

Cognizant®



It's Time for **Intelligent, Connected Manufacturing**

A connected and intelligent core sharing information across the value chain is an imperative for manufacturers to stay relevant and drive business value.



Contents

One thing is certain: More technologically advanced manufacturers are better equipped to quickly reset production requirements, manage supply chain fluctuations, and support and engage employees wherever they work — all while substantially improving customer engagements.



01

**The time
is now!**

Time for a change

Manufacturers have been eyeing Industry 4.0 for years. Aside from a few notable exceptions, most strategic plans have been years in the making – and the executing. The global pandemic, however, compressed timetables and accelerated timeframes. Not only were manufacturers forced to operate in ways they'd never done before – remotely, virtually and digitally – but they also faced challenges that only grew more acute during the pandemic, from new consumer behaviors and expectations to supply chain constraints.

These challenges aren't going away anytime soon. But one thing is certain: More technologically advanced manufacturers are better equipped to quickly reset production requirements, manage supply chain fluctuations and engage employees wherever they work — all while substantially improving customer engagements.

Many manufacturers have invested in enterprise software such as SAP ECC to drive their basic manufacturing processes. These technology solutions are facing their own transformations. SAP is planning to phase out support for its legacy ECC systems in 2027. Most manufacturers plan to make the shift to SAP S/4HANA, the company's modernized, intelligent, cloud-based ERP software suite to convert their traditional systems of record to an agile, responsive system of intelligence and engagement.

Clearly, the post-pandemic landscape is not one that benefits those who wait. The slow pace manufacturers have been accustomed to won't serve them now or as they emerge from the pandemic.

Demands of the day

Abrupt shifts in consumer behaviors and expectations, requiring B2C-like interactions

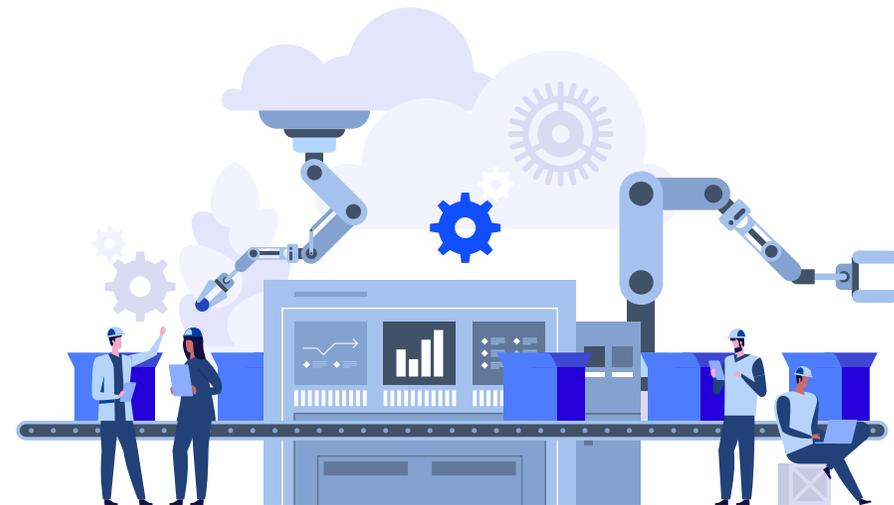
Confounding supply chain constraints, demanding alternative access to resources

The need to maintain plant operations amid social distancing norms

An uncertain macro-economic and geopolitical environment, increasing supply chain risk management

New distribution and delivery requirements to reach customers in non-traditional ways

A highly competitive landscape, requiring new levels of speed and adaptability



It's a new ballgame

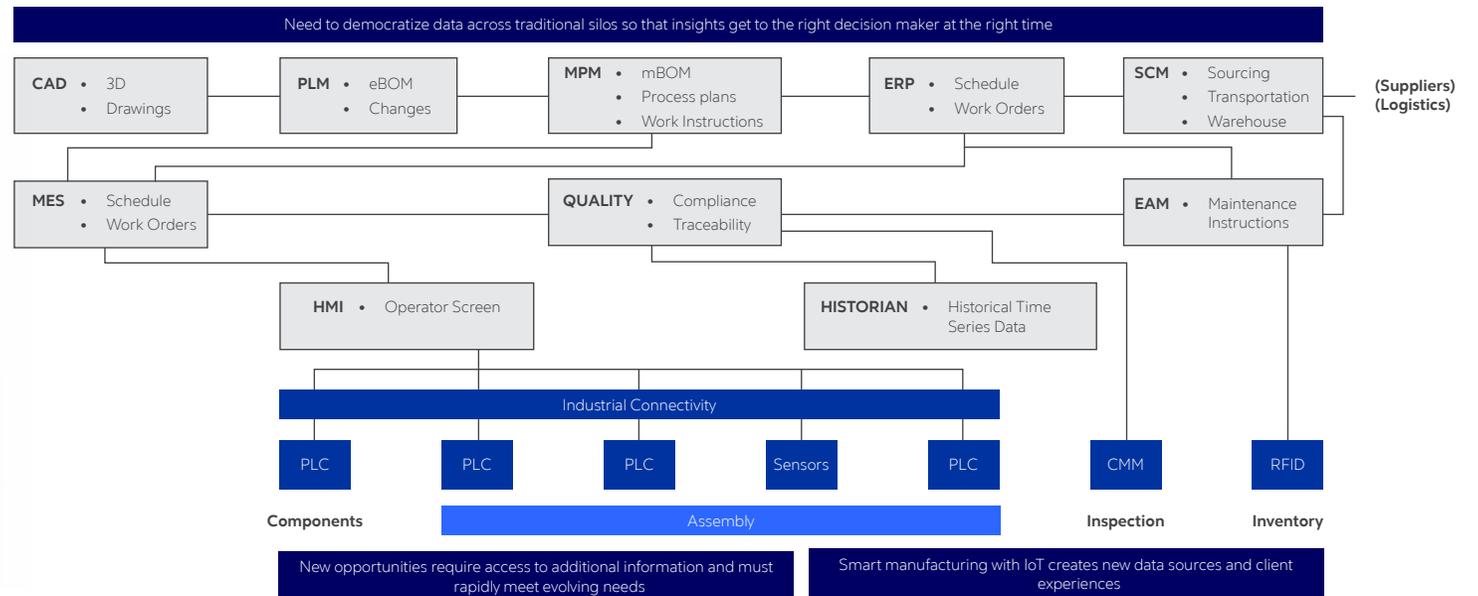
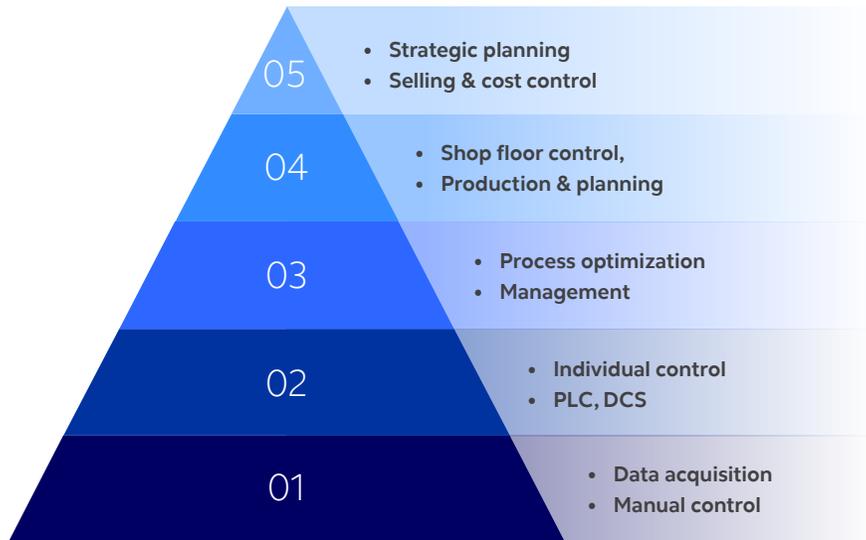
What worked in the past for manufacturing systems no longer works today. Older ERP systems are Systems of Record. They were designed to accurately record and track the past. They replaced walls of filing cabinets that contained the history of customers, suppliers, what you bought, what you sold, who you bought from and sold to. These systems made it infinitely easier to close the books at the end of the month, quarter, and/or year. They also told you how long ABC Corp. has been your customer, what they ordered, and how often.

Today's competitive landscape has changed dramatically, with unstable supply chains and rapid changes in both supply and demand. Legacy ERP systems possess neither the intelligence nor the agility to help recognize what might happen in the future, combining both historical and modern data. They also can't help manufacturers understand the impact that a sudden shift may have on existing operations, let alone what proactive actions to take and where in the value chain.

Further, many manufacturing legacy systems are highly specialized for a particular department. Each block of information is optimized with its own protocol, database and human interface, and can range from mainframe-based applications to Excel spreadsheets. Connections to these data troves are ad hoc at best. They cannot be readily shared.

If we look under the covers for ERP data, we will probably find this ...

ISA 95 Manufacturing Architecture



The new reality - systems of intelligence

Instead, manufacturers need the ability to connect the dots in the value chain. Rather than having data locked in isolated systems and silos, they need data to flow freely from one stage of the manufacturing value chain to the next, from design and procurement, to manufacturing, delivery and support. We refer to these systems as **Systems of Intelligence**.

Decision makers need to be able to access the data they need, when they need it. When data is available, advanced analytics can be applied to it, unlocking insights.

At a minimum, easily accessible data promotes collaboration across the manufacturing value chain, including design, supply chain, production, logistics and customer support, providing a common understanding by filling in the gaps with previously siloed information. This is how new opportunities are identified, and how innovative solutions are created.

Suddenly, fast pivots can be made – whether it’s responding to demand shifts, proactively maintaining equipment, sourcing from a different supplier or giving customers new self-service tools that give them new levels of transparency and empowerment. Beyond that, new business models can be created, using the continuous flow of data from goods sold.

The benefits from connecting manufacturing towers



A new vision for adopting Systems of Intelligence

To achieve this, manufacturers need a new ERP foundation that enables them to do business differently – more intelligently, more efficiently and in a more connected manner. This new foundation has three key components:

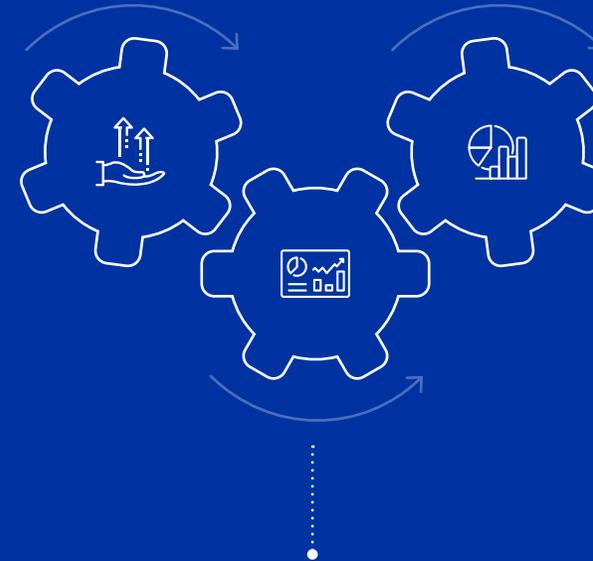


A simplified ERP landscape.

Manufacturers are seeking a simplified landscape that reduces the time needed to manage and enable new capabilities or processing volumes, and shifts resources to improved outcomes like shop-floor productivity and integrated planning.

Accurate real-time data for

decision-making. Decision makers need timely data to make their next key business moves, such as re-aligning capacity to meet customer demands, or looking for alternate vendors/suppliers to tackle sourcing constraints.



A digital IT core that enables operational efficiency. Manufacturers need to develop new data-driven business models that help them realize greater efficiency and create new sources of revenue by monetizing equipment data. With a digital core, they can also improve the customer experience through product performance analytics that can close the loop and directly influence the functionality and design of new product offerings.

Real-world benefits

Clearly, the numbers speak for themselves. Through the move to SAP S/4HANA, manufacturers have realized an array of real-world benefits, across the value chain.



Improve operations and reduce costs

4 %

lower manufacturing costs

Realize competitive advantage via cost leadership

8 %

Reduction in manufacturing cycle time

Operational efficiencies that drive value

15 %

Reduction in order lead times

Integrated material-and capacity-constrained plan

10 %

Higher labor utilization

Real-time production monitoring

52 %

lower infrastructure costs

Free up budget for reinvestment with lower infrastructure costs

29 %

Operational resilience improvement

Reduction in planned downtime

The background consists of a dark blue field filled with numerous small, light blue dots. These dots are arranged in a grid-like pattern that appears to be receding into the distance, creating a sense of depth and perspective. The dots are more densely packed in the foreground and become sparser as they move towards the background.

02

**A new
digital core**

Digital transformation starts with reimagining your core

S/4HANA is an intelligent ERP system that enables manufacturers to modernize their digital core, providing them with the flexibility to respond quickly to the rapidly changing environment and launch them on a digital transformation journey.

With its cloud-based foundation and embedded AI and machine learning capabilities, manufacturers can implement new business models and processes quickly to make real-time decisions. By doing so, they can become more agile, reduce costs, experiment with and simulate new processes, realize business goals and achieve a competitive edge.

Digital Core: Update to unlock business value



Become agile

Transformation becomes quicker and more effective once your foundation is solid. Change needn't disrupt your business.



Cut down costs

Automating means you can modernize at scale, applying changes across an organization's entire application portfolio.



Drive business goals

Modernizing helps bring data from across the organization together, enabling better decision-making and improved outcomes for the business.



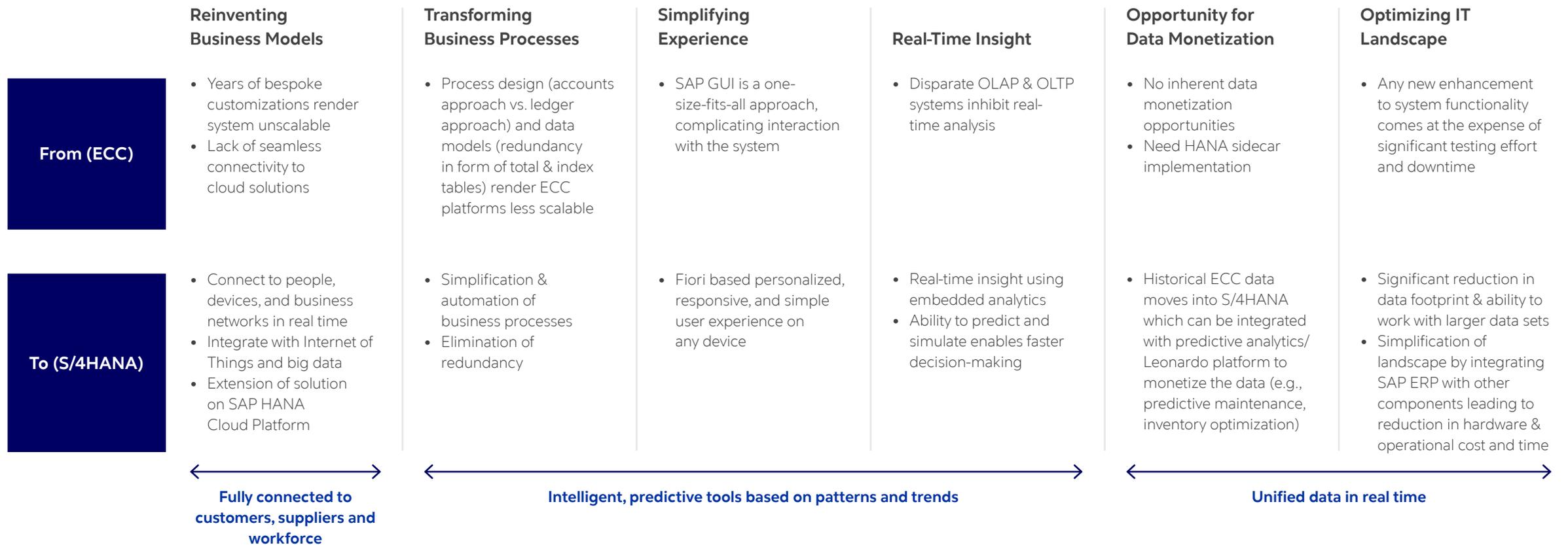
Stay competitive

Your business is limited if it's tied to legacy technology. Leveraging the cloud and other technologies unlocks opportunities and keeps you competitive.

A before/after view

Here's a quick look at the differences between the two systems – the traditional SAP ECC System of Record and what manufacturers can gain from the shift to a cloud-native SAP S/4HANA System of Intelligence.

SAP S/4HANA | Driving Digital Transformation & Innovation



03

Making the move to Intelligent ERP



Overcoming hurdles

The transformation from traditional to intelligent ERP can be daunting for many manufacturers, and no two manufacturers are at the same point of the journey.

Some are in the planning stage. They have been unable to acquire necessary investment, lack the resources for implementation, and/or believe their environment is too complex. They envision a protracted, expensive and resource-hungry trek that will likely jeopardize the performance of current operations at some point.

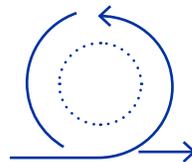
Some may be in the process of transforming but have experienced cost overruns, project delays, quality and/or stability concerns they feared as they set out.

Others may have completed partial or full migrations, but are simply not achieving the results expected from user adoption rates, operational costs, cycle times, data insights, and overall business agility.



Common challenges

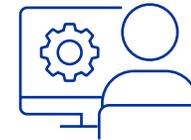
Manufacturers face an array of challenges in making the shift to intelligent ERP, including:



Lack of a scalable, agile and flexible platform for ERP hosting



No roadmap for S/4HANA adoption



Need assistance with rapid SAP deployment



Remain unfamiliar with a true consumption-based pricing model

Our three-part solution to Intelligent ERP

While there's no single path to modernization, there is a formula for ensuring success – quickly, cost-effectively, on-time and within budget -- with no need for costly do-overs. The three parts of the formula are **intelligence, simplification and automation**.

With our **intelligent, simplified and automated** approach to ERP modernization, manufacturers can unlock their full potential with real-time data and digitally transform with SAP S/4HANA – getting it “right the first time,” streamlining efficiencies and reaching the desired business goals quicker.



INTELLIGENCE through a future-proof intelligent ERP core



SIMPLIFICATION, enabled by a robust cloud strategy that ensures scalability, flexibility and a modern enterprise architecture



AUTOMATION to ensure a comprehensive approach to testing and quality assurance that results in “first time right,” shorter time to market and the ability to respond intelligently to rapidly changing business demands

1. Start with intelligence

It all starts with intelligence: a future-proof intelligent core.

With a modernized digital foundation, manufacturers can adopt industry best practices supported by artificial intelligence/machine learning and intelligent process automation to accelerate the transition and unlock S/4HANA's critical features.

Build a future-proof Intelligent Core

Modernized Digital Foundation for Transformation

- Agile backbone for **faster response**
- Empower CXOs to **reimagine business models**
- Integration with cloud enabled applications
- Simplified **user experience** with modern UI

From **System of Record** to **System of Intelligence**

- Real-time analytics for real-time decision-making
- Applications powered by RPA, AI/ML & mobile



- **Agility & faster innovation cycles**
- **Real-time decision-making**
- **Automation**
- **Modern user experience**



- **Run-time transactions**
- **Process complexity**
- **Inertia**

2. Then, simplify through the cloud

The cloud enables manufacturers to easily scale for business growth and adapt to fast market change.

Using our SAP-certified SmartMove S/4HANA Conversion Factory and Cloud Migration Factory, manufacturers can simplify conversion to S/4HANA and move to any cloud hyperscaler, or a combination of hyperscalers, in just one step.

Enabled by Robust Cloud Strategy ...

Scalable to adapt business growth

Flexible to support dynamic business environment

Significantly **lower downtime** to support 24X7 operation

Easy integration with other applications and latest **services** (AI, IoT, data lake ...)



- Scalability/Flexibility
- Speed of Implementation
- Innovation



- TCO
- Downtime (~zero)
- Capex

3. And top it off with automation

To get migration right the first time, testing needs to be automated and continuous.

Our S/4HANA test suite and test automation tools ensure fast time to market and end-to-end process assurance.

Ensuring first time right ...

Reassuring Business

- End-to-end business process assurance
- Validation & compliance to meet statutory requirements
- Eliminate risk

Increasing speed-to-market and quality

- Enabled by Agile & DevOps
 - Optimal, test what matters
 - Tools, accelerators & automation
- Ensuring scalability of the business



- Business Process Coverage
- User Experience
- Test Automation/QA Industrialization



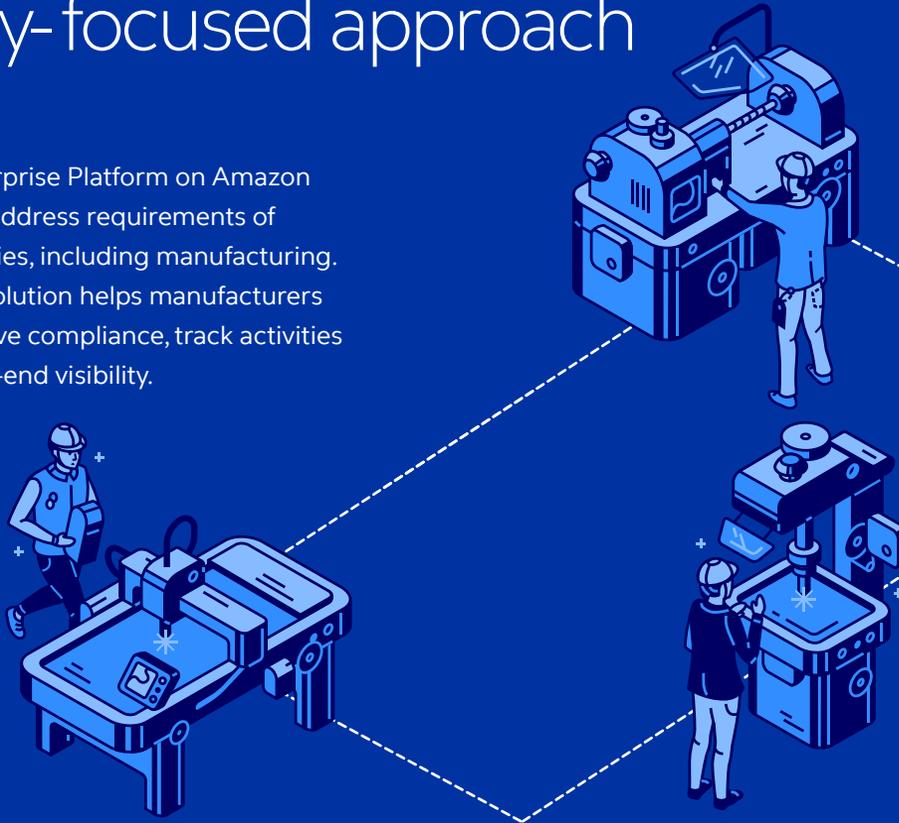
- Risks
- Production Defects (Zero)
- Test Cycles/Efforts

Putting it all together

Through our experience and industry expertise, we've come up with the key ingredients to ensure every manufacturer gets a simplified, intelligent S/4HANA, and an automated strategy for success.

An industry-focused approach

Cognizant's Intelligent Enterprise Platform on Amazon Web Services is tailored to address requirements of clients from specific industries, including manufacturing. Our state-of-the-art cloud solution helps manufacturers gain relevant insights, achieve compliance, track activities in real time and gain end-to-end visibility.



In addition, Cognizant's Managed Platform as a Service (mPaaS) hosted and deployed on the public cloud, comes with IaaS, OS and database administration, high availability and disaster recovery, SAP integration, administration, operations and enterprise security. This includes managing end-to-end infrastructure, SAP-based platform support and Level 3 application management services (including SAP functional and SAP security support) for our manufacturing clients.

Our integrated approach to intelligent ERP modernization enables manufacturers to achieve RoI, improve cash flow, reduce costs, reduce operational risk, and improve business process efficiencies. At the same time, manufacturers can build a modern core with S/4HANA, with increased agility, scalability (people, process, technology), and analytics to respond to market changes faster. Be it lifting-and-shifting legacy SAP landscapes or modernizing on S/4HANA as part of a broader digital transformation, manufacturers can count on the experience of Cognizant and AWS running SAP on the cloud.

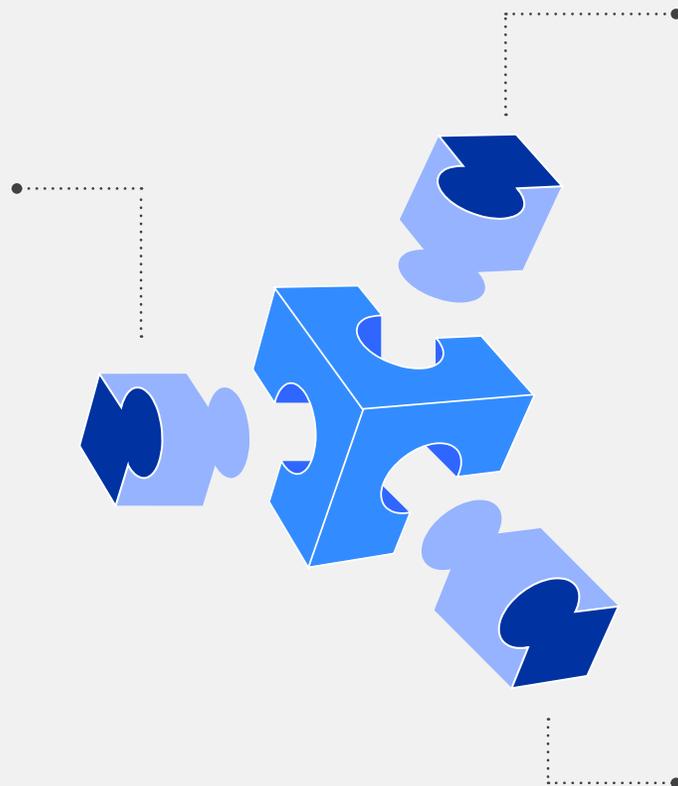
Setting a new standard for innovation, quality and trust

Innovative approach

Digitize business processes to achieve zero-day close, an optimized supply chain or better client experiences. Use the Cognizant-created design thinking methodology to reset platforms and open up new categories for growth

Key IP: Intelligent ERP platform with preconfigured industry best practices, Idea Couture and the Design Thinking methodology

Skills: 3600 S/4HANA specialists and 12k SAP specialists



First Time Right

Cognizant is one of the best software quality assurance services companies in the world. Experience automated, continuous testing for S/4HANA migration using Cognizant's S/4HANA test suite and the power of Tricentis test automation tools. We return control and governance to the business and lower the risk leading to minimal disruption to the business operations during SAP migrations and upgrades

Key IP: 1300+ automated and 7000+ reusable test cases and proven SAP configurations to end cost overruns, delays and surprises.

Skills: Cognizant is one of the leading partners

Simplified journey

Accelerate your conversion to S/4HANA with a trusted partner whose differentiator is quality. Our SAP certified SmartMove conversion factory and our SAP-certified partner-packaged solution, the Cognizant SmartMove Conversion Factory helps you migrate your S/4HANA on AWS in just one step

Key IP: SAP Certified SmartMove and the Cloud Migration Factory

Skills: Experts trained on SAP certified toolsets and processes for Technical Migration, Cloud Migration, Functional Migration and Quality Assurance

04

Intelligent ERP in the real world

Case Study:

Delivering actionable insight to make an intelligent enterprise

Elizabeth River Crossings (ERC) had embarked on a critical infrastructure tunnel project, which translated to a myriad of variables and components, which in turn translated to vast amounts of data. The infrastructure company needed better visibility over its data, to be in step with the exponential growth in project work.

While ERC's incumbent business intelligence platform, SAP BusinessObjects, is good for daily, monthly and annual reporting, it has limitations in advanced analytics and scaling up performance. Having migrated a significant portion of its on-premises infrastructure to AWS, ERC decided to take its BI platform to the cloud and turned to Cognizant for help implementing SAP Analytics Cloud on AWS.

Leveraging the AWS Cloud for Improved Analytics

ERC engaged Cognizant for our expertise in cloud migration. It had never been more critical to acquire predictive analytics capabilities for better insights, given the expanding scope of the company's projects. Specifically, ERC needed increased insight into toll road usage, customer type, revenue, costs and internal operations.

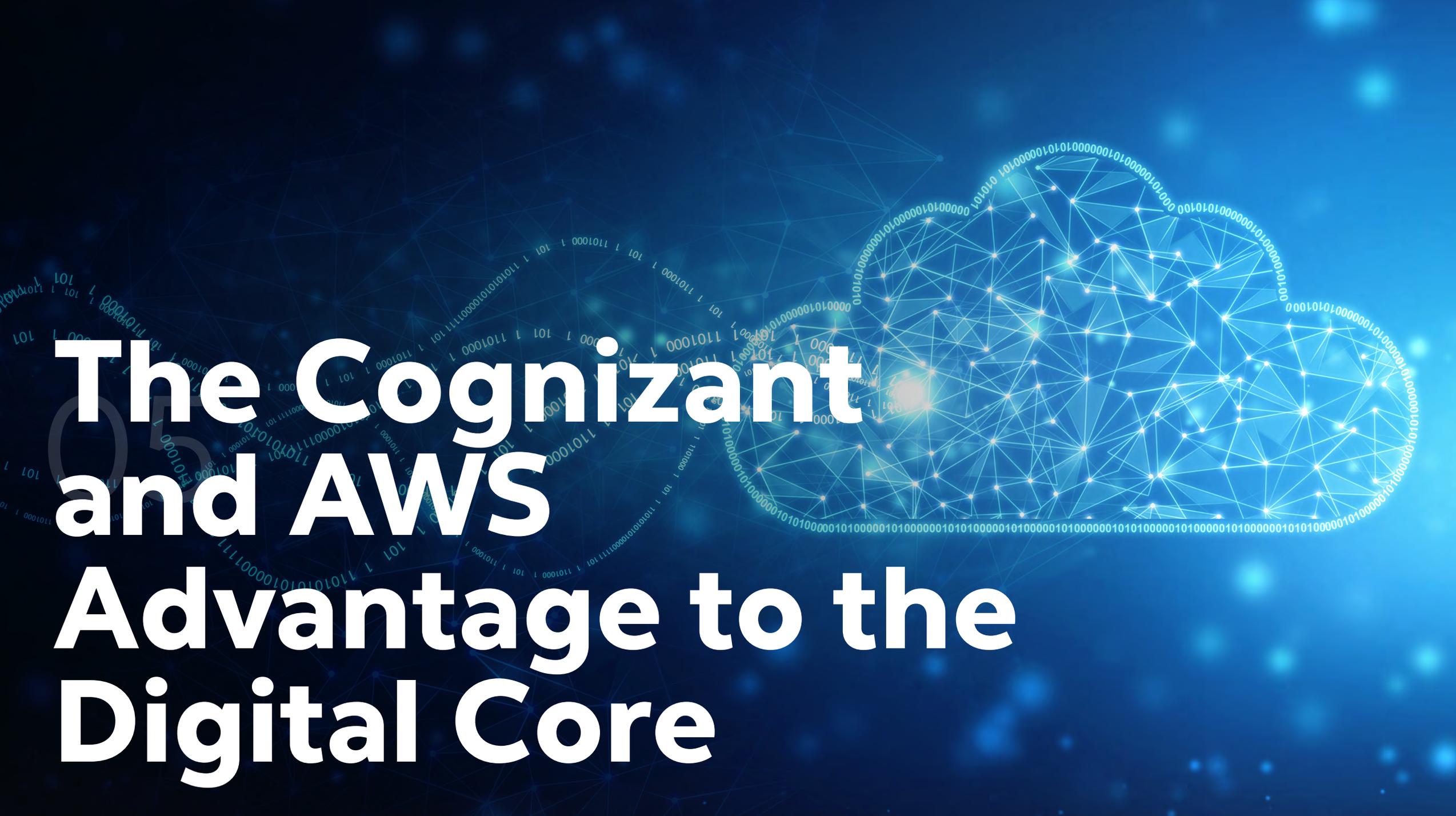
The project involved migrating SAP BusinessObjects and its components to the cloud, along with implementing and configuring SAP Analytics Cloud on AWS. With the migration, ERC was able to utilize SAP Analytics Cloud's ability to create specific single-view dashboards that offer insights into customer payment patterns and behavior, day-to-day traffic patterns, traffic volume predictions, customer care call center volumes, operational performance monitoring, and transactions and the revenue expected from them.



Better Data Management and Improved Business Insight

ERC's migration to SAP BusinessObjects and implementation of SAP Analytics Cloud on AWS delivered a host of tangible benefits, including a 360-degree view of the business, overall system performance and availability improvements, on-demand capacity and improved SAP Data Services job performance, which increased by over 90%.





The Cognizant and AWS Advantage to the Digital Core

Isn't it time?

If there's one thing the pandemic has taught us, it's that we can take bold steps when they're really needed.

If you're ready to make your move, consider what a simplified, intelligent, and automated approach can do for you. With the compressed timetables of today, the future will be here before you know it.

Make Your Journey First Time Right Let's dig a bit deeper

Intelligent ERP Modernization In-depth

- Schedule 2 hr follow-up to learn more about Cognizant's Methodologies, Accelerators, Program Schedule.
- Learn about the outcomes and experience from our engagements with case studies
- Meet our experts and learn first-hand about our experiences

Tailor Our Impact To You

- Compare our best practices to your current state
- Assess how ready you are to move to S/4HANA, SAP on AWS, and continuous testing
- Build a business case to predict and maximize value



30% ≡

Faster implementation and upgrades

30% ≡

Lower cost to implement & manage SAP

Leader

For continuous testing by ISG

30% ≡

Lower operating costs

450+

SAP customers including 83 of the Fortune 500

Leader

Gartner Magic Quadrant for Testing Services

Automation

Prebuilt automation frameworks

AWS is the platform of choice and innovation for 5000+ SAP customers and hundreds of partners. Whether you are looking to lift and shift ECC to reduce costs, migrate to SAP S/4HANA, or innovate with AWS services, AWS offers proven approaches backed by unmatched experience supporting SAP customers in the cloud. Get more flexibility and value out of your SAP investments with the world's most secure, reliable, and extensive cloud infrastructure, 200+ AWS services to innovate, and purpose-built SAP automation tooling to keep valuable personnel focused on value-adding activities. Safeguard your migration and transformation by working with the world's leading SAP on cloud experts through AWS SAP Competency Partners like Cognizant.



Cognizant, as an AWS SAP Competency Partner, has the experience, tooling, methods, and best practices to streamline client migrations or transformations. Cognizant's highly experienced SAP consulting practice has a global presence with 10,000+ resources inclusive of 1,000+ SAP HANA / SAP S/4HANA certified/trained experts.

Cognizant works closely with the SAP S/4HANA product management team for early evaluation of the innovations, which provides access to a network of 1200+ SAP S/4HANA development personnel in SAP Laboratories in India. Cognizant has delivered numerous ECC implementations and rollouts at a global scale.

We partner with manufacturers to address immediate business challenges while keeping an eye on the long-term goals of business transformation and sustainability. Cognizant, in collaboration with AWS, tailors a bespoke ERP modernization strategy that not only addresses your challenges today, but also sets you up for resilience and flexibility in the future.

Let's dig a bit deeper.
Contact us at
DIGITAL CORE

About Cognizant Manufacturing

Cognizant's Manufacturing and Logistics Practice operates as a trusted global partner to automotive, industrial and process manufacturers as well as transportation and logistics companies helping them accelerate business performance and drive growth through the power of digital. By leveraging our domain expertise and knowledge of manufacturing, transportation and logistics business processes, we're able to deliver next-gen digital solutions "in context" across the R&D, sourcing, production and aftermarket support value chain. In doing so, we enable organizations to take a holistic approach to their business, delivering systematic and structured transformation that defines the modern business and delivers the promise of Industry 4.0. Our business unit has been recognized as one of the top 10 providers of manufacturing services by HfS Research for innovation, execution and voice of the client. Learn more at www.cognizant.com/manufacturing-technology-solutions.

About Cognizant

Cognizant (Nasdaq-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 185 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.

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