



# THE INTELLIGENT ENTERPRISE FOR THE LIFE SCIENCES INDUSTRY

Delivering patient-centric experiences  
that are transparent and connected  
to the real world.

THE BEST RUN







"The industry is moving toward a value-based model where patients are becoming more proactive and focused on wellness and prevention. Healthcare providers, payers, and producers are exploring ways to collaborate across the digital health sciences network to reduce costs while improving patient safety and care quality."

**Joe Miles**  
Global Head  
Life Sciences Industry  
SAP SE

# WELCOME

Dear Customers and Partners,

In 2025, healthcare will look increasingly more like other consumer industries, such as retail and consumer products. **Empowered patients will be in the driver's seat, focusing on prevention rather than treatment**, and be comfortable sharing their health insights with providers and life sciences manufacturers in secure ways.

Further, patients will be more accountable for their care and have greater access to their personal health information. Technology will allow patients to use smart devices to monitor their health in real time while collaborating with their physicians from home. **Patients and payers will demand personalized treatments with superior outcomes, but also cost-effective.** These personalized treatments are enabling the supply chain to adopt more agile modes.

In working with leading companies across the globe, we see investments focused on three strategic priorities:

- Improve patient outcomes
- Enable the digital supply chain and smart factories
- Compete as an ecosystem

I believe that the most successful companies will be admired as intelligent enterprises.

**These companies will run patient-centric, integrated processes that are transparent and connected to the real world.** They will speak to machines in the factory, interact with patients, and promptly be aware of global health situations. People will be relieved of repetitive work and be more focused on high-impact activities.

With the Intelligent Enterprise framework, SAP provides the integrated suite of applications, the intelligent technologies, and the digital platform that life sciences companies need to accomplish this shift. We have the vision, the solutions, and the commitment to go with you all the way – from defining your transformation strategy and delivering the right solutions to running your digital backbone in the cloud.

Sincerely yours,

**Joe Miles**  
Global Head  
Life Sciences Industry  
SAP SE



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# OUR PLACE IN THE NEW WORLD

## **Lifelong Health**

Lifelong health is the most precious possession we as humans have. Access to healthcare, the cost of healthcare, and the aging population are impelling life sciences companies to respond with agile supply chains and value-based outcome models, and to directly connect with patients to drive down costs and provide real-time insights.

## **Trusted Products**

The need for trusted products requires life sciences companies to serialize more of their drugs and medical devices, assigning a unique identification to tailor their supply chains to prevent falsification or counterfeit products.

## **Global Supply Chains**

Global supply chains require life sciences companies to have full, real-time demand visibility across complex supply networks spanning the globe.

## **Circular Economy**

The move from a linear to a circular economy allows life sciences companies to play two roles. First, they must respect the planet and the entire patient lifecycle by providing recyclable packaging and products and transitioning to increasingly service-based models that reduce waste throughout the value chain. Second, life sciences companies are challenged to improve collaboration across research institutes, healthcare, and other service providers. In this way, they can gain better insights into root causes for diseases and improve consumption of healthcare services, with seamless information transfer for better delivery of care.





## The life sciences industry is being reshaped by three major trends.

- **Empowered patients and personalization:** Patients are increasingly taking control of their health approaches and demanding therapies that provide promised outcomes. Personalized medicines are emerging at faster rates, with higher price points and improved patient results. Being able to provide outcome-based patient engagements and connect with patients directly becomes paramount.
- **Big Data driving health networks:** Providing therapeutic outcomes at lower costs is transitioning traditional, fragmented value chains to new ecosystems that integrate suppliers, contractors, and regulatory agencies.
- **Regulatory pressures and rising healthcare costs:** As public health issues continue to arise – such as the opioid crisis or the pandemic of diabetes and the associated impacts on healthcare costs – regulatory pressures will fully continue. Today, counterfeit drugs represent about 30% of the drug supply outside of the developed world. Unsustainable healthcare costs are driven by complex channel models and R&D investments. Costs that outpace GDP are constantly scrutinized for global change.

Being able to address the global megathemes and the industry challenges will determine who will be among the winners in the next 10 years. Successful business model innovation, process optimization, and workforce productivity are directly linked to delivering great patient, customer, and employee experiences. In fact, research<sup>1</sup> indicates that the best-performing companies are pulling away from the rest, widening the performance gap. They are doing this by creating a landscape where they deliver exceptional experiences to business partners and assurances to patients. These companies are the most profitable because they successfully adopt new technologies and deliver life-saving products and services more efficiently.

According to a July 2018 study by Forrester Consulting that was commissioned by SAP, more than other manufacturing companies, innovative companies are focused on digital priorities to help them achieve digital transformation.<sup>2</sup>



### Digital strategies are disruptive and changing the rules of manufacturers.

[Carestream Health](#) provides diagnostic medical imaging equipment to approximately 90% of the world's hospitals. As demand for its products increased, so did its need for digital transformation. Manual order processing procedures impeded rapid order fulfillment, so Carestream decided to automate back-end processes and data management while integrating the front-end commerce site to improve the overall customer experience.

Global biopharmaceutical company [UCB S.A.](#) is dedicated to transforming the lives of people living with neurological and immunological conditions. UCB's approach is driven by science and based on engaging with patients to address unmet needs. To keep business operations running smoothly, UCB counts on sophisticated software systems. But with so many users, the UCB IT team was concerned about potential security risks. To keep company, user, patient, and customer data safe and systems secure, UCB needed expert guidance on how to mitigate risk and strengthen its IT security strategy overall.

Developing new drugs to treat and prevent diseases is a complicated process with varied manufacturing requirements. Traditional biotech approaches use recombinant proteins and monoclonal antibodies, which can't get inside cells. So, diseases in which intracellular or transmembrane proteins are implicated can't be drugged by these methods. To solve this problem, [Moderna Therapeutics](#) is pioneering a radical new technology. Using messenger RNA, which is a fundamental component of human biology, Moderna's medicines can get inside cells and direct them to make proteins to prevent or fight diseases. This breakthrough may result in new treatments, help standardize manufacturing, and hopefully even get new drugs to market faster.



# PAVING THE WAY FOR BUSINESS MODEL INNOVATIONS

We believe life sciences companies will deliver personalized patient solutions at scale and as a service in 2025.

Traditional blockbuster drug sales models will be supplanted with personalized therapy treatments, driving life sciences companies to evolve business models to more of a patient-lifecycle service-based context.

The nature of R&D processes will transition to become increasingly patient-centric and compressed, with the intersection of technology and biology speeding up and decentralizing research opportunities across collaborative networks.

Traditional back-office functions such as finance, IT, HR, data management, and customer contact have matured into a single global business services organization that owns the value chain relationship and is the nerve center of the noncommercial activities. Supply and logistics networks are flexible and agile.

Embracing the opportunities from new technologies and implementing the right business initiatives will be the foundation for successful digitalization transformation and staying ahead of the innovation curve.



## 30%

Of manufacturers are predicted to use innovation marketplaces by 2022 for on-demand services and software that raise margins by up to five percentage points<sup>3</sup>

## 35%

Of manufacturing organizations will have created new ecosystems by implementing AI- and blockchain-centric platforms, thus automating 50% of processes by 2022<sup>4</sup>

## \$350 billion

Annual value added to the healthcare sector if U.S. healthcare were to use data analytics for efficiency and quality<sup>5</sup>

## 90%

Of large enterprises will generate revenue from data as a service by 2020 – from the sale of raw data, derived metrics, insights, and recommendations – up from nearly 50% in 2017<sup>6</sup>





# THREE PRIORITIES FOR SUCCESS

We have identified three strategic priorities necessary for life sciences companies to transform their business.



IMPROVE PATIENT OUTCOMES



ENABLE THE DIGITAL SUPPLY  
CHAIN AND SMART FACTORIES



COMPETE AS AN ECOSYSTEM



# IMPROVE PATIENT OUTCOMES

Identify patient segments and service them directly for greater holistic approaches that improve quality of life.

To keep the promises you make to your patients and to improve outcomes and adherence, it is imperative to understand patient populations down to a segment of one. Real-world data streams from patients' smart devices provide greater accuracy and insights into patient conditions. This vast and rich data will allow companies to improve outcomes through enhanced service from many aspects of the business.

## The Vision

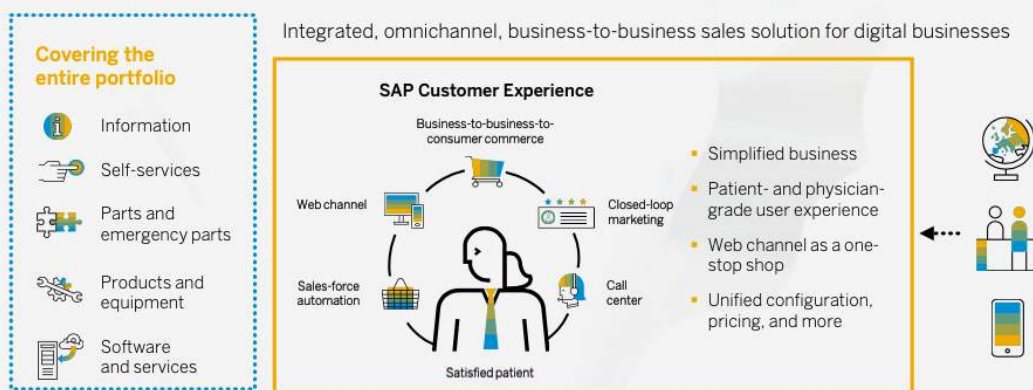
In 2025, the strategic focus of life sciences companies will pivot around patient and provider needs. Patient and shareholder value will be linked and measured. Positive patient outcomes will drive organizational missions, alignment, and goals in addition to transforming employee behaviors in

support of this strategy. Closer relationships with providers will improve patient engagements in closed-loop approaches. (See Figure 2.)

## The Journey

Life sciences companies can start toward this goal by evolving their current R&D and commercial approaches by integrating real-world patient information into key business processes. Increasingly, threading these insights into commercial operations such as pricing and billing will drive revenue and growth, as true value-based models become a reality. Radical transformation of the supply chain and manufacturing processes will support greater agility in supporting personalized patient approaches and smaller product segments.

**Figure 2: The Vision of Improved Patient Outcomes**



**30%** Of manufacturers will provide personalized dashboards for customers to schedule service, learn about products, and collaborate by 2023.<sup>7</sup>

**QIAGEN** is a diagnostics and life sciences firm supplying testing kits, instruments, and software to more than 500,000 customers that develop biotech-based products. Customers range from molecular biologists researching new cancer therapies to crime labs. Despite a robust business, QIAGEN wanted to improve the sales process and customer experience, especially for those still faxing in their orders.



## IMPROVE PATIENT OUTCOMES

# KEEPING THE PROMISE: CREATING A GREAT CUSTOMER EXPERIENCE

Putting the end-customer and patient's points of view and their feedback at the center of every decision is a key prerequisite for success in the digital age. It means capturing feedback from both business-to-business (B2B) customers (wholesalers, retailers, hospitals) and patients. And it does not stop in the commercial department but also applies to how therapies are designed and how services are offered. Life sciences companies strive to become patient-centric enterprises, and the ability to focus on servicing valuable B2B customers is one of their key priorities. SAP S/4HANA® enables life sciences companies to prioritize customer orders more reliably and efficiently while providing valuable insights into the order management process to avoid delayed deliveries and to help ensure on-time delivery.

### TRADITIONAL SCENARIO



Retail pharmacies ordering vaccines from life sciences manufacturers through electronic communication or electronic data interchange (EDI)

Uncertainty of delivery time and vaccine quantity requires 1:1 coordination directly to understand inventory availability details

Customer dissatisfaction over wait times and incorrect order receipt quantities

Promotional pricing cumbersome with traditional process due to high level of manual effort required, resulting in loss of sales

Drop in vaccine sales due to inefficient channel execution

### NEW-WORLD SCENARIO



Manufacturing company launches B2B Web site to sell vaccines directly to retail pharmacies rather than dispatching through wholesalers.

Vaccine manufacturers can view their product inventory in real time, decide on pricing and discount strategy for customers, and send the retail pharmacy customer survey immediately.

Operational data is merged with experience data, drawing insights that are used to improve R&D. There is an increase in repeat pharmacy orders based on self-service and real-time channel information.

Churn scores and operational data are used in real time to make retention offers to pharmacy customers, and directly to patients (B2B2C).

Survey results data is used to improve pharmacy deliveries, and the ordering portal has increased customer satisfaction, boosting sales and a rise in market share.

### TOP VALUE DRIVERS

## 10%–20%

**Increase** in revenue from new products

## 10%–20%

**Increase** in customer satisfaction

Source: SAP Performance Benchmarking



# ENABLE THE DIGITAL SUPPLY CHAIN AND SMART FACTORIES

Ensure patient safety and brand protection while supporting personalized medicine segments of one.

Supply chains and manufacturing networks must be able to seamlessly execute different manufacturing strategies and respond directly to demand signals and customer orders. This requires increased automation on the shop floor, including continuous process verification; AI to check the status of chemical and biological reactions; warehouse functions through nonhuman interactions; and error reduction through automated processes such as e-labeling.

## The Vision

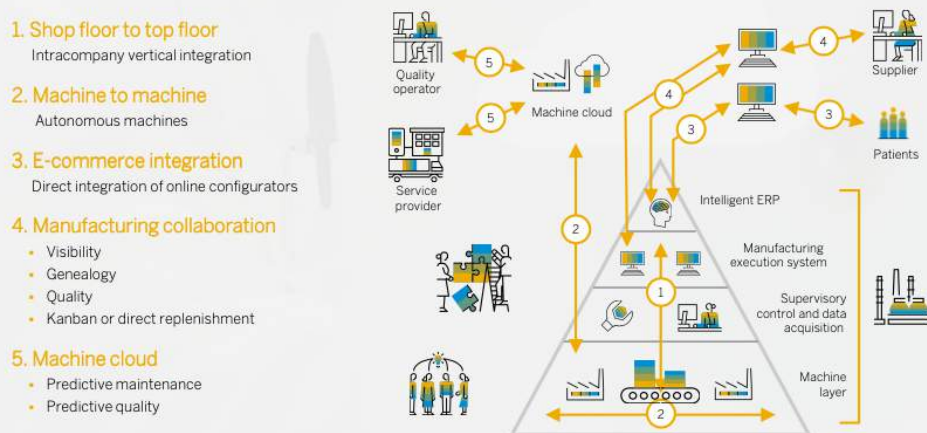
In 2025, supply chains and manufacturing networks in life sciences companies will be modular and flexible, allowing the seamless execution of different manufacturing strategies. They will be directly connected to demand signals and allow for immediate execution of complex, multiple-attribute-driven customer orders. Increased automation on the shop floor with the use of collaborative robots (cobots), drones, augmented reality, and machine learning will

increase efficiency even more. Through IoT technologies, supply chains and manufacturing operations will be completely transparent and managed on a global level. Supply chains will not only cater to a customer lot size of one but will also be managed and tracked at a product lot size of one. (See Figure 3.)

## The Journey

Life sciences companies will start toward this goal by providing end-to-end traceability for finished goods at the item level of the packaging hierarchy. They will optimize supply chain transparency across the enterprise as well as "shop floor to top floor" connectivity for real-time visibility. Subsequent steps would extend cold chain and manufacturing capabilities by adding predictive and smart-device technologies. Planning and execution capabilities will be intelligently transformed by integrating multiple characteristics related to ingredients, and distribution constraints will connect manufacturing, logistics, and supply chains to fully support complex global demands.

**Figure 3: Five Levels of Connectedness for the Digital Supply Chain and Smart Factories**



**60%**

Of manufacturers will have empowered shop-floor workers with AR and VR, intelligent apps, and cobots by 2021, thus achieving productivity gains of up to **7%** and more-attractive work environments.<sup>8</sup>

Pharmaceutical pioneer **Boehringer Ingelheim** decided to fight the counterfeiters by harnessing digital technology with help from the SAP Innovative Business Solutions organization to establish a pharma network as an information collaboration hub for life sciences companies. Based on SAP Cloud Platform, this digital network links organizations right across the pharmaceutical supply chain – from manufacturers, logistics companies, and wholesalers to pharmacies and hospitals. By providing detailed track-and-trace information to all parties, the pharma network provides peace of mind that the drugs taken by patients are genuine and of the high quality expected from **Boehringer Ingelheim**.



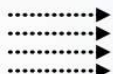


# ENABLE THE DIGITAL SUPPLY CHAIN AND SMART FACTORIES LOT OR BATCH SIZE OF ONE

Providing solutions that precisely fit the needs of an individual person has been commonplace in other industries, such as traditional assemble-to-order environments. Now, life sciences manufacturers must be able to capture personal customer requirements effectively and drive customization to give patients a drug tailored to their specific medical needs or genetic makeup.

Critical for this transformation is the ability to consistently manage the specifics of each order in every aspect of the patient-driven value chain. To do this, all patient, product, and process information must be kept in a single place, and all business processes – from initial therapy research and design through after-patient administration – must be effectively executed and closely monitored.

## TRADITIONAL SCENARIO



Schedule and collect patient blood sample with hospital or clinic, and initiate manufacturing planning.

Hand over technical transfer and patient-specific specifications to manufacturing from product lifecycle management.

Disparate ERP systems for production, order processing, and shop-floor manufacturing execution systems (MES) and customer ordering information result in a highly manual process.

Schedule drug infusion for patient in hospital and closely monitor controlled shipment temperatures and timing. This requires constant process monitoring.

A cumbersome chain of custody reporting for status of drug exists at any given time within the extended supply chain.

## NEW-WORLD SCENARIO



Role-specific user experience (UX) screens to speed up the management and execution of patient visit scheduling from order management and manufacturing to delivery in an integrated process

Handover of bill of materials to manufacturing and creation of work instructions in one integrated process, including closed-loop change management, for managing overall cycle time

On-time delivery of the drug to the hospital site, coordinated with the physician for scheduling the patient visit for the drug infusion, and maintaining customer satisfaction

Digital manufacturing insights for continuous process verification, adhering to the regulatory needs around batch-process consistency to ensure correct patient-centric batch creation

## TOP VALUE DRIVERS

### 10%–12%

**Reduction** in total logistics costs

### 10%–20%

**Increase** in on-time deliveries

### Up to 10%

**Reduction** in total manufacturing costs

Source: SAP Performance Benchmarking

## Three Priorities for Success

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# COMPETE AS AN ECOSYSTEM

Drive down costs and improve efficiencies through collaboration with partners from across the health sciences network.

It will be difficult for one company alone to meet all the new patient expectations. So therapies and solutions will not be restricted to a company's own products, but they will evolve into multibrand services and solutions.

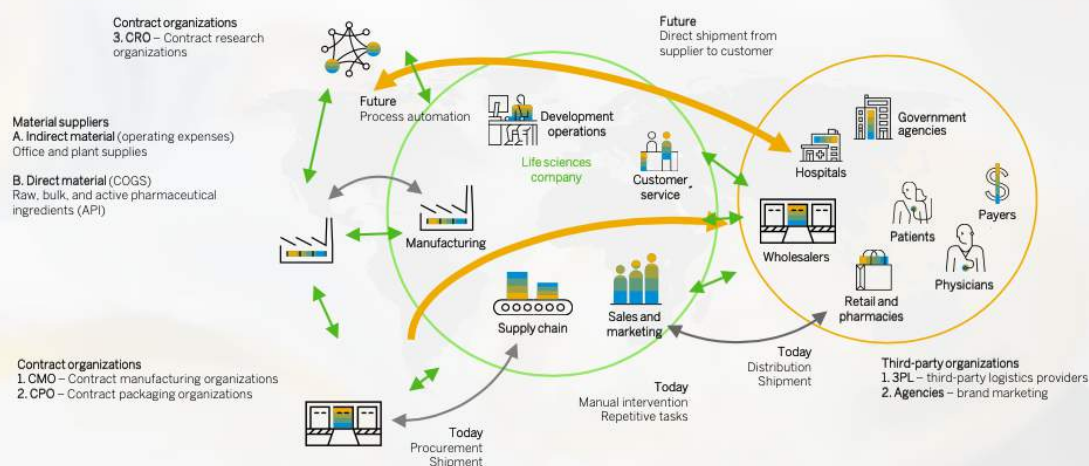
## The Vision

In 2025, life sciences companies will shift from being largely product centric to increasingly service centric, capitalizing on resources derived from the extended health ecosystem with a unified focus on successful patient outcomes. This requires end-to-end disease state management approaches across manufacturers, research organizations, regulatory bodies, and healthcare and insurance providers with aligned goal clarity. (See Figure 4.)

## The Journey

Life sciences companies will start toward this goal by collaborating better with manufacturers and suppliers to ensure quality standards on ingredients, packaging, and finished products. Collaborating on product design across the extended network of research institutes, hospitals, and innovative startups will enrich products to meet patient needs and shorten time to market. Transforming to true value-based patient models will occur when collaboration across providers, insurance companies, and distributors aligns holistically.

**Figure 4: Upstream Suppliers and Contractors and Downstream Ecosystem Value Chain Entities**



# 30%

Of manufacturers – driven by dynamic demand and empowered by data – will use innovation marketplaces by 2022 for on-demand services and software that raise margins by up to five percentage points.<sup>9</sup>

**Wockhardt** is a leading Indian research-based global healthcare enterprise. It relies on scientific innovation to develop medicine that improves the quality of millions of people's lives. Wockhardt is on a new journey for growth with SAP Enterprise Support services to improve business and system performance.





# COMPETE AS AN ECOSYSTEM

## MANAGING COLLABORATIVE PROCUREMENT

Global dynamics are elevating the need for a highly agile and efficient supplier network in the life sciences regulated environment. Safe digital and smart products are sourced and procured by life sciences companies. Outsourced manufacturing must be continuously monitored for quality adherence. This leads to increased use of digital technologies in the purchasing and quality departments. SAP S/4HANA enables life sciences companies to reimagine business transformation for source-to-pay and other collaborative scenarios, including full support of required serialization strategies.

### TRADITIONAL SCENARIO



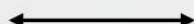
Newly approved vendor for contract manufacturing of a regulated drug must be onboarded to the manufacturer's network.

Manufacturing complexity with multiple procurement platforms for supply chain collaboration slows down onboarding.

Lack of control and oversight of spend categories exists, as the manufacturer's analytics capabilities are poor.

Lack of an end-to-end source-to-pay business process view causes manufacturing delays and higher costs.

### NEW-WORLD SCENARIO



Vendor is readily onboarded, catalogs are fully visible, and the manufacturer can purchase goods and services.

Manufacturers can float bids and use a supplier business network for streamlined collaboration and communication with their entire supplier base.

Purchasing costs per transaction are reduced, and operational efficiencies are increased.

### TOP VALUE DRIVERS

## 20%–30%

**Reduction** in procurement costs

## Up to 10%

**Reduction** in contract manufacturing costs

## 10%–20%

**Reduction** in manual rework through better collaboration

Source: SAP Performance Benchmarking

### Three Priorities for Success

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# KEY TECHNOLOGIES

The current pace of technological advancements has the most profound impact on enabling how life sciences companies transform themselves to respond to their patients' and customers' needs and to market trends.

Intelligent technologies promise to bring great benefits, such as productivity and efficiency gains, enabling innovative new business models and new revenue streams. The following intelligent technologies are instrumental in helping life sciences companies respond to market trends.

## **Artificial Intelligence and Machine Learning**

Machine learning is one example of artificial intelligence that enables algorithms to "learn" from existing data and achieve the best possible outcomes without being explicitly programmed. Once the algorithm is trained, it can then predict future outcomes based on new data. Businesses can leverage these capabilities to eliminate repetitive manual tasks such as service ticket management by automatically determining classifications, routing, and responses, or by helping with understanding the human genome and how drugs are processed in the body.

## **The Internet of Things**

Advances in ubiquitous connectivity and edge computing are driving a step change in business productivity. This connectivity, coupled with artificial intelligence and machine learning, can analyze petabytes of data and affect business outcomes. Although manufacturers have been using the Internet of Things (IoT) for some time, now the entire value chain can be connected from research and design to production to supply chain. Patient wearables provide key parameters back to providers and commercial divisions within life sciences organizations for monitoring the device status and to inform product design; at the same time, they inform patients and providers of key health indicators and aid outcome-based payment models. Remote condition monitoring of assets provides real-time data from machines to predict maintenance needs and identify potential quality problems in manufacturing processes before they occur. Additionally, throughout the cold chain, sensors track time out of refrigeration and temperature on sensitive drugs to ensure compliance from production to patients' use, thereby reducing profit loss.



### Data Platform to Manage Experiences

In the digital economy, reducing the cycle time to sense, analyze, and respond is a big competitive differentiator. Leaders are interlocking the operational performance data, or O-data, from companies' business systems (what is happening) with the experience data, or X-data, coming from customers and employees (why it is happening). The purpose is to improve customer and patient interactions, retention, products, and brands.

### Advanced Analytics

The integration of advanced analytics capabilities – including situational awareness – into applications enables business users to analyze data on the fly and drives better decision-making. Empowered users, benefiting from embedded analytics in business processes, can get real-time visibility into their changing environment, simulate the impact of business decisions, mitigate risk, and achieve better customer outcomes.

### Blockchain

A relatively recent breakthrough technology, blockchain is revolutionizing the movement and storage of value by creating a chain of unalterable transactional data. The blockchain model of trust, through massively distributed digital consensus, could reshape supply chains and commerce across the entire digital economy; for example, tracing serialized products across the value chain to fight counterfeit drugs.

### Virtual and Augmented Reality

Virtual reality (VR) – the use of digital technology to create immersive simulations – was once the stuff of science fiction. So was augmented reality (AR), which lets users interact with digital content that's overlaid on the real world. Already in use to help workers with difficult or infrequent maintenance activities, these technologies will become even more critical to attract and retain new talent.

### Conversational AI

Advances in machine learning are enabling algorithms to become highly accurate in natural-language understanding and in image and voice recognition, especially useful in after-service and call-center activities. Voice interfaces will be the go-to technology for the next generation of applications, allowing for greater simplicity, mobility, and efficiency while increasing worker productivity and reducing the need for training.

### Robotic Process Automation

Robotic process automation streamlines repetitive, rule-based processes and tasks in an enterprise and reduces cost through the use of software robots by replicating specific tasks or keystrokes.



## ~50%

Of new mobile apps use voice as a primary interface, and 50% of the consumer-facing Forbes Global 2000 will use biometric sensors to personalize experiences by 2020<sup>10</sup>

## 20%

Of healthcare organizations will use blockchain networks in production by 2021<sup>11</sup>

## Over 50%

Of new industrial robots will leverage AI by 2019<sup>12</sup>

## 57%

Increase, on average, of the contribution of machines and algorithms to specific tasks will occur by 2022<sup>13</sup>

## US\$1.2 trillion

Will be the amount of IoT spending in 2022<sup>14</sup>

## 75%

Of manufacturers will provide their service teams with access to searchable video content through mobility and wearables by 2021<sup>15</sup>

## 40%




Of digital transformation initiatives will use AI services by 2019<sup>16</sup>





# GETTING THERE: A PHASED APPROACH

Companies will become intelligent enterprises on three distinct tracks as they evolve their strategic priorities to match their company's vision. They will:

-  **1. Optimize** what they already do by implementing a stable and scalable digital core to make processes more transparent and integrated
-  **2. Extend** their current processes by connecting them to the real world using IoT technologies
-  **3. Transform** their business using a constant stream of data, enabling new service-driven business models (See Figure 5.)

**Figure 5: Strategic Priorities Across the Maturity Framework**





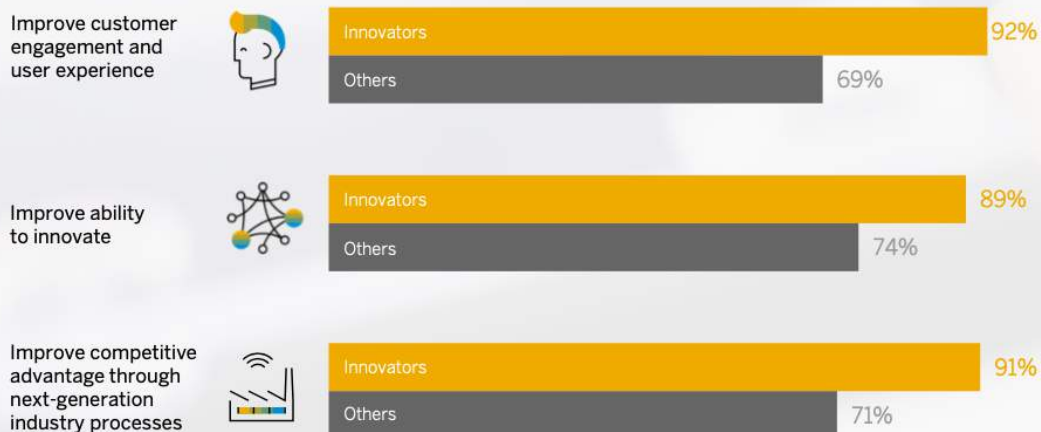
# EARLY DIGITAL ADOPTERS LEAD THE WAY

## How do you achieve these strategic priorities?

Start with reimagining your business together with your customers. Then build a path for even more optimization and intelligent automation to simplify your business and free up resources to invest in even more digital transformation programs and find new business models and revenue streams.

According to a July 2018 study by Forrester Consulting that was commissioned by SAP, Innovators focus more on digital priorities than others, enabling strategic benefits. (See Figure 6.)

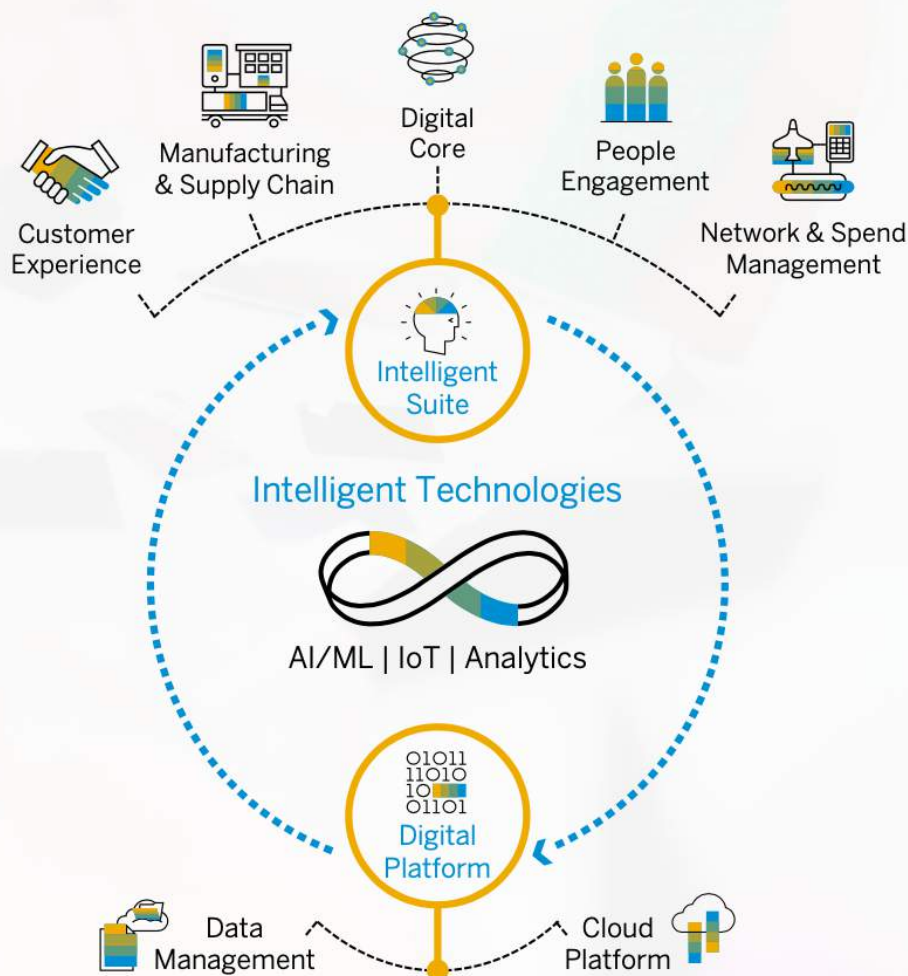
**Figure 6: Innovators Enable Strategic Benefits by Focusing on Digital Priorities<sup>1</sup>**



# SAP'S FRAMEWORK FOR THE INTELLIGENT ENTERPRISE

The Intelligent Enterprise framework is a suite of intelligent business applications that use intelligent technologies and can be extended on a digital platform. This enables next-generation business processes to deliver breakthrough business value on our customers' journey to becoming intelligent enterprises.

**Figure 7: SAP Intelligent Enterprise Framework**



# HOW TO PLAN YOUR PATH TO THE INTELLIGENT ENTERPRISE

In the digital economy, intelligent technologies and integrated business processes are now driving digital transformation.

To do this effectively requires an end-to-end plan for becoming an intelligent enterprise. This includes creating an intelligent enterprise road map and implementation plan with proven best practices and deployment options that optimize for continuous innovation with a focus on intelligent outcomes.

## The End-to-End Journey to Becoming an Intelligent Enterprise



To move forward with speed and agility, it helps to focus on live digital data and combine solution know-how and industry-specific process expertise with data analytics so that the right digital reference architecture is defined and delivered. In that context, a model-company approach is aimed at simplifying and increasing the speed of the digital transformation journey.

Model companies represent the ideal form of standardization for a specific line of business or industry. They are built on preconfigured SAP solutions based on best practices supported by SAP, along with the business content that encompasses our experience and expertise relevant for the industry. They provide a comprehensive baseline and come with the accelerators to jump-start digital transformation projects.



# COMPREHENSIVE SAP ECOSYSTEM ORCHESTRATING THE WORLD TO DELIVER VALUE FASTER

Our comprehensive life sciences ecosystem offers integration into:

- A wide range of business services (laboratory information management systems, labeling systems, pharmaceutical MES systems, calibration, and more)
- Open architecture with a choice of hardware and software
- Complementary and innovative third-party solutions
- Broad reach through partners to serve your business of any size anywhere in the world
- Forum for influence and knowledge
- Large skill sets

Our partner ecosystem includes, among others:



# SAP IS COMMITTED TO INNOVATION



## 10-Year Innovation Vision

SAP delivers fully intelligent business solutions and networks that span across company boundaries and promote purpose-driven businesses. These solutions will be the most empathic symbiosis between machine intelligence and human ingenuity.

- Self-running enterprise systems
- Self-organizing business ecosystems
- New markets and business models



## Comprehensive Industry Coverage

SAP enables comprehensive coverage of the complete life sciences value chain across the enterprise. With its clear industry road map, SAP is the partner of choice for the life sciences industry.

- More than 3,000 life sciences companies globally are innovating with SAP solutions
- 97% of life sciences companies in the Forbes Global 2000 are SAP customers
- All lines of business are supported on a single platform



## Proven Services Offering

By bringing together world-class innovators, industry and emerging technology expertise, proven use cases, and design thinking methods, we help life sciences companies develop innovations that deliver impact at scale.

- Proven methodologies to drive innovation, from reimagining customer experiences to enhancing operations
- Innovation that is fueled through a managed innovation ecosystem from SAP
- Ability to build your own innovation capability and culture

SAP supports life sciences companies in becoming intelligent enterprises – providing integrated business applications that use intelligent technologies and can be extended on SAP Cloud Platform to deliver breakthrough business value.



### Learn more

- [SAP.com for Life Sciences](https://www.sap.com/life-sciences)
- [SAP Leonardo](https://www.sap.com/leonardo)
- [SAP Digital Business Services](https://www.sap.com/digital-business-services)
- [SAP Design Thinking](https://www.sap.com/design-thinking)





# RESOURCES

Outlined below is external research that was used as supporting material for this paper.

- 1., 2. "[Emerging Opportunities to Deploy Industry Processes in the Cloud](#)," a Forrester Consulting thought leadership paper commissioned by SAP, July 2018.
  3. "[Big Data: The Next Frontier for Innovation, Competition, and Productivity](#)," McKinsey Global Institute, May 2011.
  4. "[IDC FutureScape: Worldwide Manufacturing 2019 Predictions](#)," IDC, Doc #US44467118, November 2018.
  5. "[Big Data: The Next Frontier for Innovation, Competition, and Productivity](#)," McKinsey Global Institute, May 2011.
  6. "[IDC FutureScape: Worldwide IT Industry 2018 Predictions](#)," IDC, Doc #US43171317, October 2017.
  7. "[Worldwide Semiannual Artificial Intelligence Systems Spending Guide](#)," IDC, March 2018.
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