



SAP and DSAG Vision Paper

Digital Transformation

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Dear Reader,

This vision paper presents a joint view of SAP and the German-speaking SAP User Group (DSAG) on digital transformation. It is written with a view on the “next but one” generation of business and IT.

Rather than discussing individual products or technical enablers such as cloud computing, we present four projections for digital transformation that will enable companies to implement new business models, run intelligent business processes, thrive in interconnected networks, and lead with sustainability.

Then, we identify strategic drivers that are important for any enterprise software landscape to ensure those projections can be pursued in a future-proof manner.

Enjoy reading!

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Introduction: Digital Transformation Moves from “Nice to Have” to Market Imperative

Digital transformation was already under way before the COVID-19 pandemic hit. Major industries were facing significant market disruption driven by the invention of new technologies used to exploit unused supply, the blurring of industry boundaries, and a pent-up demand in customers' expectations for superior service. Many new companies emerged that built natively digital business models and software-first platforms that disrupted the status quo, putting intelligence and the customer experience at the center of their processes. Such companies have successfully reshaped how a customer benefits and, as a result, have redrawn the competitive lines for the industries in which they compete.

In turn, entire industries risk being overtaken by innovative new competition. In most cases, the lead time of IT-driven digitalization programs is too long for an organization to achieve front-runner status. In addition, many businesses still underestimate the benefits that automatization and the restructuring of established organizations and processes can bring.

Rebuilding for a post-COVID-19 world has accelerated the need for every company to be at the forefront of digital transformation for its industry. Most notable, extreme volatility in supply, demand and production capacity – as well as unprecedented levels of scalability from automation and artificial intelligence technology – will trigger fresh thinking on ways to rebuild more strongly for decades to come. As a result, companies will need to now address common issues such as struggles with sudden material shortages, large fluctuations in demand, and limited availability of required skill sets.

In the future we envision, it won't be enough to achieve horizontal digitalization (focused on optimizing for efficiency). Instead, companies will also need to be ready for vertical digitalization – that is, intelligent networks across a value

chain, including other companies, to the point of “coopetition,” which is the act of cooperation between competing companies.

COVID-19 might have accelerated the need for transformation, but even before the pandemic hit, the world faced significant challenges ranging from climate emergency to pressure on natural resources to societal inequalities.

Digital transformation is no longer an option but a must for companies to stay relevant and act with purpose going forward. From a technology lens, one might get the impression that the IT ecosystem in the past only did what was absolutely necessary, going from one technology stack to another while avoiding a true transformation. Sharing processes and data to allow visibility to safeguard cash flows between partners – for example, in supply chains or payment processes – was not on the radar. For traditional business processes, thinking about things from an internal point of view is the mainstream approach; thinking in new models is not (yet) the norm.

Just as important, corporate purpose and stakeholder values are making it critical for companies to deliver services and products with sustainable purpose for society. To prosper over time, companies today must not only deliver in terms of financial performance, but also show how they make a positive contribution to society. In turn, software decisions may need new valuation criteria focused on long-term and sustainable values. Short-term ROI will become less relevant as companies must execute against a long-term vision for the environment and the wider society at large.

As we have seen in the past, adversities often create an opportunity to emerge more resilient and stronger. And, as businesses emerge from the pandemic, the following four projections will dictate how they design and deliver their value flows.

Projection 1: Business Transformation for New Business Models in All Industries

With every new technology spurt, a new opportunity to radically improve the customer experience emerges.

Over four decades ago, the concept of a software-based business process was invented to radically improve previously paper-based processes and bring massive efficiency to the way transactions were executed. Since then, we have seen numerous transformations. We've gone from paper to on-premise software to cloud-based consumption and delivery and finally to mobility, hyperscalers, and cloud platforms. These last innovations enable the creation and extension of standardized software to support competitively differentiated use cases. All of these evolutions have radically improved the customer experience. And each of these technology spurts has led to the creation of new business models.

In the past decade, we have seen the most profound shift in what it means to put the customer at the center of any experience. Where online hotel booking previously transformed how we purchased a hotel room by giving us unlimited choice, brokers that facilitate renting everyone's apartment changed the concept of a "hotel room" entirely. Where online banking had made managing and spending money more convenient, consumer brands appropriated the available float from banks and enticed consumers to store money on their debit cards in exchange for valuable loyalty points.

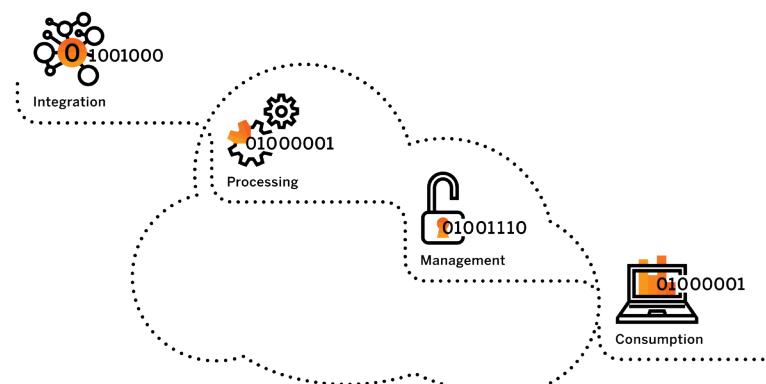
What do these disruptive models have in common? The breaking down of a traditional process that was optimized for internal operational efficiency in favor of one centered on the customer.

It includes a decisive reorganization of the demand and supply chain within a company and across an ecosystem. All of this has one goal: to create unprecedented, differentiated value for each

customer. By moving from a siloed, process-efficiency footprint to a networked model among manufacturer, supplier, and customer, the new model delivers radical transparency in data and insight across the value chain. And as a result, businesses today can dynamically adapt the customer experience and consistently surface opportunities that deliver superior business outcomes. The primary design modality in the business-to-business and business-to-consumer context has been extended from efficiency for the seller to convenience for the buyer.

Business model change has also been driven by the fact that customers expect a service experience instead of simply buying and owning a product. In turn, the focus of companies needs to shift from producing volume to delivering added value. For many industries, industrial transformation (such as Industry 4.0) brings enormous potential, turning traditional industries into output-based economies. Manufacturing companies are moving away from traditional assets and spare parts sales models toward providing asset output as a service (for example, remote asset monitoring and predictive maintenance).

However, this is easier said than done. It requires the willingness and buy-in across internal departments and the extended supply chain to adapt to this new way of thinking about holistic and repeatable value to keep the customer coming back versus securing ad hoc transactions.



Projection 2: Moving from Process Workflows to Surfacing Business Process Intelligence

The next generation of business processes is no longer about maximum efficiency and optimization; but embracing intelligence and agility for superior outcomes. Intelligence and efficiency do not conflict with each other. The vast amounts of data, both from processes and Internet of Things (IoT) sensors, intelligently employed, allow businesses to achieve new levels of operational excellence and automation. They also enable processes that can adapt to a changing environment.

Being able to use data for legitimate reasons becomes paramount not only for process intelligence but also for other projections. Instead of blocking use of personal data, consumers and companies have shown themselves willing to share data when they see the value in doing so – and when trust has been established. In turn, this enables new process innovations and models. On the basis of the “privacy by design” and “security by default” principles, companies and people are asked for their consent to optimize processes with their secured data.

Projection 3: Extending Intercompany Integrated Processes to Open- and Closed-Loop Business Networks at Scale

Collaboration between companies increasingly moves from point-to-point to interconnected and trusted networks, to the benefit of all stakeholders in the network. Companies that embrace such coopeitition benefit from increased supply chain visibility, traceability, and flexibility. It requires sharing necessary information on models, processes, system landscapes , and data in a selective and confidential manner.

A business network implies an integrated system landscape that also includes the legacy systems that often form the backbone of business. Companies should not need to wait for a perfect integration solution that connects their arbitrary system landscape out of the box. Instead, they need to bridge their legacy systems via adapters to the new network backbone. Only then can everyone join and take advantage.

The benefits of such broad and deep networks are manifold: among others, they allow optimizations on a broader scale and, ultimately, lead to more resilient supply chains. Moving from enterprise resource planning (ERP) to network resource planning (NRP) might be the next big frontier of digital transformation.

This approach can be adopted by all industries, from public sector to healthcare and consumer industries. Business networks also expand beyond traditional lines of business such as logistics or finance. The trend toward business networks also touches, for example, people-related topics such as learning. For example, a supplier of machines can collaborate more intensively with its downstream stakeholders, including service technicians and users, when enabling them to handle the machine using a variety of learning materials and engaging with them in the learning process.



Projection 4: Sustainable Enterprises

Climate change is top of mind for people and governments worldwide. Nevertheless, sustainability has remained a nice-to-have capability for most businesses. But end consumers are increasingly demanding a more sustainable footprint of the products they procure and consume – and they make choices also based on supply chain transparency that makes it clear how and where a product was made. Similarly, regulatory demands are increasingly moving in the same direction.

A deeply integrated supply chain model that connects the network of manufacturers and distributors is essential in making environmental and social effects of business operations transparent. Modern enterprises looking to digitally transform their industries will embrace and embed sustainable practices and data transparency in their efforts toward contributing to a cleaner planet. As a result, measuring societal impact becomes as important as measuring financial success, and the “green line” becomes just as important as the top line and bottom line. In addition to understanding the impact based on actual transactions, companies then need to identify where they can reduce their impact and optimize their processes and products accordingly.

More and more business leaders recognize: actions and behavior that benefit the planet are good for business as well. This is true for several reasons. Not only does an enterprise need to be forward looking and thus be aware of climate trends (potentially the most disruptive issue of the future), but acting in line with this mantra also helps uncover new and innovative business opportunities. New business models are most promising and sustainable when they break the circle of more service consumption equaling more use of resources.



Strategic Drivers for Enterprise Software

So far, we have outlined four major projections we believe will influence how and with what purpose information technology is used in the future. In that manner, IT follows function. At the same time, we also see several core drivers in IT that will be essential to include in any enterprise software strategy. We briefly consider those drivers and how they support the projections below.

Thanks to ever more affordable storage and new technologies, more data than ever is more readily available. Data itself has become more of a commodity. However, data becomes a value driver when it is brought together with processes and interpreted in context, as discussed in Projection 2 above, and shared in networks, as discussed in Projection 3. To enable value based on data, the data needs to be accessible. Also, doubts of sharing data must be overcome; otherwise, companies cannot use the data to its full extent.

In combination with the vast amounts of data, a next generation of analytics and artificial intelligence is emerging, which is giving rise to highly personalized services. This can revolutionize decision-making to become less biased (for example, through self-learning networks). Our projections concerning business process intelligence and business networks are largely driven by these intelligent capabilities. Understanding and assessing a company's sustainability impact also builds on the same capabilities.

In the enterprise context, a consumer-grade user experience is now the norm. Still, there is some way to go until business user experience will be truly centered on users' core demands. To a large extent, user experience used to be determined by looking at how the design of a single application facilitates a user's tasks. Now, the design of entire workflows across individual applications plays at least a similar, if not larger, role. Thus, the push toward user-centered experiences is not just at

the core of new business models, it also influences business processes.

Deep integration of diverse systems along the value chain becomes another important driver, and not only for business networks. Integration points no longer connect related systems of different layers within a company but also across companies in their networks and industries. Companies need to accept that integration cannot be solved universally for any and all combinations of systems in an historically grown landscape. Instead, companies need to be open to explore alternatives for flexible integration and consider integration to never be complete but be evolving continuously.

In the context of adopting new systems, quick, modular, and adaptable implementation and extension of systems are expected by lines of business. To be a true value driver, a successful adoption of enterprise software not only consists of the technical introduction of an application (go-live), but also considers the organizational dimension of information systems. Such changes always require transformation and change management.

The core value drivers come together in (technology) platforms. While most software arrives ready to use, every company has different requirements. Companies put different emphasis on different processes, have specific needs for data treatment and access, and act in heterogeneous environments. An integrated platform for enterprise software enables companies to react quickly to market needs, and allows them to build a solid foundation for sustainable and long-term solutions. It provides business-centric tools and access to innovation from the ecosystem, so enterprises can integrate their IT landscapes, customize and extend their processes, and turn their data into impactful business value.

Outlook

Businesses have already taken first steps toward the projections outlined in this paper, but almost no one has reached the finish line – if there ever would be one. Instead of waiting for others to take the lead, companies need to start now and move from pure bug-fixing in existing system landscapes to creating a future-proof, forward-looking, and holistic strategy for their digital transformation. This strategy needs to bring together processes, systems, and data with employees and other stakeholders. Companies must avoid making the mistake of looking at digital transformation only as a technical topic; instead, consider people-related aspects at all steps of the transformation. They must stabilize and improve the efficiency of IT and processes where necessary, but most importantly, assess their team readiness and optimize technology readiness for a true digital transformation. Successful businesses explore the potential and evaluate ways to transform, evolve and act on a transition plan. The process continues to be an agile and continuous evolution: a digital transformation project never stops with a successful implementation but must be followed up continuously with constant validation, dynamic adaptation, and further projects to capitalize on newly unlocked opportunities.

To use the value drivers and put the projections mentioned here into motion, companies will find that systems and applications are not enough. Digital transformation first and foremost requires a culture and mindset suitable to address the associated challenges. An agile working mode with a truly DevOps culture – meaning end-to-end ownership – is the new normal for which companies need to prepare their employees and stakeholders.

Technology supporting the projections needs to be whole-heartedly embraced, instead of questioned. Businesses implementing the projections and value drivers should be whole-heartedly embraced instead of being questioned. Companies must begin to use new technologies, instead of simply preparing for them.



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