



Discrete Manufacturing Industries

## **Defining a Path to the Intelligent Enterprise in the Cloud for Discrete Manufacturers**

Tapping the Power of Industry Clouds

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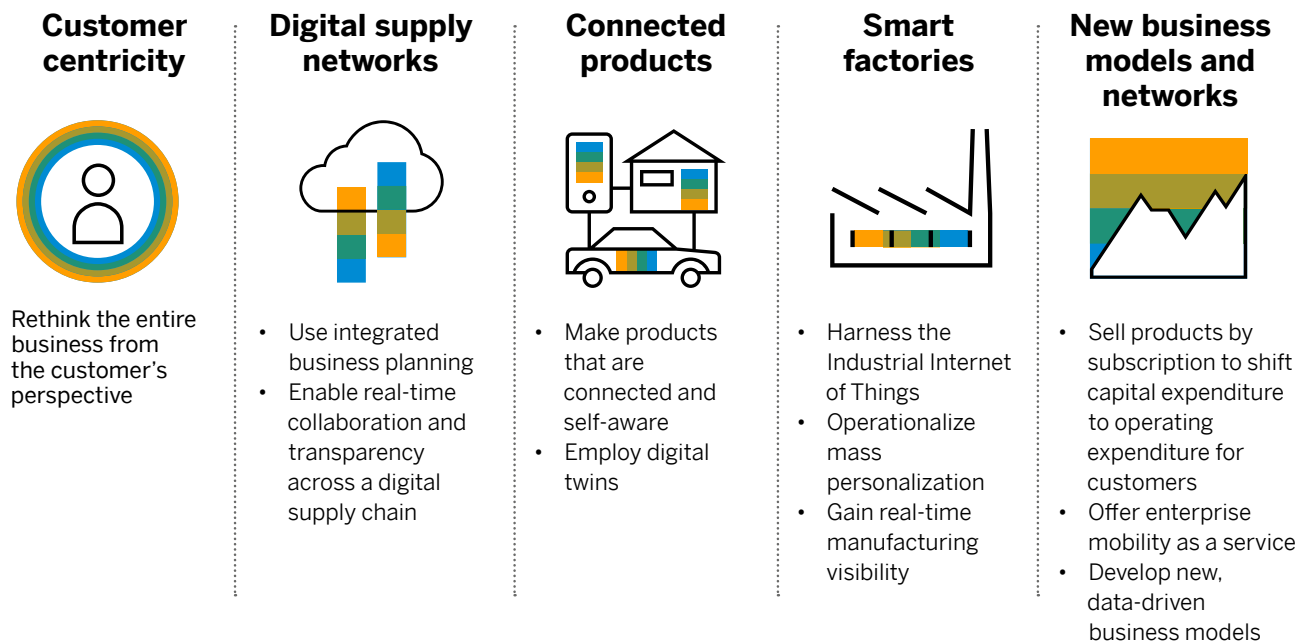
# Industry Dynamics: Transforming Business As We Know It

Digitalization has reached every aspect of modern life, and it is here to stay. Every business is now **working on digital transformation and harnessing new technologies** to deliver a new total customer experience, achieve step-level changes in productivity, and reimagine how people work. Savvy business leaders know they must either disrupt or be disrupted – and face the consequences.

For companies in the discrete manufacturing industry, the evolution to digitally transformed, intelligent enterprises is already underway. As shown in Figure 1, leading companies are focusing

their digital transformation efforts on five strategies: customer centricity, digital supply networks, connected products, smart factories, and new business models and networks.

Figure 1: The Top Five Strategic Priorities for Discrete Manufacturers



# Industry Clouds: Enabling the Intelligent Enterprise

To stay ahead of the competition, your business must execute on these top strategic priorities swiftly. But the traditional way of doing so – by going through a lengthy design, blueprinting, implementation, and rollout process – takes too long. Today, companies must rapidly adopt the latest innovations to support their strategic priorities, and the window of opportunity is limited.

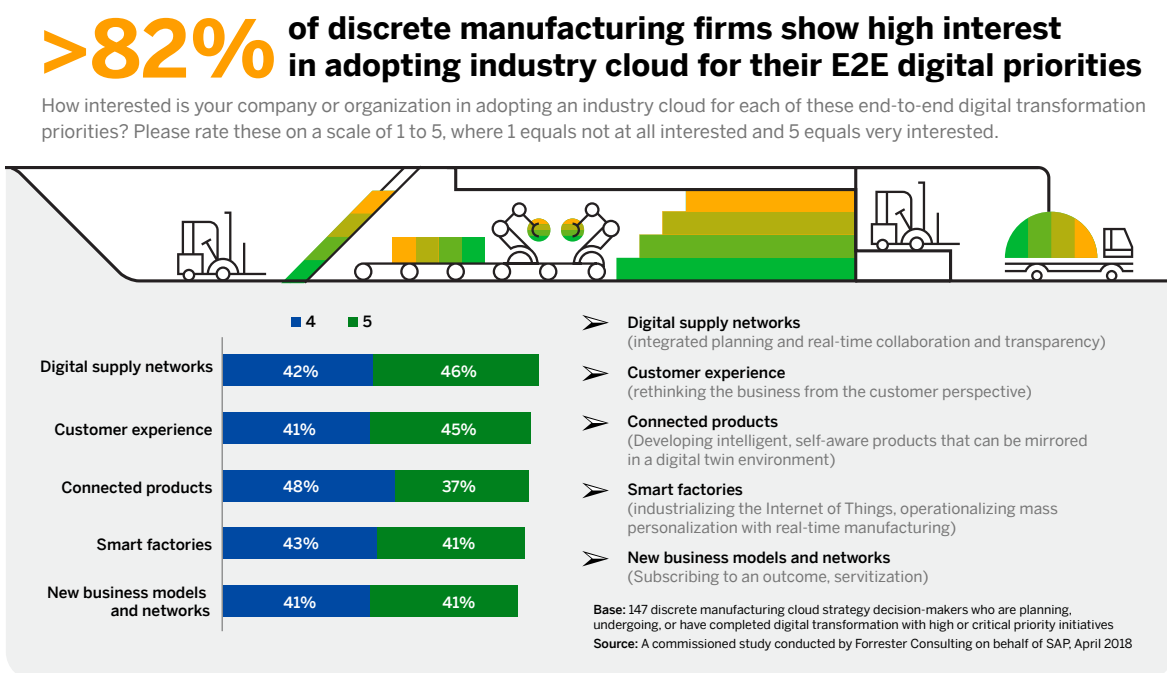
**Discrete industry clouds are key.** They support innovative processes end to end through an integrated suite of applications preconfigured to meet the needs of a specific industry segment. Delivered as software as a service, industry clouds:

- Can be deployed swiftly and cost-effectively
- Scale easily as your business grows
- Help you **consume innovation faster** – the **right** innovation, at the **right** time, in the **right** way, that aligns with your strategic priorities

Industry clouds also facilitate continuous business evolution. This is essential because the impacts of digital disruption have only just begun for the discrete manufacturing industry – which for SAP encompasses the high-tech, automotive, industrial machinery and components, and aerospace and defense industries. In addition, according to SAP benchmarking, companies that leverage the cloud to innovate rapidly achieve a 49% higher operating margin.

So it should come as no surprise that there's growing interest among discrete manufacturers in adopting industry clouds for their digital priorities. In fact, according to a recently commissioned study conducted by Forrester Consulting on behalf of SAP, up to 88% of the 147 firms surveyed are highly interested in leveraging an industry cloud to execute on their strategic priorities (see Figure 2).

Figure 2: Discrete Manufacturer Interest in Industry Clouds



## CLOUD BUILDING BLOCKS FOR DISCRETE MANUFACTURING INDUSTRIES

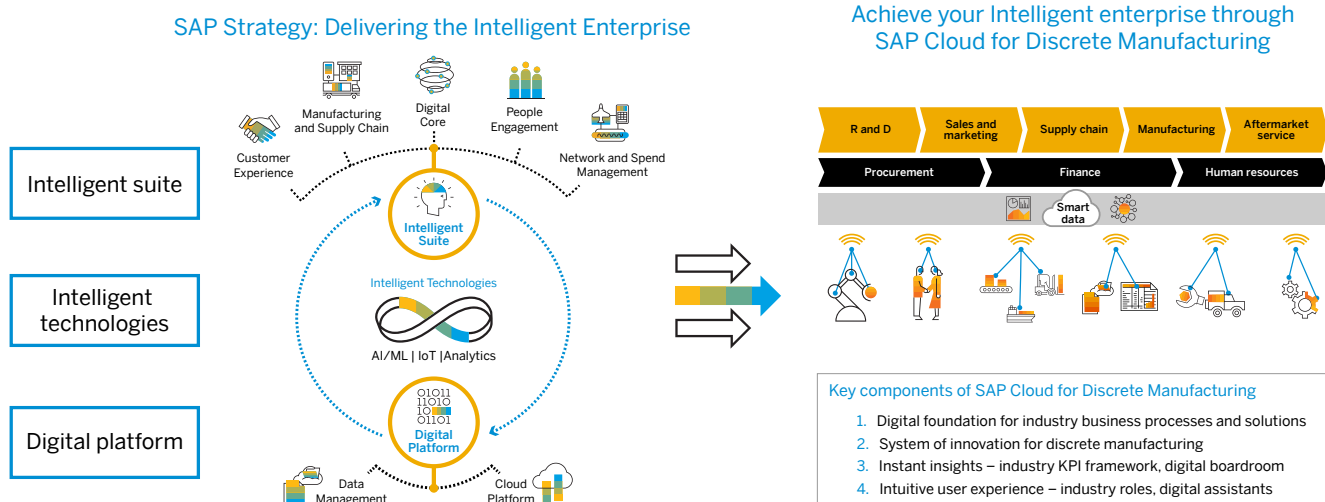
As shown in Figure 3, discrete manufacturing industry clouds fast-track your organization's transformation into an intelligent enterprise by providing these building blocks:

- **A digital foundation for next-generation business processes** – This foundation, which is provided by an integrated suite of intelligent cloud applications, is based on deep industry domain expertise. These cloud applications support everything from ERP and digital supply chains to the customer experience, people engagement, and network and spend management.
- **An intelligent system of innovation** – Such a system enables you to cocreate new business processes and models by leveraging next-generation, intelligent technologies and services to scale quickly while lowering business risk.

Technologies you can harness include the Internet of Things (IoT), machine learning, and advanced analytics.

- **Real-time insights into your business** – Based on a single, trusted source of real-time enterprise data, insights can be optimized for each user and industry context. For example, executives should be able to monitor their entire business using digital boardroom views and drill down to answer questions and explore root causes. The KPI framework should provide industry-relevant insights into order delivery times, inventory levels, and customer sentiment.
- **An intuitive user experience** – Users access all functionality within a contextual, role-based experience so they see only what's relevant to them, which helps them stay focused on what's most important. Functionality should be accessible through desktop and mobile devices for anytime, anywhere access.

Figure 3: An Industry Cloud Fast-Tracks Your Journey to Becoming an Intelligent Enterprise



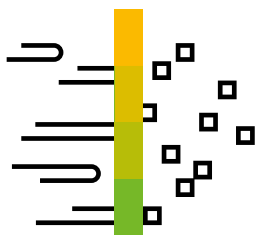
Industry clouds, by their very nature, provide **consistency throughout your cloud journey** with comprehensive support for integrated processes that cover all areas of your business. This integration ensures that every cloud deployment across your enterprise – however small or large – will both share the same data and direct the data where it needs to go. You can also be sure it will work seamlessly within the context of the business.

You can expect an industry cloud to give you the required **flexibility to initiate and execute on simultaneous cloud initiatives** – large or small, simple or extended. It also provides tight integration between these cloud initiatives. This is vital, because however small a process or function is, when it moves to the cloud, it must be logically connected with other areas of your business. The integration enables you to run your entire business in the cloud as an intelligent enterprise. The alternative is a piecemeal approach in which you cobble together solutions from different cloud providers, which results in complexity due to mismatched technical foundations. A piecemeal approach ultimately prevents you from attaining the enterprise agility, speed, visibility, and focus possible when everything is running on a single industry cloud platform.

#### **USE CASE: OPERATIONALIZING NEXT-GENERATION BUSINESS MODELS**

To understand the power of an industry cloud for discrete manufacturers, let's take a look at how it can help you execute swiftly on a strategic imperative: operationalizing next-generation business models, for example, a pay-per-outcome business model. Pay-per-outcome business models disrupt traditional sales models by providing alternative pricing solutions that optimize operation and capital expenditures. They overcome the challenges of risk analysis, complex pricing, and complex contract management. An industry cloud facilitates this by making it easier for companies to:

- Continuously learn from similar customers to identify new customers
- Perform smart calculations using customer history data and machine learning based on experiences of similar companies
- Partner with and consume the expertise of local ecosystems – for example, to serve customers as they scale globally
- Access real-time information streaming from IoT-connected smart machines and use it to predict maintenance to optimize cost and price



For companies in the discrete manufacturing industry, the evolution to digitally transformed, intelligent enterprises is already under way.

# Starting Your Journey

As you use an industry cloud to execute on your strategic priorities, you'll likely want to move a variety of both simple and transformational processes – from siloed processes to end-to-end value chains – to the cloud. We're seeing discrete manufacturers use the cloud to:

- **Simplify processes:** You may want to simplify a business process or function to reduce complexity and lower costs and headcount, or to respond faster to business needs. For example, you may be seeking a more efficient process for closing the books, reporting expenses, or matching purchase orders with invoices. By replacing nondifferentiating processes with standardized industry processes available in the cloud, you can free up resources and reduce cost and waste while taking advantage of industry best practices.
- **Differentiate core processes:** To address changes in customer demand, you may need to move from mass-produced products to products manufactured to customer specification. Or you may need to find a way to capture new types of customer sentiments in order to rethink your business from a customer's perspective so you can focus on – and serve – your customers better.
- **Transform through the creation of new business models and data-driven services:** You may want to drive end-to-end business transformation by moving from the traditional model of selling products to selling a product as a service or to an outcome-based model. You can also combine your products with partner capabilities and offerings to provide more comprehensive solutions.

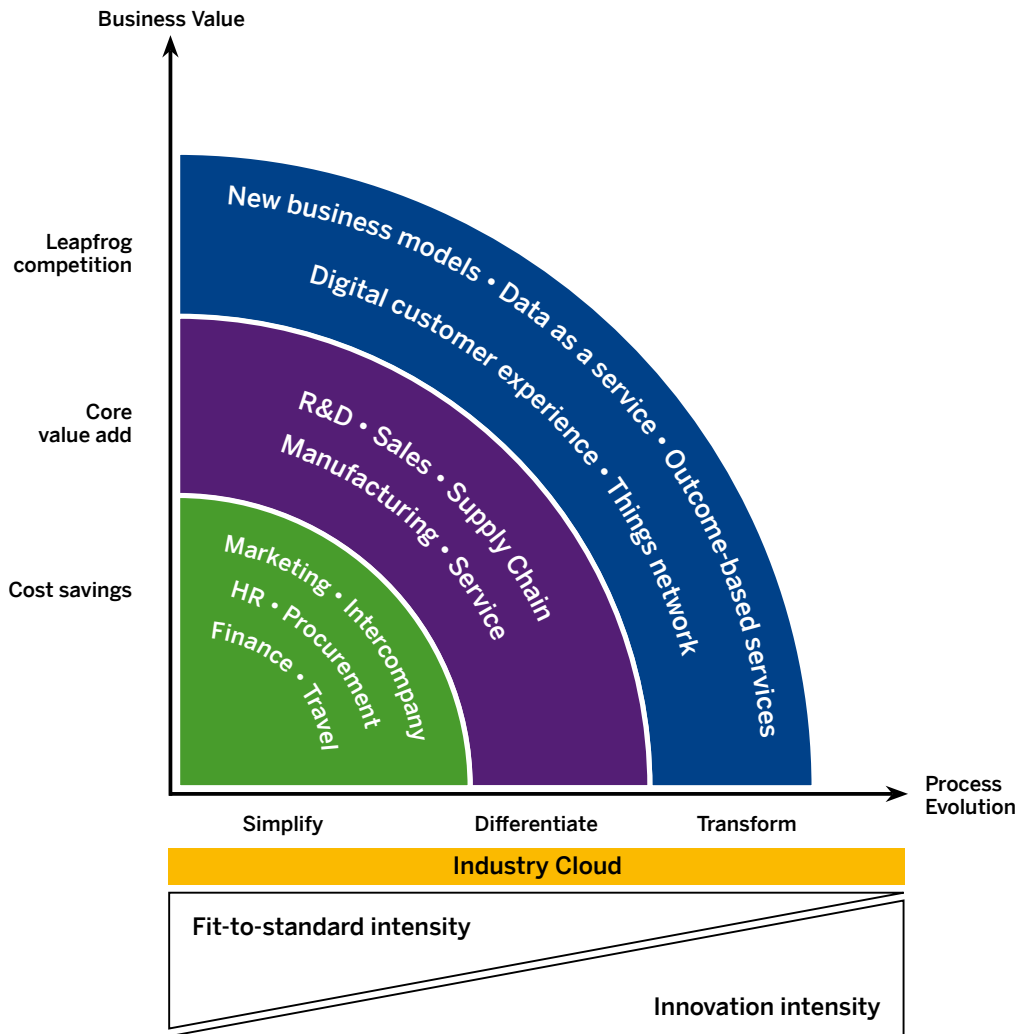
[Figure 4](#) illustrates a framework for understanding the approach many discrete manufacturers are taking in their journey to the industry cloud. It also shows how companies realize more value as they move from simplification initiatives to differentiation and transformation initiatives. It's important to note that this framework does not represent a linear process. In fact, within a single business, multiple instances of all three types of cloud initiatives may occur simultaneously. A company may want to simplify the operations of its subsidiary or a specific function by adopting standard processes to reduce cost and increase efficiencies. At the same time, it may take advantage of cloud-based innovations to differentiate or transform the way it manufactures its products or serves its customers.



Discrete manufacturing industry clouds fast-track your organization's transformation into an intelligent enterprise by providing a digital foundation, an intelligent system of innovation, real-time business insights, and an intuitive user experience.



Figure 4: Industry Cloud's Support for Fluid Transitions



It's important to note that the lines between the categories in the framework are fluid. As shown at the bottom of Figure 4, they run along a continuum. This continuum is determined, on the one hand, by the degree to which the process, scenario, or application to be moved to the cloud can be adapted to industry best practices. This

would suggest a simplification cloud initiative. On the other hand, the continuum is also affected by the degree to which innovation is needed to meet unique business requirements. This would suggest either a differentiation or a transformation cloud initiative.



## APPLYING THE FRAMEWORK: SAP CUSTOMER JOURNEYS

Regardless of the category an initiative falls into, an industry cloud can dramatically accelerate your journey to the cloud. Consider the following real-world discrete manufacturing companies. They are SAP customers who are applying this framework as they harness the SAP® Cloud for Discrete Manufacturing solution. Each business approaches its cloud journey from a **different perspective**, depending on whether it seeks to simplify, differentiate, or transform areas of its business. The initiatives used will also vary in scale. But regardless of their size, all cloud implementations add business value and are important parts of the journey to the cloud.

### Customer Objective: Simplification

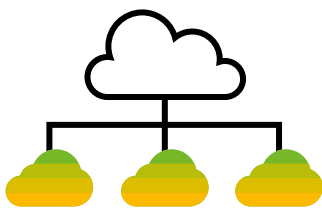
Following a carve-out, **SMA Railway Technology GmbH, a leading manufacturer of auxiliary power converters**, had 17 weeks to set up core business systems needed to operate independently. As a manufacturing company with no IT staff, management chose a cloud-based SAP solution with strong support for all areas of the business. Now the company has a **simplified IT foundation** that connects core finance, order-to-cash, procure-to-pay, and plan-to-product processes, plus service and repair. Total cost of ownership (TCO) is down, and support requirements are minimal.

### Customer Objective: Differentiation

**Mapal, a leading provider of precision tools and machining solutions**, faced a daunting challenge: managing the data of special tools for machining metalwork pieces and the efficient use of those tools. With help from SAP software, the company created a “data highway,” where customers and suppliers would network in true Industry 4.0 fashion and jointly maintain and use tool-related data based on clearly defined guidelines and access rights. All data related to a tool is stored in real time in the cloud. Optimized stock levels and insight into excess stock and shortages have reduced unused stock and production downtime.

### Customer Objective: Transformation

**Stara S/A Indústria de Implementos Agrícolas, a large Brazilian manufacturer of agricultural machinery**, used cloud solutions from SAP to transform from an agricultural equipment manufacturer to a precision-farming solution provider. Now, Stara’s customers can use IoT-enabled farm equipment to monitor farming processes in real time. They can access live metrics and insights to make better farming decisions, such as the quantity of seeds to plant based on varying soil characteristics at different points in the field. Stara’s evolution is well under way. Already, 21% of Stara’s revenues come from computer hardware and software.



You can expect an industry cloud to give you the required flexibility to initiate and execute on simultaneous cloud initiatives – large or small, simple or extended.

# A Clear Path **Forward**

With the SAP Cloud for Discrete Manufacturing solution, you have a clear path forward to digital transformation. The solution provides an integrated suite of cloud applications with built-in support for the best practices of model companies in your industry. You simply select, tailor, and deploy the ones you require to build your intelligent enterprise rapidly.

**Figure 5** summarizes the steps for the three different types of cloud initiatives, what's involved for you as an SAP customer, and the unmatched innovations and resources we provide to accelerate your journey. You'll notice that the steps to simplification are indeed simple – as they should be when consuming preconfigured cloud services to support limited, siloed activities. In many cases, our customers select, deploy, and start using industry cloud services for specific areas of their business in a matter of days.



With SAP Cloud for Discrete Manufacturing, your path forward to digital transformation is clear. The solution provides an integrated suite of cloud applications with built-in support for the best practices of model companies in your industry.

## INDUSTRY CLOUDS DRIVE **DIGITAL TRANSFORMATION BETTER**



**80%–100%**

Target reduction in  
blueprinting efforts



**<50%**

Target reduction in  
realization efforts

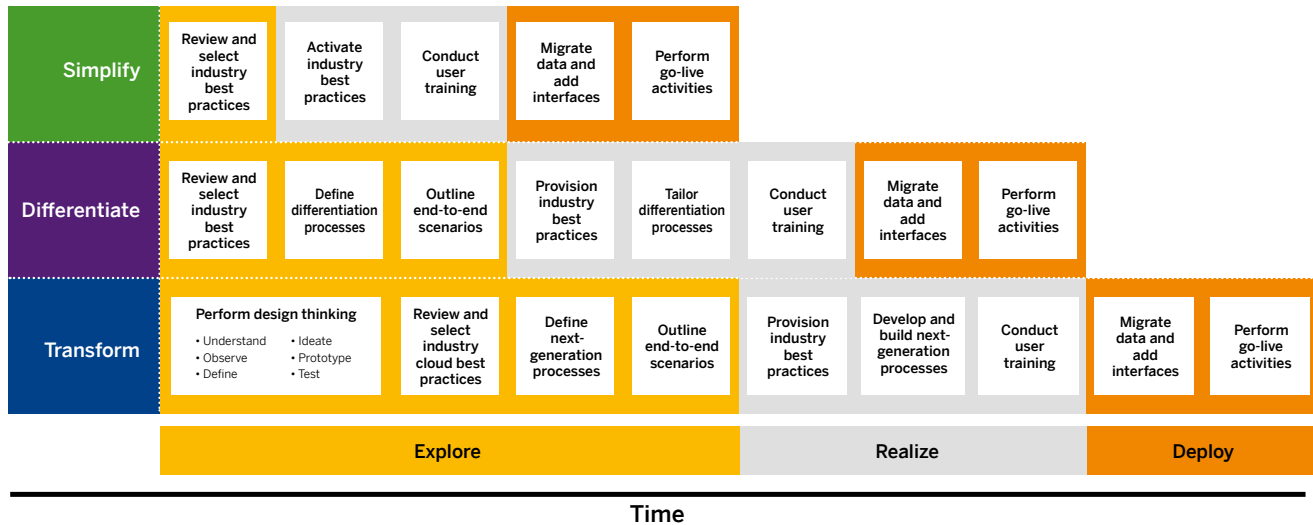


**<30%**

Target reduction in  
testing efforts

Source: SAP benchmarking, 2017

Figure 5: Accelerated Steps to the Cloud



Let's take a closer look at how this journey-to-the-cloud framework can be applied in practical ways to accelerate your journey to becoming an intelligent enterprise.

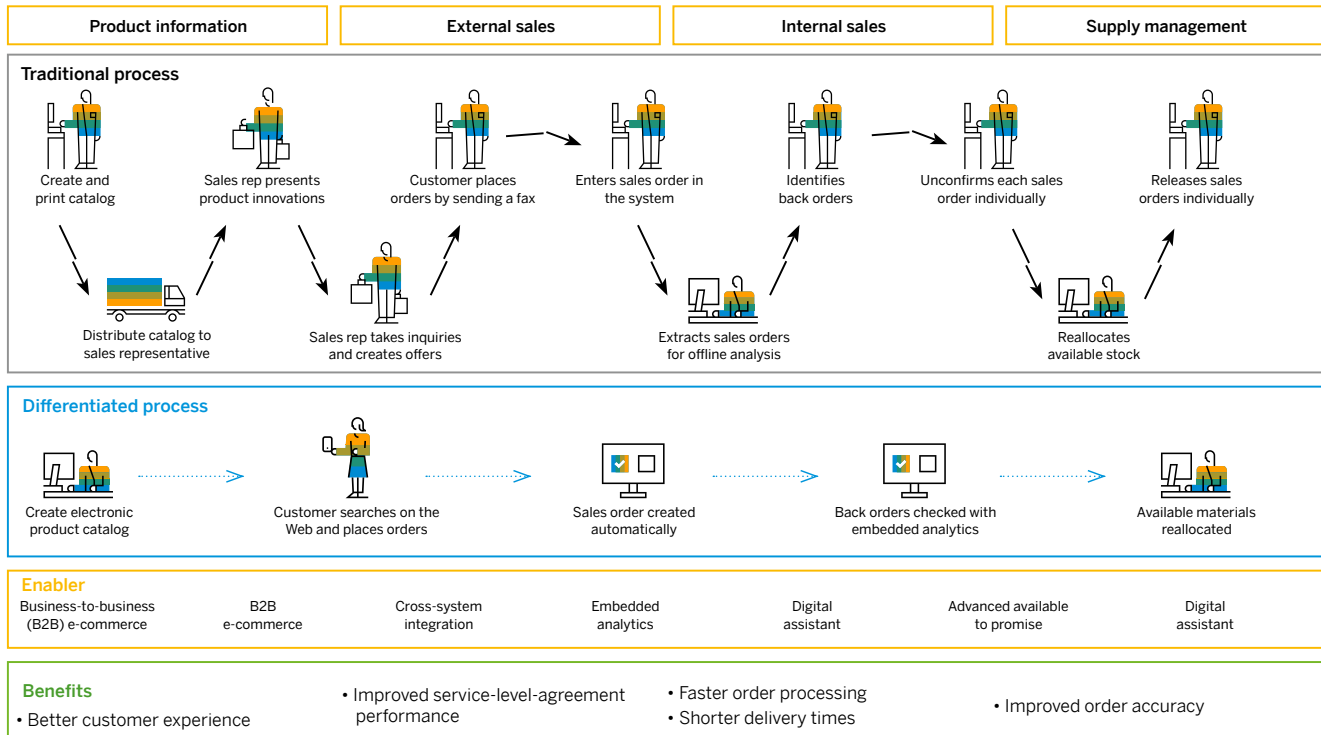
**THE CLOUD JOURNEY TO SIMPLIFICATION**

The focus of simplification is straightforward: to consume cloud services rapidly to realize business benefits. You simply identify nondifferentiating, siloed, line-of-business activities – such as financial closes or time and expense management – and digitally transform them using preconfigured industry cloud functionality that's already optimized for your industry. As shown in Figure 5, you review and select the relevant industry best practices available through the industry cloud selected for your business, activate the support for them, train users, migrate relevant data, and go live. In this way, you can maximize efficiency, effectiveness, transparency, and speed; substantially reduce total cost of ownership; and gain exceptional scalability.

**THE CLOUD JOURNEY TO DIFFERENTIATION**

As you transition from moving small, siloed activities to the cloud to moving end-to-end processes and scenarios to the cloud, you'll find opportunities to differentiate your business. The benefits of these cloud initiatives go far beyond IT benefits; you can also realize key business outcomes, such as increased sales effectiveness and revenues. You could, for example, differentiate your sales process by moving from a traditional direct sales process to one that digitalizes and differentiates the end-to-end customer experience – all the way to order fulfillment (see Figure 6). Once again, with the industry cloud, the process is efficient and straightforward. As shown in Figure 5, you simply start with built-in functionality and modify only what's needed to meet your unique end-to-end process requirements (typically 10% to 20% of the functionality).

**Figure 6: Example of a Differentiated Sales Process**

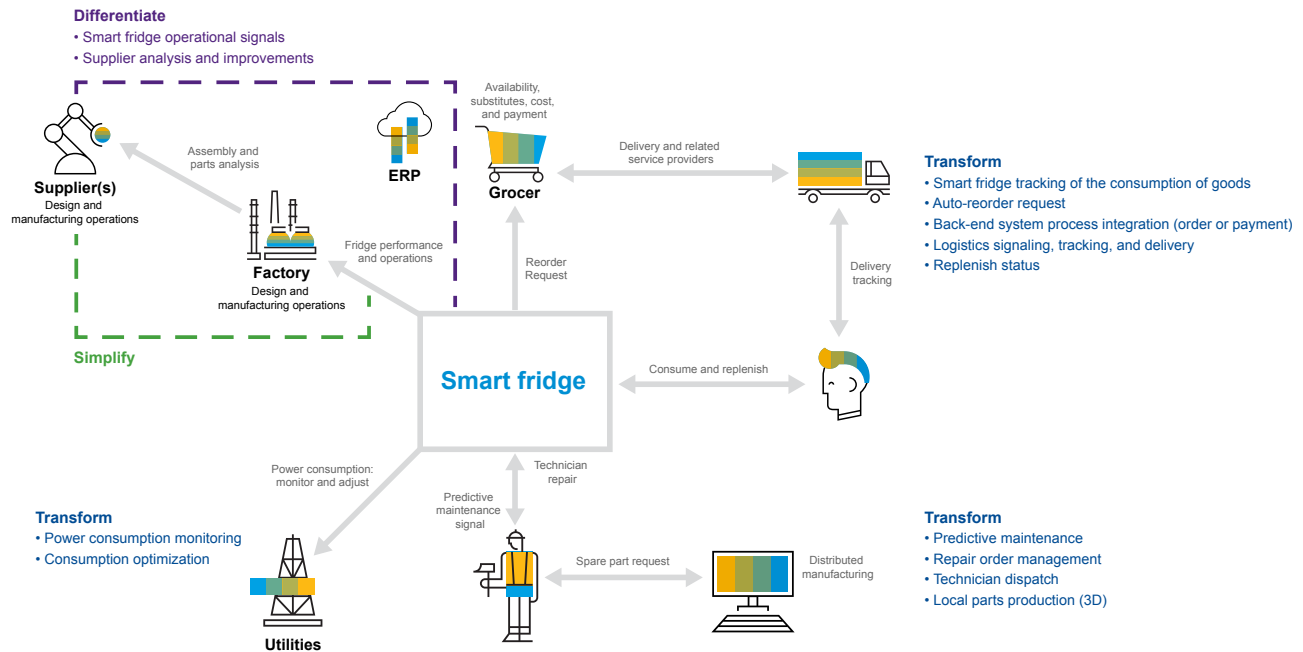


**THE CLOUD JOURNEY TO TRANSFORMATION**

Transformation initiatives, by their nature, not only encompass multiple areas of your business but also include new and innovative uses of data and processes. Increasingly, they also encompass the resources of partners, suppliers, and ecosystems. For example, as shown in [Figure 7](#), a refrigeration manufacturer with commercial and consumer product lines may produce digitally connected products that generate tons of sensor and user data. This data can be used to go beyond

condition-based maintenance to support delivery of automatic grocery replenishment services through strategic partners. As illustrated in [Figure 5](#), cloud initiatives such as this one will involve identifying the customer experiences to optimize and the problems worth solving. Success will also require prototyping business scenarios and using model company best practices in combination with an innovation portfolio to build next-generation processes.

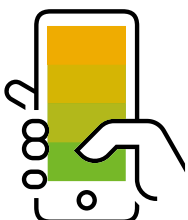
**Figure 7: Transformation of the Refrigeration Value Chain**



**LEARN MORE**

As explored in this paper, there's no one right way to move to the cloud – and the path and value proposition for doing so vary considerably depending on your goal: simplification, differentiation, or transformation. Central to your success will be choosing the right industry cloud and a trusted partner who knows and understands your business. Because make no mistake – the path is complex, the decisions along the way are complex, and the costs of mistakes can be extremely high.

By partnering with SAP, you have the flexibility to start your digital business transformation from any area of your business – it could be a subsidiary, a functional area such as HR, or a process. And you can realize benefits every step of the way. At the same time, you can adopt the most effective innovation faster and with less risk. This is because it's either built-in or easy to tailor to meet your specific needs, and already integrated with other processes supported by the SAP Cloud for Discrete Manufacturing solution. Please visit us online to learn more about our [industry insights](#) and [cloud services](#).



Transformation initiatives, by their nature, not only encompass multiple areas of your business but also include new and innovative uses of data and processes.

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