

**Look Out 2020+**  
Industry Trends  
Telecom

# Accelerating the race to value



Thought  
Leadership

**Atos**

## Megatrends in Telecom: Targeting blue oceans for growth



“To succeed in the coming years, Telcos will have to meet an increasing competitive pressure on core business while finding blue ocean growth. This may be challenging. This will also open up formidable opportunities.”

**Oliver Kleinhenz**  
Senior Vice President, Telecom, Atos

After enduring several years of sluggish growth, telecom companies continue to be shaken up as digitization reshapes the industry landscape.

New customer expectations for ubiquitous mobile and digital services necessitate ever-accelerating growth in connectivity and bandwidth, requiring massive investments in fixed and 4G/VoLTE (Voice over LTE) bandwidth, with 5G on the horizon.

At the same time, the explosion of connected devices, over-the-top (OTT) services (chat, video-on-demand (VOD), ...) and new business models is weakening the industry's hold on consumers. This, in turn, is reducing core voice and messaging businesses and threatening incumbents' competitive boundaries, EBITDA and cash flow margins.

### The perfect storm

While Telcos from emerging countries benefit from large customer-based expansion opportunities - in spite of low-cost offerings - European and US players are particularly affected in more mature markets. In earlier years, this led to colossal consolidations, a revival of convergence strategies (notably with cable players) and accelerated innovation in new services.

The years to come are unlikely to see these trends subside with monetization continuing to go up the value chain.

### Changing the face of the Telecom industry

To thrive in the years to come, Telcos need to accelerate their race to develop value while continuing to reduce costs in connectivity and differentiate with ultrafast access.

For operators, it represents a challenge. But huge rewards may be on the horizon for players who significantly evolve and adapt customer relations, operations, business models and compliance, contributing to significantly transforming the industry landscape.

Today's mutations represent immense opportunities for telco players to move up the value chain and find new sources of revenue for growth.



Sources: Cisco, Ericsson, IDATE, IDC, GSMA

# Four transformational challenges and opportunities for the future of Telecom

1



## Deliver a 360° omnichannel experience

With mobile, Telcos have been at the very heart of the connected experience for years. As **digital pervasiveness multiplies touchpoints** (including watches, apparel, glasses, smart homes, connected cars and health devices), telecom players see their **direct relationship with customers being by-passed** by connected device vendors and OTT players.

The development of eSIMs promises to weaken their grip on consumers further, undercutting the economics of bundling but also enabling competitors' customers (and their devices) to be on-boarded easily in post-sales scenarios.

To catch up, **Telcos should adapt to a 360° customer-centric journey mindset**, covering the whole digital experience and the largest spectrum of services from fixed to mobile services and including content such as PayTV and payments. Ultimately, they may dramatically **personalize offerings** with tailored services.

> **The benefit: increase average revenue per user (ARPU) and margins, reduce churn and boost net promoter scores (NPS) by 15 to 30%.**

2



## Align service management with business outcomes

Telco has always been a business of scale; however, rarely have the cost pressures been so strong.

In developed countries, **deregulation and increased competition** require firms to radically slash costs each year to support bandwidth growth requirements, notably to support the exponential rise of video traffic. In emerging countries, **low-cost markets require constant imagination** to ensure they provide customers with affordable plans.

Beyond industry consolidation, mergers and acquisitions, these cost pressures mean Telcos must **streamline their processes and increase network agility**. This rationalization may include a shift to lower-cost **standardized and virtualized NFV/SDN infrastructures**. It could also imply real-time process management with new-generation OSS/BSS and business process **automation and orchestration**.

> **What's at stake: reduce costs by up to 20% and catch up in the agility and competitiveness race in an increasingly volatile business landscape.**

3



## Create new services & platforms for growth

In a world where margins are climbing the value chain, Telcos must accelerate their journey to business reinvention.

With **video streaming demanding exponential growth**, convergence finds itself at the top of the telecom agenda once more. Content partnerships and creation along with player acquisition should help Telcos **monetize fixed ultrafast and 4G plans**.

To escape the commodity trap, telco players can **develop value-added services** such as Cloud, security, payments and IoT/M2M, and build a multi-sided business.

They may also **pursue disruptive adjacent industries**, such as Financial Services, Healthcare, E-commerce or Utilities, in search of new opportunities and revenue streams through acquisitions, partnerships, incubation and corporate venturing.

> **The goal: gain position as a data-driven, customer-centric open innovation platform with APIs and marketplaces, and become a major player in the digital transformation game.**

4



## Ensure absolute privacy & compliance

With the recent attention on **net neutrality**, the risk of monopolies has made a marked return in telecom debates, reversing a trend marked by years of deregulation. Potential **data privacy and information manipulation issues** only add complexity to the current challenges.

Debates on fake news, GDPR and the 'right to be forgotten' have shown how important ethical, as well as practical, issues are at stake. There is a strong possibility these could not only **harm reputations** but also lead to **legal damages and fines**. Together, these challenges make Telecoms one of the hottest domains for regulatory debate in the years to come.

At the same time, cyber-risks are growing explosively. Recent major attacks leveraging the IoT have shown the potential **weaknesses of a fully interconnected world**. Billions of often insufficiently protected things can be turned into weapons by hacktivists, mafias or hostile organizations and states. This makes it all the more vital they deploy the latest real-time, prescriptive security technologies.

> **For Telcos, security is not just a challenge; it is also an opportunity for business differentiation through creating trust and new security service value proposals.**

## Building next-generation telecom infrastructures & platforms to succeed in tomorrow's markets



“To adapt to changing customer behaviors, Telcos need to build customer-centric, data-driven platforms that leverage their own and their partners' services. This will require a quantum leap in analytics and intelligent automation.”

**Roland Steiner**  
Vice President, Global Head of Telco Solutions, Atos

To successfully meet these four transformation challenges, Telcos should shift from today's 'mainly connectivity' model to a more holistic 'digital services provider' value proposition.

### Bringing legacy systems into the digital era

This evolution brings new demands to existing telco systems. Very powerful for supporting traditional telecom business, these systems were not built to meet the radically new challenges to come.

Based on proprietary and heterogeneous technologies from waves of M&A, legacy telecoms systems are often siloed and fragmented. They frequently lack the **standardization and automation**, as well as agility and scalability at almost zero marginal cost as provided by the latest Cloud native architectures, which are required for optimizing.

For years, Telcos have undergone major transformation projects around back office operational support systems (OSS) and business support systems (BSS). They have also launched initiatives to better support strategic customer engagement, product catalog automation and network transformation.

However, aging and complex legacy infrastructures and applications are still among the biggest obstacles for Telcos seeking to compete against nimbler digital players.

### Preparing for a paradigm shift

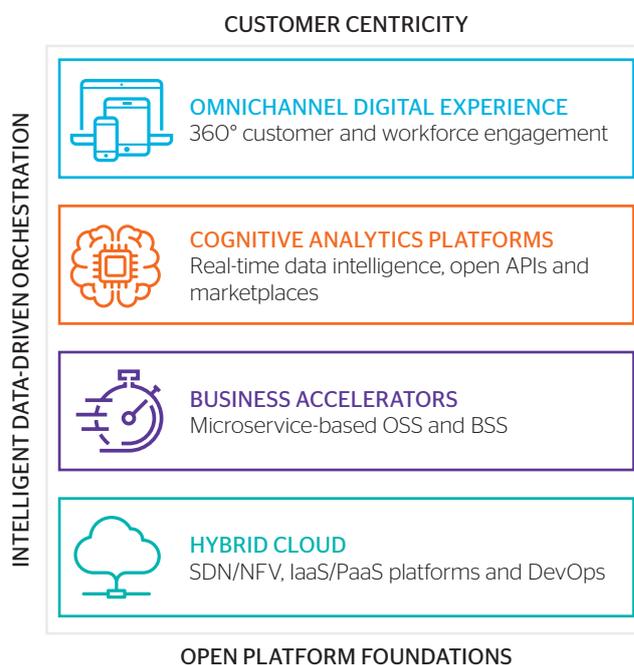
Adapting to the future requires a quantum leap. To embrace the challenges of a digital world and take a winning position within it, three core principles will be essential for Telcos:

- Become wholly **customer-centric**, providing 360° omnichannel customer engagement across any touchpoint for seamless service provisioning and service assurance.
- Provide **intelligent data-driven orchestration**, being able to adapt to market changes and evolving customer demands in a real-time, prescriptive way.
- Adopt **open platform foundations**, and real-time process automation with next-generation OSS and BSS, relying on software-driven zero-touch operations infrastructures.

### The road ahead

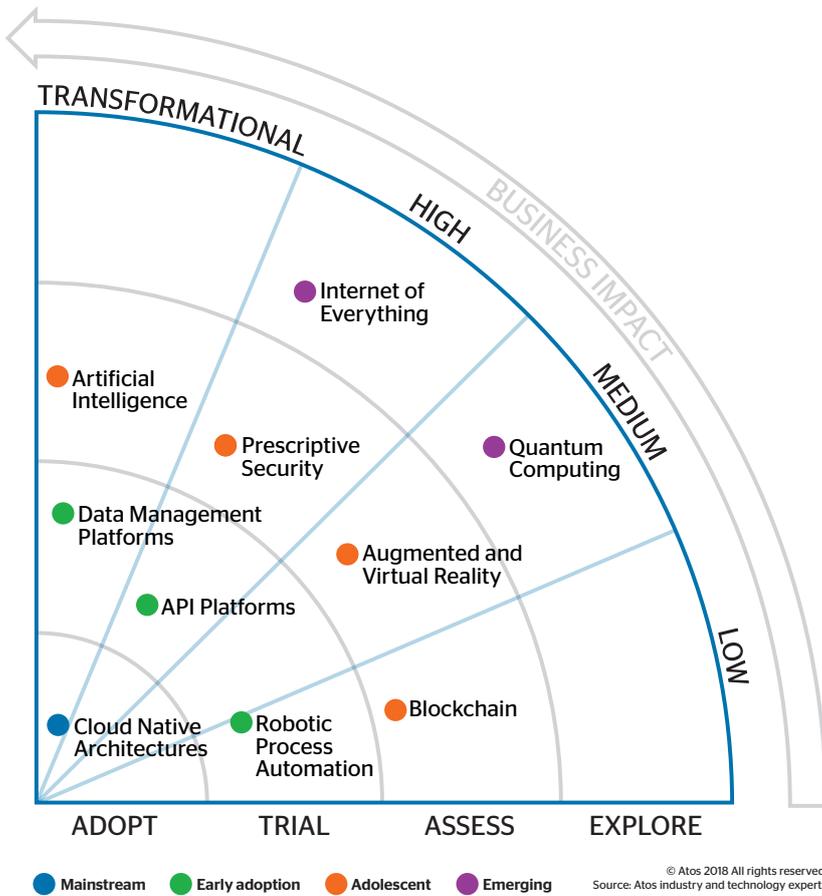
To thrive, Telcos will also need to create the right partnership and convene the largest ecosystem to enrich their offering, monetize their data and turn it into profit. They should begin building new supporting architectures today. Modernizing legacy and fully embracing software-defined networking and analytics technologies is only the start of the journey.

### Next-generation architecture for digital telco players



More disruptive technologies will emerge. While some may only appear as dots on the horizon today, they will turn out to be transformational in the years to come.

# 10 disruptive technologies that will shape the future of Telecom



Telecom Look Out 2020+ Radar: 10 key technologies set to impact Telcos over the next 5 years.



Want to know more? Examine the Look Out 2020+ Global Technology Radar to get deeper insights into these 10 strategic technologies and many more: [atos.net/lookout](https://atos.net/lookout)

**Cloud-Native Architectures** rely on data/logic separation principles, SDN/NFV, DevOps, microservices, etc. to foster telecom agility, scalability and innovation. Telecom players must adapt their IT processes, and prepare for related security implications.

**Data Management Platforms** enable Telcos to analyze customer behavior and manage interaction across all channels and touchpoints. Well beyond marketing applications, Telecom players should consider making it a cornerstone for their next-generation digital service platforms, ultimately enabling 'segment of one' or 'B2Me' go-to-market for themselves and their B2B customers.

**API Platforms** allow data and services to be distributed across third parties. Telecom players should put API platforms at the heart of their digital strategy to attract ecosystems partners and create multi-sided marketplaces.

**Robotic Process Automation** brings virtual workforces for managing repetitive tasks, reducing the cost of administrative and regulatory processes by at least 50% while improving quality and speed. Telco players should standardize processes to facilitate automation and engage in related change management programs.

**Artificial Intelligence** promises to second human cognitive capabilities with virtual assistants, chatbots, knowledge engineering, smart machines and autonomous vehicles. It will impact customer experience, business models and operations along the entire value chain. Telecom players must prepare for the business, human and legal impact.

**Prescriptive Security** uses real-time dark web monitoring, AI and automation to detect potential threats and stop them before they strike. Applications range from cyber-protection to fraud management and compliance. Telco players should explore integrating it into their IT/OT Security Operation Centers and their B2B security offerings.

**Augmented and Virtual Reality** are blurring real and virtual worlds, allowing customers, partners and employees to engage with digital services within the context of their current environment. Telco players should explore potential use cases to provide new services and customer experiences.

**Blockchain** is a potential game-changer for conducting business with parties without prior trust relationships. Telecom could leverage it to propose new services in trusted transaction management, automated contracting and the microservice economy.

**Internet of Everything** solutions have the potential to disrupt the industry as we know it. Beyond connected cars and autonomous vehicles, the IoT and smart machines will transform factories, smart cities, Healthcare, Utilities, Retail, CPG, Defense and more. Technological, business and legal implications are huge and must be explored now by Telcos to provide new connectivity and value-added services.

**Quantum Computing** promises to break traditional combinatory analysis limitations, bringing disruptive advances in data analysis within ten years. This will elevate risk by potentially breaking current cryptographic standards, threatening to cause a 'crypt-apocalypse'. Telcos must start preparing for Quantum-safe cryptography.

## A glimpse into the future of Telecom: Expert views on best practice for digital transformation



**Oliver Kleinhenz**  
Senior Vice President, Telecom, Atos



**Ulf Walter**  
Head of Global Strategy & Business  
Development, Telecom, Atos

### What could Telecom look like in five years?

On the network side, **exponentially growing demand** will make generalizing broadband, LTE and 5G essential. There is strong public pressure on that. Even if Telcos are private companies, they are often considered to be strategic utilities. They are high on the political agenda.

Paradoxically, at the same time, they are under pressure to invest; Telcos are often subject to **strong waves of regulation and anti-monopoly constraints** that make it difficult for them to prosper..

To succeed, operators will need to pursue M&As, further blurring the line between cable and telco players. They will also need to **accelerate their strategies for bundling services on top of their assets**.

Some will target content, sports and media, even though it's an already very competitive and crowded field. Others will target new connected consumer worlds such as the smart car or smart home. Some more will dive into the Industry 4.0 world.

There will be probably no silver lining or 'killer app' but multiple experimentations in a wide range of domains, including **moves into adjacent industries** such as Payments, Banking, Utilities, Gaming, Cloud and maybe IT services. Tomorrow's Telcos' world will be much larger than today's.

### Which driving forces will help them succeed?

Pure connectivity will probably no longer be a very profitable business model by itself. So, value will mostly come from bundled high-value services or from resulting **data monetization streams across a wide range of use cases**.

This will put strong demand on telecom infrastructures, which will need be much more agile and versatile than today. To succeed, most Telcos will have to decouple or unbundle services from the underlying infrastructures they rely on, **splitting into network and services organization - 'netcos' and 'servcos'**, you might say. This will require strong harmonization and consolidation initiatives to build highly standardized and automated digital platforms based on NFV and SDN.

On these platforms, the real value will come from the way data will be leveraged to streamline customer experience, operations and create new monetization models. This will be among the major challenges for Telcos:

- First, make the most of their vast amounts of data to transform them into contextual and applicable business insights, in real time
- Then, attract multiple third parties around these data-driven platforms.

“  
Tomorrow's Telco will be an ecosystem play, where strong alliances and partnerships will be the key to the win.”

### What should Telcos do today?

Beyond consolidation and service innovation, **the focal point must be the customer**. With the rise of connected things and the multiplicity of connectivity options, the traditional customer journey and relationship with Telcos is increasingly scattered. This results in broken engagement models.

Starting from that, we think there are five **key priorities for Telcos** today:

- **Create additional revenue streams** with new services such as unified communications and collaboration (UCC), the IoT, e-commerce.
- **Boost loyalty** by engaging with customers in a compelling and easy manner, leveraging on common omnichannel experiences as well as 360° views of all relevant aspects to the customer.
- **Transform data into business outcomes** with real-time telco analytics.
- **Simplify, virtualize and bring agility to business processes** by cloudifying support functions (OSS, BSS).
- **Avoid bottlenecks and reduce TCO by up to 40%** with NFV/SDN along with IT and network consolidation and harmonization.

All this requires significant technology, process and cultural changes. As the leading telecom outsourcing provider, we are helping our more than 100 telco customers drive this with our data-driven **Digital Transformation Factory**, which spans all the four layers of next-generation digital architectures.

With our ecosystem of partners such as Dell/EMC, we have notably built powerful blueprints for telecom analytics, business-driven automation and NFV. Our new strategic partnership with **Google** also enables us to help Telcos **be at the heart of innovation from the Big Tech** and leverage it in an open way, rather than trying to fight it.

For Telecom, the objective is **accelerating time to value** while reducing the costs and risks of transformation. This is exactly what we are doing for our clients.

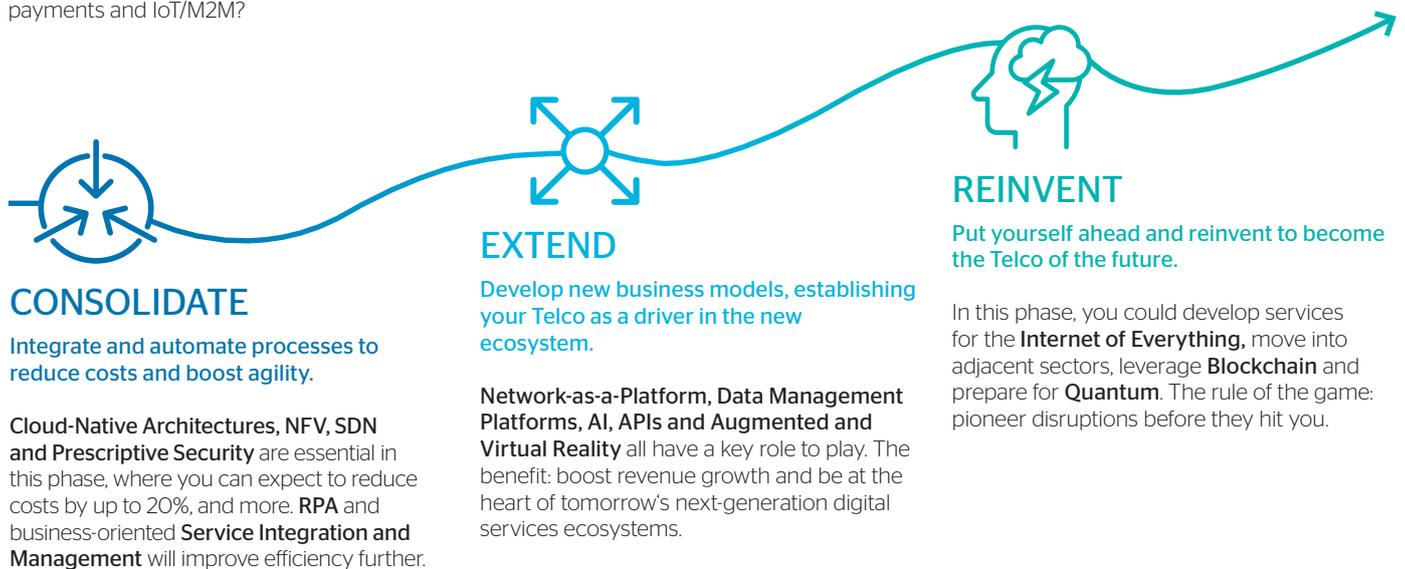
# Creating your own Telecom transformation journey

With all these challenges surfacing at once, you must drive your business forward. Faced with a rapidly changing business ecosystem, the question you will be asking is not 'Why change?' but 'Which direction?' and 'How?'

The first step is **figuring out the role you want to play within next-generation telecoms ecosystems**. There are several possibilities. Do you want to build value-added services such as Cloud, security, payments and IoT/M2M?

Do you want to scale with partners as a multi-sided business? Will you pursue adjacent industries in search of new opportunities?

Having made that strategic choice, you must next **embark on a journey of progressive and continuous transformation**, combining people, organization and technology streams. Your journey requires a roadmap. We have drawn up a three-step approach with steps that can be undertaken simultaneously.



Cloud-Native Architectures, NFV, SDN and Prescriptive Security are essential in this phase, where you can expect to reduce costs by up to 20%, and more. RPA and business-oriented Service Integration and Management will improve efficiency further.

Network-as-a-Platform, Data Management Platforms, AI, APIs and Augmented and Virtual Reality all have a key role to play. The benefit: boost revenue growth and be at the heart of tomorrow's next-generation digital services ecosystems.

In this phase, you could develop services for the Internet of Everything, move into adjacent sectors, leverage Blockchain and prepare for Quantum. The rule of the game: pioneer disruptions before they hit you.

Throughout these phases, an open approach to innovation, such as the Digital Business Continuum approach developed by Atos, will be paramount to success. In an ecosystem world in which start-ups appear and spread at internet speed, openness is also the best way to capture collective intelligence. As Telcos strive to transform, open innovation labs - such as the joint Atos and Google Labs - will provide an ideal environment for bringing new ideas and new concepts to life - and creating the Telco of tomorrow.

## Where should you begin?

As the Trusted Partner for your Digital Journey, Atos can help. Meet our experts and stay one step ahead by getting hands-on experience of new disruptive technologies.



**ENGAGE** in a co-innovation workshop at one of our Business Technology & Innovation Centers.

Get off to a quick start with a personalized workshop. Ask for a meeting:  
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This is an extract from the full Atos Look Out 2020+ report, which provides an in-depth analysis of the emerging megatrends, business transformation opportunities and technologies that will drive innovation in the years ahead. Explore the full report on [atos.net/lookout](https://atos.net/lookout).



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# About Atos

Atos is a global leader in digital transformation with approximately 100,000 employees in 73 countries and annual revenue of around € 12 billion. European number one in Big Data, Cybersecurity, High Performance Computing and Digital Workplace, the Group provides Cloud services, Infrastructure & Data Management, Business & Platform solutions, as well as transactional services through Worldline, the European leader in the payment industry. With its cutting-edge technologies, digital expertise and industry knowledge, Atos supports the digital transformation of its clients across various business sectors: Defense, Financial Services, Health, Manufacturing, Media, Energy & Utilities, Public sector, Retail, Telecommunications and Transportation. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and operates under the brands Atos, Atos Consulting, Atos Worldgrid, Bull, Canopy, Unify and Worldline. Atos SE (Societas Europaea) is listed on the CAC40 Paris stock index.

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