

SAP Point of View | PUBLIC

# **The Digital Telco:** **Unlocking New Business Value** **with Intelligent Technology**

THE BEST RUN 



“Digitalization has reached every aspect of today's life, and brings new and exciting opportunities for the telecommunications industry. Technologies such as 5G networks, software-defined networking, blockchain, the Internet of Things, artificial intelligence, and machine learning can enable telcos to innovate and establish competitive differentiation – yet they also represent a significant disruption. To succeed, telcos will need to strengthen their position as the providers of digital services beyond connectivity, while focusing on profitable growth across their key customer segments.

The need to transform into an intelligent enterprise – to optimize profitability, digitalize business processes, and reimagine business models – has never been so great for the industry. Telcos are uniquely positioned to drive and lead the digital economy, if they can be bold and imaginative.”



A handwritten signature in black ink, appearing to read 'S. Gatien', written over a horizontal line.

**Stephan Gatien**  
General Manager  
Telco Industry  
SAP SE

# Telcos Face New Challenges and Opportunities Amid Digital Disruption

Leading telcos use market dynamics to create and capture new business opportunities.

## Digitalization

In the digital age, the need to quickly deliver new services, meet customer demand, and optimize business processes is greater than ever.



Telcos use digital technologies to transform existing processes and create efficiencies in the enterprise that will propel growth in the future.

## Fierce competition

Nontraditional market entrants are driving increased margin pressure and speeding up the commoditization of core communications services.



To compete effectively in the digital age, telcos use a margin management approach to drive profitability and increase the focus on delivering a highly personalized customer experience.

## Hyperconnectivity

With the introduction of the cellular IoT network and the upcoming 5G rollout, the new battleground is all about connecting a sensor-based world.



Telcos are building a platform and ecosystem to monetize their sensor-based business – not just on the connectivity layer but also by delivering data processing and industry solutions together with partners.



Leading telcos use digital technologies to:

- Create the intelligent enterprise
- Reimagine their business models to develop new revenue streams beyond traditional services
- Create innovative business processes to protect and expand their customer base
- Drive efficiency in asset operations and the supply chain to protect their bottom line
- Use Big Data and advanced analytics to defend their margins

# With Huge Opportunities and Challenges, It Is Essential to Focus on the Right Strategic Priorities to Drive Digitalization

In a connected world, where every company is becoming a technology company, smarter products and services will refocus commerce on business outcomes and blur industry lines.

In this new digital era, telcos must proactively adapt their business models or face strong headwinds that erode both profitability and relevance. Business agility is key, and embracing digital technology is mandatory.

Innovative telcos will respond effectively to encroaching competitors and meet new expectations from customers.



## Intelligent operations

New innovations around artificial intelligence, machine learning, blockchain, and more have the potential to drive vast efficiencies around existing business processes and enable new generation processes moving forward. Labor-intensive processes around management of invoices, service tickets, and customer attrition will be among the first processes leveraging new technologies to drive optimization in the intelligent enterprise.



## Profitable customer-centricity

With new market entrants and “over the top” players providing heavy competition, successful telcos are extending the use of new technologies to rethink how they can deliver optimal customer experiences, manage profitability, and offer relevant services. Putting customers first and optimizing margins will become more important to drive overall business growth. Focusing on delivering a superior and personalized customer experience will become even more critical to compete effectively.



## Innovative business models

The emergence of a sensor-based world opens up the space for platform providers to deliver adapted and scalable solutions for connectivity, insight, applications, and processes in the IoT. Providers can offer sensor-friendly vertical services and solutions to enterprise customers or industry ecosystems, and also develop industry-specific stack-and-build competence and partner ecosystems that target strategic industries, both organically or by acquisition.

Business optimization and intelligent automation are key priorities for innovative telcos to simplify their business and free up resources to invest in transformative programs.

**US\$1.2 trillion**

Potential cumulative profit for telcos unlocked by digitalization from 2016 to 2025<sup>1</sup>

**\$8 trillion**

Estimated global worth of the IoT technology by 2025<sup>1</sup>

**89%**

Of telcos believe digital transformation is having a dramatic effect on the industry<sup>2</sup>

**91%**

Of telcos believe they need to rethink their business models to continue to grow the business<sup>2</sup>

1. “Digital Transformation Initiative: Telecommunications Industry,” World Economic Forum white paper, in collaboration with Accenture, January 2017.

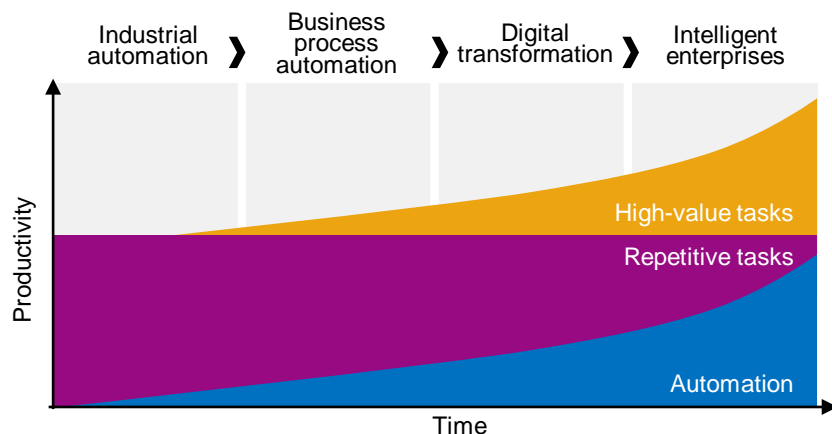
2. SAP survey, Mobile World Congress 2018.

# Our Point of View: To Achieve These Strategic Priorities, Leading Telcos Are Becoming Intelligent Enterprises

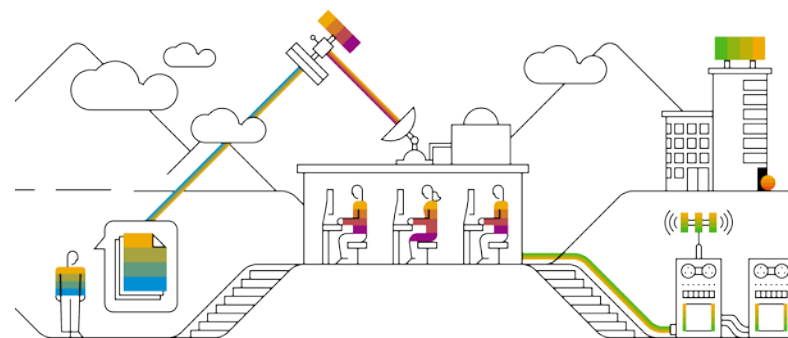
**The intelligent enterprise enables employees to focus on higher-value outcomes and to invent new business models and revenue streams.**

By applying intelligent technologies such as the Internet of Things (IoT), artificial intelligence (AI), machine learning, and advanced analytics, leading telcos transform into event-driven businesses. Event-driven businesses automate repetitive tasks, enable employees to focus on higher-value tasks, and allow companies to invent new business models and revenue streams by monetizing data-driven capabilities and applying core competencies in new ways.

## Optimize and extend the value of current processes



## Transform with next-generation business processes



Optimize existing processes for more efficiency or reliability



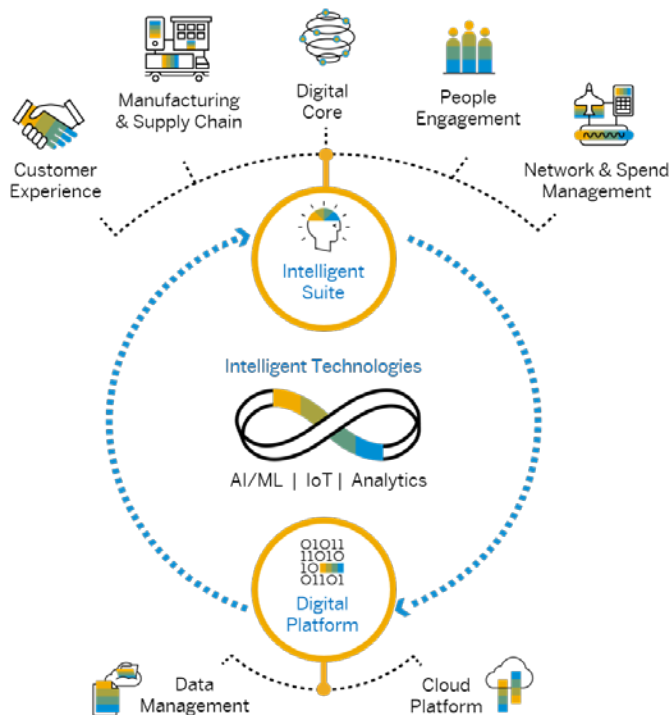
Extend current business processes beyond efficiency gains to capture new sources of value



Transform the company's value chain or business model to capture new revenue streams

# SAP Enables Telcos to Become Intelligent Enterprises

SAP helps telcos transform to intelligent enterprises through integrated business applications that use intelligent technologies and can be extended on SAP® Cloud Platform. This enables next-generation business processes to deliver breakthrough business value on our customers' journey to becoming intelligent enterprises.



## Intelligent Suite

The set of applications provides the business capabilities that telcos need to run their business. End-to-end business processes span multiple applications, so processes and data must be integrated for automation, a seamless user experience, fast adoption, and ease of operations.

## Intelligent Technologies

Several innovative technologies have matured to practical use:

- The Internet of Things makes business applications interact with the physical world.
- Big Data makes large data sets accessible for advanced analytics and intelligence.
- Machine learning and artificial intelligence automate repetitive processes and learn from human exception handling and decision-making.
- Advanced analytics find data patterns to support decisions and predict the future.
- Blockchain distributes collaborative processes across the entire value network.
- Data intelligence finds new value in data assets for new business models.

## Digital Platform

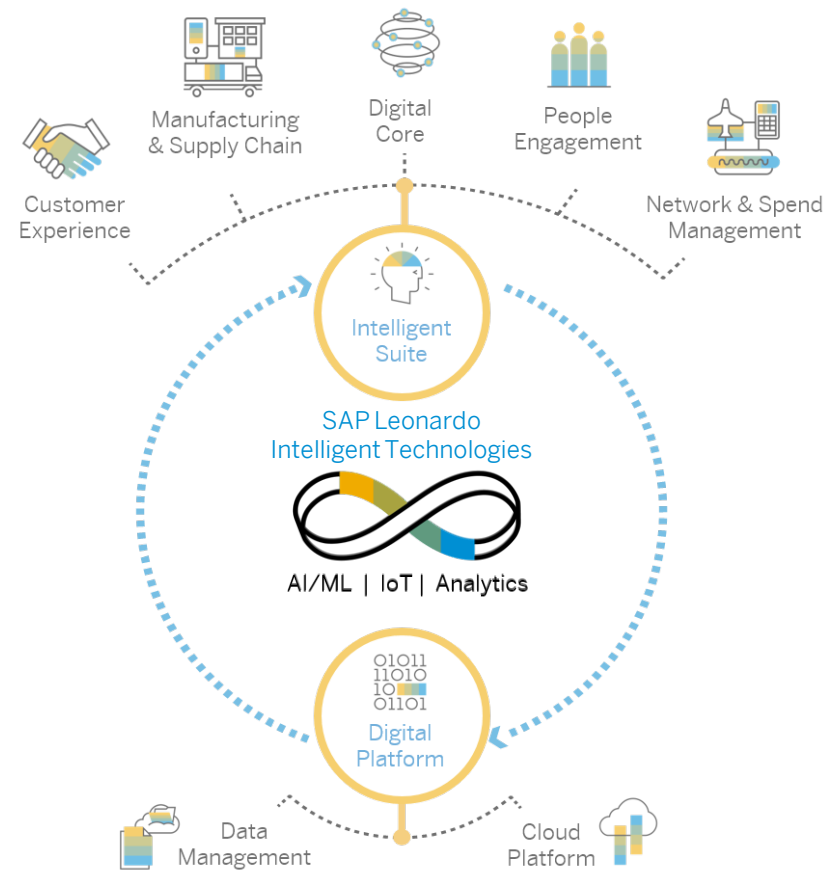
The digital platform, which is powered by SAP HANA®, extends the intelligent end-to-end processes and connects to data sources:

- Cloud platform that allows customers and partners to extend their intelligent suite to run additional business processes.
- Data management to handle and organize data, a key asset of the intelligent enterprise.

## SAP Leonardo

SAP Leonardo brings the power of intelligent technology to your platform and applications to streamline existing workloads, reveal optimal decisions, maximize revenue and profits, improve customer satisfaction, and capitalize on digitally transformed business models.

In addition, companies can use SAP Leonardo Services, delivered by world-class innovators that combine industry and emerging technology expertise, to help you drive innovation and business impact at scale.



# SAP Leonardo: Intelligent Technologies Optimize, Extend, and Transform the Business

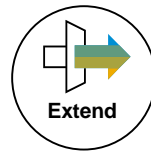
## Telco intelligent scenarios

SAP Leonardo capabilities are embedded in the business core and industry applications to optimize and extend business processes. Companies can also use them together with innovation services to build and assemble next-generation business processes. For telcos, SAP supports more than 15 intelligent scenarios to optimize, extend, and transform their business. Below are a few highlighted ones which will be further explained on subsequent pages.



Optimize existing processes for more efficiency or reliability

- Cash application
- Service ticket intelligence
- Customer retention
- Customer service chatbot for telco
- Business integrity screening



Extend current business processes beyond efficiency gains to capture new sources of value

- Big Data margin assurance
- Digital boardroom
- Digital twin for mobile networks
- Predictive maintenance and services



Transform the company's value chain or business model to capture new revenue streams

- Hypertargeted advertising
- Connected transportation safety



# SAP Leonardo: Applications Optimize Business Processes

Optimizing business processes results in achieving the same business outcome more efficiently and reliably. We begin with scrutinizing current practices: What can be automated using machine learning and artificial intelligence? How can we make processes aware of the real world by connecting them to the things around them? How do we give people the right analytical tools to make sense of vast amounts of data and to handle exceptions where machines (still) need help.

## Cash application

Labor-intensive and error-prone processes for invoice matching



The SAP Cash Management application uses machine learning intelligence to boost automatic matching rates and frees up finance professionals to focus on strategy and service quality.

- **Increased productivity**
- **Reduced error rates**

## Service ticket intelligence

Labor-intensive and slow resolution of customer service tickets



The SAP Service Ticket Intelligence application efficiently processes inbound social media posts, e-mails, and other channel interactions. It automatically determines classifications, routing, and responses.

- **Increased productivity**
- **Higher customer satisfaction**

## Customer retention

Lack of insight into root causes of customer attrition



The SAP Customer Retention application anticipates customer behavior – such as product cancellations or renewals – with instant insights from transactional data and digital interaction points.

- **Increased customer retention**

## Customer service chatbot for telco

Costly customer service and slow in resolution



Based on the SAP Conversational AI service, use a prepackaged telco chatbot designed specifically for customer services purpose.

- **Reduced customer service cost**
- **Accelerated service resolution**

## Business integrity screening

Slow detection of both internal and external fraud



The SAP Business Integrity Screening application monitors and analyzes data from diverse sources, so you can identify, manage, and counteract risks and protect the bottom line.

- **Increased productivity**
- **Reduced revenue leakage**



**Vodafone** uses the SAP Process Mining software by Celonis to achieve 100% process transparency in less than six months, reducing costs by 11% and improving time to market by 20%.

With SAP Predictive Analytics software, **Cox Communications** saw a 14% increase in products and services bought per household, thanks to optimized predictive models used across e-mail, direct mail, and telemarketing channels.

**MegaFon** launched a massive business process reengineering project to simplify, optimize, and automate its retail processes to improve and balance stock levels for customers using the SAP Innovation Control Center.

**Vodafone** uses our fraud management application to review 100% of its expense claims. Before implementing the software, it was only able to review 10% of employee claims made through a manual process.

# SAP Leonardo: Capabilities and Services Extend Current Processes to Capture New Sources of Value



Extending business processes aims at generating more value and new outcomes. Begin by challenging the status quo: Are we doing the right things in managing assets or in shaping customer relationships? Innovators use digital technology to reimagine business processes to create new value. They recover unidentified margin leakage to optimize margins and increase profitability, and ensure that network assets and infrastructures are maintained as cost-effectively as possible while retaining maximum uptime.

## Big data margin assurance

No granular margin insights as obstacle for margin-focused transformation



The SAP® Big Data Margin Assurance solution delivers multidimensional margin information on the most granular level for telco, based on SAP HANA® business data platform and TM Forum Information Framework (SID) compliant data model. With advanced algorithm and machine learning technology, the solution also provides automatic analysis and detection of margin outliers and margin drivers.

- Increased margin
- Reduced revenue leakage

## Digital boardroom

No real-time business insights in one place



SAP Digital Boardroom transforms the boardroom into a real-time digital enterprise, providing a 360 view of all business and instant data-driven insights.

- Increased productivity

## Digital twin for mobile networks

Costly asset downtime and risk of safety and compliance incidents



Digital twin for mobile base stations provides a virtual representation of telcos' entire mobile base stations assets. Combining the capability of SAP Asset Intelligence Network and SAP Leonardo IoT Bridge digital operations center, the solution helps ensure the consistency and accuracy of network assets, and provides in-context and in-depth insights to maintenance managers and field technicians.

- Reduced maintenance cost
- Increased asset utilization

## Predictive maintenance and service

Costly maintenance and assets downtime



The SAP Predictive Maintenance and Service solution makes both passive and active network infrastructure operation more efficient by enabling predictive maintenance strategies and asset health optimization. Using sensor and condition data around passive infrastructures, telcos can predict and prevent failures, thus optimizing performance and availability.

- Increased asset uptime
- Reduced repair costs

**Vodafone Germany** implements the SAP® Big Data Margin Assurance solution to analyze granular customer profitability and identify margin leakage scenarios worth tens of millions of euros.

**Swisscom** is scaling for business transformation and offering and monetizing its new digital services with the SAP Hybris® Billing solution.

# SAP Leonardo: Intelligent Technologies and Innovation Transform the Telco Value Chain and Business Models

Transforming the business starts with ideas to conquer new markets with current products or deliver new value on your home turf. It often goes along with a renewed view on who is the ultimate customer and what kind of value they really need.

## Hypertargeted advertising

Advertisers unable to execution contextual precision advertising because of limited customer profiling



By providing a hypertargeted, cross-platform customer profile to advertisers, after applying machine learning and Big Data techniques, this use case enabled telcos to obtain new outcome-based revenue streams – while also benefiting advertisers' business outcomes.

- Increased revenue from new digital services

## Connected transportation safety

Road accidents caused by drivers' emergent health issues



Connected transportation safety combines SAP Leonardo capabilities and the IoT connectivity platform of telcos. Together, these capabilities provide an intelligent solution for transportation companies to monitor the health conditions of their commercial vehicle drivers in real time and avoid potential accidents.

- Increased revenue from new digital services

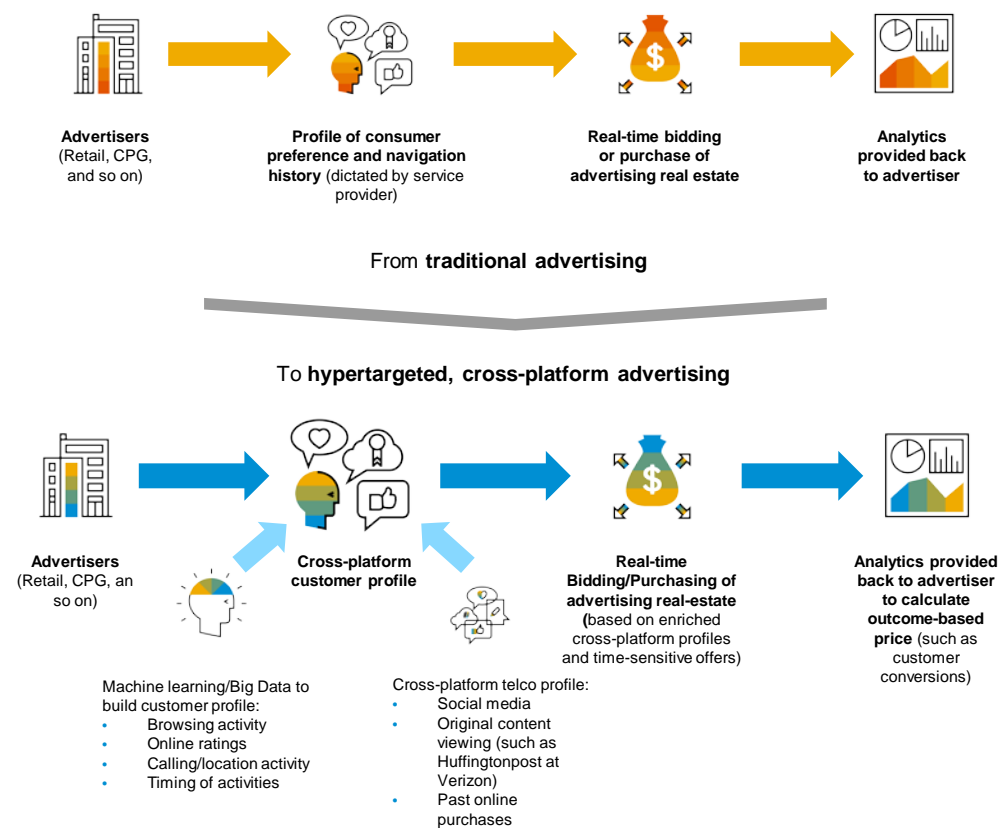


**T-Systems** partnered with SAP and our joint client, the Hamburg Port Authority, to build a real-time smart port logistics management system.

# SAP Leonardo: Transformational Scenario – The Hypertargeted Advertising Use Case

SAP customers and SAP experts collaborate to design and build-up end-to-end use cases leveraging innovation technologies – fully tailored to the specific customer situation and supported by the SAP Leonardo Innovation Services.

**Example:** The hypertargeted advertising end-to-end use case



By providing a hypertargeted, cross-platform customer profile to advertisers, after applying machine learning and Big Data techniques, this use case enable telcos to obtain new outcome-based revenue streams while also benefiting advertisers' business outcomes.

According to 451 Research, the "telecom data as a service" addressable market will grow from US\$24.1 billion in 2015 to approximately \$79 billion in 2020, which provides a sustainable and potentially highly profitable business for telcos.<sup>3</sup> The opportunity for telcos to develop the expertise to better target consumers in a rapidly changing digital world will provide for a competitive advantage moving forward.

Source: TM Forum, 451 Research

# Bringing It All Together: NTT Group's Journey to Become an Intelligent Enterprise

## Improving road safety by avoiding predictable accidents with SAP Leonardo

With human error being the cause of vehicle crashes, [NTT](#) is taking advantage of the Internet of Things to allow companies such as Keifuku Bus Company to monitor its drivers and ensure transportation safety. The solution allows its customers to equip drivers with smart shirts capable of tracking biomedical signals. In this way, safety supervisors can monitor drivers' health conditions in real time and alert deficient drivers to stop before an accident happens. With the ability to check and ensure the alertness of each driver, NTT customers can deliver a safer service to their passengers and the community.

### Objectives:

- Reduce bus company's liability and promote transportation safety in an efficient and automated way
- Establish new revenue streams for NTT's IoT business

### Results:

- By estimating mental fatigue of drivers and warning managers in real time of anomalies, drivers can be instantly alerted through mobile devices, preventing accidents
- The cloud-based solution was easy to deploy, and customers such as Keifuku could validate its effectiveness in just 2 months



Easy

To deploy



2 Months

Time to value



“This project makes it possible to monitor a driver's conditions continuously in real time. Thanks to making good use of this data, we can catch a driver's unusual movements when he is driving and an abnormality occurs. We expect that this will help us make the vehicle stop safely.”

– Sachihito Amaya, President, Keifuku Bus Company Ltd.



# How to get started with SAP Leonardo

Whether you're still exploring new ideas or have defined one in detail already, SAP Leonardo brings together world-class innovators, industry and emerging technology expertise, proven use cases, and design thinking methods to help you optimize your business and drive innovation and impact at scale – faster and with less risk.



## Explore Workshop

Identify and prioritize your business challenges, explore how SAP Leonardo might help to rapidly solve them and define a path for the way forward.



## Accelerate

Draw on our library of industry innovation kits to address common value propositions, and let SAP guide you to a business outcome in weeks, not months.



## Design for the Future

Use a guided process to reimagine the future of your business and uncover where a blend of SAP Leonardo and established technologies might take you – from testing a new business model to organization transformation.



## Bring Your Own Idea

Bring a defined idea and we'll support rapid prototyping and progression with a constant eye towards how to scale it across your business.

SAP takes a holistic approach to innovation. Because digital transformation isn't just about installing the latest tech, we also address the readiness to receive a new idea. From human capital to infrastructure, we bring best business practices across your organization to improve communication, plan for employee training, review technical and regulatory feasibility, and consider other cross-functional needs to drive change and truly scale your innovation.

# SAP Is the Innovation Partner for Telcos



## Ten-year innovation vision

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

- 10 of the top 10 global telcos run SAP
- 94% of telcos in the Forbes Global 2000 are SAP customers – more than 4,500 in total
- 1.8 billion mobile messages processed every day by SAP



## Proven services offering

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

- Use proven methodologies to drive innovation, from reimagining customer experiences to enhancing operations
- Fuel your innovation through a managed innovation ecosystem from SAP
- Build your own innovation capability and culture



## Learn more

- [SAP.com for telecommunications](https://www.sap.com/telecommunications)
- [SAP Leonardo](https://www.sap.com/leonardo)
- [SAP Digital Business Services](https://www.sap.com/digital-business-services)
- [SAP Design Thinking Workshops](https://www.sap.com/design-thinking-workshops)

SAP delivers support for the intelligent enterprise for telcos – providing integrated business applications that use intelligent technologies and can be extended on SAP Cloud Platform to deliver breakthrough business value.

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