THE INTELLIGENT ENTERPRISE IN THE EXPERIENCE ECONOMY FOR PAPER AND PACKAGING COMPANIES

Moving past selling products to providing value and an improved customer experience
Dear Customers,

For decades, energy-intensive commodity businesses for paper and packaging aimed for better process control, leading to higher product quality with less energy consumption. This would help to both reduce costs and maintain a healthier environment. A plethora of concepts and devices were invented to control the production and verify or predict the product quality. This approach had some measure of success, but it had its limits.

Use of technology in paper and packaging companies has been common for many years. Paper companies were already deploying in-line sensors in the 1970s and using real-time data from their machines to understand and improve the making of their products. When reading today’s definitions of Industry 4.0, you could think that the fourth industrial revolution already happened years ago in this sector. So what’s the hype today?

While concepts for real-time analytics and predictions have been around for many years, information technology has advanced greatly and become affordable. This allows companies to apply IT beyond manufacturing to all steps of the value chain. The use of digitally enabled and connected equipment can create high-quality products, reduce waste, and add recycling capabilities to facilitate a circular economy. In addition, paper and packaging needs to respond to global trends such as empowered customers, disrupters from adjacent industries, the availability and prices of raw materials, and the application of the latest digital technologies.

I predict that by 2025, a substantial part of paper and packaging companies’ value, reputation, and differentiation will come from services. These services will be delivered around highly customized products, enriched by digital information.

To get there, paper and packaging companies need to focus on five strategic priorities:

- Achieving customer centricity
- Connecting and automating the enterprise
- Running smart factories and digital networks
- Supporting value-added services and new business models
- Building a responsible and sustainable business

To achieve the 2025 vision, companies need to change the way they operate. They must increase the transparency of their own processes and combine this with real-world awareness, including customers and the environment. Winning and keeping business will be based on providing great experiences across all interactions.

By shifting routine tasks from humans to business systems enabled by machine learning and artificial intelligence, they will free up the capacity needed to define and pursue innovative and transformative business models.

With the SAP® Intelligent Enterprise Framework methodology, SAP provides the integrated suite of applications, the intelligent technologies, and the digital platform that 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.

Alfred Becker
Global Lead for Paper and Packaging Business
SAP SE
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The move from a linear to a **circular economy** allows paper and packaging companies to play two roles. First, their products can be made of recycled material. New technology allows for making high-quality products from even reused fiber. Second, companies think about the circularity of their own products. They can be designed to be recyclable with less effort.

The need for **green products** requires companies to serialize even low-value products, prove origin of fiber, and testify to harmlessness and product quality (especially for food and pharmaceuticals).

The cost and availability of energy and related CO₂ reduction is forcing producers to innovate processes and **reduce energy consumption**.

Industry borders are blurring, with partners and competitors arising at the same time. The focus is shifting from corporate-owned assets to successfully managing a **multioperational global supply chain**. This shift will help companies access raw materials at reasonable prices and allow for geographical access to consumer markets.

Customers expect outcomes, and the feedback they provide can be used to create products that really matter. The world is shifting into the experience economy, and paper and packaging companies can benefit from better understanding their customers.

Customer experiences including customer satisfaction surveys are important for food packaging giant Tetra-Pak’s success. With support from Qualtrics, Tetra-Pak went to a mobile-friendly interface and cut its customer surveys from 48 to 8 questions, which went from an average of 7 minutes down to 2 minutes to complete. Now, teams at every level and in every function have role-based dashboards, so they see the feedback that matters most to them, allowing them to react faster to customer insights. Previously, it took up to 15 days to follow up with customers. Tetra-Pak now aims to follow up with 100% of detractors and 25% of promoters within 48 hours.

**Cascades**: The SAP Integrated Business Planning for Supply Chain solution has helped Cascades establish long-term partnerships with its most strategic customers. These partnerships enable the packaging company to support customers’ growth and sustainability goals, with its strong focus on the supply chain.
Automation has already achieved a level of production that would be difficult to increase, and customers are still demanding higher value-add, higher service levels, and quicker delivery.

In 2025, services will comprise a substantial part of paper and packaging companies’ value and differentiation. Services will be delivered around individually customized products and enriched by digital information. Process parameters, once correlated, can provide additional value such as use recommendations.

As labor is frequently too expensive compared to often low-margin products, the Intelligent Enterprise can help companies achieve more-efficient processes and higher customer value. For example, it is already common practice to use manufacturing data analytics for optimizing product quality and avoiding scrap. The application of intelligent IT will spread from core value-creating processes, such as manufacturing and transportation, to all over the company.

Successful business model innovation, process optimization, and workforce productivity are directly linked to deliver great customer and employee experiences. In fact, research indicates that the best-performing companies are pulling away from the rest, widening the performance gap. They are doing this by delivering great experiences. And they are the most profitable because they adopt new technologies and deliver winning products and services more efficiently.

>50% Of all IT spending will be used directly for digital transformation and innovation by 2024

20% Of manufacturing companies will have started to treat their assets as internal customers, leading to a 40% reduction in asset downtime by 2021

40% Of manufacturers will have tied innovation and product lifecycle management to S&OP systems to meet customer demand and needs more effectively, thus raising product success rates by 25% by 2023

50% Of manufacturers, driven by demand for product personalization, will have integrated simulation and configuration tools with customer profile data thus achieving up to 2% gains in revenue by 2024

90% Of manufacturers will leverage real-time equipment and asset performance data to self-diagnose issues in advance and trigger a service intervention to avoid unplanned downtime by 2021
FIVE PRIORITIES FOR SUCCESS

We have identified five strategic priorities necessary for paper and packaging companies to transform their business.

- ACHIEVING CUSTOMER CENTRICITY
- CONNECTING AND AUTOMATING THE ENTERPRISE
- RUNNING SMART FACTORIES AND DIGITAL NETWORKS
- SUPPORTING VALUE-ADDED SERVICES AND NEW BUSINESS MODELS
- BUILDING A RESPONSIBLE AND SUSTAINABLE BUSINESS
ACHIEVING CUSTOMER CENTRICITY

It is imperative to understand how your customers are using your products to deliver value for their customers – all the way to the end consumer. If the expectations of that end consumer are changing, that will drive ripple effects all the way back up to your business. True customer centricity means understanding the ultimate end consumer and how their behavior is changing, and then make every business decision based on this insight.

Today’s dilemma for paper and packaging companies is that they are disconnected from the consumer, as these relationships are typically owned by consumer products companies, for example, who use packaging materials made from paper.

In 2025 paper and packaging companies will be able to maintain customer-for-life relationships with shared risk and a focus on long-term value based on a 360-degree understanding of their customers, starting with the detailed understanding of requirements and needs through experience management and ending with the knowledge of how customers use the products in their daily operations. They will interact seamlessly with their customers on a constant basis through multiple channels, from Web to direct and including IoT connectivity. And they will find ways to gather information about their customers’ customers – for example, through analyzing social media or tracking their own goods throughout the entire ecosystem. This encourages open interchange of data and ideas, and the offering of new products and services – all of which improve the final customer value.

Paper and packaging manufacturers start toward this goal by evolving their current routes to their customers into a true omnichannel model. This means that customers can be served seamlessly even if they change the channels by which they interact with your company. This situation will then be extended to include a real-time view – not only of the customer itself and your interactions but of all products that they bought from you in the past, including how the products are performing and the conditions under which they are used. These multiple perspectives will finally allow you to transform the collaboration with your customers into a 360-degree relationship, from product design and sensing demand to delivering value through products and services (see Figure 1).

Figure 1: Establishing a Customer for Life

Today

Future

Transactional

Customer for life

By 2020, human-digital interfaces will diversify, as 25% of field service technicians and over 25% of information workers use augmented reality. 

How Do You Sell Paper in the Digital Age?

Using intuitive software, Mondi sales staff members always have customer data at hand. Even on an airplane on the way to a customer, they can fully prepare, as the cloud solution can be used offline. This makes it instantly clear what each customer really needs. Furthermore, Mondi can now better understand the strengths and weaknesses of its competition and consequently position the uncoated fine paper company more effectively.
Putting the end customer’s point of view at the center of every decision is a key prerequisite for success in the digital age, and experience management helps with this. It does not stop in the sales department but also applies to which products are built and which services are offered. Paper and packaging companies want to become customer-centric enterprises, and the ability to focus on their most valuable customers is one of their key priorities. Since short and reliable delivery times are important for their customers, paper and packaging companies want to prioritize the production of their products based on the individual importance and individual product configuration of each customer.

**ACHIEVING CUSTOMER CENTRICITY**

**FOCUS ON THE MOST VALUABLE CUSTOMERS**

Disparate information and data silos are hindering the ability to have a clear picture of customers’ orders and order status.

- Achieving consistent product configuration in the area of mill products can cause significant effort.
- Production, costing structures, price, and more need to be calculated based on product specification.
- Changes to customer orders will impact many different levels and departments, leading to lack of visibility.
- Order fulfillment and delivery are separate processes, making product and delivery tracking difficult.
- In case of claims, many departments need to be consulted to understand the situation and provide appropriate assistance to the customer.

**A NEW WORLD WITH SAP**

Put customers’ success at the center of all activities.

- Single point of truth
- 360-degree view of past and current customer activities, leading to better decisions
- Ability to react quickly to late order changes
- Ability to track goods and delivery, enabling instant service on claims
- High level of integration across sales order processing allows for total visibility of cost drivers at all stages. Knowing transportation details helps avoid delays and find alternatives. Product status and origin can be tracked across all material levels.
- Transparency of customer history and activities helps make better decisions. Machine learning can automatically define the right reaction in case of claims for timely reaction.

**TOP VALUE DRIVERS**

- 10%–20% Increase in revenue from new products
- 10%–20% Increase in customer satisfaction
Individuals and companies are interested in products and solutions that are built to meet their exact requirements.

Often, these requirements are requested specifically to help differentiate them. The need to meet these requirements forces paper manufacturers to move from large lot sizes, which can serve many customer orders at low cost, to smaller lot sizes. As customers are not willing to pay more than for a standard solution, manufacturers need to control the costs of manufacturing and distribution to stay competitive and profitable.

In 2025 companies will be able to quickly process small-lot-size sales orders and delivery of tailor-made solutions, creating additional value for customers. For example, instead of needing to order from predefined, inflexible solutions and delivery, customers will be able to request unique product features. Then, with help from rules, analytics, and algorithms, they will be guided to appropriate additional solution choices. Companies will offer much more flexibility on choice and delivery while still ensuring appropriate levels of profit. Being able to execute the wish of a customer from order through manufacturing and offering multiple delivery options – all while considering costs and margins – will be a key differentiator.

Manufacturers start toward this goal by getting all customer, product, production, and logistics-related data connected in a digital manner. They will use this data to analyze demand and improve production processes for higher flexibility and response times. Once all data is connected, digital technologies such as predictive analytics will recommend the best product configuration and the best way in which to fulfill its production and distribution (see Figure 2).

**Figure 2: Configuring Products for a Single Customer**

- **Today**
  - Segmentation

- **Future**
  - Single customer

10% to 20% reduction in manual rework through better product configurations

**Smurfit Kappa** is a world-leading supplier of paper-based packaging solutions and is passionate about delivering quality products to its customers. That means producing the virgin and recycled papers that go into making its innovative and sustainable packaging solutions. With its unrivaled quality standards, Smurfit Kappa has harnessed data across its paper mills to drive consistent quality and productivity.
Providing solutions that precisely fit the needs of one single customer has been commonplace in traditional make-to-order environments. Now, manufacturers must be able to capture all customer requirements effectively and they must be able to produce at the lowest cost exactly what is requested by customers. Experience management helps in understanding customers’ demand so that product configurations tailored to individual customer needs can be offered more quickly with less effort during the order-intake process.

Critical for this transformation is the ability to manage the specifics of each order in every aspect of the industrial value chain in a consistent way, at nearly the cost of a standard product. To do this, all product and process information must be kept in a single place, and all business processes – from order entry through after-sales service – must be effectively executed and closely monitored.

**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
RUNNING SMART FACTORIES AND DIGITAL NETWORKS

Supply chains and manufacturing networks must be completely modular and flexible to react to short-term changes. At the same time, they must execute seamlessly for quick order completion, and they must respond directly to demand signals and changing customer orders. Higher customer expectations will require increased automation throughout all processes, and not only on the shop floor. This will include the use of new technologies such as bots, drones (for analyzing wood stock or forest conditions), augmented reality, and machine learning to increase efficiency and be able to promise and deliver orders on time as expected.

In 2025 the supply chains and manufacturing networks of paper and packaging companies will allow the seamless execution of producing and shipping the right product at the right time in the most profitable way, because businesses will have transformed into a responsive network. Companies will be able to act on volatile customer demand and heightened expectations of responsiveness. Innovative technologies such as the digital twin or machine learning can help meet these higher expectations by providing vital business information across the network, improving real-time analysis, and enabling better collaboration across departments and trading partners. Repetitive tasks will be automated, and processes will be managed by exception only.

Paper and packaging companies start toward this goal by enabling seamless data exchange within a factory and with external business partners. Subsequent steps make use of smart sensors to improve insights into physical reality and apply autonomous processes in production. Finally, they will connect every business to a digital network and run fully automated processes beyond their own company borders. As an example, a machine can autonomously order the parts it requires to run. Even complex scenarios – such as answering the classic questions in maintenance of “repair, replace, or retire?” – can be calculated on the fly for the most profitable, least risky solution (see Figure 3).

48% identify “better operational performance” as the paper sector’s top reason to invest in asset performance management. What is different from manufacturing in general is the paper sector named “increasing production capacity” as its second-most-popular top driver a significant portion of the time.

Sappi used Web services to integrate its SAP instance directly with the customer’s software. This provided a similar customer experience that users were accustomed to with eShop. Using the functionality of SAP HANA®, customer integrations could be accomplished with one week of effort, unlike the previous EDI and middleware integrations that would take months to implement.

Figure 3: Enabling Flexible Production

Today

Mass production

Future

Modular, flexible production

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Manufacturing and operations are becoming more connected and autonomous. Siloed, incomplete, and outdated information on assets, products, and customers means that processes cannot be optimized. Companies need a virtual, real-time representation of their business – a digital twin – not only of assets but of any element within the company. This allows all partners to collaborate in real-time and provides remote monitoring of internal assets as well as the entire supply chain across company boundaries. This will result in optimization of material throughput, reduced downtime, and better outcomes for customers—at a lower cost.

**TRADITIONAL SCENARIO**

Disconnected departments and limited access to the business network prohibit responsive business.

Plans are not consistently created and shared, so information cannot flow quickly. R&D, sourcing, sales, manufacturing, and planning are not aligned, wasting time and money.

Reliance on a few external partners and manual communication means visibility is limited, collaboration is difficult, delays are inevitable, and the risk of error is high.

**A NEW WORLD WITH SAP**

One plan can be shared with all critical resources and partners to achieve visibility, agility, and responsiveness. You gain:

- Collaborative product design with customers
- Insight into future demand for manufacturing and procurement, optimizing inventory
- Alignment of sales, manufacturing, and delivery, improving customer satisfaction through in-time orders
- Linear supply chains transforming into digital supply networks through simultaneous collaboration of all relevant stakeholders
- Your company at the center

**TOP VALUE DRIVERS**

- **Reduction** in asset service and maintenance cost
- **Reduction** in asset master-data creation and maintenance effort

Source: SAP Performance Benchmarking
It will be difficult for one company alone to meet all the new customer expectations. Solutions will not be restricted to the companies’ own products but, rather, will evolve into multibrand services and solutions, including partners from the paper and packaging ecosystem such as machine providers, service providers, and so on.

Services will not be restricted to providing product information and to handling claims, but companies will find additional value in using products from a certain paper and packaging supplier. The supplier-to-customer relationship will convert to a partnership where the paper producer helps its customers excel in their business.

**The Vision**
A unified data model of suppliers and customers will allow companies to analyze product performance throughout the value chain. Paper and packaging companies will be the customer’s partner in developing and delivering the right product for the right purpose at the right time. But companies will not sell only the product; they will also sell associated value such as performance or security. For example, they can assess that paper runs well on a customer’s printing device, or consider from a security perspective that packaging prevents product counterfeiting. Paper and packaging companies will sell performance, not products.

**The Journey**
Paper and packaging manufacturers start toward this goal by providing detailed data about the products shipped, including tracking, just-in-time delivery dates, vendor-managed inventory stock levels and, of course, product-quality data. A roll of paper is not a uniform product, and providing the detailed profile will help the customer to process the material at the highest speed flawlessly. Companies will collaborate on product design and delivery processes in the most open manner to identify potential improvements. Finally, companies will apply remote analysis of their customers’ processes, and a unified data model of supplier and customer will help improve product performance along the entire value chain. As they continue to collect increasing amounts of data from their own business operations and their customers, they will be able to offer new digital services through an IoT platform such as “best product use” or “best product configuration” for a specific purpose (see Figure 4).

**Figure 4: Creating New Products and Services with the IoT**

<table>
<thead>
<tr>
<th>Today</th>
<th>Future</th>
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</thead>
<tbody>
<tr>
<td>Selling products</td>
<td>Selling outcomes</td>
</tr>
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</table>

By 2018, **60%** of large manufacturers will bring in new revenue from information-based products and services, while embedded intelligence will drive the highest profitability levels.9

*Pregis* is deploying SAP Connected Goods software with the support of the SAP Analytics Cloud solution to help manage the sensor-equipped machines it maintains at customer distribution centers. The result is a digital system that helps keep customers supplied with the raw materials they need to create packaging and lets experts address mechanical issues before they become problems.
Traditionally, paper and packaging products are individually configured products, but they are seen as a commodity. Differentiation is difficult, and paper and packaging companies are shifting from selling physical products to providing only complete solutions. This can include collaborative development, advice on correct product configuration, advice on best product use, or even more sophisticated scenarios. Companies will use experience management to validate the effectiveness of their investments in areas such as service or product recommendations to increase differentiation from competition.

Paper and packaging materials often are converted or processed further at the customer sites. Innovative paper and packaging companies offer additional business models to differentiate in the marketplace. They provide their goods bundled with services, which can lead to better outcomes for customers with the same amount of products being consumed. With that transformation, they generate new business, increase market share, deliver more product insights, and, finally, create a more sustainable revenue stream.

### SUPPORTING VALUE-ADDED SERVICES AND NEW BUSINESS MODELS

#### SELL OUTCOMES AND SERVICES

Traditionally, paper and packaging products are individually configured products, but they are seen as a commodity. Differentiation is difficult, and paper and packaging companies are shifting from selling physical products to providing only complete solutions. This can include collaborative development, advice on correct product configuration, advice on best product use, or even more sophisticated scenarios. Companies will use experience management to validate the effectiveness of their investments in areas such as service or product recommendations to increase differentiation from competition.

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To succeed in the future, paper and packaging companies will, of course, still need to deliver financial performance – but they will also need to show how they are making a positive contribution to society and helping in solving some of the world’s greatest challenges.

With the planet’s limited natural resources, people have an increased awareness of the ecological footprint of a product. To attract the right talent, paper and packaging companies need to make sure that theirs is a place at which young people want to work. While worker safety is commonly taken care of, the consumption of wood, water, and energy should be as low as possible. The wood should originate from sustainable plantations, and companies must take care of the needs of affected local communities (see Figure 5).

In 2025 paper and packaging companies will be able to offer best-in-class worker safety even in remote locations. They will avoid using material from illegal logging, and they will be able to prove the origin of their products at all stages. Companies will run their business profitably but also focus on product recyclability during design.

They will support recycling, establish lower energy requirements, and reduce material consumption. They will strive for fair labor conditions, and they will engage with local communities – for example, in reducing the impact of cutting down trees during periods of harvesting field crops.

Paper and packaging companies start toward this goal by improving production processes so that they have lower energy consumption and improved labor conditions. This is achieved through process insight based on sensor data, real-time analytics, and IoT concepts. They can collaborate with business partners to lower transportation effort and then decide to produce locally to lower transportation volumes. Finally, they will use 3D positioning of workers to predict and avoid hazardous situations, and replace an increasing number of products with environmentally friendly material. Total transparency throughout the value chain will allow them to track the origin of any product at any stage and ensure that only fiber from certified forestry is used.

**Figure 5: Managing the Product Lifecycle with Purpose**

<table>
<thead>
<tr>
<th>Today</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product sales</td>
<td>Product lifecycle management</td>
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69% of packaging companies and 62% of paper companies plan to spend money on Big Data and predictive analytics. TemperPack Technologies Inc. helps companies deliver perishable foods and ship temperature-sensitive medicines without foam or plastic waste with its plant-based packaging material ClimaCell. TemperPack implemented the SAP Business One® solution, which is supporting the 40% growth it needs to get economies of scale. TemperPack is seeing significant time and cost savings in manufacturing and procurement, a 50% reduction in lead time, the ability to calculate margins in profitability in real time, and the ability to calculate its carbon footprint and provide customers with accurate sustainability data on the finished products.
Differentiation in products is difficult in the paper and packaging business. As this is an energy-intensive, water-consuming industry, society has a close look at how goods are manufactured in this business. But there are concepts in place to reduce energy consumption and emissions significantly. Some paper plants produce green energy and can even supply to the grid. While paper is a recyclable product, there is still a need for sourcing fresh fiber from the forests. Digital capabilities allow for testifying and tracking the origin of fiber, and growing wood is done while taking care of the needs of local communities.

Modern technology also helps organizations keep employees safer and mitigate environment, health, and safety (EHS) risks by providing the functionality to perform risk assessments, efficiently measure and report emissions, manage incidents, and communicate safe work practices to all employees.

**TRADITIONAL SCENARIO**

Health and safety administrators that have limited insight into the root causes of incidents and their implications and into organization-level compliance for EHS

Out-of-the-box applications to analyze incident data

Analytics disconnected from real-time incident data

Multiple reports to monitor and analyze environmental compliance across the organization

No easy way to identify risks for location or to define risks

Incident reporting

**A NEW WORLD WITH SAP**

Support health and safety administrators through advanced analytics, simplified EHS processes, and dedicated applications, enabling them to act in the moment.

Use sophisticated analytics to analyze incidents, near misses, and other safety information supported by spatial data.

Monitor environmental data records graphically for different compliance scenarios with applicable compliance limits.

Approve, replace, or invalidate the recorded values of environmental data records. Use dedicated applications to manage chemicals with all the relevant details.

Simplify the process to identify risks and assign relevant safety measures for risk mitigation.

Enable proactive warnings for workers to avoid incidents – using IoT technology.

**TOP VALUE DRIVERS**

Saving energy will result in a reduction in total manufacturing cost.

Source: SAP Performance Benchmarking
KEY TECHNOLOGIES

Each of these priorities will be enabled by emerging intelligent technologies.

Artificial Intelligence and Machine Learning
Machine learning enables algorithms to “learn” from existing data. Once the algorithm is trained, it can then predict future outcomes based on new data.

The Internet of Things
Although manufacturers have been using the Internet of Things for some time, now the entire value chain can be connected, from design to production to supply chain. Data-driven insights of customer preferences can drive better designs, lower material costs, and reduce risk.

Data Platform to Manage Experience
Leaders are interlocking the operational performance data from companies’ business systems (what is happening) with the experience data coming from customers and employees (why it is happening) to get 360-degree views and actionable insights and to deliver better experiences.

Advanced Analytics
Empowered users can get real-time visibility into their changing environment, simulate the impact of business decisions, mitigate risk, and achieve better customer outcomes.

Blockchain
The blockchain model of trust, through massively distributed digital consensus, could reshape supply chains and commerce across the digital economy.

Virtual And Augmented Reality
Already in use to help workers with difficult or infrequent maintenance activities, this will become even more critical to attract and retain new talent.

Conversational AI
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.

90%
Of new enterprise applications will embed artificial intelligence by 2025\textsuperscript{13}

30%
Of manufacturers will be utilizing blockchain and the IoT (driven by increased requirements for sustainability) to provide reliable provenance, leading to a 90% increase in audit efficiency by 2025\textsuperscript{12}

60%
Of G2000 manufacturers will address growing industry talent shortages by making significant investments in intelligent robotic process automation by 2023\textsuperscript{13}

40%
Of manufacturers will leverage IoT-connected products and AI tools to validate warranty claims preventing claims submitted in error by 80% by 2023\textsuperscript{14}

50%
Of all manufacturing supply chains will have invested in supply chain resiliency and artificial intelligence, resulting in productivity improvements of 15% by the end of 2021\textsuperscript{15}

SAP HANA® Enterprise Cloud helped Cosmo Films move toward becoming a cloud-run company with a future-ready platform that allows it to adopt smart applications across core areas of the business.
Companies will become intelligent enterprises on three distinct tracks as they evolve their strategic priorities to match their company’s vision.

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 6).

**Figure 6: Strategic Priorities Across the Maturity Framework**

- **Optimize**
  - Exchange information seamlessly with customers
  - Collaborate in real time with customers using omnichannels
  - Manage a collaborative interdisciplinary network

- **Extend**
  - Integrate all production and logistics data
  - Improve production flexibility and response time to customers
  - Realize machine-learning recommended best product configuration and the best way to fulfill its production

- **Transform**
  - Exchange data seamlessly internally and with partners
  - Use smart sensors to improve insights into physical reality, and apply autonomous processes in production
  - Connect with external parties to automate beyond the company

- **Achieving customer centricity**
  - Optimize production for lower energy consumption and improve labor conditions

- **Running smart factories and digital networks**
  - Exchange information seamlessly with customers
  - Collaborate in real time with customers using omnichannels

- **Supporting value-added services and new business models**
  - Complement physical products with information
  - Collaborate on product design and delivery in an open manner

- **Building a responsible and sustainable business**
  - Optimize production for lower energy consumption and improve labor conditions
  - Collaborate with partners to lower transportation effort and reduce waste
SAP’S FRAMEWORK FOR THE INTELLIGENT ENTERPRISE IN THE EXPERIENCE ECONOMY

Most organizations understand what is happening in their business, but they may not always know why.

They know what’s happening because they have systems that capture operational data (O-data) – about their customer transactions, supply chain, manufacturing, spending, and the activities of their workforce. They can see that data through reports and dashboards. They can see trends and predict what will happen next.

But to influence what happens next, companies need data about the interactions that people have with their products and their business. Experience data (X-data) captures beliefs, emotions, opinions, and perceptions – “why” something is happening. And when companies know why something is happening, they can make an informed decision about the best way to respond.

To win in this experience economy, intelligent enterprises connect experiences with operations. They use both X-data and O-data to guide their business decisions. Intelligent enterprises collect insights from customers, employees, products, and brands at every touch point. They use powerful technologies to automate and integrate their data, processes, and applications, enabling them to sense risks, trends, and opportunities. And they act on this intelligence across every part of their business (see Figure 7).

Only SAP has the strategy, expertise, and solutions to deliver on this vision, enabling intelligent enterprises to turn insight into action.

Figure 7: SAP® Intelligent Enterprise Framework

Note: This representation is a general visualization of the Intelligent Enterprise and may include functions not covered in every industry.
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

Plan
- Plan well to manage expectations

Simplify and innovate
- Reimagined business models, business processes, and work
- SAP Intelligent Enterprise Framework methodology as a guide for digital transformation
- Value-based innovation road maps

Standardize and innovate
- Model-company approach to accelerate adoption with model industry solutions
- Design thinking and rapid, tangible prototypes
- Coengineered industry innovations delivered with agility

Build and launch
- Build and launch with proven best practices

Run
- Run all deployment models

Run with one global support
- One global, consistent experience
- End-to-end support – on premise, in the cloud, or with a hybrid approach

Optimize to realize value
- Continuously captured and realized benefits of digital transformation

Optimize
- Optimize for continuous innovation

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 PARTNER ECOSYSTEM TO DELIVER VALUE FASTER

Our comprehensive ecosystem for the paper and packaging industry offers:

- The Intelligent Enterprise as the overarching strategy to meet future requirements, providing:
  - SAP S/4HANA co-development programs for customers and partners
  - Industry co-innovation programs for industry-specific use cases
  - Delivery of enterprise-to-enterprise industry clouds
  - Thought leadership, evangelism, and enablement by industry through events, councils, and regular customer exchange

- Integration into a wide range of business services (OEMs, suppliers, key vendors, and more)
- Open architecture, with a choice of hardware and software specifically designed to meet requirements
- Complementary and innovative third-party solutions to provide leading-edge and state-of-the-art technology

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 paper and packaging value chain across the enterprise. With its clear road map, SAP is the partner of choice for the paper and packaging sector.

- More than 5,000 paper and packaging companies in 70 countries are innovating with SAP solutions.
- 99% of paper and packaging 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 paper and packaging 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 paper and packaging 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 for Mill Products
- SAP Services and Support
Outlined below is external research that was used as supporting material for this paper.


Note: All sources cited as “SAP” or “SAP Performance Benchmarking” are based on our research with customers through our benchmarking program and other direct interactions with customers.