations reference (SCOR) model.

As a result, we obtain the SC&O Cloud Impact Heatmap (see Figure 2) with the granular expected impact potential per cloud lever and SCOR capability as well as the aggregated overall cloud impact per SCOR capability. The SC&O Cloud Impact Heatmap provides the client with a global overview of the potential impact by the cloud on its supply chain and operations and indicates the areas that should be prioritized, and the resources allocated, during the initial cloud journey.

In the third step, after the client focus areas for the cloud journey have been identified, we jointly determine the most promising use cases, leveraging Accenture's cloud value use cases repository (see Figure 3).

This repository helps the client choose which use cases are most relevant and attractive, based on the business value each use case will generate. For each of the cloud-relevant flagship use cases, there is a more detailed view with a description, value indication, leverage of technological levers and a cloud vs. non-cloud comparison.

Figure 3: Cloud-relevant flagship use cases along the SCOR chain



Use case: “Cloud enabling digital multi-plant integration”

Here is an example of a flagship use case:

- Production and control systems of multiple plants and sites are digitally connected
- Manufacturing applications, such as production scheduling and routing, can be performed centrally (called services)

Different plants and sites have built up over the years siloed solutions with different maturity levels of technology due to lacking central application management or for the simple reason that those facilities were built in different decades. Traditionally, in this use case a high implementation effort is required to address the divergence in IT and operational technology (OT) and to harmonize the different technology maturity levels. Cloud technology serves as an integration layer to ease digital bridging of IT and OT across plants. The entities will be integrated in a digital companywide cloud environment with low requirements for the physical infrastructure.

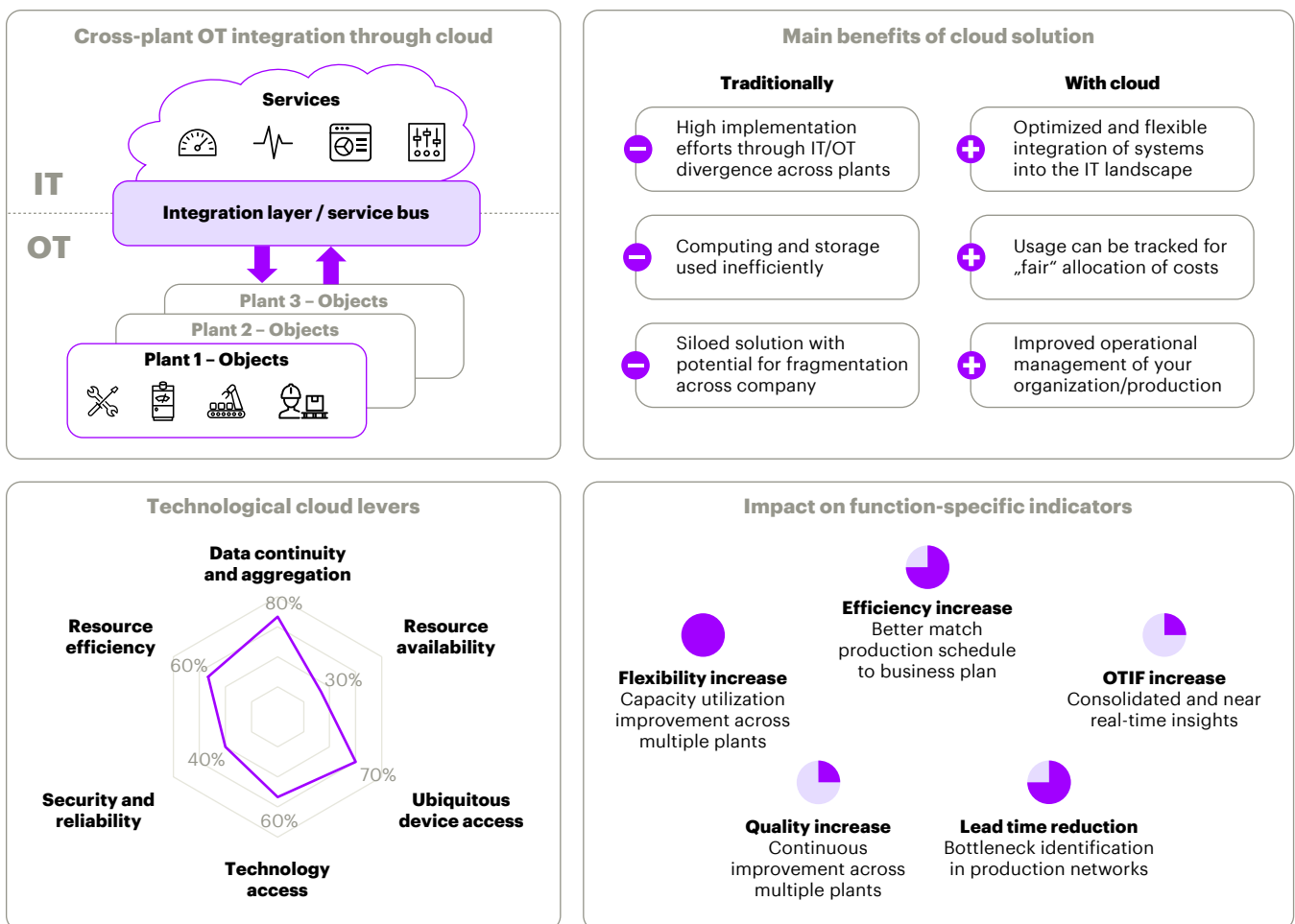
The following summary sheet (see Figure 4) highlights the changes through a cloud solution, its technical levers and the key business outcomes that can be achieved in this particular use case.

Stay ahead of the curve – companies must master cloud technology for future success

Our experience has shown that most of our clients are not able to reap the full potential of the cloud in the context of supply chain and operations due to two main reasons:

- **Lopsided focus on cloud technology:** Missing key value pockets by neglecting business and supply chain aspects, resulting in only reaping a small fraction of the full benefit potential
- **Lack of scaling capabilities:** Insufficient knowledge and/or access to cloud technology to scale use cases effectively to capture business value, resulting in being stuck in the endless pilot loop

Figure 4: Digital multiplant integration use case summary sheet



IT = Information technology OT = Operation technology

Our three-step approach ensures that all relevant technological, business and supply chain aspects are considered by analyzing the technological cloud impact on a client's SCOR capability, to identify the use cases with the highest benefits potential in the context of supply chain and operations. Regarding scaling capabilities, Accenture's holistic end-to-end approach and extensive network of hyperscalers and cloud solution providers guarantees that our clients can scale their high value cloud use cases with ease. Getting a head start in mastering cloud technology, which inherently is an enabler for scalability and accessing cutting edge technologies, is crucial to stay in front of the competition.

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Spinning the digital thread

How to establish a digital thread in the process industry



The time is now for process industry companies to establish a digital thread within their data backbones and venture into the possibilities offered by product lifecycle management.

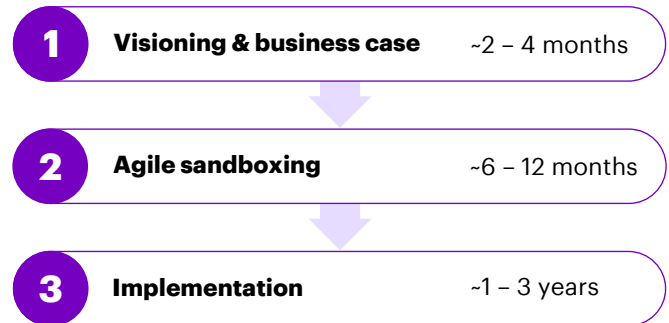
That is how we concluded our article “Needle in a haystack” in the 10th edition of Operations.Insights. In this article, we discuss why and how process industry companies should approach the digital thread in a holistic manner. Companies that adopt this approach could reap substantial benefits from business growth and improvements in speed, efficiency and compliance.¹ However, spinning a digital thread is a complex undertaking, so decision-makers must consider various factors to successfully structure and finance such an initiative.

How to spin a digital thread

Any established company that plans to adjust its product data structure will find it is not an easy task. In fact, some of our clients refer to it as “open heart surgery”. However, the benefits are massive, when done correctly and with surgical precision.

A large transformation journey begins with a visioning exercise that includes clearly articulating future needs, current pain points and market dynamics and an analysis of the As-Is system landscape (Figure 1). This provides a basic understanding of the real cost of product data complexity today and helps to shape an end-to-end (E2E) vision of the target state. The next step is the sandboxing phase in which key experts across the product lifecycle, including research, quality, compliance

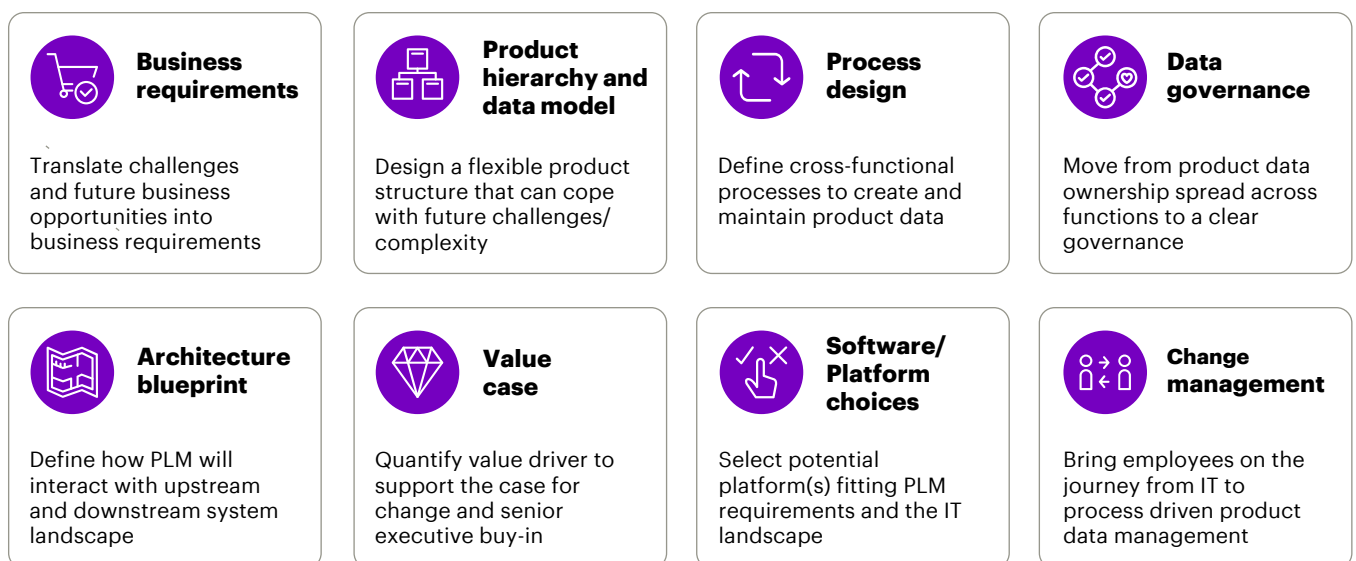
Figure 1: Typical digital thread journey



and manufacturing, form a clear understanding of the future design and apply it in test systems in an agile fashion. This “simulated heart surgery” is critical to validate requirements, assumptions and the capabilities of the technology.

While discussing the detailed approaches could be an article in its own right – let’s focus on three key watchouts in the early stages of such projects for now. First, to understand if and how a digital thread can support your business, clearly define what success in a digital thread initiative means for your company. What kind of benefits are specifically important to your business? Which pain points must be eliminated now and in the future?

Figure 2: Typical PLM journey building blocks



Second, determine the relevance of the business case and identify the parameters. Digital threads are strategic initiatives. You build a digital infrastructure with a tremendous future value that you should also quantify. You will be looking at a two-plus year transformation and need the fuel to keep going, so make sure the objectives you set are supported by a business case framework that highlights the value of your journey.

Third, identify your technology options. This allows a smooth design phase with the tool(s) already in mind, assessing the possibilities and limitations of the available vendors on the fly.

When thinking about a digital thread or product lifecycle management (PLM) transformation in its strategic and design stages, eight building blocks (Figure 2) emerge, based on our project experience. While all of the building blocks are important, we will dive deeper into two of them: product hierarchy and data model, as well as the change management part of the transformation.

Why the product hierarchy is essential

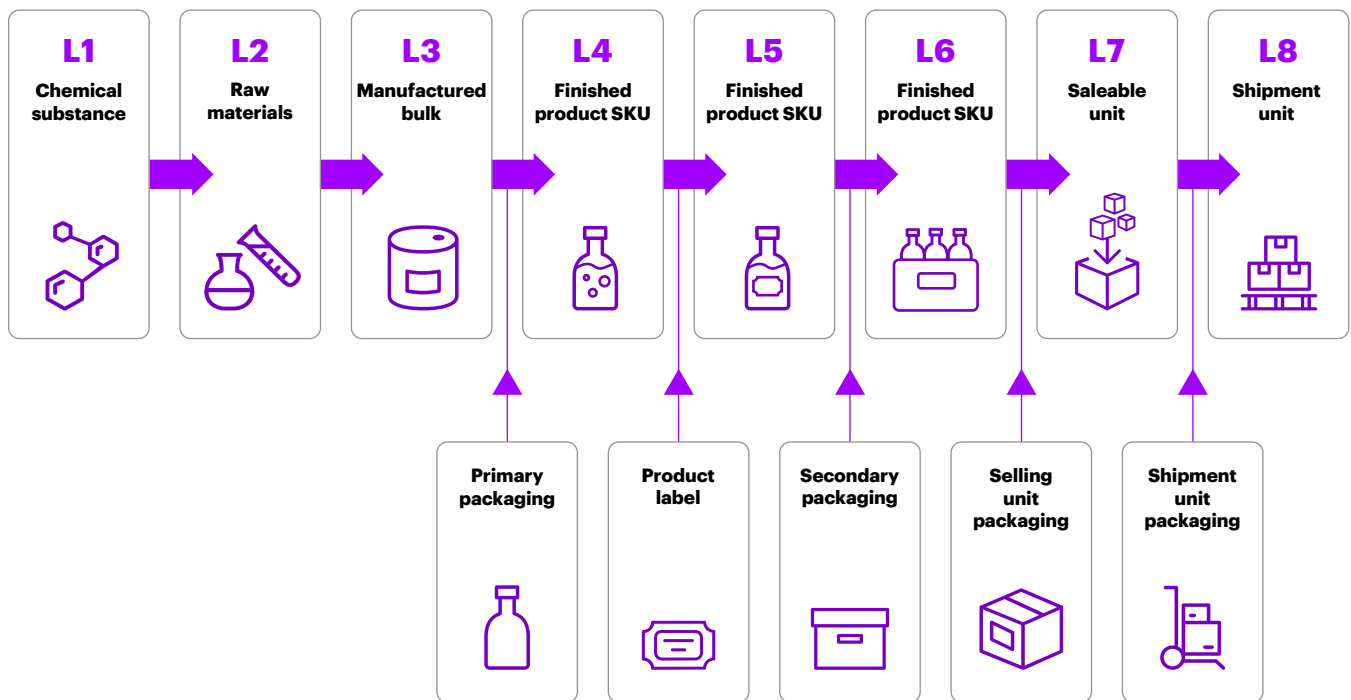
The product hierarchy is one of the key enablers of your digital thread. It is simply how your product is digitized in your system(s). Various data objects are used to describe a final sellable product, including its formulation, packaging, labels and artwork (Figure 3).

Your product hierarchy should not be hardwired. It should be flexible and tailored to your business, to ultimately serve your company's future opportunities and challenges.

How flexible your product hierarchy needs to be completely depends on your operational reality. Based on our experience, flexibility requirements have increased a lot. Why? Regulators intensify their policies globally, consumers expect digital information about everything, suppliers want to collaborate and the speed of change keeps increasing. Today, products don't just serve a purpose, such as satisfying hunger, eliminating illness or protecting from rain. They are also expected to be social, ethical and sustainable while providing functionality at a decent price.

Satisfying these requirements leads to complexity in every functional domain. There is complexity from bundling, kit offers, resale scenarios, tolling, specific customer demands, country-specific requirements and so on. Your future product hierarchy should be able to cope with these and new business requirements without the need for complex workarounds and bridging solutions.¹

Figure 3: Exemplary process industry product hierarchy



As overarching guidance, the product hierarchy of the future should be designed to closely align with industry standards and enable automation, to reduce data management. Keep in mind that there is no one-size-fits-all solution. Your business is different from any other company, and thus your product hierarchy too needs to be set up in a way that it can cope with today's and future business scenarios.

Too little too late – change management

When speaking about PLM transformations, the term change management is usually mentioned in the same breath. That's because at the heart of the journey is the fact that almost all business functions are impacted and how people work is changed. After all, if you add or remove layers in your product hierarchy, it impacts how you cost the product and plan your demand, as well as downstream systems such as artwork management. Change usually scares employees, and it can lead to resentment and outright frustration if the transformation is communicated as simply another data cleansing exercise.

Change and program management go hand in hand in a digital thread journey. You must involve the right people at the right time. Not doing that is one of the main reasons PLM projects fail or run over budget (Figure 4). Depending on your vision, you should nominate one business owner per function. Choose someone who is knowledgeable of different business practices across regions and can apply a strategic

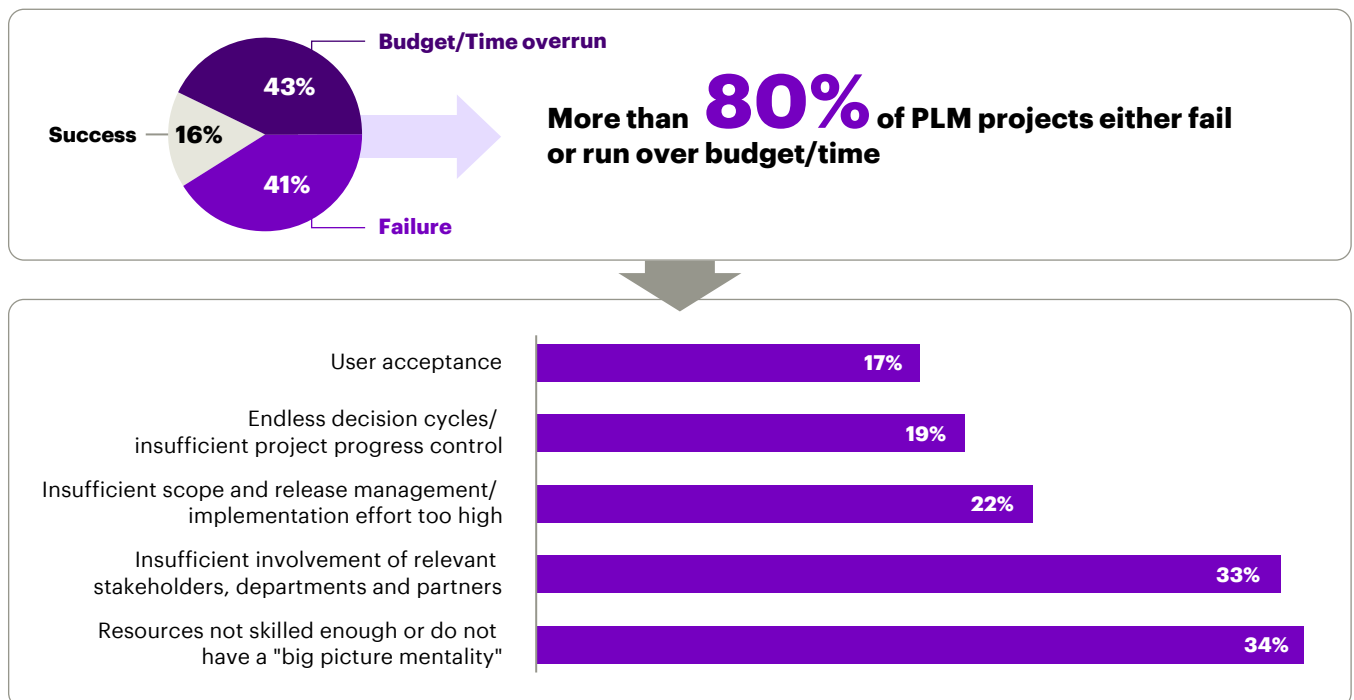
lens to reach a global design. Business owners need to be convinced that a digital thread will provide the benefits they are looking for. For example, research and development stakeholders are interested in having consistent data not only from development but also from commercialization stages at hand to develop new products. Regulatory usually appreciates the possibilities a digital thread offers to handle product compliance in a more stringent way, and planning can be satisfied when the benefits of a new product hierarchy are mapped to their supply chain scenarios.

When you involve strategic minds who think conceptually and are knowledgeable about your company's regions and business practices right from the start, they will become the internal advocates for your digital thread transformation. This will help bring regional stakeholders on board, and their feedback will be beneficial when you design a final solution in later stages of the process.

What target-driven recipe development can do

While the digital thread journey focuses on your business in an E2E way, there are also specific, standalone solutions that leverage a solid data foundation in the early stages of the product lifecycle. Together with SAP, Accenture developed a solution based on SAP S/4HANA called target-driven recipe development (TDRD). This solution supports companies when developing products by responding to new customer demands quickly and efficiently.³

Figure 4: Why PLM projects fail ²



Instead of a bottom-up approach, TDRD takes the customer requirements as the key determinant. In the beverage industry, for example, customers demand a certain target value for an ingredient, such as sugar-free. TDRD will start from this target value and provide developers with an E2E view on the nutrients and other components in the recipe to create the final product. The system also focuses on product cost and compliance and ultimately enables faster product launches, reduced development costs and faster design cycles. To get there, TDRD considers data from different business functions to develop new products quickly and up to customer expectations. Besides a wide array of functions (Figure 5), TDRD fosters collaboration and enables companies to conduct simulations and experiments and see all relevant calculations in a single user dashboard.

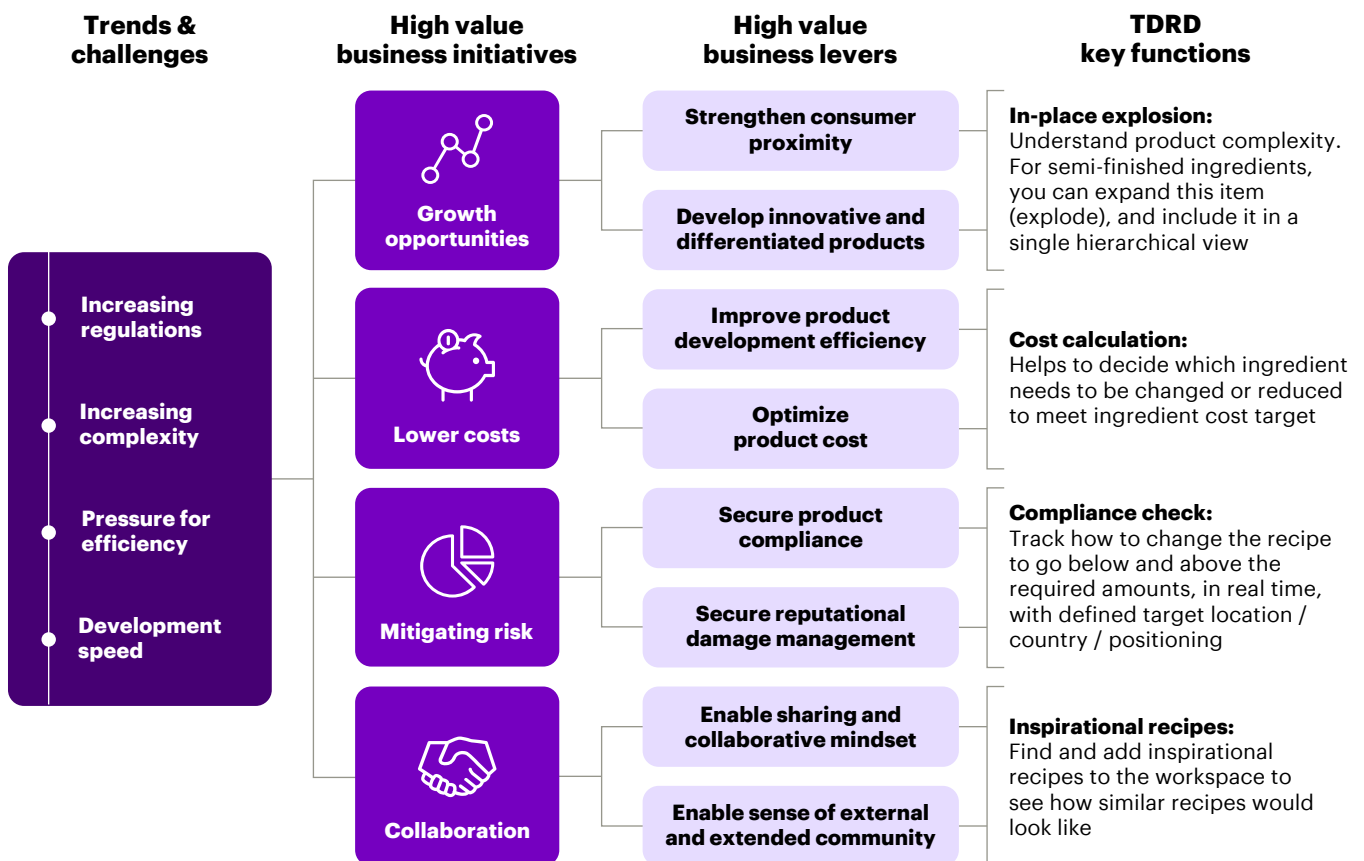
Conclusion

We strongly urge process industry companies, who have not yet taken action, to start with the first steps to manage product data complexity in a better way. Identify key pain points, create a mapping of your system landscape and define your vision for a digital thread. Spinning a digital thread in the process industry is a strategic process that takes time and careful planning. Companies that embrace two important building blocks—product hierarchy and change management—will be prepared to meet future business, customer and regulatory demands. In addition, companies that approach the digital thread in a holistic manner will have the flexibility to meet unknown opportunities and challenges. It is time to start spinning.

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Figure 5: TDRD value drivers and key functions (excerpt)³





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The end of APO as a chance for new SC planning excellence

How to leverage urgency for IT change to pivot toward an integrated planning approach



The SAP APO suite termination in 2027 provides a unique opportunity to centralize and standardize business processes and enable a fully integrated supply chain planning approach. But first, we must redefine the role of business and IT to enable such a transformation in a brave, new AI-driven and data-fueled world.

As announced in February 2020, SAP will focus its next generation support strategy on a full innovation commitment toward all SAP S/4HANA based applications.¹ In line with that, SAP will terminate all maintenance efforts for its SAP Business Suite 7 core applications by end of 2027, including the entire advanced planning and optimization (APO) suite.

Now, IT departments of many companies worldwide are facing the challenge of replacing APO in a highly customized and diversified ecosystem. How can this IT challenge become a chance to transform the digital planning space and kickstart a true business transformation? The answer lies in the ideal calibration of process design principles (in line with data flows), product- and market-owned IT setups, as well as democratized automation decisions.

But first, let us examine why organizations should welcome this change, and why we must shatter a myth that has been haunting global IT departments for many years: that business should lead and supply chain IT must follow.

Historically grown chaos: How business legacy became an IT liability

Since 1998, when SAP launched the APO suite, businesses worldwide have implemented the module-based tool to digitally enable their planning capabilities. But for many operations, the once standardized APO suite has grown into a highly fragmented and customized apparatus with multiple nuclei and additional satellite systems per region, market, division or product group. This is the result of the dynamic evolution of market-specific requirements and decentralized managerial systems, operating models and ways of working that impacted the planning landscape.

Recent client transformations have shown that, on average, only approximately 30 percent of supply chain planning teams still use standard functionality in SAP APO. The remaining 70 percent of business processes are either performed in custom development areas, regional satellites or via manual workarounds, such as spreadsheets or email transfers.

The great designer David Pye once said: “Everything we design and make is an improvisation, a lash-up, something inept and provisional.”² And indeed, he has a point: Every support system must mirror and constantly grow with the activity flows of the execution engine it fuels. However, there is a big difference between proactively managing change by holistic and fully integrated system adaptations and sporadically reacting to change by performing random, isolated system enhancements or creating manual workarounds. The first approach requires a long-term strategy, vision and conscious C-level investments around digital transformation, while the second method focuses on short-term pain relief and business continuity. There is no right or wrong in either approach, but there is a breaking point that fundamentally disrupts the idea of reactive and local IT enhancements driven by partial business change. In the example at hand, that breaking point is the need for a global replacement of the highly customized and localized SAP APO planning core.

A paradigm shift: Why IT transformations should drive business change

The myth that business should lead and supply chain IT must follow dates to the early stages of industrialization. When there is a machine, there is someone who uses it and someone who maintains it. Whereas the user typically performs the machine-supported process step and understands its position in the overall vertical value chain, the “maintainer” only focuses on the horizontal, technical pillar of the machine and its functionality.

For the longest time, this disbalanced power and ambition triangle between user, machine and maintainer was rightfully kept alive, as the only non-deciding part – the machine – needed to be maintained to support the deciding part – the user – to execute the business process step as effectively as possible.

This has resulted in siloed organizational structures and the overall inability to align motivations and expectations when it comes to any kind of operational change, especially between business areas and IT departments. To this day, business requirements are still considered as the primary key and leading principle in most digital transformation programs.

But what many organizations fail to acknowledge is that the relationship between user and maintainer has been experiencing a major shift during the last two decades (see Figure 1). In the near future, it will be the machine, not the user, that makes decisions. By enabling innovative technologies based on artificial intelligence (AI) and machine learning (ML), we are in the process of making the executing machine user more obsolete as the machine itself makes analytical and data-based decisions.

Taking this a step further, the user will be pushed into a maintaining role, ensuring that the machine makes decisions based on the company's business and performance targets while still catering to market-specific requirements where necessary. The user will maintain performance adherence to business standards while the IT department will maintain performance adherence to technology standards.

With this equal positioning, the tradition of default business dominance in any corporate transformation can officially be buried. Therefore, in a brave new digital and AI-enabled world, IT transformations will drive business change.

A brave new world: How business and IT form an integrated transformation team

That said, transformation politics should never shift from one extreme to the other. It is not about IT departments taking over the lead, but about enabling both business and IT divisions to take an equal and integrated seat at the overall transformation table. For SAP APO, the ambition should be to leverage the new system implementation to centralize and standardize business processes and to enable a fully integrated supply chain planning process.

All necessary customization or localization efforts should be pushed into either the integration layer or smaller satellites to keep the planning core engine as a central and harmonized instance. Sticking to these design principles will allow organizations to respond to system upgrades in a more agile way and avoid a second diversification nightmare like the one many APO landscapes have grown into during the past decades.

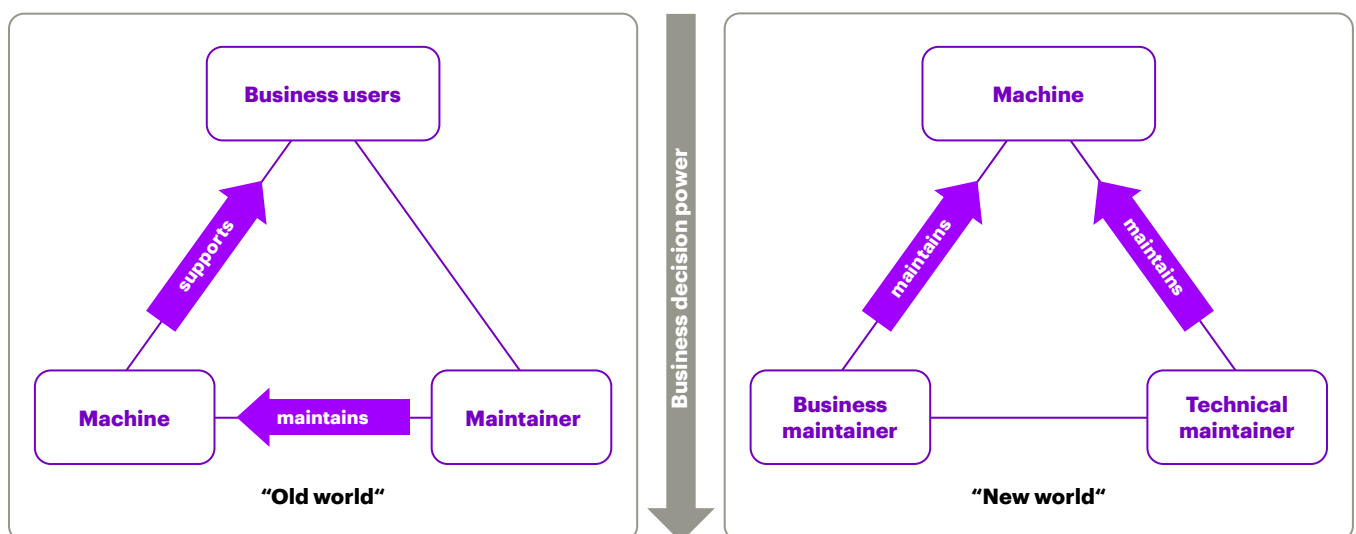
But as much as integration and agility should be reflected in the new end-to-end (E2E) planning process and system landscape, it also needs to be the core mandate and main instrument of the actual transformation journey. Catering to this idea and the constant need to align IT and business perspectives, the following three main guiderails enabled companies to have successful transformation programs.

Data flows drive business processes

There is good reason behind the general statement that data is the new main asset that drives business value, and it will be a staple on every CFO agenda. In supply chain management, the overall planning performance of manufacturing and distribution companies is highly dependent on the quality and the diversity, accessibility and completeness of data input.

Statistical demand forecasts are no longer just calculated on historical demand data but are the result of a multilayered demand sensing enhancement that pulls in multiple internal and external data sources, such as planned promotions, regulatory market changes and customer behavior, to find and leverage correlative demand drivers. With this, companies can better anticipate volatile markets and demand shifts.

Figure 1: The shifting power and ambition triangle



When relying that much on data as the core driver of business performance, the overall data flow should be determinant for the split and sequence of activities in the E2E planning process. In addition, the respective data owners should have an active stake in the process/IT design and implementation and the final process execution.

Empowerment of product- and market-owned IT setups

Performance governance plays a huge part in how employees define their ownership. In the old world, the answer to “what is your work focus?” would have been “the output quality” (user) vs. “the machine cost and functionality” (maintainer). This conflict in motivation was mainly fostered by the difference in how success for both roles was measured.

To this day, business and IT departments follow different KPI set-ups and therefore often find themselves in discussions around conflicting interests when defining future system and process requirements.

To counteract this tendency, transformation progress as well as final planning performance should follow a fully integrated success definition for both business and IT divisions. This integration approach must be mirrored in the transformation team as well as the future IT set-up while moving away from classic system ownership toward product and market-ownership.

Democratization of automation decisions

The automated decision-making capability of machines is, of course, not yet a mandatory element for all value chains. Many planning departments still see the market intelligence of regional demand planners as more meaningful than system-generated forecasts and often business representatives mistrust anything that has not been touched by a human hand before it came to their desk.

Within the exercise of designing the future planning operating model, and deciding where automation could potentially replace human touch, decision power should be given not only to AI and ML experts but also to the business roles that are working with automated outputs. Active involvement of these stakeholders should drive the transformation’s change management agenda and the actual automation scope.

Taking the first step: The time is now

As you face the approaching extinction of your APO suite, here are some points to keep in mind:

- Stop believing that business requirements should always lead IT change. It is a square game now, and times have changed. IT transformations will lead business change – that is the future.
- Supply chain planning is not a static model. It is constant conversation that should be created and led by data flows and cross-functional collaboration. Make sure you shape your planning transformation around an aligned success understanding and a unified expectation toward the use of automation technology.
- In unprecedented times like these, any thought of putting organizations through fundamental transformation programs can be terrifying. Yet, the end of 2027 is fast approaching. There is never a perfect time to begin, so why not start now?

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Unleash enterprise value

A platform ecosystem as the key
to large scale business transformation



With the looming lifecycle end of SAP R/3, many companies are forced to rethink their IT support for their operations platforms. The environment of core IT systems and associated end-to-end processes are extremely complex, so touching such more or less balanced, running systems is full of challenges and risks.

A new paradigm: Operations platform transformation

The overarching issue is how to ensure the digital continuity of a “virtual” product from design through manufacturing to service. Essentially, we see two approaches.

The first one is to engage in a technology upgrade that leaves the legacy processes in place. This allows room for a sequential, risk-mitigating approach, such as starting with an S/4HANA upgrade followed by a PLM and/or CRM integration. This approach loses out in terms of harvesting efficiency gains from an end-to-end operations perspective while being bound over years in sequential upgrades and the roll out of various systems.

The other option is to embark on a full redesign of the value chain to capture value from the digital thread and the technologies put in place by the leading software majors, such as SAP, Siemens and Dassault Systèmes, and the hyperscalers, such as AWS and Google.

Most companies are choosing the second option, which requires a strategic approach for designing a harmonized process, IT and application landscape, and vendor and

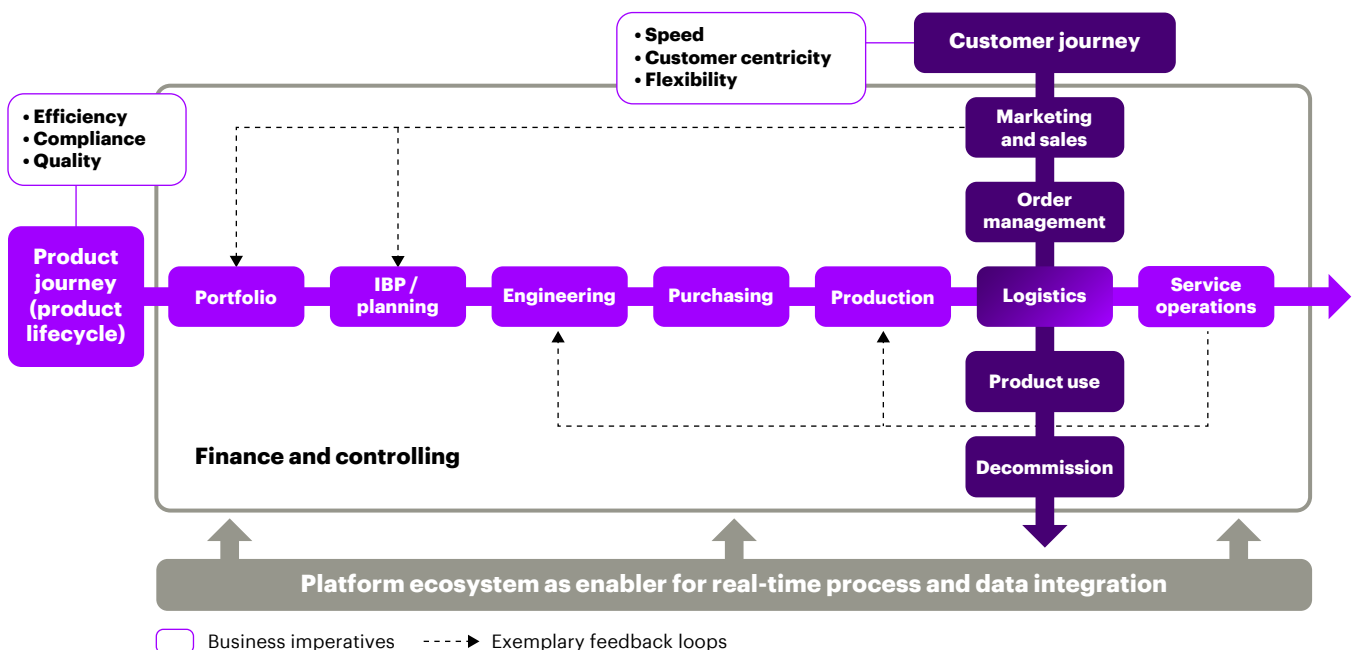
partner ecosystem setting. It also requires an implementation logic that has been thought through and, above all, a business instead of an IT-led transformation.

Our recipe for a successful operations platform transformation

One common pitfall during such transformations is to lose sight of the underlying strategic business targets that are core drivers for competitive advantage: increased efficiency and customer centricity powered by higher speed, flexibility, compliance and quality. To fully achieve these strategic ambitions, companies must follow an approach along three key dimensions (see Figure 1):

- Horizontal integration along the product lifecycle ensuring digital continuity from design through manufacturing to service, including feedback loops supported by seamless and automated data exchange
- Vertical integration along the customer journey targeting customized, fast and flexible order processing and service provision based on individual customer demands
- Cross-functional integration leveraging integrated business planning (IBP) and finance and controlling excellence, to ensure profitability along the value chain

Figure 1: Horizontal and vertical value chain integration



The described integration must encompass the holistic enterprise operating model, including organization, processes and technology. The latter one plays an especially pivotal role for transformation into a digital and data-driven enterprise. We recommend a holistic four-layer operations platform ecosystem that leverages a wide range of major technology providers (see Figure 2) to enable support and speed up the transformation.

Each layer must be tailored to the industry-specific enterprise needs:

- **Digital core:** This is the heart of the platform and the backbone and support for major enterprise platforms, such as CRM, ERP and PLM.
- **Application layer:** The best-of-breed applications for client-specific value-adding parts of the value chain, such as Coupa for procurement, Kinaxis for supply chain planning and ServiceMax for service operations, enhance the digital core. In some instances, these applications might replace certain functionalities of the core.
- **Cloud layer:** This fuels the digital core and the application layer. Hyperscaler platforms, such as AWS, Google and MS Azure, provide the infrastructure and ability for real-time data lakes and processing.
- **Analytics layer:** Here, providers such as Palantir, Snowflake and Splunk, which have big data platforms, intelligent data management solutions and strong analytics capabilities, make use of the new real-time data availability as basis for data-driven decisions and automation.

Full benefits can only be achieved through a holistic integration of the four layers. A large global chemical company, for example, adopted this approach and was able to decommission obsolete assets and expand its LIMS system to reach multiple new sites with no downtime and no new CAPEX commitment. The company achieved a seamless cross-layer integration between Azure, LIMS and ecosystem applications, enabling transparency through real-time data exchange protocols and role-based security.

Key preconditions and success criteria for the transformation journey

As mentioned above, technology should not be leading in the initial phase of the transformation journey. Therefore, the starting point for operations platform transformations is a clear understanding of the current and targeted enterprise operating model:

- Ecosystem with customers and partners representing expectations and requirements
- End-to-end processes representing the how
- Roles with the related skills and governance model they are embedded in as well as their assignment to the organizational units
- Operations platform supporting the processes for maximum efficiency and automation.

All the elements build on each other. To define the future setup of the operations platform, it is crucial to understand the processes, interfaces and ecosystem requirements that need to be supported, as well as the roles and organizations that execute them.

Figure 2: Holistic operations platform ecosystem

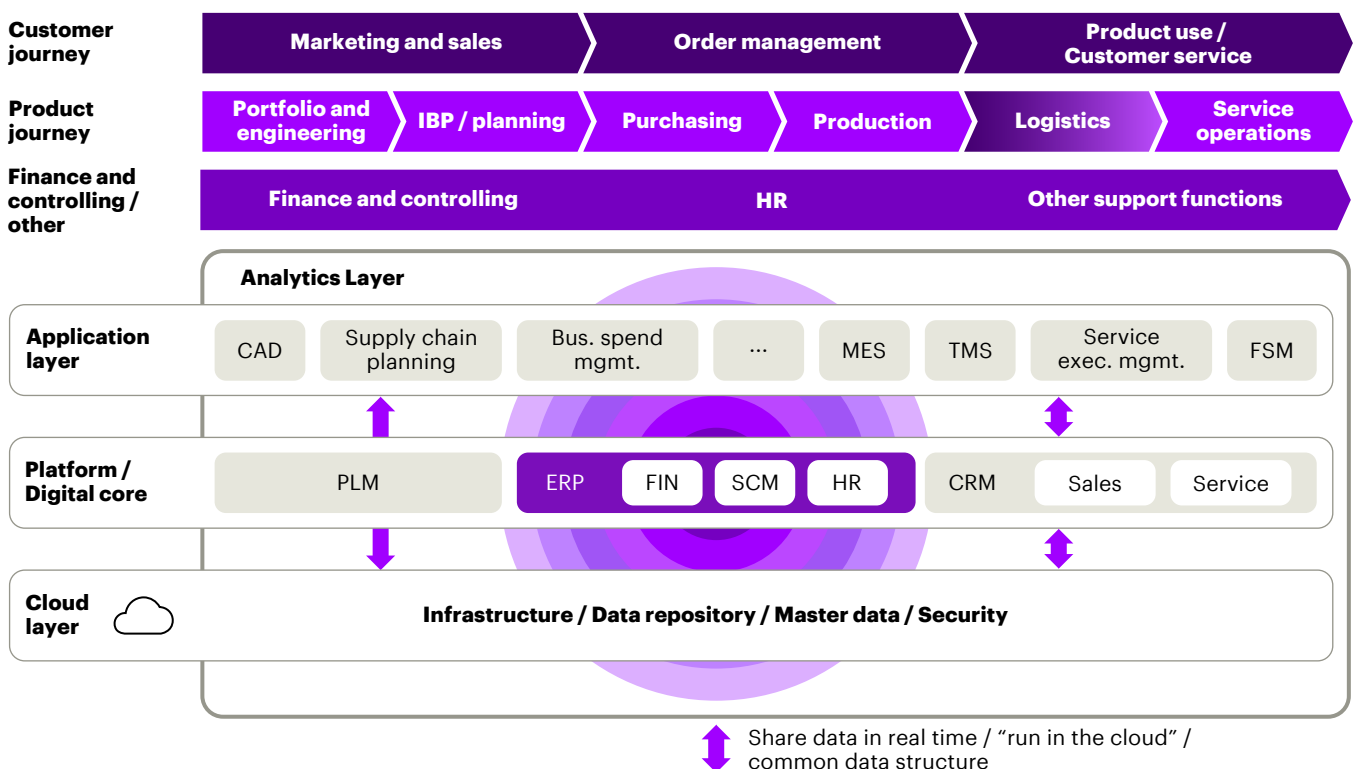
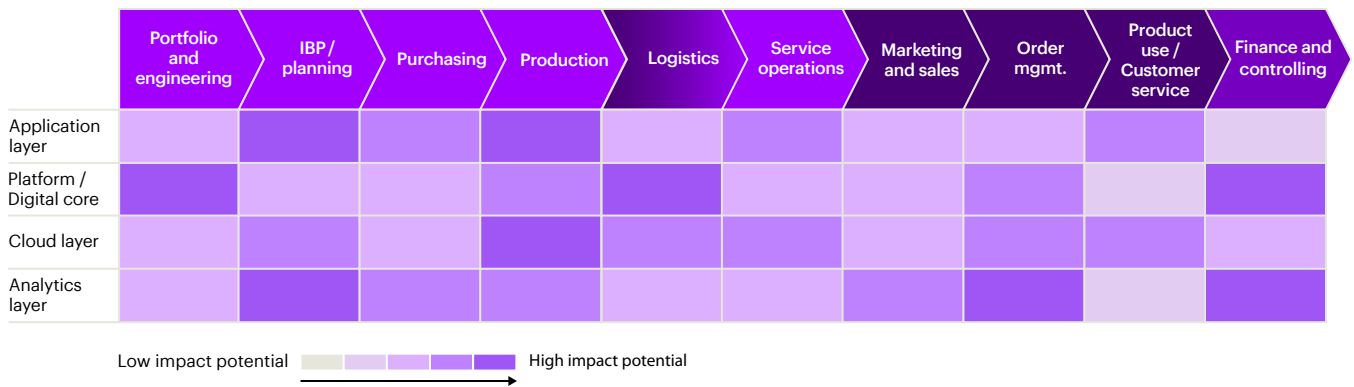


Figure 3: Platform layer – Value chain impact heatmap (illustrative)



When processes are not fully defined or documented or they are not harmonized within the global organization, the result is a fragmented and highly individual set of process landscapes. A fundamental precondition is to build a consistent enterprise-wide process house harmonized for all stakeholders and with clear roles and interfaces, to ensure integration of the processes along the horizontal and vertical value chain.

Designing such end-to-end process houses requires a lot of effort. A proven method to limit this effort is to identify the business-critical processes first. These require maximum focus during the transformation, and they typically are the processes in which deep dives in terms of best-of-breed IT support is required. Business-critical processes can be identified through segmentation in market differentiating and business-model-driven complexity, to ensure competitive advantage and the ability to handle highly complex process variations. A typical result is a heatmap that shows most critical process areas mapped to the four platform layers.

For a major industrial equipment manufacturer, the process house design was the first phase of its S/4HANA greenfield approach — strongly business and not IT-driven, with a clear view on efficiency gains. The objective was to limit process exceptions and stick to the S/4HANA standard as best as possible, to avoid customization of the future core platform.

In this phase, IT requirements were captured on task level, gaps to standard were identified and required customizations were evaluated. Also, key design decisions for the future technology architecture were defined and decided on, which, along with the business requirements, are the basis for the platform decisions across all four layers. Establishing these preconditions beforehand ensured an efficient template and implementation phase for the operations platform integration.

Conclusion

Many companies are struggling to define a best-fit end-to-end target picture and to successfully manage the complexity of these large-scale transformations in parallel. To secure a return on investment for large transformation programs, companies should establish a holistic four-layer operations platform ecosystem as technology foundation – but only if end-to-end value chains are fully integrated, the platform decisions are well aligned with the business requirements and processes and the interplay of all four platform levels is optimized.



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Operations as the real enabler for e-commerce

An evaluation that goes beyond post-its, personas, and customer journeys



If there is one thing that has not been negatively affected by COVID-19, it is e-commerce. If anyone still needed proof that digital shopping is becoming the new normal, the ongoing pandemic has provided the last evidence. While entire industries have suffered, millions of people have lost their jobs, and shopping malls and retail stores have been deserted, digital marketplaces experienced roughly 81 percent year-over-year growth in the fourth quarter of 2020.¹ That is twice as high as e-commerce as a whole.

How to make an e-commerce platform really work

The many major industry players that want to enter (or have entered) the digital commerce space try different approaches to tackle the design and build challenge. Yet, they all have one thing in common: They focus on “the surface”, thinking that a fancy front end will provide a great user experience. So, they create a state-of-the-art customer experience, define personas and customer journeys and conduct design-thinking workshops.

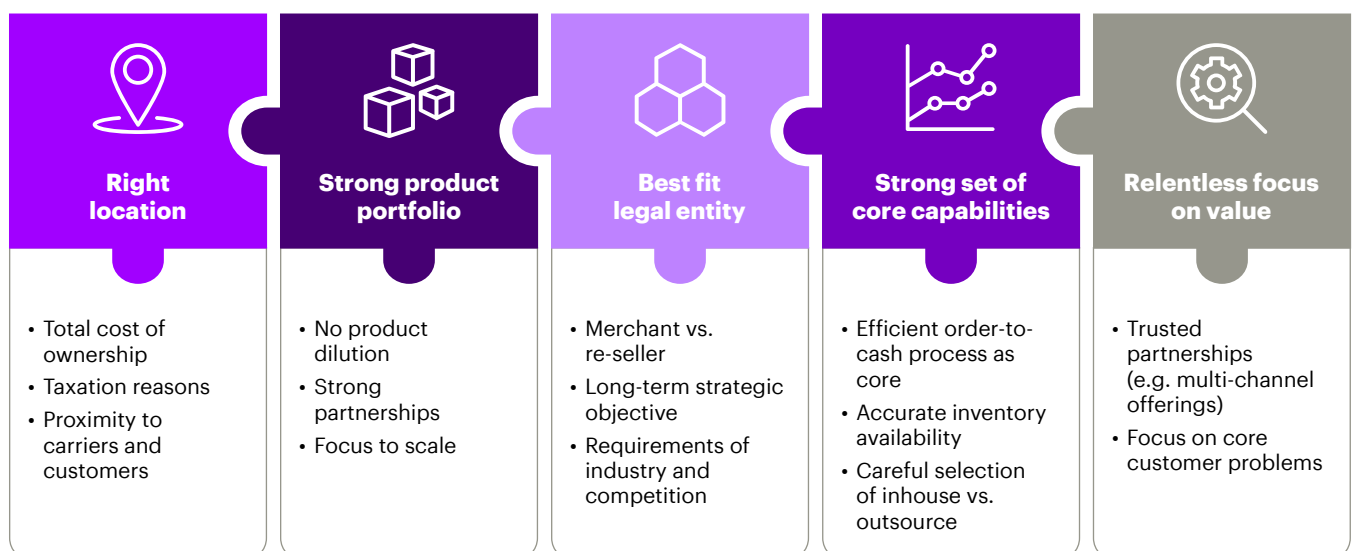
What is the problem with this? Those approaches tend to forget the solid groundwork: An e-commerce platform that only focuses on design will provide a bad customer

experience if operations and logistics are executed poorly. Studies show that logistics are determining customer behavior to a significant degree.

Approximately 41 percent of purchase decisions are based on delivery options, and roughly 50 percent of customers cancel their order if the delivery options do not meet their expectations.² Clearly, a company’s goal must be to deliver a high service promise with cost-efficient operations to truly differentiate their e-commerce from the competition.

How to achieve this? When it comes to operations, our experience shows that there are some decisions you must get right (see Figure 1).

Figure 1: Building blocks for a successful e-commerce platform



Evolve from a strong core

Start small and with a focused product portfolio. Market studies show that all companies that have been in business for more than 5 years started in just one product segment.³ What does this mean? When starting, do not try to offer everything. Instead, cherry pick the products offered. Focus on addressing one market segment and choose products with high volumes and stable demand. Also, leave out complicated products, such as dangerous goods and electronics. However, it is not only about the products. Starting with an “easier” portfolio allows you to outsource more easily to service providers. You do not need to do everything on your own. Use experts for a lean profit and loss and fast scaling. Build on committed suppliers, service providers and partnerships for joint growth. When Accenture supported one of the largest universal marketplaces in setting up its operational capabilities, this strategy proved to be very successful. In that case, using external logistics services was the key enabler to support the company’s growth ambition. It also allowed the company to “go live” with a new sales channel and to establish new revenue streams significantly faster than if it had built everything inhouse. And, more than that, it allowed the company to scale fast, using the service provider’s capabilities and network.

No marketing buzz but relentless focus on real value creation

Right away, you will need a substantial number of products and suppliers in your chosen segment to build the basis for scaling the business. How? You must showcase that your platform is relevant and brings tangible value to your partners as a new channel. First, you must become a trusted partner to your suppliers. Consider yourself as only one part of each supplier’s omnichannel strategy. Consequently, you must open your operations to each supplier’s other e-commerce/offline channels, similar to the approaches adopted by Amazon and eBay.⁴

Second, build an operating model that addresses your suppliers pain points. Take the chemical industry, for example. In the past, many chemical companies deliberately pushed small order volumes to distributors because they did not want the complexity in their own operations. Today, marketplaces such as CheMondis fill that gap and allow chemical companies to access long-tail clients directly.⁵ Those marketplaces must excel in operations to stand a chance against established industry players.

Third, do what you are good at first. While it is nice to talk about data monetization and additional revenue streams, this is something for a later development stage (and at scale). Optimizing the core means do not blow up your back-office functions with additional complexity and manual efforts. The same holds true for tax optimization schemes: They are great, for sure, but more relevant after you have become a significant player in the market. We often see clients lose track in those discussions, and we have had to push the focus back to the core operating model.

Do not forget about the basics

Carefully consider the choice of your legal entity, which will also have a significant impact on your order-to-cash (OTC) processes. There are two choices: You can either offer an e-commerce platform (merchant) or take a more active role and own products (re-seller). Both models have pros and cons and should be selected based on industry and your strategic rationale. As a rule of thumb, the merchant model leaves you with thinner margins but less (investment) efforts, and the re-seller model allows you to exert more influence in the market. This decision is a very strategic one, and we strongly recommend evaluating it during the beginning of your platform ideation phase.

Also, do not underestimate the power of (your) location. Our experience shows that there are many more factors relevant for choosing the right location than just cost. If you need delivery speed, you should consider proximity to your clients or at least proximity to your carriers. Operating inexpensive but remote sites may prohibit you from quick access to a last-mile carrier haulage network. Thus, you may save some pennies on the location, but you will lose money as you cannot offer the appropriate delivery standards. One of our clients initially moved to a central location strategy but in the process of centralizing realized that the multisite strategy is a must to offer what customers expect from a speed perspective. For other companies, such as the newly emerging instant commerce companies like Gorillas in Germany,⁶ the right location depends on being located within the neighborhoods you are servicing. Meeting all those requirements demands highly elaborated scenario and network modeling.

Design and user experience, fueled by technology and operations

As you can see, it is the on-the-ground logistic operation that counts. Our research shows that approximately 80 percent of customer satisfaction comes from simply delivering “on-time, in-full”.⁷ Thus, five cornerstones of your e-commerce platform are crucial for success:

1. Real-time inventory visibility and the corresponding backend integration to offer **accurate product availability**
2. An efficient and automated **order-to-cash process**, minimizing efforts on the customer’s side
3. **Order transparency** along the entire process to stay connected to your customers and to be able to inform them pro-actively
4. **Differentiated fulfillment** options, including multiple transport modes to serve customers in the most economic and efficient way
5. Focus on quality leadership instead of cost leadership when starting a collaboration with **reliable service providers**

Of course, we do not want to minimize the importance of a smooth touch-and-feel front-end. Ultimately, the combination of an innovative design and the right technology stack in the background will make your e-commerce platform a success.

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Are you really ready for Product as a Service?

How to successfully transform your business model



PaaS is dramatically changing business models of companies and re-defines “value”. Are you and your organization ready?

As customers increasingly seek flexible asset management and up-to-date products with high uptime, more are turning to alternative product-based business models, such as Product-as-a-Service (PaaS) offerings in which they pay for the use of a product or its output instead of buying the product outright. In fact, PaaS is currently a real “hype” in many industries.¹ An example is the offering of a printing press manufacturer: It now sells by volume printed using a subscription model, instead of selling its own equipment to the customer.

Companies interested in tapping this market and offering their products as a service need service maturity to ensure product availability and uptime and therefore securing output for the customer and revenues for the manufacturer.

In this article, we look at required service maturity levels to enable PaaS and what it takes for a company to move into the PaaS market. This includes a shift of the usual way of working – from adaptations to enterprise functions, such as sales and finance, to upgrades of IT infrastructure.

For customers, the benefits include higher product quality and less risk because the producer must ensure uptime throughout the entire product lifecycle and provide updates to the latest technologies.

For manufacturers, moving into the PaaS business model means an opportunity to create new and constant revenue streams, increase customer centricity and generate greater value from connected products and services.

Figure 1: Comparison of product-based business models

	Degree of service orientation			
	Low			High
	Product sale	Rental/Leasing	Sharing	PaaS
Customer focus	On product ownership	On product use (exclusive)	On product use (shared)	On product output
Ownership	Customer	Manufacturer (or leasing company)	Manufacturer (or sharing company)	Manufacturer
Value for customer	Valued for its characteristics / possession-driven	Valued for its characteristics / possession-driven	Mainly valued for purpose but also for characteristics	Valued for reliable output
Revenue source for manufacturer	Product price	Payment for use (for a fixed period)	Payment for use (for actual time used)	Payment for use (for value-add provided or output produced)
Customer payment	One time (in full or in installments) at time of sale	One-time (initial base fee) and recurring (period of use, service)	Usually recurring for each use	Recurring based on output
Revenue risk for manufacturer	None	None	Product not used (e.g. sinking demand, downtimes)	Product not producing output (e.g. downtimes)
Product design focus	Design for targeted quality and serviceability	Design for targeted quality and serviceability	Design for reliability and serviceability	Design for reliability, high output and serviceability
Service focus	Service as legal requirement and enabler for customer satisfaction	Service as legal requirement and enabler for customer satisfaction	Service as enabler for product uptime	Service as enabler for product uptime
Circular economy focus	Low (e.g. repair instead of scrap, retrofit, 2 nd life, recycling)	Medium (usually 2 nd life as sold product)	High (optimized utilization of product)	Medium to high (2 nd use or 2 nd life as sold product)
Relevance of connectivity	None – product can be sold without connectivity	Low – connectivity is not a prerequisite but helpful	High – connectivity as an enabler for business model	Very high – connectivity inevitable to secure revenue

How PaaS compares

What is now known as PaaS was introduced as early as 1960 by Rolls Royce, which charged for power from its jet engines on an hourly basis (Power-by-the-Hour). Some 60 years later, PaaS is still in its infancy in many industries due to concerns about their revenues on equipment sales.² Figure 1 shows the differences between established business models and Product as a Service.

A paradigm shift for the enterprise

Companies that want to add PaaS business models to their portfolio need a mindset shift in multiple domains, something that is often underestimated in the transition. Michelin, for instance, was not able to manage the new complexity of PaaS and also failed to communicate the new value proposition.³

While service as a core enabling function for PaaS needs to increase focus on its core task of securing the product uptime efficiently and economically, other enterprise functions must rethink how they operate. Figure 2 gives an overview of changes needed in various areas.

Xerox, the maker of photocopier machines, implemented PaaS in the early 2010s: Over the years, it went from selling photocopiers to being a document management solution provider paid per output (e.g. pay-per-page). Xerox had to transform its entire operating model and significantly expand its business process outsourcing business to manage the transition to PaaS.⁴

Service as a core enabler for PaaS

As highlighted above, service, or maintenance and repair, is critical for reaping the benefits of the PaaS business model, since products only generate revenues for the manufacturer when they are up and running.

Hence, the primary goal is to provide products that – ideally – do not fail. Even though this seems to be more a task for enterprise functions, such as engineering, purchasing or production, service can play an important role as well. The equipment generates most of the information relevant for quality during operation. One could say that service is the fuel for quality feedback processes from functions earlier in the lifecycle.

But failures cannot be completely avoided. So, the second goal to strive for is to avoid unplanned outages. Condition monitoring and failure prediction allow companies to perform service activities before the product breaks down, minimizing the loss of output, extending product lifecycle and securing PaaS revenues. Predictive maintenance made possible by the correct IT infrastructure powered by the cloud and enhanced by Internet of Things (IoT) capabilities is crucial.

Assuming the worst case of an unexpected breakdown, service can still minimize the damage through lean and efficient service delivery supported by digitization and automation. Examples are:

- Predictive spare parts planning to ensure short-term parts availability on-site
- Digital field force scheduling for optimized utilization and availability
- Advanced failure analysis through remote access for improved first-time-fix-rate
- Customer self-help support for immediate containment actions
- Digital service technician (using artificial intelligence (AI)/virtual reality (VR) to enable a universal, flexible workforces

Figure 3 summarizes what success with PaaS depends on (measured in output and customer satisfaction), as it relates to service proactivity, service digitization and product quality.

Figure 2: Impact on enterprise functions




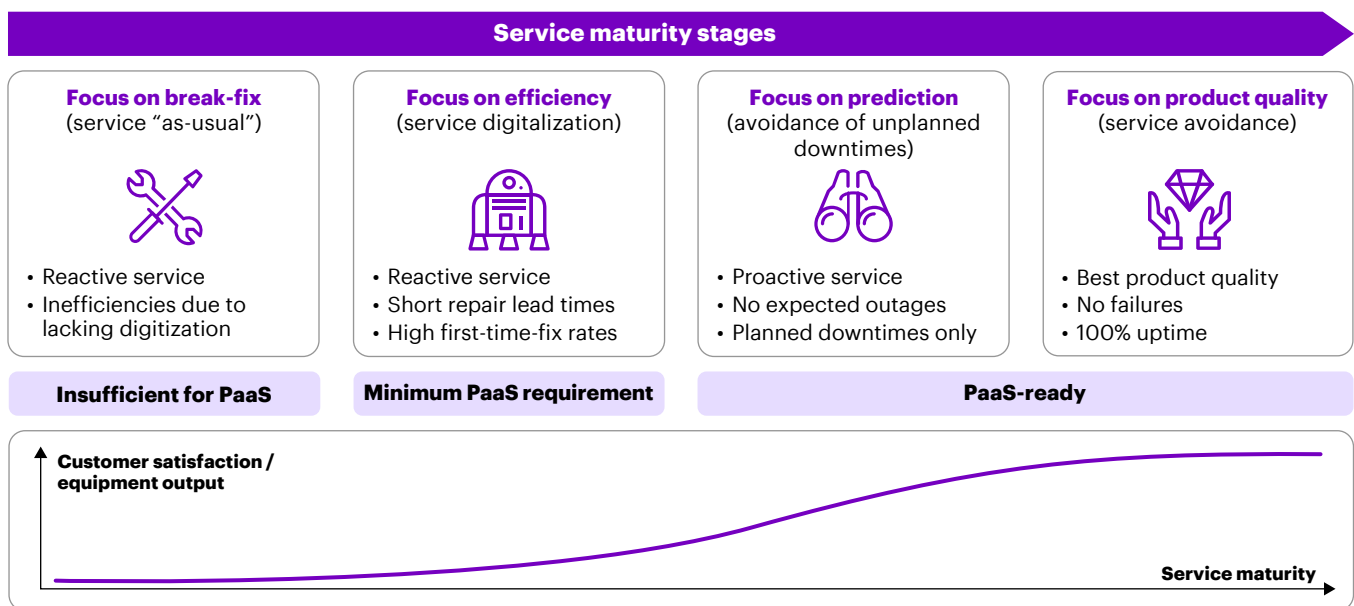
 Sales	<ul style="list-style-type: none">• Customer relationship management will need to rethink how to manage different channels, customer archetypes and follow-on business• Sales processes and incentives will need to be aligned to the new model, as they are typically tied to one-time product revenues, while PaaS will lead to steady, smaller revenues distributed over the product lifecycle
 Finance and accounting	<ul style="list-style-type: none">• Finance and accounting will need to accommodate for more complexity in cash flow, revenue recognition, billing, and asset accounting
 Service	<ul style="list-style-type: none">• An understanding of and dedication to product quality must become an integral part of the company culture, as PaaS will only generate profit while products are up and running• Engineering, manufacturing and quality management will need to be closely linked with service as an important source of feedback on quality from the field. “Design-to-service” aspects will be important to keep service costs at a minimum throughout the product’s lifecycle

Figure 3: Service and quality in PaaS



Is PaaS a game changer?

Product as a Service can be a highly attractive business model for manufacturing companies. We urge manufacturers to consider four key aspects when thinking about the implementation of PaaS:

1. Is there a demand in your segment for PaaS and what is the business case for profitability?
2. Does your company have the digital, analytics and IoT-/cloud- enabled capabilities needed to support PaaS? For example, can you secure the product uptime through predictive maintenance? We recommend clients to be at maturity level 3 (see definition above) before offering PaaS, while maturity level 2 would be the bare minimum for starting PaaS.
3. Have risks associated with PaaS, such as asset-heaviness, shift of revenue streams and external factors like demand fluctuations, been thoroughly considered?
4. Is the enterprise ready for a mindset shift toward "as a service" across all functions in the value chain?

If the answer is "yes" to all four questions, and C-level sponsorship is secured, then your company is moving in the right direction to implement PaaS successfully. A "yes" for at least the first two questions should be considered mandatory before venturing into PaaS. If not, important homework has to be done first before starting the journey toward PaaS.⁵

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The customer comes first

How customer-centric supply chains drive profitability for chemical companies



Understanding the needs of key customers will enable sustainable supply chain improvements that provide top line growth and create a competitive advantage.

Introduction

For decades, customer-centered topics were handled by sales and marketing departments while supply chain management focused on cost efficiencies. Although cost saving is still a major value driver, the supply chain now plays an important role in the end-to-end customer experience.

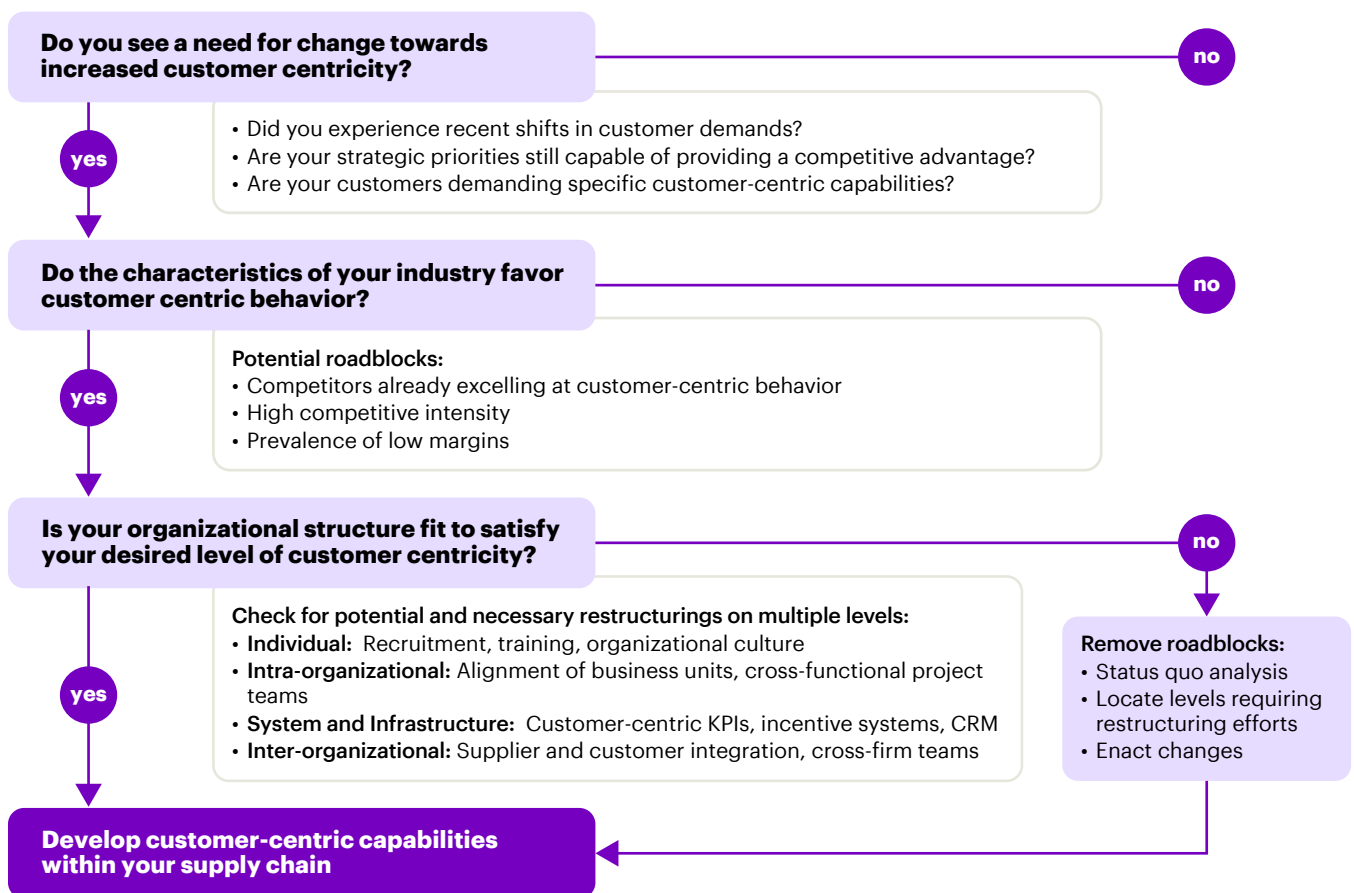
Organizations can tap into a seemingly limitless amount of potential data sources from the value chain, cloud solutions, artificial intelligence (AI) or machine learning algorithms and other technologies to transform the supply chain toward increased customer centricity.

This approach is especially promising for chemical companies, which are crucial suppliers and innovation partners of numerous industries. Accenture's 2020 Global Buyer Values Study found that customer

centricity is among the top five priorities for 9 out of 10 chemical companies.¹ However, almost 50 percent of these companies are struggling to get it right and, as a consequence, fear to lose ground to competitors.

These concerns are understandable as customer-centric organizations can secure competitive advantages from a twofold perspective – either by charging price premiums or by increased customer order quantities. Both ways reinforce the value proposition of customer-centric supply chains as they can generate top line growth through increased revenue rates, a higher EBITDA margin as well as a higher overall contribution to total revenue.² To move forward toward customer centric supply chains, chemical companies must understand what makes a supply chain customer-centric, how they can set the right focus for their own supply chain and what are critical enablers for a transition.

Figure 1: Customer centricity checklist



What do customers expect from customer-centric supply chains?

Building on Accenture's Global Buyer Values Study we conducted additional research within the chemical sector to detect industry-specific levers of customer-centric supply chains. Among other findings, the survey participants identified collaboration with strategic network partners, data-driven segmentation of suppliers and customers, and flexible manufacturing and fulfillment capabilities as essential drivers for customer-centric supply chain strategies in the chemical industry. The survey found that chemical buyers:

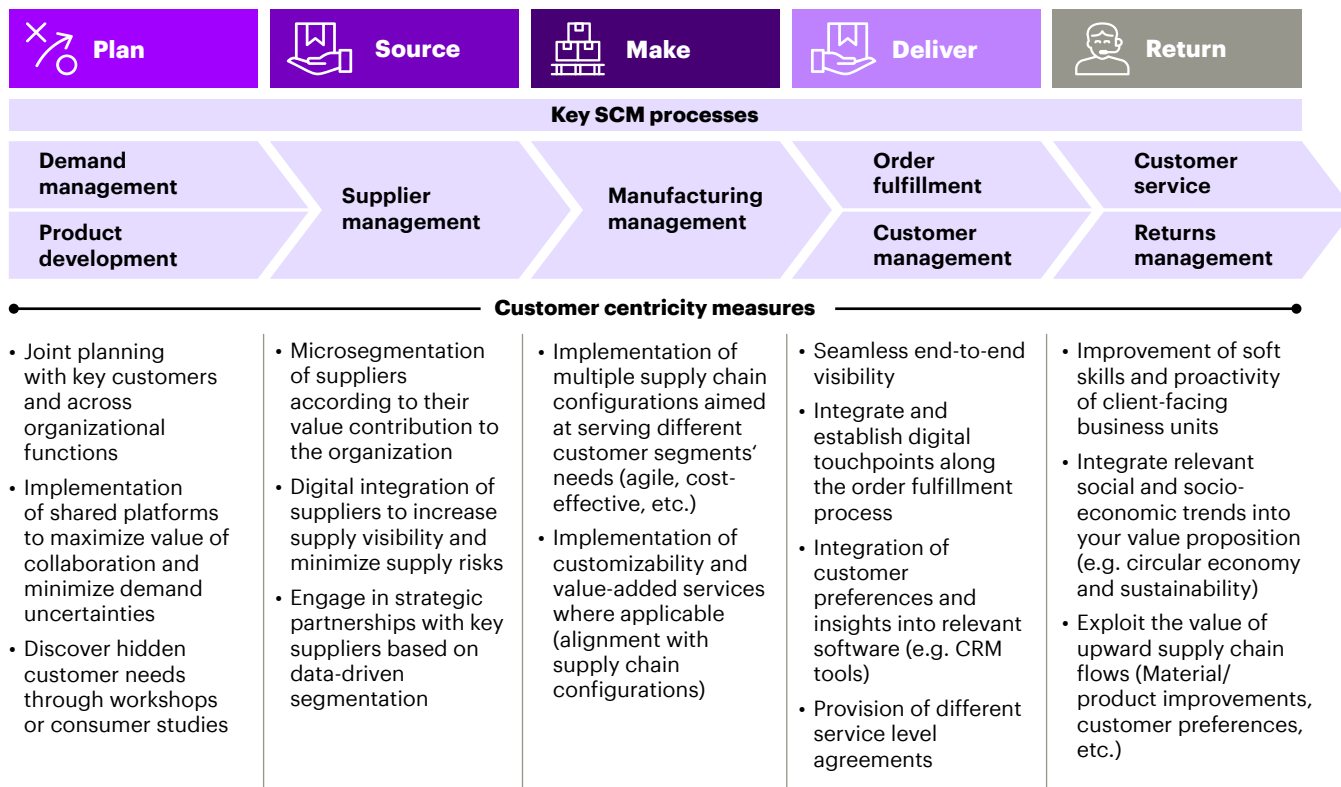
- Display a strong demand for seamless customer experiences based on end-to-end supply chain visibility
- Favor a clear data-driven segmentation strategy, which allows chemical companies to channel customer-centric efforts to places where they can have the biggest impact
- Are interested in joint planning with key suppliers and customers
- See value in the utilization of shared platforms to enable more efficient communication and collaboration
- Support the introduction of multiple value chains to efficiently satisfy the needs of different customer segments
- See strong soft skills of customer-facing units as drivers for service excellence

Before thinking about how these requirements can be applied to specific areas and processes of a supply chain to generate benefit from customer-centric restructurings, companies must make sure that the characteristics of the industry they are focusing on are a fit for customer-centric capabilities. For example, industries with a prevalence of low margins or existing competitors that already excel at strategies centered around customer focus mean that adapting for customer centricity may not provide the desired impact.³ On the other hand, if these aspects are not present in the market, you may have a chance for first mover advantages. To provide a look to determine whether your situation favors an implementation, see the overview in Figure 1.

Avoid wasting your resources by channeling customer centricity efforts

A clear understanding of your key customers' needs is required to efficiently leverage investments into customer centricity within your supply chain. Your key customers will not expect relentless customer-centric excellence in every part of the supply chain, but proactive approaches and collaboration will help to uncover spots of untapped value and guide your way to a profitable implementation approach. Providing meaningful customer experiences that foster loyalty and drive customer profitability will help meet the needs of tomorrow or those currently unsatisfied. In addition to

Figure 2: Customer-centric supply chain elements mapped by SCOR management processes



determining the status quo of your organization and the existing capabilities to undertake customer centric transformations, identifying the exact target areas will be most crucial. To provide some guidance for this critical process, we mapped our key study insights on how to achieve customer centricity into the Supply Chain Operations Reference (SCOR) framework (see Figure 2).

Ensure a smooth transition

Before organizations can reap the fruits of a successfully implemented customer-centric supply chain, they must carefully assess the status quo of their organizational structure. A product-centric organization will not be able to switch to a customer-centric supply chain overnight.⁴

Although the required restructurings are resource consuming, the long-term benefits clearly outweigh the short-term losses related to the restructuring efforts. The key to keeping those losses at a minimum lies in ensuring a planned and structured transition. Customer centricity is most effective when it provokes a culture shift. Thus, in a truly customer-centric organization each employee action, as well as each business process and business decision, is centered around the impact on the key customers. Inducing such a new mindset into the entire organization requires two fundamental drivers: Management buy-in and clear communication. If organizational leaders actively guide their employees through the process while the organization creates transparency and trust through a meaningful communication strategy, the negative impact of restructuring toward customer centricity should be limited.

The benefits of a customer-centric supply chain

Without a doubt, customer-centric supply chains will not satisfy the needs of every organization. A careful assessment of internal capabilities, network partners and industry characteristics is a prerequisite to success. Nevertheless, the potential for chemical companies is immense. Increasing your profitability rates and EBITDA margin will provide huge long-term economic benefits while also making your customer base more resilient through increased loyalty and meaningful customer experiences. Considering the enormous importance of chemicals for the supply chain of numerous other industries, a customer-centric supply chain can be an efficient and profitable way to address constantly changing customer demands and well-informed buyers.

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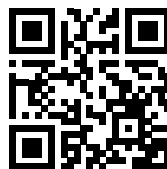
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Lieferketten- sorgfaltspflichten- gesetz

How does the Supply Chain Due Diligence Act impact human rights and companies?



Global supply chains across markets, including garments from Asia, cocoa from Africa and coffee from South America, will be affected when the German Supply Chain Due Diligence Act comes into force in 2023. The law, known as Lieferkettensorgfaltspflichtengesetz, is designed to make sure human rights are respected and protect the environment.

There are many and varied reasons for enacting the new law. Research has shown that less than 20 percent of companies voluntarily conduct due diligence on their suppliers.¹ The law is intended to ensure that companies take responsibility for their social and environmental damages and that any competitive advantage is not based on a violation of human rights. The United States, France, the Netherlands and the United Kingdom have already legislated responsibility for their supply chains (see Figure 1). Now, Germany, the third largest importing country, will follow suit.

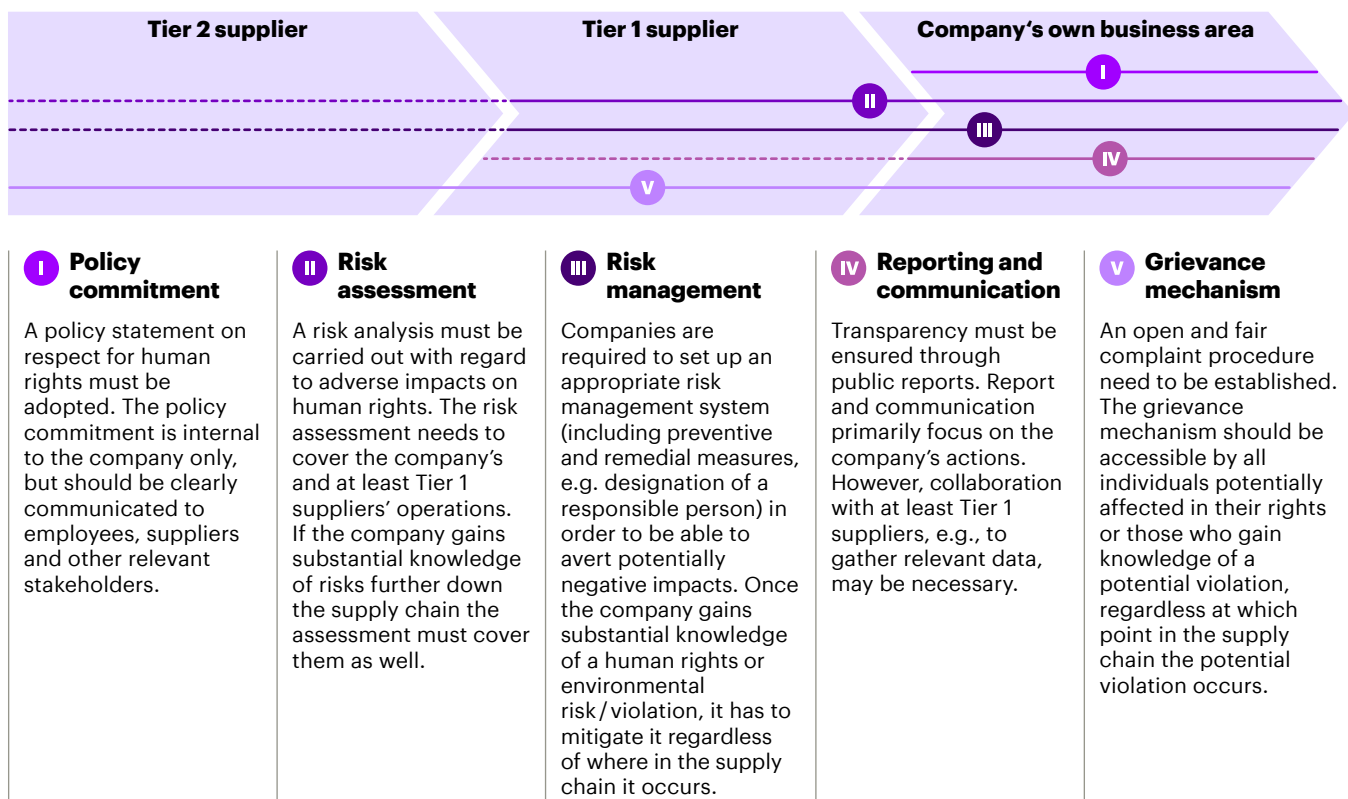
When thinking about human rights violations and environmental damage along the supply chain, the problem areas of sub-Saharan Africa, Asia and the Pacific region and industries such as automotive, food and textiles come to everyone’s mind. Many companies in these industries are already moving toward addressing sustainability aspects in their supply chain. There is, for example, a trend toward sustainable fashion. Yet, human rights violations can also occur in other areas and industries through, for example, the deployment of temporary labor. That means all companies must fulfil due diligence obligations. The upcoming law should not be considered additional work but viewed as an opportunity to gain a competitive advantage at an early stage on the journey to sustainable operations.

Figure 1: Due Dilligence Act – country comparison

	Germany Moderate due diligence act	Switzerland Due diligence law with limited impact	EU³/ (Austria)⁴ Comprehensive due diligence proposal
Applicability	<ul style="list-style-type: none"> • 2023: companies with >3,000 employees • 2024: companies with >1,000 employees² 	<ul style="list-style-type: none"> • Several criteria need to match regarding entity, location, employees and financials 	<ul style="list-style-type: none"> • All stock listed or high-risk companies located in or with access to EU market
Scope	<ul style="list-style-type: none"> • Own company • Tier 1 – direct suppliers • Tier 2 – indirect suppliers (on occasion and only if the company explicitly becomes aware of a possible violation) 	<ul style="list-style-type: none"> • Mostly economical-dependent companies 	<ul style="list-style-type: none"> • Upstream and downstream supply chain partners
Obligations	<ul style="list-style-type: none"> • Adopt a human rights policy • Establish risk mgmt. and analysis • Establish prevention and mitigation measures • Report and document • Establish a grievance mechanism 	<ul style="list-style-type: none"> • Establish risk mgmt. and analysis • Establish risk prevention plan • 3rd party audits • Report 	<ul style="list-style-type: none"> • Develop due diligence strategy • Effective implementation of strategy • Establish risk mgmt. and analysis • Set up fair complaint procedure
Penalties	<ul style="list-style-type: none"> • Up to 800,000 €, or • 2% of global sales, if sales exceed 400 M€ 	<ul style="list-style-type: none"> • Up to 100,000 CHF 	<ul style="list-style-type: none"> • Based on domestic law for companies from EU member state • Import ban/ban to operate in EU market for companies from non-EU markets

Similar laws in other countries, e.g.	<ul style="list-style-type: none"> • USA: Dodd-Frank Act, 2010 • UK: Modern Slavery Act, 2015 • Australia: Modern Slavery Act, 2018 	<ul style="list-style-type: none"> • France: Loi relative au devoir de vigilance des sociétés mères et des entreprises donneuses d’ordre, 2017 • Netherlands: Child Labor Due Diligence Law, 2019
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Figure 2: German Due Diligence Act – reach of obligations



What does the law require?

The requirements of the German law are considered more extensive and ambitious than similar regulations that already exist in Switzerland and other European countries. Some sources expect the German law will be a blueprint for a uniform and more comprehensive EU regulation, which is expected to be approved in 2022. The comparison of selected laws can be seen in Figure 1.

In Germany, the requirements are subdivided with regard to the stages in the supply chain, and criteria, such as the type and scope of the business activity or the typically expected severity of the violation. In a company's own business area and for Tier 1 suppliers, more extensive measures are required, such as a risk assessment with regard to adverse impacts on human rights. In contrast, the due diligence obligation for Tier 2 suppliers applies on occasion and only if the company becomes explicitly aware of a possible violation (see Figure 2).

What are the consequences of not fulfilling the duty of care?

Companies that violate the law will be subject to penalties of up to 2 percent of the average annual turnover and could also be excluded from public tenders.⁵ Moreover, affected parties can assert their rights in German courts, with the support of German trade unions and non-governmental organizations, and file a complaint with the Federal Office of Economics and Export Control. Beyond legal ramifications,

companies should consider the negative impact of inadequate due diligence on their reputation, brand values and market share, which can affect the top line.

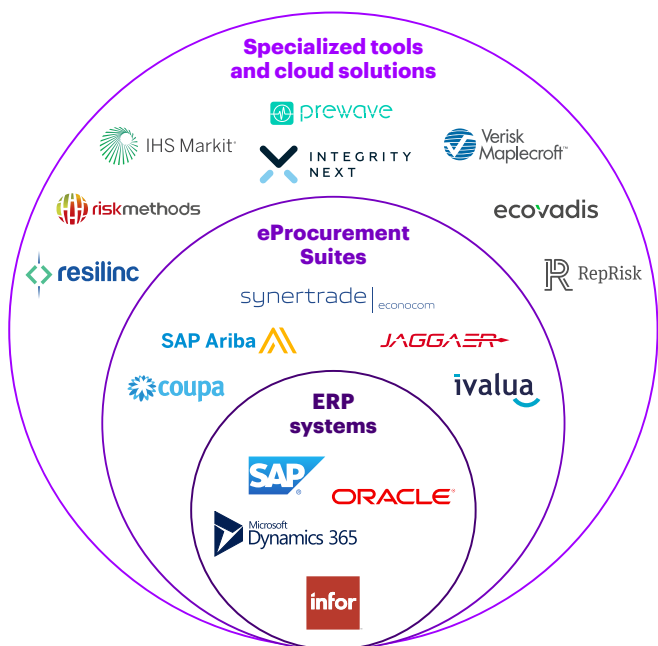
Technology solutions that can help monitor risks

In case of law violation, the consequences described above can be considered as both financial and non-financial risks for companies, which must be included as part of their third-party risk management. A crucial step for companies to prevent these penalties and be able to meet the requirements of the Supply Chain Due Diligence Act is to check and challenge readiness of their IT systems, especially risk monitoring capabilities to handle and evaluate the act's required data.

At the core, most organizations operate a companywide ERP system, in which they can store supplier related master and transactional data (see Figure 3). Building on this, leading eProcurement suites include risk management modules.

In addition, the market offers several specialized cloud-based supply chain risk management tools and data feeds to enhance the risk management ecosystem. These solutions typically use both third-party data input and local public news to calculate individual risk scores for suppliers, to further improve the quality of risk analysis. This enables the creation of automated alerts so companies can be aware of unexpected risks. The

Figure 3: Tool ecosystem (non-exhaustive)



solutions also feature integrated analysis and reporting functions to enable compliance. The combination of all three layers can enable companies to manage the risk fields of human rights and working conditions.

In the next issue of Operations.Insights, we will explore in detail the archetypes for tool implementation scenarios. In particular, we will look at the possible combinations for different layers, as shown in Figure 3, to implement feasible and sustainable measures and requirements that help companies comply with the law and build a sustainable business in the future.

Lessons learned and the way forward

Our research found that many companies have begun implementing single or multiple cloud-based technologies and using external data providers to identify and manage risks in their supply chains.⁶ But we also see that supplier risk management capabilities are often not sustainably embedded in the procurement or supply chain operating model. Cross-functional roles and responsibilities, ownership and execution accountabilities are often not clearly defined or have become outdated. Most often, risk management plans that were developed have been in the drawer for years, waiting to be put into practice. Once an incident in the supply chain occurs, these companies are not able to react due to missing links in the chain of reaction.

Accenture has helped many clients build a functioning operating model that incorporates sustainability and risk management capabilities. Once implemented, setting up a procedure to conduct recurring stress tests can help these companies better understand how to act and respond in cases of emergency and identify potential

Figure 4: Typical project phases of risk management tool implementation



vulnerabilities in their risk management processes (see Figure 4). This improves the response time, helps to adjust mitigation strategies to minimize risks in the supply chain and enables a competitive advantage.

References

- ¹ NAP (Nationalen Aktionsplan Wirtschaft und Menschenrechte) monitoring 2020
- ² After 2024, the scope of the law will be reviewed
- ³ Expected approval of the new legislation in 2022
- ⁴ Austria plans to follow EU proposal
- ⁵ A fine of up to 2% of the average annual turnover may be imposed on companies with an average annual turnover of more than 400 M€ million. For companies with an average annual turnover below than 400 M€, the new act stipulates fines of up to 800,000 €.
- ⁶ Accenture Research 2021



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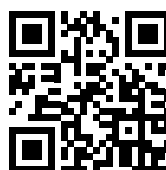
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Procurement is defining the limit

How to become resilient through
indirect procurement



The COVID-19 pandemic forced companies across industries and geographies to quickly search for financial liquidity. This resulted in spend reduction by as much as 30 percent across categories, with shifts in demand structure such as reduction in travel and increase in IT. We studied the recent developments to better understand what the “never normal” may mean to procurement, especially indirect procurement.

Our insights show that navigating this new terrain is best done with a strong focus on three essential ingredients for indirect procurement: a zoom in on category strategies, an extensive strategic supplier relationship management and an agile target operating model. With a focus on these three topics, we can see how to improve the current setup of indirect procurement organizations.

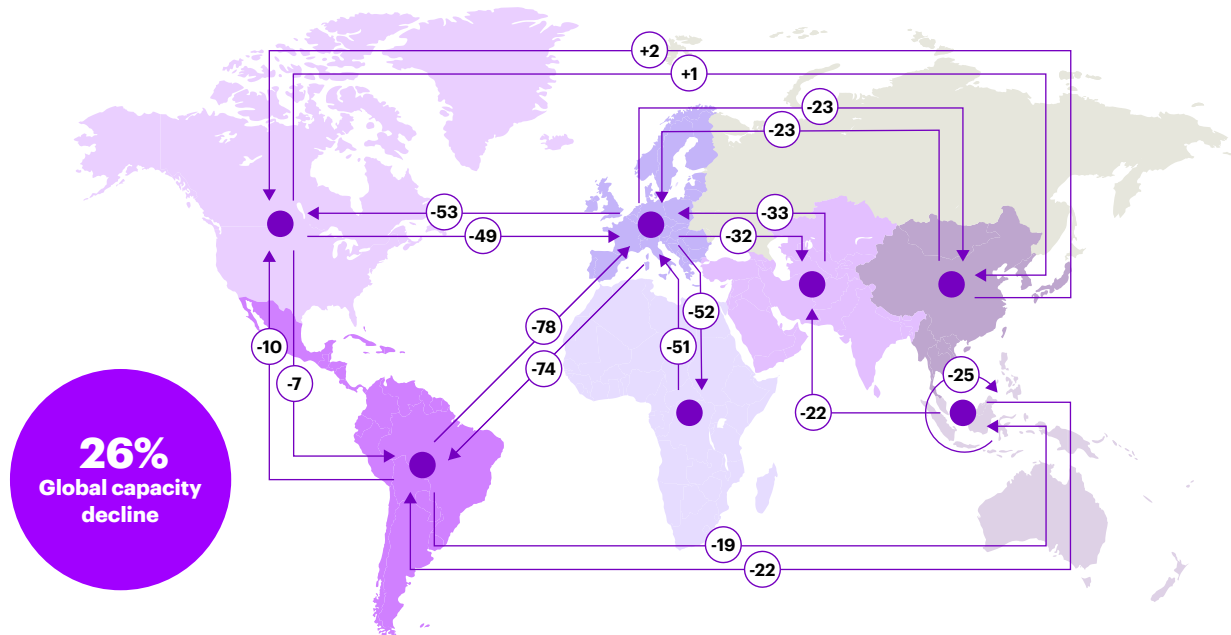
Focus on category strategies

The way companies view sourcing categories changed tremendously since the beginning of the pandemic. Previously unimportant procurement categories became important because companies had to shift quickly to enable their staff members to work from home. As employees adapted to new ways of working, new processes and capabilities have become a starting point for longer-term business transformation. This is also driven by the move of working habits from yesterday’s mobile working style to a today and tomorrow virtual way of working. Characteristics are home office and flexible working environments independent from travelling and office environments.

Category strategies, with their deep and detailed structuring of the respective supply chain and supplier portfolios, are essential. This becomes relevant for all categories now. The recent crisis has shown that common categories of the past will not necessarily be the only important goods and service categories of the future. Category strategies must consider a multi-supplier setup, even for commodities such as IT hardware. To stay in business, the category strategy must enable an agile way of operating with suppliers.

In this context, the sourcing of critical goods, such as those for your products or workforce, must be ensured no matter the region or country in which you operate. In addition, supply chains must be built so they can quickly be moved from one region to another. A high degree in spend and operations transparency, as shown in the example for air freight demand in Figure 1, is needed to react quickly to changes in spend and supply disruption. To strengthen procurement for the current and next crisis, companies should pay attention to those categories that may seem unimportant at first glance. This will enable you to operate as usual in a quickly changing environment.

Figure 1: Changes in airfreight volumes (in percent)



Build strategic supplier relationships

Strategic and long-term relationships with suppliers will become essential for indirect categories, including commodities. These relationships will help your company secure supplies when the going gets tough. Strategic supplier relationship management has been relevant for all supply areas that are essential to keep a company in business, to ensure the quality and time of delivery of crucial products and ingredients. This remains important during disruptive events such as the current one. Additionally, the guidelines, governance structure and ways of working with suppliers gain importance for the less important categories, such as IT hardware and collaboration software providers. These suppliers are essential as companies rely on communication and come from yesterday's mobile working style to a today and tomorrow virtual way of working to stay in business (see Figure 2). Those with strong supplier relationships are first in line to receive necessary products and services to secure their operations.

Strategic supplier management gets even more resilient against crisis and keeps you driving the boundaries when you use artificial intelligence (AI) to manage your supplier portfolio. For an early reaction to a disruption, it is essential to include public and non-public sources as you analyze supplier and production site data. This self-learning environment would be the basis for an early warning regarding an impact on the suppliers and therefore also on the respective supply chain, be it direct or indirect. The more sources AI has and the longer the

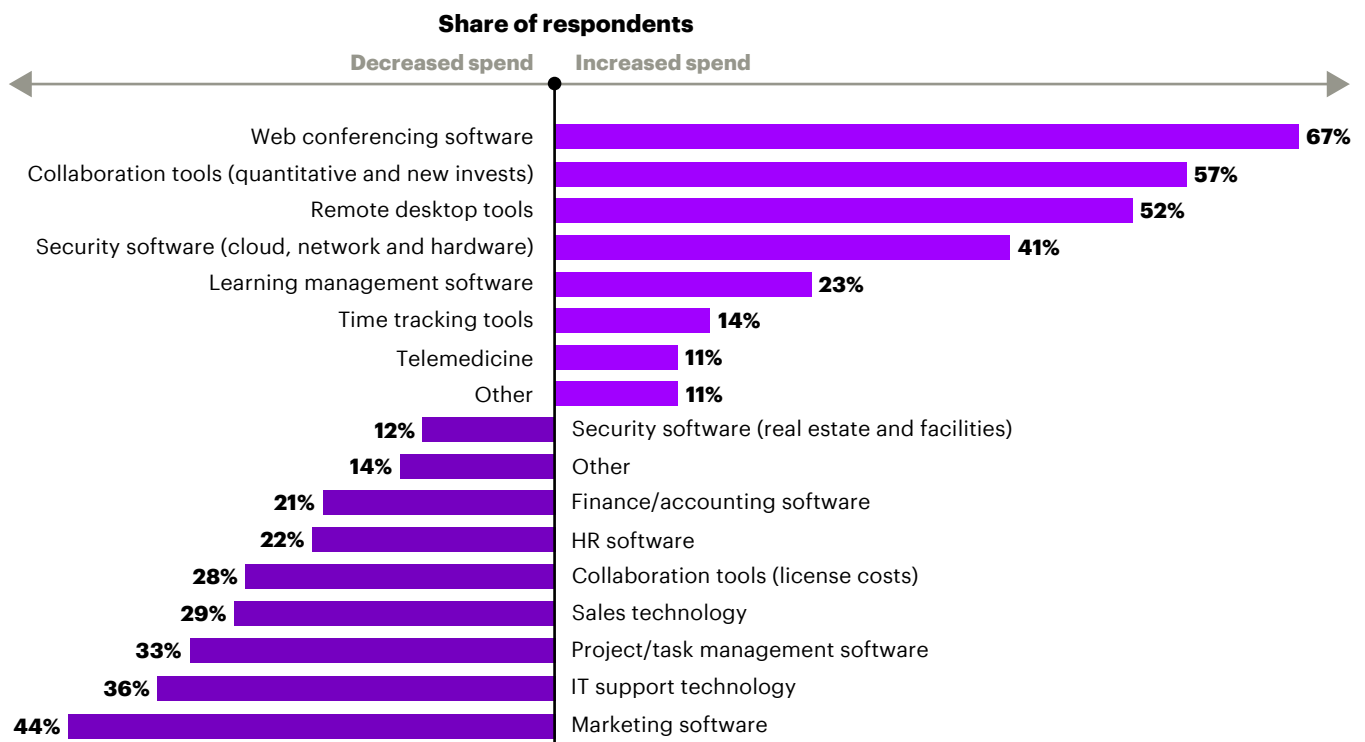
learning period of the algorithms, the more accurate prediction gets. Taking this logic further, you get the best out of it if this mechanism runs at an external provider that has a much broader data base and more suppliers that are monitored: AI gets better the larger the data base is it can work with.

To make a long story short: Staying in business during a crisis requires strong and deep strategic supplier relationship management for the categories that had been labeled "commodities" in the past. Use automation to create meaningful data and empower decisions through those analytics, to gain the ability for early reactions due to changes in spend and supply disruption. AI increases this even more as it enables self-learning from historical and actual data to predict the future, and flexible contracts and relationships can be set up with the respective suppliers.

Develop an agile target operating model




Finally, companies must adapt their target operating model so procurement organizations become more agile. This means creating procurement organizations in which benchmarks and best practices have their place but being adaptive to business needs becomes more important. Companies need a flexible workforce and service designs that allow employees to shift the workload, based on the dynamic needs of the business. This can be achieved, in part, by increased generalization in sourcing activities.

Figure 2: Where are businesses increasing/decreasing software spending?



Note: Worldwide; April 9-10, 2020; 2,168 Respondents; TrustRadius database of software buyers and users. Further information regarding this statistic can be found on page 8. **Source(s):** TrustRadius ID1116831

Figure 3: Covid impact and opportunities

Covid-19 impact	Indirect categories	Direct categories	(Post) crisis opportunity
 <p>Decreased spend</p>	<ul style="list-style-type: none"> • Travel • Events and sponsorship • Real estate and facilities (space – office based) • Utilities • Legal services • Contractors and consultants (short term) 	<ul style="list-style-type: none"> • Transportation • Variable labor • Inbound transport • Outbound transport • Supply chain losses • Maintenance (depending on industry) • Direct materials 	<ul style="list-style-type: none"> • Define “should cost” model following (post) crisis evolution • Consolidate and scale digital/virtual workplace and new ways of working • Prevent old habits from coming back through effective control and change management
 <p>Increased spend</p>	<ul style="list-style-type: none"> • Technology • Logistics • Real estate and facilities (factory and warehouse) • People development/benefits • Outsourced business services • Contractors and consultants (long term) • Recruitment 	<ul style="list-style-type: none"> • Product warranty • Warehousing • Nearshore production facilities • Flexibility costs (product traceability, increased regulatory requirements) 	<ul style="list-style-type: none"> • Position the category as an enabler during and after the crisis • Create forensic visibility of category spends to be able to isolate, control and optimize Covid and non-Covid related spends • Drive ZBx culture and discipline
 <p>Minimal spend changes</p>	<ul style="list-style-type: none"> • Maintenance (depending on industry) • Company vehicles • Financial services 	<ul style="list-style-type: none"> • SC overhead – People • SC overhead – Non-people 	<ul style="list-style-type: none"> • Work on category best practices, policies and reporting for control and monitoring • Drive ZBx culture and discipline • Capture value to create space in P&L

For instance, companies can move sourcing to centralized support teams, regardless of spend thresholds. This would enable the chief procurement officer to shift resources easily to the needed categories. Some companies may choose to go further by moving entire categories to centralized support teams. This means having a model that requires more sourcing generalists instead of a sourcing specialist. Another scenario is to outsource/insource category experts in different locations, based on how spending and business priorities are shifting. This reduces cost and increases agility in times of changing supply and demand. See Figure 3 for further post crisis opportunities.

Conclusion

The pandemic has highlighted the importance of strategic supplier management for indirect procurement. Companies can improve indirect procurement by building relationships with suppliers in all categories. It is also important to adopt new technologies, including AI, so you will be alerted to any disruptions in your supply chain and can react to keep your company in business. In addition, an agile target operating model is key to meeting the needs of your employees while reducing costs. Now is the time to make changes so your company can weather the pandemic and future disruptive events — and recap the benefits when business returns to the never normal.



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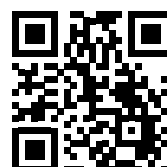
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