

# The Intelligent Enterprise for Telecommunications

Delivering Compelling Services and Differentiating Customer Experiences

May 2022

# Paving the Way for Sustainable Business Model Innovation

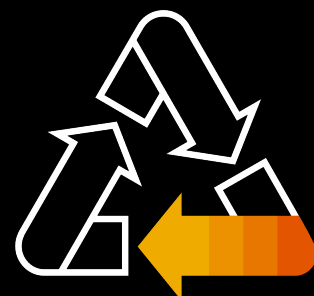
The telecommunications industry is primed to shape how people interact and how business gets done. By combining the Internet of Things and 5G technologies with machine learning and artificial intelligence (AI), telcos will empower digital inclusion throughout the world and enable the digital transformation of dozens of industries. To achieve this, they also need to respond to industry trends that are reshaping the telco landscape, including the following.

- **Disruption and competition:** Nontraditional market entrants are driving increased margin pressure, and telcos must respond. To compete effectively in the digital economy, telcos need to deliver a highly personalized and fully digitalized experience that integrates the customer journey across multiple channels and touch points while excelling in operational efficiency.
- **Structural transformation:** Significant capital expenditures (CAPEX) are under way in the rollout of next-generation networks with both 5G and fiber to the X (FTTX). There are various initiatives from different entities to fund these investments. In this new world, telco operations will need to adapt and transform their asset operation model to become collaborative.
- **Market saturation:** Mobile communication market penetration has been saturated for a long time, dictating the need for accelerated diversification of revenue streams. Telcos must quickly meet (and exceed) customer demand, deliver new services, and innovate new business models within an ecosystem-focused approach.
- **Next-generation networks:** Network evolution creates opportunities for telcos to hop in the driver's seat and enable other industries to reinvent their business processes. The new battleground is all about connecting and monetizing a sensor-based world with the combination of 5G, the IoT, edge computing, AI, and machine learning technologies.

## Evolving to Become a Digital Service Provider

Telcos are evolving from communication service providers to digital service providers. Shifting from a focus on products to a focus on customer experience means eliminating gaps between back-office, customer engagement, and network operations systems, streamlining to deliver the best customer experience across channels. To succeed in markets beyond connectivity, telcos should move from a generic sell-to and sell-through model to an ecosystem-driven approach – reinventing business-model processes by delivering context-based intelligent connectivity and digital services.

Ooredoo selected SAP as its technology partner to lead a complete digital business transformation across the majority of its 10 operating companies to enhance the experience of its customers, employees, and suppliers through integrated and optimized processes and systems.



# Strategies for Telcos to Run as Intelligent Enterprises

Intelligent connectivity – 5G combined with AI, machine learning, and edge computing – offers a strong foundation for new telco business outcomes and models. Here are a few proven strategies and approaches for telcos embarking on the journey to become an intelligent enterprise.

## **Customer Centricity**

Customer experience and customer value should be at the center of everything telcos do, from plan and build to fulfill and deliver. Telcos gain and retain customers by providing proactive digital customer experiences across all touch points and by delivering tailor-made services and solutions.

## **Supply Chain and Asset Lifecycle Excellence**

Automation and intelligence need to be fully assimilated into telcos' business processes. There are two essential types of supply chains enabling telco operations: commercial equipment (customer devices such as handsets) and technical equipment (such as network equipment). In the race to the next-generation network, there is enormous value to be recovered in streamlining the management of both supply chains, with automation and intelligence embedded into the processes.

## **Revenue Stream Diversification**

With the right combination of business models, strengths, and capabilities, telcos will achieve success in revenue stream diversification by transforming into digital life providers, data brokers, digital transformation enablers, and cloud service providers.

## **Intelligent Connectivity**

The intelligent connectivity provided by telcos, combined with the SAP® Intelligent Enterprise Framework methodology, could be the cornerstone of the journey to becoming intelligent enterprises for most industries and enterprises.

## **Sustainable Growth**

It's time for telcos to double down on sustainability, beginning with the critical task of promoting the reuse and recycling of mobile phones and other consumer devices. With the Internet of Things and advanced analytics, telcos are well equipped to further optimize their energy consumption while accelerating the adoption of renewable energy across their networks.

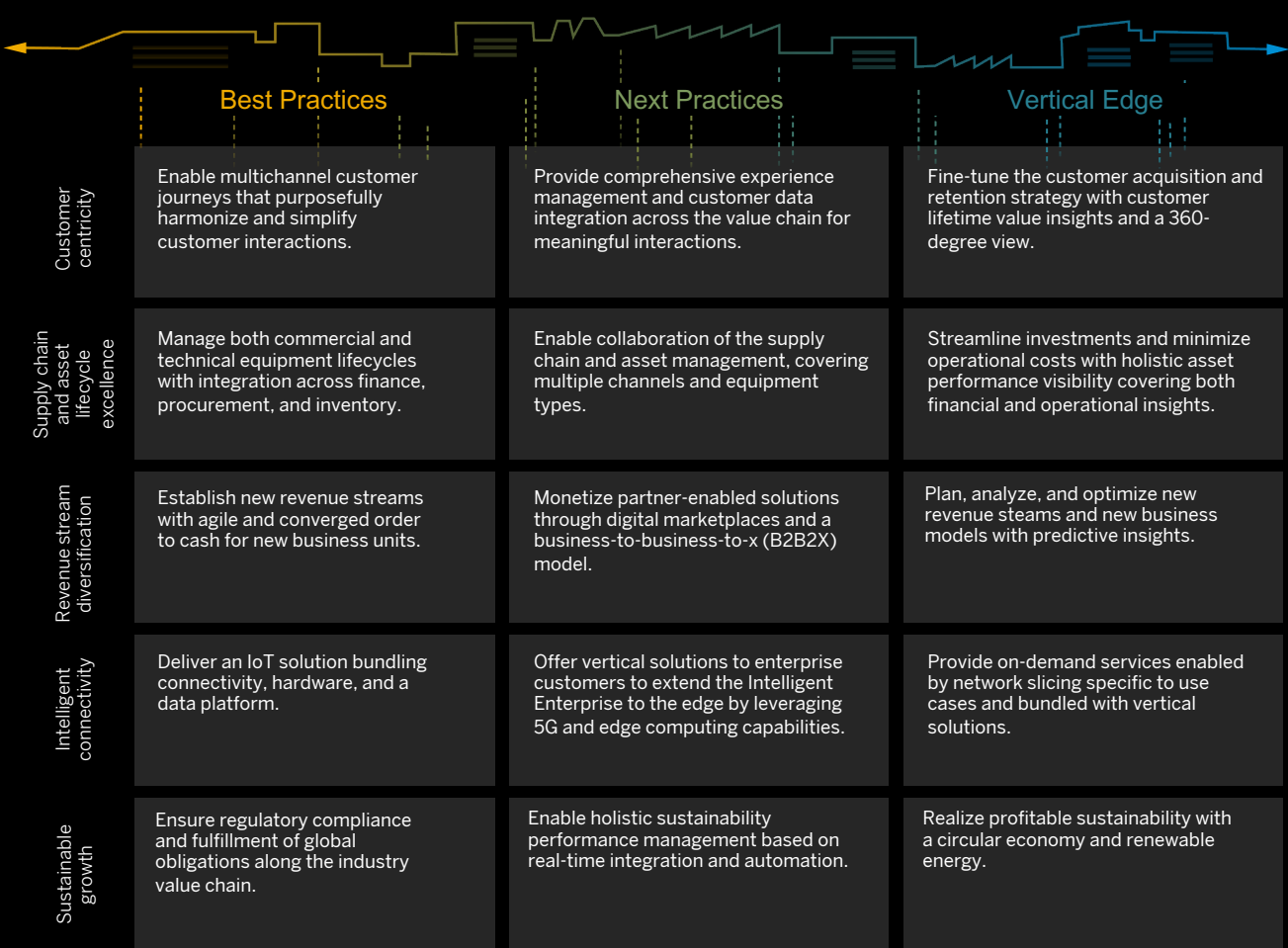
## **Speeding Up the Rollout of FTTX**

The need for reliable high-speed connectivity has never been greater. Upgrading from copper-based access to fiber access is critical to advance digitalization. New investment initiatives are rushing into the FTTX market, and these startups and spin-offs need a robust digital platform to enable ambitious rollout and customer acquisition plans while ensuring utilization and profitability.

[Hyperoptic](#), a fiber broad provider in the UK, chose SAP S/4HANA® as the digital core to support its fast-growing fiber-to-the-home (FTTH) business, with real-time visibility into finance and the supply chain.

# From Best Practices to the Vertical Edge

In a digital world, innovation is no longer just the domain of the research and development teams that build the next generation of machinery, products, and services. Innovation must become an integral part of each department and discipline within a telco. Every employee should be empowered to contribute to the evolution from best practices to industry next practices, right to the “vertical edge.” Cross-functional teams can experiment with new ways to create unique value for customers, generating top-line, bottom-line, and green-line improvements.



## Business Process Intelligence

Today’s telecommunications industry is defined by disruption, but one major area is often neglected during critical overhauls: internal processes, administrative procedures, and legacy systems must be transformed to meet new market challenges. With business process intelligence, telcos can streamline processes and procedures and begin the journey of simplifying internal services. This will immediately improve efficiency and productivity while reducing the cost of doing business. At the same time, improved processes will support telcos in their quest to create unique customer experiences and build competitive advantage.

[Telstra](#) is changing the ways it drives value for customers by enabling end-to-end digital experiences. Telstra is now able to gain insights into its performance and pinpoint the areas it can improve.

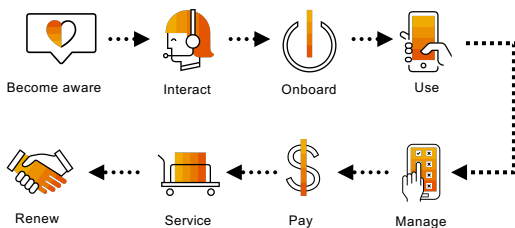


# Customer Centricity

Consumers are asking for more. Accustomed to the digital experience provided by Internet companies, they expect the same – if not better – from telcos. As telcos woo their customers with better and ever-more-personalized customer service experiences, the battle for customer acquisition and retention is growing fiercer. It is critical for telcos to develop and maintain intimate relationships with customers to remain competitive.

## BEST PRACTICE

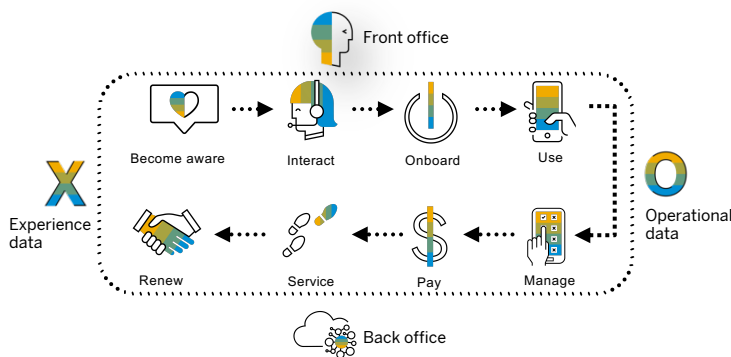
Enable multichannel customer journeys that purposefully harmonize and simplify customer interactions.



- Digitize the customer journey through omnichannel engagements enabled by automation and intelligent technology
- Switch between digital self-service, digitally enabled human interactions, and offline interactions, based on customer preference
- Simplify the purchasing process of complex product offerings to deliver desired outcomes
- Take pricing to the next level by providing flexibility and simplicity for complex pricing models
- Enable the right process flows with the right product offerings at the right price for a given customer at any time

## NEXT PRACTICE

Provide comprehensive experience management and customer data integration across the value chain for meaningful interactions.



- Help ensure a single view of the customer's operational and experience data to deliver a personalized experience
- Support operational transparency and efficiency between the front and back office to deliver a customer device with the right model
- Monitor and optimize customer lifetime value based on real-time granular insights
- Advance privacy practices and capture explicit user consent before collecting and using implicit personal data
- Use customer data and insights throughout business operations to reduce friction points and improve the customer experience

## Innovations at the Vertical Edge

Fine-tune the customer acquisition and retention strategy with customer lifetime value insights and a 360-degree view.

**7-point**

Increase in Net Promoter Score  
year over year

**15%**

Revenue lift due to smart  
personalization

**7%**

Reduction in customer churn



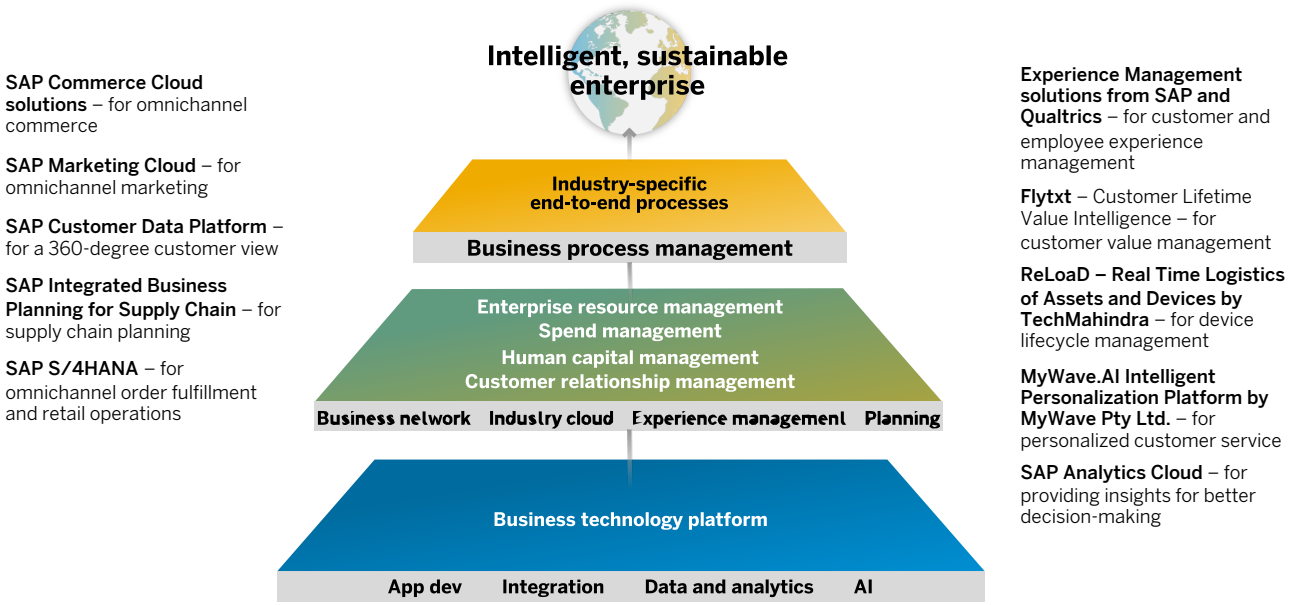
# SAP Solutions: Put Customer Experiences at the Center

Becoming customer centric means understanding and prioritizing the customer point of view across the front office and back office to create great experiences at every interaction point. To achieve a customer-centric vision, new intelligent business capabilities are required throughout the telco value chain.

## Required Capabilities

Plan, Build, and Operate	Acquire and Retain	Fulfill and Deliver	Analyze and Optimize	Enable Human Resources
<ul style="list-style-type: none"> <li>Actively listen to the customer voice with feedback mechanisms to fine-tune coverage strategy</li> <li>Achieve a holistic view of network quality of service with real-time insight into customer experiences</li> </ul>	<ul style="list-style-type: none"> <li>Accelerate customer journey digitization with a scalable commerce platform</li> <li>Enable hyperpersonalization with a 360-degree customer view</li> <li>Reduce churn and increase loyalty with predictive and proactive customer engagement</li> <li>Rapidly drive feedback to resolution</li> </ul>	<ul style="list-style-type: none"> <li>Provide personalized device offerings such as device leasing</li> <li>Track and trace serialized inventory</li> <li>Achieve collaborative forecasting and replenishment planning for consumer devices</li> <li>Automate supply assignment across channels and stores</li> <li>Enable omnichannel order fulfillment models</li> </ul>	<ul style="list-style-type: none"> <li>Build a digital platform to support customer lifecycle value management</li> <li>Combine analysis of customer feedback with a granular margin driver to prioritize customer experience actions</li> </ul>	<ul style="list-style-type: none"> <li>Meet service levels and drive revenue with appropriate staffing levels in stores and call centers</li> <li>Improve in-store performance by combining employee and customer feedback</li> </ul>

The architecture of the Intelligent Enterprise in the telecommunication industry starts with SAP Business Technology Platform and business applications from SAP, including industry cloud solutions that support organizations with their industry-specific end-to-end processes.



## Digitalize the Customer Journey

[Voo](#) delivers a fully digitalized experience targeting younger generations with its new brand Zuny, supported by the SAP Commerce and SAP Billing and Revenue Innovation Management solutions.

[Liberty Latin America](#) went live in 10 months with a unified e-commerce platform enabling an omnichannel experience across five countries and millions of customers.

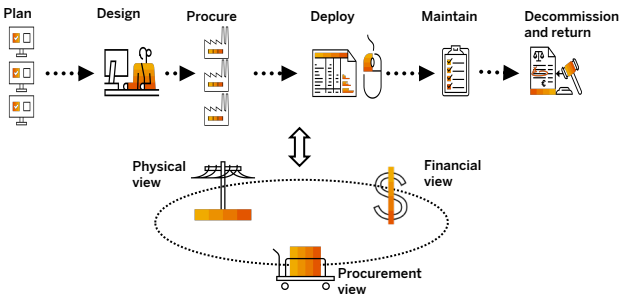


# Supply Chain and Asset Lifecycle Excellence

Telcos are facing increasing operational expenses and the expected huge capital expenditure from the incoming 5G deployment. As a result, telco margin is at risk, posing a serious threat to the financial fundamentals of the business. Telcos must focus fully on optimizing efficiencies and costs by streamlining the way they operate the supply chain and the asset lifecycle.

## BEST PRACTICE

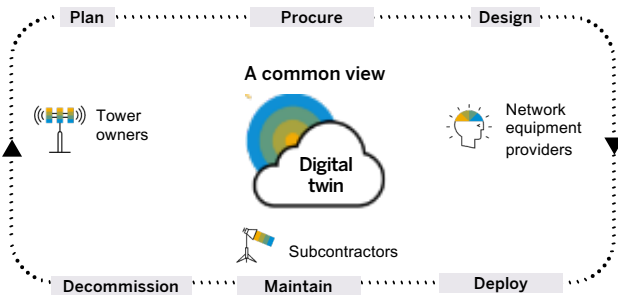
Manage both commercial and technical equipment lifecycles with integration across finance, procurement, and inventory.



- One system of record for procurement, inventory, and physical locations tied to the financial record of the serialized asset
- Integrated project planning, execution, and monitoring across multiyear distributed portfolios
- Devices tracked throughout the lifecycle from initial sale to trade-in, refurbish and repair, resale, and dispose and recycle, integrating with the reverse supply chain and finance
- Real-time visibility into inventory and asset locations
- Virtual segregation and prioritization of inventory to enable omnichannel fulfillment

## NEXT PRACTICE

Enable collaboration of the supply chain and asset management, covering multiple channels and equipment types.



- Integrated supply chain planning and execution across multiple business units to quickly and profitably sense and respond to predicted or unanticipated supply chain disruptions
- Cloud-based asset information shared to enable collaborative maintenance processes with contractors and OEMs
- Ability to drive preventive and predictive maintenance plans through predictive models, digital twins, and real-time IoT data alerts
- Collaboration with suppliers and logistics partners over business networks, improving agility, integrity, and consistency in the supply chain
- Granular asset performance with both operational and financial views

## Innovations at the Vertical Edge

Streamline investment and minimize operational costs with holistic asset performance visibility to cover both financial and operational insights.

**15%**

Reduction in inventory levels  
for network assets

**4%**

Reduction in network  
asset lifecycle costs

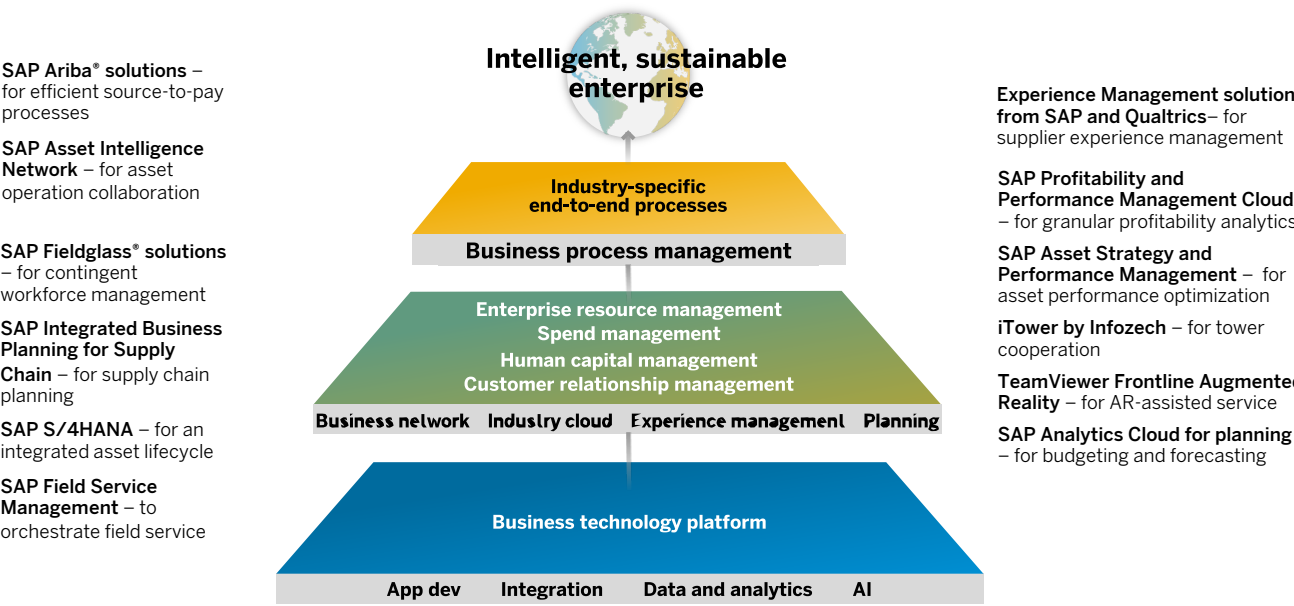
# SAP Solutions: Manage the Digital Supply Chain and Asset Lifecycle

With the SAP Intelligent Enterprise Framework methodology, we provide an integrated solution across the telco asset lifecycle from plan to retire, including capital projects, supply chain planning, procurement, inventory and warehouse, asset operation and maintenance, and the evaluation and optimization of asset performance.

## Required Capabilities

Plan, Build, and Operate	Fulfill and Deliver	Analyze and Optimize	Enable Finance	Source and Procure
<ul style="list-style-type: none"> <li>Plan, execute, collaborate, and monitor capital project financials and logistics</li> <li>Help ensure asset information integrity and consistency across the lifecycle</li> <li>Optimize operations and maintenance with a digital twin of an asset</li> <li>Support field service with optimized workforce scheduling and mobile apps</li> </ul>	<ul style="list-style-type: none"> <li>Enable demand planning for both project-driven equipment and high-volume consumables</li> <li>Enable advanced order fulfillment and prioritization across geographically spread project sites</li> <li>Provide real-time visibility into inventory movement and consumption status</li> </ul>	<ul style="list-style-type: none"> <li>Support closed-loop, real-time planning at various levels</li> <li>Improve profit potential with a strategic, business-focused profitability platform</li> <li>Reduce reporting cycles with real-time data access</li> </ul>	<ul style="list-style-type: none"> <li>Gain granular visibility into asset lifecycles with a unified view across financials and physical locations</li> <li>Provide high-performance cost allocation and simulation with accurate source data</li> <li>Enable predictive forecasts and dynamic simulation</li> </ul>	<ul style="list-style-type: none"> <li>Collaborate with supply chain partners using a single business network</li> <li>Enable self-service requisitioning with cross-content and catalog search</li> <li>Provide comprehensive visibility into spending and suppliers</li> <li>Optimize the supplier experience with proper onboarding and lifecycle management</li> </ul>

The architecture of the Intelligent Enterprise in the telecommunication industry starts with SAP Business Technology Platform and business applications from SAP, including industry cloud solutions that support organizations with their industry-specific end-to-end processes.



## Standardization, Simplification, and Automation

[Vodafone](#) has standardized more than 80% of its core business processes and boosted automation levels to more than 60%.

[Verizon](#) is standardizing, simplifying, and automating its IT landscape and processes with guiding principles including cloud first, greenfield, no customizations, and self-service.





# Revenue Stream Diversification

The commoditization of basic communication services is not news for telecommunications companies across the globe. Telcos can elevate themselves in the value chain only by going beyond the pipe, and they must fully embrace an ecosystem approach while establishing the required capabilities to develop and monetize innovative offerings.

## BEST PRACTICE

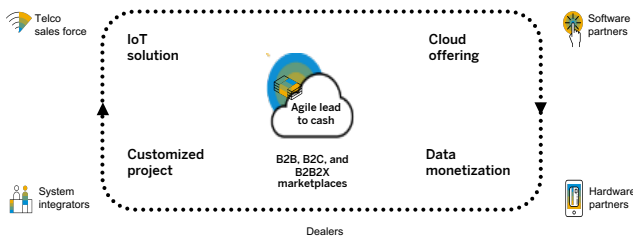
Establish new revenue streams with agile and converged order to cash for new business units.



- One platform from order to cash that provides the proper revenue recognition compliance from contract and discounts to billing, collection, and revenue accounting and reporting
- Accelerated time to market through easy configuration and onboarding of new tariffs and bundles
- One 360-degree view of the customer portfolio: accounts, agreements, discounts, orders, returns, invoices, and receivables
- Elimination of reconciliation issues associated with accounts receivable and accounts payable, “subledger” with the general ledger, and settlement with funding
- Enterprise business-to-business (B2B) hierarchical account requirements addressed while supporting business-to-consumer (B2C) performance demands

## NEXT PRACTICE

Monetize partner-enabled solutions through digital marketplaces and a business-to-business-to-x (B2B2X) model.



- One platform to enable multiple types of business models, including professional services, OEMs, and platforms, covering both large enterprises and small and midsize businesses
- Multisided revenue models with partner settlement and revenue sharing
- Delivery of on-demand services bundling next-generation connectivity with partner applications through a digital marketplace
- Unified configuration and quotation tool for offerings, to increase sales team productivity
- Accurate and trustworthy commission tool to boost sales team morale

## Innovations at the Vertical Edge

Plan, analyze, and optimize new revenue streams and new business models with predictive insights.

**95%**

Faster quote-to-order process when quotes are configured by an AI-based configurator

**46%**

Fewer customer complaints when real-time order, billing, and invoicing are available

# SAP Solutions: Enable New Revenue Streams and a New Business Model

SAP provides integrated, cloud-native applications for agile monetization, enabling telcos to establish new revenue streams through B2B2X business models for consumer businesses and the enterprise sector.

## Required Capabilities

Plan, Build, and Operate	Acquire and Retain	Bill and Settle	Analyze and Optimize	Source and Procure
<ul style="list-style-type: none"> <li>Plan revenues and costs for complex, customized B2B projects</li> <li>Manage budget and milestones for customer projects</li> </ul>	<ul style="list-style-type: none"> <li>Motivate sales teams and drive new revenue streams with compelling incentive schemes</li> <li>Enable faster selling by dynamically configuring and bundling complex offers for telco B2B business</li> </ul>	<ul style="list-style-type: none"> <li>Enable multiple revenue streams and business models with one unified monetization platform</li> <li>Manage usage rights, authorizations, and privileges given to a customer for digital services</li> </ul>	<ul style="list-style-type: none"> <li>Capitalize on growth opportunities of new business initiatives by simulating outcomes through what-if analysis</li> <li>Use granular margin insights to help ensure profitable digital services within a complex partnership</li> </ul>	<ul style="list-style-type: none"> <li>Digitalize the partner journey, from onboarding to monetization</li> <li>Optimize partner experience management</li> </ul>

The architecture of the Intelligent Enterprise in the telecommunication industry starts with SAP Business Technology Platform and business applications from SAP, including industry cloud solutions that support organizations with their industry-specific end-to-end processes.

**SAP Sales Cloud**  
– for intelligent sales engagement

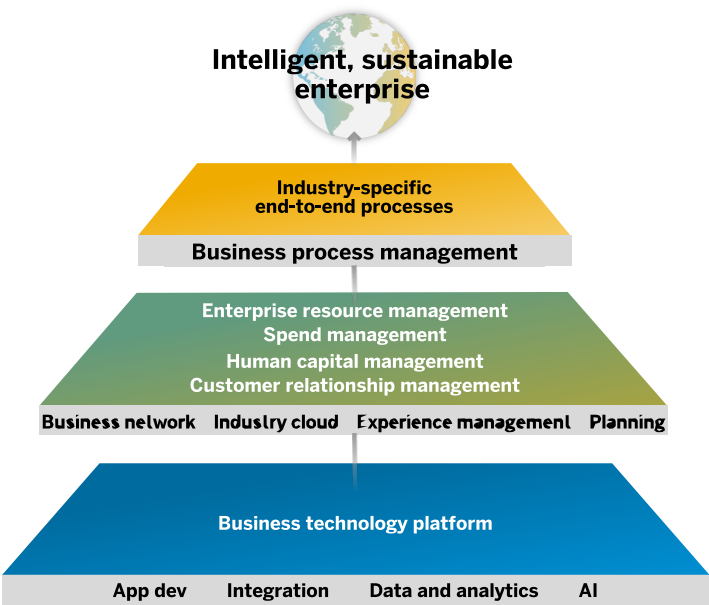
**SAP CPQ** – for complex configurations, pricing, and quotation of B2B proposals

**SAP Commerce Cloud** – for integrated portfolio and project management

**SAP Commissions solution** – for sales incentive management

**SAP Billing and Revenue Innovation Management**  
– for billing and partner settlement of new revenue streams

**SAP S/4HANA** – for commercial project and customer order management



**Experience Management solutions from SAP and Qualtrics** – for partner experience management

**SAP Subscription Billing**  
– for agile monetization of digital services

**SAP Entitlement Management** – to enable a digital services business model

**SAP Convergent Mediation by DigitalRoute** – for transparency of subscription usage data

**Resource and Inventory Management by Altima** – for number and logical resource management

**SAP S/4HANA for rights and royalty management by Vistex** – for media business

## Lower TCO with Billing as a Service

[IBM](#) provides next-generation billing as a service with SAP software on IBM Cloud for Telecommunications, with an offering designed to achieve up to a 40% cost savings.

# Intelligent Connectivity

During these early days of 5G deployment, the million-dollar question for telcos is how to justify the business case and, further, how to maximize the return on investment in 5G. They need to deploy and operate the new 5G networks as efficiently as possible while maximizing the revenue potential from new features available with 5G technology. Innovative business models and revenue streams are possible from the combination of SAP Intelligent Enterprise Framework with the telecommunications industry's intelligent connectivity.

## BEST PRACTICE

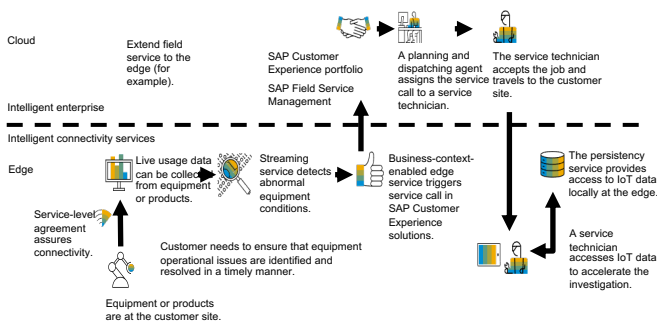
Deliver an IoT solution bundling connectivity, hardware, and a data platform.



- Provide bundles of devices, sensors, connectivity, and a data-processing platform to enterprise customers with a manufacturing plant, warehouse, and stores
- Provide IoT device management capabilities for enterprise customers
- Deliver field services to deploy and maintain the customer's on-premise equipment needed for the solutions

## NEXT PRACTICE

Offer vertical solutions to enterprise customers to extend the Intelligent Enterprise to the edge by leveraging 5G and edge computing capabilities.



- Enable business logic to run at the edge for enterprise customers with edge services integrated with business apps
- Provide vertical solutions to enterprise customers through ecosystem play
- Open up telco capabilities including anonymous customer insights, location insights, and identity verification for digital partners
- Work with solution partners to provide business applications through platform-based business models and B2B2X models

## Innovations at the Vertical Edge

Provide on-demand services enabled by network slicing specific to use cases and bundled with vertical solutions.

**>70%**

Of 5G growth potential requiring operating model transformation

**>US\$580 billion**

Revenue opportunity for telco operators addressing industry digitalization with 5G technology

# SAP Solutions: Unleash the Power of 5G with Intelligent Connectivity Services

Intelligent connectivity services enable telcos to bundle the SAP Database and Data Management portfolio, including edge services, with next-generation connectivity to provide a scalable technology foundation. Telcos can scale from on premise, to the cloud, to the edge of the network – for data transmission optimization, latency-sensitive use cases, and improved business process performance.

## Required Capabilities

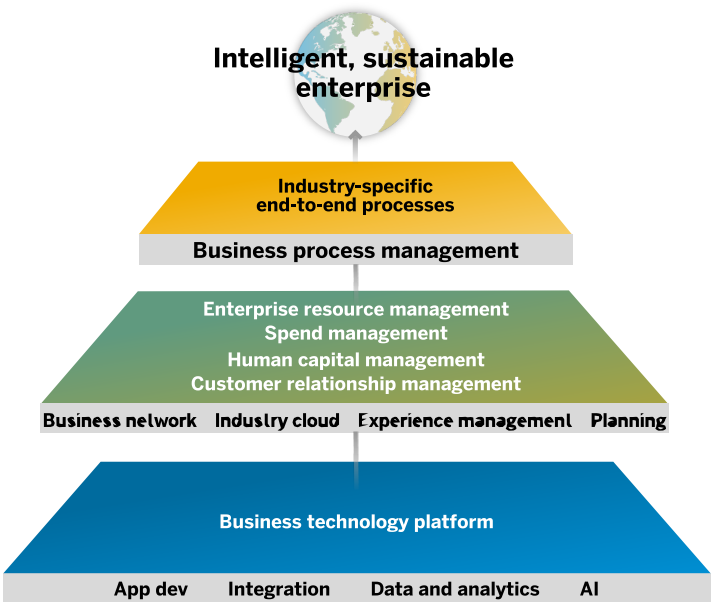
Plan, Build, and Operate	Acquire and Retain	Fulfill and Deliver	Bill and Settle	Analyze and Optimize
<ul style="list-style-type: none"> <li>Enable business logic to run at the edge for enterprise customers with edge services integrated with business apps</li> <li>Provide vertical solutions to enterprise customers in focused sectors through ecosystem play</li> </ul>	<ul style="list-style-type: none"> <li>Open up telco capabilities including anonymous customer insights, location insights, and identity verification for digital partners</li> <li>Deliver virtualization and network slicing-enabled on-demand services with open marketplace capabilities</li> </ul>	<ul style="list-style-type: none"> <li>Ensure supply chain planning and execution for partner-driven IoT devices</li> <li>Provide equipment lifecycle management for customer-premise IoT devices</li> </ul>	<ul style="list-style-type: none"> <li>Facilitate platform-based business models and B2B2X models for the next-generation network</li> <li>Provide flexible and agile monetization and settlement of on-demand services with a dedicated service-level agreement</li> </ul>	<ul style="list-style-type: none"> <li>Ensure profitable tariffs and contracts in a platform-based business model driven by a next-generation network</li> </ul>

The architecture of the Intelligent Enterprise in the telecommunication industry starts with SAP Business Technology Platform and business applications from SAP, including industry cloud solutions that support organizations with their industry-specific end-to-end processes.

**SAP Logistics Business Network**  
– to enable track and trace and smart logistics

**SAP Asset Intelligence Network**  
– for asset operations and maintenance of B2B customers

**SAP Customer Identity and Access Management** – to foster trusted relationships with customers and partners



**SAP Edge Services** – for enabling business process execution at the edge for enterprise customers

**SAP Digital Manufacturing Cloud solution** – for setting up manufacturing processes and running them in an integrated manner with no media break

**SAP Integration Suite** – for integration with SAP and third-party solutions

**SAP Analytics Cloud** – for providing insights for better decision-making

## 5G Co-GTM: Targeting the Enterprise Customer Market

[Verizon](#) and SAP are teaming up to pursue a strategic go-to-market alliance that pushes the boundaries of industry innovation powered by 5G.

[NTT](#) and SAP have formed a strategic alliance to deliver solutions that will support a remote and connected world.

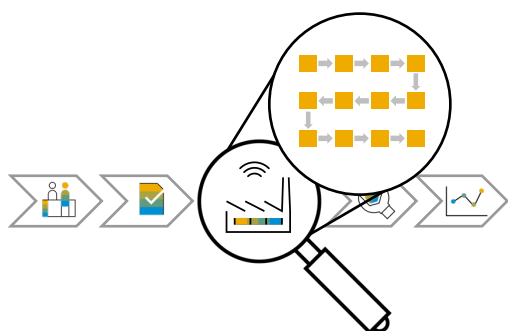


# Sustainable Growth

A focus on sustainability is nonnegotiable, and it starts with meeting global obligations by providing deep transparency to ensure compliance and proactively address regulations. From there, telcos must work to make processes increasingly sustainable and efficient with a solution portfolio that will address circular business models, reduce waste and carbon footprints, and drive social responsibility across the value chain. Once telcos have established this essential foundation, they can create the sustainable products, services, and business models that the world demands.

## BEST PRACTICE

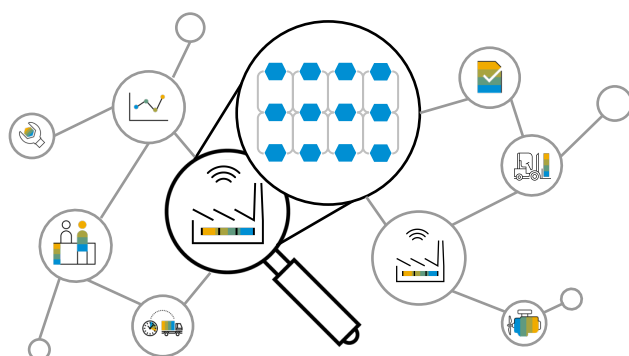
Ensure regulatory compliance and fulfillment of global obligations along the industry value chain.



- Enable compliance-based reporting for both financial and nonfinancial KPIs
- Ensure supply chain and global trade compliance with automation
- Ensure health and safety in the workplace

## NEXT PRACTICE

Enable holistic sustainability performance management based on real-time integration and automation.



- Allow holistic reporting and performance management for sustainability across board areas
- Enable informed decision-making based on connectivity of financial, prefinancial, and environmental, social, and corporate governance indicators
- Quantify the total environmental impact of business activity and manage trade-offs with money as a comparable currency

## Innovations at the Vertical Edge

Realize profitable sustainability with a circular economy and renewable energy.

**3%–10%**

Reduction in energy cost

## 3%-10%

Reduction in emissions cost

**5%–30%**

Improvement in environmental  
safety and compliance

Source: Benefits are conservative outside-in estimates of the benefits of moving from a traditional ERP system to enhanced SAP S/4HANA with line-of-business and cloud capabilities. As each enterprise is at a different level of maturity, our recommendation is that you work with SAP to determine the value case for your enterprise.

# SAP Solutions: Embed Sustainability into your Business DNA

SAP solutions enable telecommunications companies with sustainability insights embedded into processes extended throughout the business network. With holistic insight into data, processes, and regulations, telcos can explore innovations into sustainable products, services, and business models.

## Required Capabilities

## Plan, Build, and Operate

- Optimize energy efficiency with both hardware and software innovations
- Move toward renewable energy sources
- Ensure proper waste management during construction
- Share infrastructure to minimize overcapacity

## Acquire and Retain

- Provide environmentally friendly offerings and choices along the customer journey
- Encourage the circular economy of consumer devices with appropriate business models and processes
- Provide device-as-a-service offerings to both B2B and B2C customers

## Fulfill and Deliver

- Embed circular economy in operations through proper reuse and recycling of equipment with device lifecycle management
- Work with external stakeholders in the value chain to enable circular economy of power batteries
- Perform intelligent scheduling and routing of field services to reduce carbon emissions in logistics

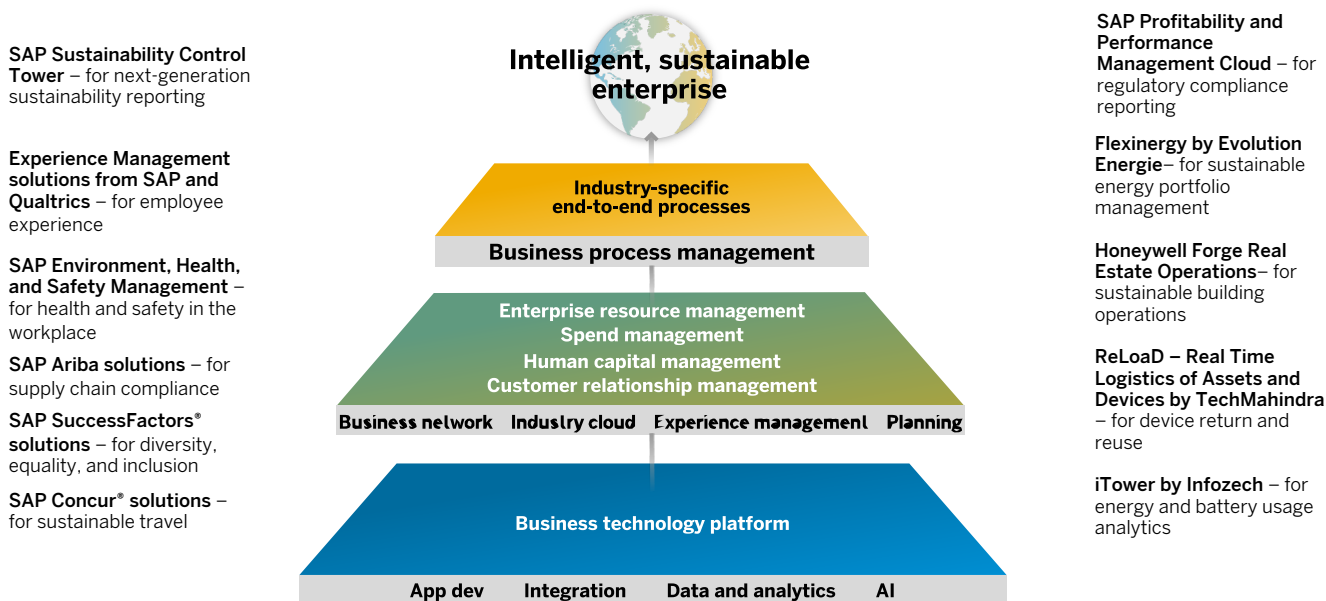
## Analyze and Optimize

- Allow holistic reporting and performance management on sustainability across board areas
- Enable informed decision-making based on connectivity of financial, prefinancial, and environmental, social, and corporate governance indicators
- Quantify the total environmental impact of business activity and manage trade-offs with money as a comparable currency

## Enable Human Resources and Procure

- Foster equality, inclusion, and diversity
- Ensure health and safety in the workplace
- Ensure sustainable and ethical sourcing

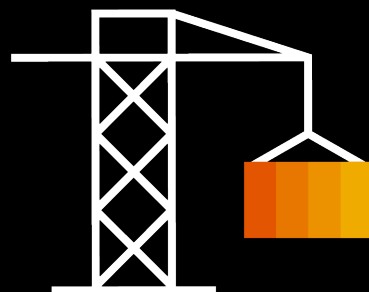
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## Joint Responses to the Pandemic

Deutsche Telekom and SAP jointly developed the Corona Warn App for Germany in 50 days, from development to deployment

[Deutsche Telekom](#) and SAP also jointly developed the technical infrastructure for the Digital COVID Certificate within two months. The introduction of the certificate represents an important step toward normalizing freedom of movement in the eurozone.

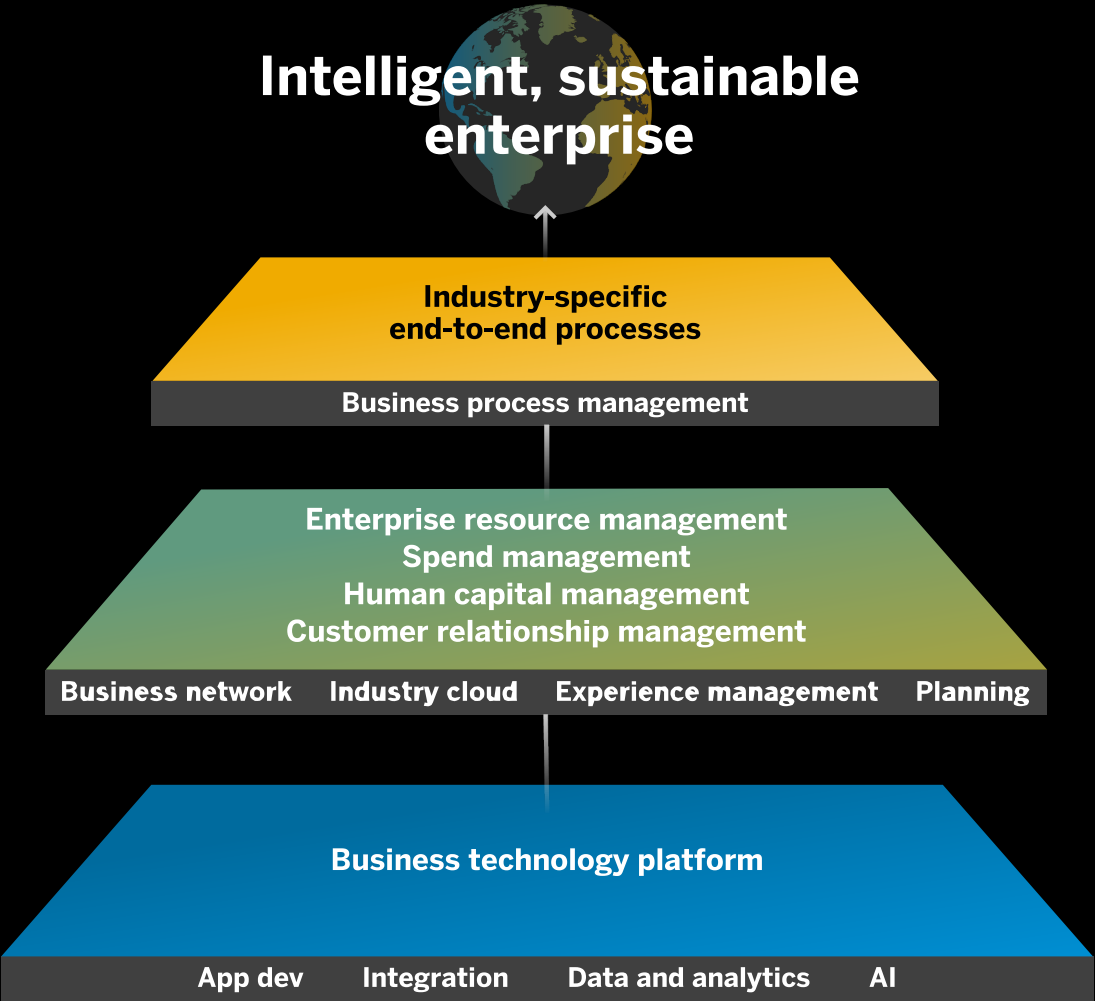




# SAP's Industry Cloud: A Joint Innovation Space

We enable our customers to become intelligent, sustainable enterprises by bringing together our comprehensive portfolio of solutions and technology in service to customers' business process needs.

- It starts with our platform technology that provides the foundation of application integration, extension to a robust ecosystem of solutions, and data and AI.
- Then our industry-leading business applications work together spanning front-end and back-end systems that only SAP can provide.
- This all comes together to provide the customer with support for the end-to-end, industry-specific business processes they need to run as an intelligent, sustainable enterprise.



## Industry Innovation Spaces

Stand-alone applications struggle to deliver relevant business value. Enterprise applications always need access to essential business domains such as products, assets, factories, cost centers, employees, and customers. SAP's industry cloud provides direct access to business domains and processes in the intelligent suite through APIs. At the same time, our business and technology services provide the tools and infrastructure to create and run innovative industry cloud solutions.

## Intelligent Technology at Your Fingertips

Business innovation needs digital technologies that are ready to use to solve a business problem.

SAP's industry cloud solutions, built on SAP Business Technology Platform, provide a full set of technologies ranging from user interfaces to robotic process automation to artificial intelligence and machine learning. All can be used readily in new solutions.

# Open Innovation Platform and Ecosystem

SAP's industry cloud is the way for our partners and SAP to deliver industry cloud solutions for customers that unlock new levels of efficiency, extend end-to-end business processes at the edge, and enable innovative business models.

SAP partners find a unique environment in our industry cloud in which the data domains and business processes of the intelligent suite and our business networks are readily accessible through open APIs. This allows our partners to accelerate innovation by focusing on the differentiating business capabilities they want to build and deliver to our joint customers.

This enables a spectrum of partnership and innovation models ranging from close co-innovation over identified white spaces to completely open innovation spaces with free competition to drive customer value.

The innovation models are complemented by a set of commercialization models that are strongly correlated to the value the solutions deliver to the business of our customers.

Freedom of choice is a key value, so customers can choose from various partners and hyperscalers to deploy their industry cloud solutions.

Industry cloud solutions from SAP enable telcos to quickly establish new business units with vertical-specific capabilities focusing on relevant business units including professional services, digital and media services, retail operations, and infrastructure, network, and tower operations while still maintaining integration with their main telco business.

SAP's industry cloud also serves as an innovation platform for telco companies and their solution partners to create innovative solutions bundled with telco capabilities such as 5G connectivity and edge computing capabilities, targeting the enterprise customer segment. Focused industries include smart retail, smart manufacturing, and smart logistics.

## **Open Ecosystems Deliver More Innovation**

Open platforms, available to the wider ecosystem, have consistently delivered more innovation and choice for customers. Therefore, our industry cloud solutions can be run by major infrastructure-as-a-service providers, giving our customers the freedom to implement their own individual platform strategy.

# SAP's Comprehensive Partner Innovation Ecosystem

SAP has been the proud solution provider for the telecommunications industry for almost five decades – starting from humble beginnings and growing into a position of supporting the core business of our customers.

SAP's industry cloud opens the doors for a new level of co-innovation with customers and partners, enabling next practices and new business models that help our customers capture the new opportunities of digital transformation and take the next step toward becoming intelligent enterprises.

Our open partner strategy gives our customers the choice of whom they work with to design the business models of the future, whom they partner with to define and implement business processes for efficiency and growth, and whom they trust to run their infrastructure.

There are many journeys telcos can take into the digital economy to become intelligent enterprises. No matter which they choose, our scalability, security, global reach, vibrant business networks, and business process knowledge across industrial manufacturing and adjacent industries are the success factors for our customers, our ecosystem, and SAP.

Our telco partner ecosystem includes, among others:



## Engagement Model

SAP is the telecommunications industry partner for the long term. We have established a co-innovation and collaboration model with many of our customers that is based on mutual trust and long-standing, value-based relationships. Our comprehensive ecosystem for the telecommunications industry offers:

- Open architecture, with a choice of hardware and software including a telco's own data center to meet requirements
- Complementary and innovative third-party solutions to provide robust technology
- TM Forum Open API conformance to enable interoperability and open digital architecture (selected products)
- Industry co-innovation programs for industry-specific use cases
- 5G business council to facilitate continuous exploration and realization of industry scenarios with telcos and focused industry players
- Cross-industry solutions to enable co-innovation and cooperative go to market as telcos move beyond connectivity

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