Business Support Systems Transformation

A shift in perspective

Introduction

In today's fast-paced digital landscape, communication service providers (CSPs) face increasing pressure to adapt and innovate. Legacy business support systems (BSS) are simply not equipped to handle the demands of modern customers who expect personalized, high-quality services always available. To stay competitive, CSPs must undergo a digital transformation by migrating to a modern, cloud-native BSS platform.

In pursuit of enhanced BSS agility and scalability, and business growth, CSPs are quickly adopting new-age technology trends and future-forward practices to gain a competitive advantage. This shift in perspective is what is driving a paradigm shift in the world of telecommunications that is fueled by a demanding customer base, advanced solutions, and next-gen technology and sustainable networks.

Key areas of business support systems

BSS encompasses four critical areas.

Customer Management:
Manages customer data and interactions, enabling customers to purchase contracts, rate plans, or bundles

Order Management:
Breaks down customer orders into sub-orders for various systems, ensuring the smooth activation of services

Product Management:
Oversees the list of products offered by CSPs

Revenue Management:
Focuses on tracking and refining revenue streams

The ability to provide real-time product bundles and upsell services is crucial for enhancing customer satisfaction and reducing churn. However, many existing operational support systems (OSS) and BSS were not designed to handle the complexities of next-generation technologies like 5G, wireless broadband, and fiber.

Modernizing the OSS/BSS infrastructure

To address these challenges, CSPs must modernize their OSS/BSS infrastructure. This modernization will streamline operations, enhance agility, and drive growth, allowing CSPs to capitalize on the opportunities presented by 5G and other advanced technologies.

As CSPs select new mobile core suppliers for 5G, there is also a growing demand for advanced customer engagement systems, such as customer relationship management (CRM) tools, to improve overall customer experience. Additionally, adaptable billing and settlement systems are essential for supporting partner ecosystems.

Journey to Digital BSS

Service providers are encountering numerous challenges in customer management as they strive to meet the expectations set by web-scale and **over-the-top (OTT) players**. Traditional legacy BSS is not designed to deliver the digital experiences that modern customers demand.

Digital transformation for CSPs is not merely about **upgrading networks**; it involves a comprehensive change in business operations. While CSPs have been pursuing digital transformation for years, there is only a recent recognition that BSS is as critical as network expansion. With CSPs beginning to assess their operations from the customer's perspective rather than just the traditional view from the inside (network) out, progress is gradual but promising.

Customers now expect seamless **omnichannel experiences**, allowing them to place orders, check bills, seek device assistance, and access third-party applications through various platforms. The customer experience is a combination of network utilization and service interactions across digital, in-person, and phone channels. This necessitates a cohesive approach that aligns all customer interactions, moving away from the siloed systems of the past.
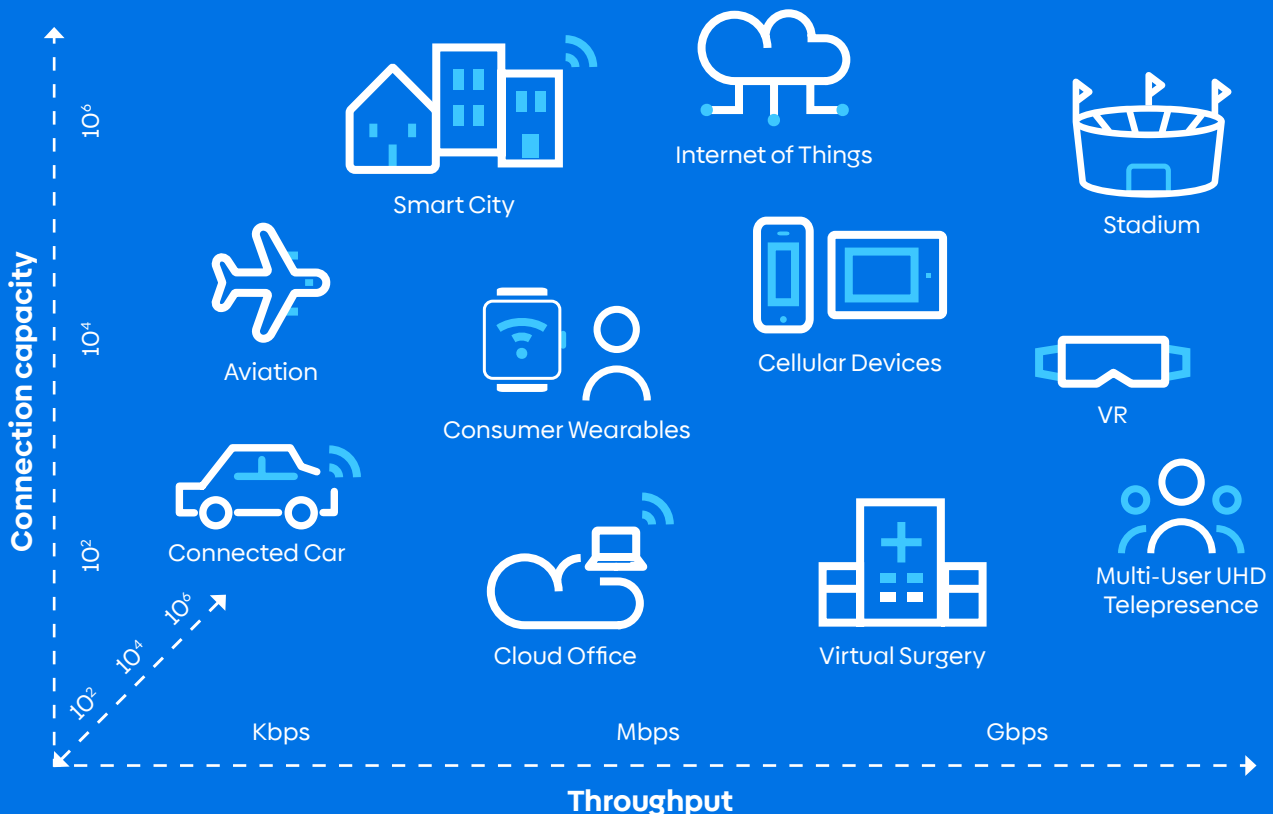
BSS is essential for managing **customer-facing business activities**, including order capture, billing, customer inquiries, and payments. Atos offers Digital BSS Transformation as a Service, enabling CSPs to upgrade their legacy systems, such as CRM, Order Management, and Charging & Billing to digital BSS. This transition aims to create new revenue streams, digitize customer experiences, and streamline operations.

BSS transformation focuses on improving **user interfaces**, enriching product features and automating processes. However, digital transformation encompasses more than just technology. It involves enhancing customer experiences and behaviors, aiming for proactive and personalized interactions.

Innovative 5G
Use Cases

5G is paving the way for innovative use cases around automated vehicles, smart cities, automated factories, and a new wave of business communications. New use cases rely on the increased speed, consistency and latency reductions that 5G offers. The International Telecommunications Union (ITU) is driving this innovation with three main application performance indicators for 5G: Enhanced Mobile Broadband (eMBB), Ultra-Reliable Low Latency Communications (URLLC), and Massive Machine Type Communications (mMTC).

Connection capacity (10^2, 10^4, 10^6)

Throughput (Kbps, Mbps, Gbps)

Smart City · Internet of Things · Stadium · Aviation · Cellular Devices · VR · Consumer Wearables · Connected Car · Cloud Office · Virtual Surgery · Multi-User UHD Telepresence

To remain competitive, CSPs must **shorten time-to-market and foster service innovation**. This can be achieved by centralizing order management and service fulfilment around a comprehensive product and service catalogue. Automation facilitates real-time order management and service provisioning, enabling self-service and service assurance.

The **declining costs of IT** hardware have made advanced data analytics platforms more accessible than ever. Technologies like Hadoop, along with tools such as Tableau and Power BI, facilitate efficient data-driven reporting, enabling faster decision-making processes. In today's data-centric environment, the capability to seamlessly connect data from OSS and BSS systems and create automated dashboards is crucial. By integrating various data sources — including site inventory, GIS, discovery, and network engineering data — with customer information from BSS applications, organizations can

gain valuable insights into network performance and site portfolio efficiency. This integration provides significant opportunities to understand customer behaviors and preferences, ultimately helping to ensure customers remain satisfied and engaged.

AI technologies, including machine learning (ML), natural language processing (NLP), and predictive analytics enable CSPs to automate tasks and derive insights from large datasets. Many CSPs are now focusing their AI strategies on Generative AI to enhance customer service delivery.

With its high speed and low latency, **5G** is also present in a wide range of innovative use cases and services. To effectively market and support these, CSPs need to adopt innovative customer-facing OSS/BSS solutions. This requires a shift towards cloud-native, fully digital BSS that can support the complexities of modern service offerings.

Benefits of Digital BSS

Digital BSS empowers telcos to deliver a seamless, personalized customer experience. This includes faster issue resolution, customized service plans, and enhanced self-service options. By leveraging advanced digital platforms, operators can create tailored offerings that significantly improve subscribers' digital experiences.

Here are some key benefits:

Cloud adoption
The shift to cloud-based solutions allows CSPs to reduce their IT expenditures, which are often heavily tied to legacy infrastructure and licensing costs. Transforming to cloud storage not only results in long-term savings but also provides dynamic scalability through improved monitoring and automation capabilities.

Convergence of systems
Legacy IT architectures often consist of monolithic systems that are siloed and static. Digital BSS facilitates the convergence of various systems and functions, such as convergent charging and billing for voice, data, SMS, and content across both B2C and B2B lines of business. This integration streamlines operations and improves efficiency.

New revenue stream
With the voice market becoming saturated and average revenue per user (ARPU) declining, traditional BSS systems limit CSPs to their role as connectivity providers. The emergence of technologies like 5G, Edge computing, and IoT requires an agile BSS platform that can quickly adapt to changes and facilitate the development of innovative products and services, enabling CSPs to create new revenue streams.

DevOps practices
Legacy systems and waterfall operational models can slow down product launches for CSPs. By adopting microservices-based applications deployed in the cloud, CSPs can reduce maintenance efforts and achieve greater flexibility. This approach allows for independent execution of IT operations and supports continuous integration and continuous deployment (CI/CD) methodologies, resulting in minimal downtime.

Real-time insights and hyper-personalization
Many CSPs currently rely on traditional, offline data warehouses for reporting. As telcos increasingly function like IT companies, customer data has become their asset. Digital BSS, powered by AI and machine learning, enables real-time customer engagement and personalized offers, enhancing customer satisfaction and loyalty.

Open APIs
CSPs are increasingly seeking solutions that support low-code or no-code configurations for user interfaces and business processes. Utilizing open standards, such as TM Forum Open APIs, enhances interoperability and simplifies integration with other systems, leading to operational efficiencies and opportunities for monetization.

Helping CSPs along their Digital BSS Journey

Based on extensive experience and a deep understanding of the telecommunications domain, Atos has engaged with leading CSPs globally to identify market trends and address the challenges they face. This expertise has been translated into a comprehensive portfolio of services designed to facilitate smooth BSS transformations for customers.

Here's an overview of Atos's BSS portfolio offerings:

Consulting Services
Design BSS End-State Architecture: Understanding the exact customer requirement is the first step. Analyzing the existing systems and identifying gaps between the current state (as-is) and the desired future state (to-be) are crucial for designing the end-state architecture. Most telcos struggle to define their target architecture and the necessary transformation journey due to the scale, pace, and complexity involved. Atos assists CSPs in envisioning their future architecture by assessing their current legacy systems and defining a target IT architecture aligned with their strategic vision. This process culminates in the creation of an integrated roadmap that outlines multiple transformation programs.

Creating a blueprint: A detailed step-by-step roadmap is essential for transitioning from existing systems to target systems. Depending on the circumstances, this may involve a complete transformation to a digital system or partial upgrades of existing applications. The blueprint serves as a guide for the transformation journey.

Optimize
Atos provides services to help CSPs consolidate and harmonize multiple BSS stacks and applications. For instance, many CSPs have various charging systems from different vendors for voice, SMS, and data, leading to separate licensing and operational costs. Atos can replace these with a convergent charging solution, simplifying business processes and rationalizing product portfolios. Notably, 80% of CSPs' customers are typically associated with 20% of their product offerings, revealing opportunities for optimization.

Modernize
Atos offers two key offerings for Digital BSS transformation: an end-to-end (E2E) digital transformation and a modernization of the integration layer, referred to as the Digital Overlay option. In the modernization offering, Atos updates legacy BSS systems either through comprehensive E2E transformations or by implementing digital overlays that enhance specific systems such as charging and billing or order management for B2B services.
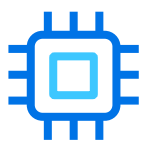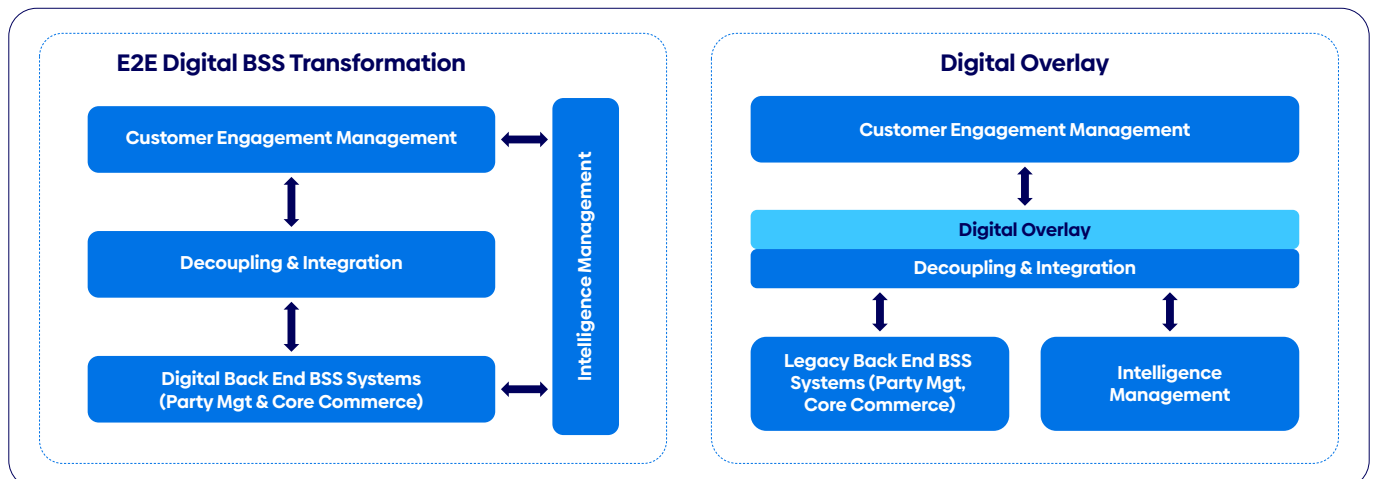
Transform
In the E2E digital BSS transformations, Atos supports CSPs in replacing legacy core BSS systems with a cloud- native microservices architecture that is modular and loosely coupled, adhering to Open API standards based on TM Forum's Open Digital Architecture (ODA). This transition also involves shifting the operating model from a waterfall approach to an agile framework. Once the digital systems are in place, the legacy systems need to be phased out, either immediately after transformation or following a parallel run.

The Digital Overlay approach is particularly beneficial for CSPs that have heavily invested in their legacy systems but wish to enhance their customer engagement layer using the latest technologies. Atos builds a digital overlay that integrates with legacy back-end systems, providing up-to-date customer information and improving customer experience while minimizing costly one-to-one integrations.

Assurance Services

BSS program governance: Atos offers governance support for transformation programs involving multiple vendors. Given the complexity of these projects, where one partner may handle product implementation, another data migration, and yet another testing, CSPs often need a third-party systems integrator (SI). Atos is a digital transformation expert and the preferred systems integrator partner for telecom leaders across the globe. With extensive experience in BSS transformation, Atos ensures that program KPIs are met, and quality gates are passed at every stage for a successful transformation.

Testing Services and Quality Management: In large BSS transformation programs, CSPs often engage third-party SIs for system integration testing (SIT) or user acceptance testing (UAT). Atos's understanding of telco business processes and BSS transformation experience ensures that the CSPs' business requirements are thoroughly addressed.

GenAI Solutions

Additionally, Atos offers Generative AI solutions tailored to various domains within telecommunications, aligning with the TM Forum's vision. These solutions cover areas such as customer operations, sales and marketing, network and IT/software engineering, business operations, and internal knowledge training and development.

Through these comprehensive services, Atos enables CSPs to navigate their BSS transformations effectively, enhancing operational efficiency and customer satisfaction in a rapidly evolving telecommunications landscape.

Atos: Your digital transformation partner for the future

Atos has extensive experience in BSS transformation, having successfully implemented over 100 projects globally for large customers. Our comprehensive transformation programs deliver tangible cost savings of ~20-30% by utilizing our accelerators and the valuable lessons learned from our extensive experience. We adopt a vendor-agnostic approach, collaborating with a broad ecosystem of partners to provide the best solutions tailored to our clients' needs. Our intellectual properties (IPs) and accelerators cover key areas such as migration, testing, monitoring, and transition to operations to deliver tangible business benefits for your organization, network and customers.

We adopt a vendor-agnostic approach, collaborating with a broad ecosystem of partners to provide the best solutions tailored to our customers' needs. In addition to our transformation services, we offer our customers:

Over 20 years of OSS/BSS experience
We bring two decades of expertise in Operational Support Systems (OSS) and Business Support Systems (BSS), ensuring a deep understanding of the telecommunications landscape.

Long-Over 20 years of OSS/BSS experience term vision for digital transformatione
Our commitment to a long-term vision enables us to guide organizations through their digital transformation journeys effectively.

Dedicated Cloud and Telecom CoEs
We have established focused Centres of Excellence (CoEs) that align strategic vision with delivery, demonstrating solutions that are both innovative and practical.

Business KPI-driven measurable delivery
Our approach emphasizes measurable outcomes based on key performance indicators (KPIs), so that our clients can track progress and success.

Hands-on experience with Cloud-native, microservices-based architectures
We have successfully deployed one of the world's largest hybrid cloud solutions, showcasing our expertise in cloud-native and microservices architectures, along with DevOps practices.

Leadership in Generative AI for diverse industry use cases
We are at the forefront of implementing GenAI solutions across various industries, demonstrating our capability to drive innovation and enhance operational efficiency.

The transition to cloud-native BSS platforms signifies more than just a technological upgrade; it represents a fundamental transformation in how CSPs operate and deliver value. By harnessing modern technologies, CSPs can significantly enhance customer experiences, improve operational efficiency, and position themselves for sustainable growth in an increasingly competitive marketplace.

Partnering with us allows you to navigate your digital BSS transformation with confidence. Our expertise empowers you to streamline operations, elevate customer experiences, and drive long-term success in a dynamic industry landscape.

- Learn more about Atos's wide range of offerings specifically for the telecommunications industry.

- Decode the challenges to your existing BSS and explore how you can boost this with a cloud-native platform. Connect with systems integration experts today.

About Atos

Atos Group is a global leader in digital transformation with c. 67,000 employees and annual revenue of c. €10 billion, operating in 61 countries under two brands — Atos for services and Eviden for products. European number one in cybersecurity, cloud and high performance computing, Atos Group is committed to a secure and decarbonized future and provides tailored AI-powered, end-to-end solutions for all industries. Atos Group is the brand under which Atos SE (Societas Europaea) operates. Atos SE is listed on Euronext Paris.

The purpose of Atos is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

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