

**Look Out 2020+**  
Industry Trends

# Building the intelligent business platforms of tomorrow

Thought  
Leadership

**Atos**

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This is an extract from the full Atos Look Out 2020+ industry trends 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 all the detailed Look Out 2020+ industry reports [on atos.net/lookout](https://atos.net/lookout)

# Foreword

I'm delighted to present **Look Out 2020+**, the latest edition of the Atos business trends report. Combining the expertise of Atos R&D engineers and industry experts, Look Out provides an in-depth analysis of emerging megatrends, business transformation opportunities and technologies to help you steer your organization forward in the years ahead.

E-commerce, social platforms and the digital conversation demanded by customers have already impacted your business profoundly. However, a new wave of digital transformation has now arrived with new opportunities and challenges. Artificial Intelligence (AI), the Internet of Things (IoT) or Blockchain are already beginning to change the behaviors and expectations of your customers and employees... as well as the business models that lie at the very core of our organizations.

Our ambition at Atos is to help our clients navigate their digital transformation journey. This seventh edition of Look Out will enable us to further support you in making informed strategic decisions in today's fast-changing world.

Delivered by our industry, technology and business experts across the globe, Look Out 2020+ uncovers hundreds of insights across diverse sectors. By blending industry knowledge with technological know-how, it explores how organizations can succeed in a world driven by data, powered by AI and Cloud, and where Quantum and High-Performance Computing are making the once impossible possible.

Individual market views will take you for a deep dive into vertical trends, exploring how the next wave of disruption will create value in your own industry. They present the concrete steps your organization can take to leverage the benefits of intelligent business platforms; to engage with customers and employees as real and virtual worlds blur; or to detect potential threats and stop them before they strike; and even to prepare for the human, security and legal impact of intelligent autonomous robots.

This report is thoughtfully crafted to help you prepare for the world that awaits. I hope you enjoy the read and look forward to our shared journey in the years ahead.

“  
The impact of Artificial Intelligence, the Internet of Things, Hybrid Cloud or Blockchain will be immense on business.”

**Thierry Breton**  
Chairman and CEO



# 3 megatrends shaping the future of business

Figures are striking: while at least 45% of Fortune 500 enterprises were displaced each decade ever since the 80s, it is projected that 80% of leaders from all segments may be disrupted in the next ten years.

With digital, we are entering a **world of paradox**, marked not only by extraordinary growth prospects but also significant challenges.

Everywhere, the pace of time is accelerating. Not only are diverging demographics, increasingly multipolar geopolitics and long-term sustainability issues driving change everywhere, **but disruption from exponential technologies is shaking the economy.**

In all domains, the rapid adoption of new **'data intelligence' technologies** – such as machine learning, robotization, automation and machine-human interaction – is profoundly transforming competitive positions and business ecosystems, hitting the market across value chains and creating Schumpeterian earthquakes.

Which forces are behind this acceleration? After having revolutionized operations and then customers' relations, digital is now coming of age, **transforming business models themselves.** In today's digitalized world, where many objects surrounding us have become sensitive, interoperable and actionable in real-time with the IoT, we're heading toward a data-driven economy. Doubling every 18 months, data has become the primary material with which our whole environment can be observed, analyzed and controlled. **In a nutshell: data has become the lifeblood of business.**

This results in three digital megatrends that will profoundly change our societies and business in the future:

- 1. The whole world becomes the computer**, surrounding customers and employees with immersive user experiences. From wearables to smart cars, smart homes, smart shops or smart factories, digital is pairing with and invading the physical world...
- 2. Intelligence takes control of the machines**, with AI rapidly rising to manage and derive value from the exponentially growing flows of data. This will dramatically augment human and business capabilities.
- 3. Infrastructure becomes a commodity** as it can easily be shared or outsourced, anytime, anywhere, 'as-a-service', in a centralized or peer-to-peer way. Whichever the industry, from data up to applications and services, everything goes into the Cloud.

**This will have a major impact on enterprise and public ecosystems.** In a much more fluid, networked world, the rules of business are changing. To succeed decision-makers will have to take new strategic signals into account.

## Strategic signals: 12 challenges & opportunities for tomorrow

### We enter an age of customer-centricity

- **Generations Y and Z reinvent customer behaviors:** Representing already two-thirds of consumers, always connected, social and impatient, digital natives only care about seamless simplicity and experience. They have a non-linear path to purchase and low brand loyalty.
- **B2Me is the future of B2C:** With digital, mass personalization has succeeded in the mass market. Automation, as-a-service and 3D printing promise to make 'one-to-one' marketing and production more than a nice concept: a deep reality.
- **Intelligent assistants become autonomous:** Google Assistant, Alexa, Siri and others are already beginning to make purchases on behalf of their owners. This promises a fundamental revolution: as already in trading today, tomorrow's billions of 'customers' may not just be humans...

### Competitors come from unexpected places

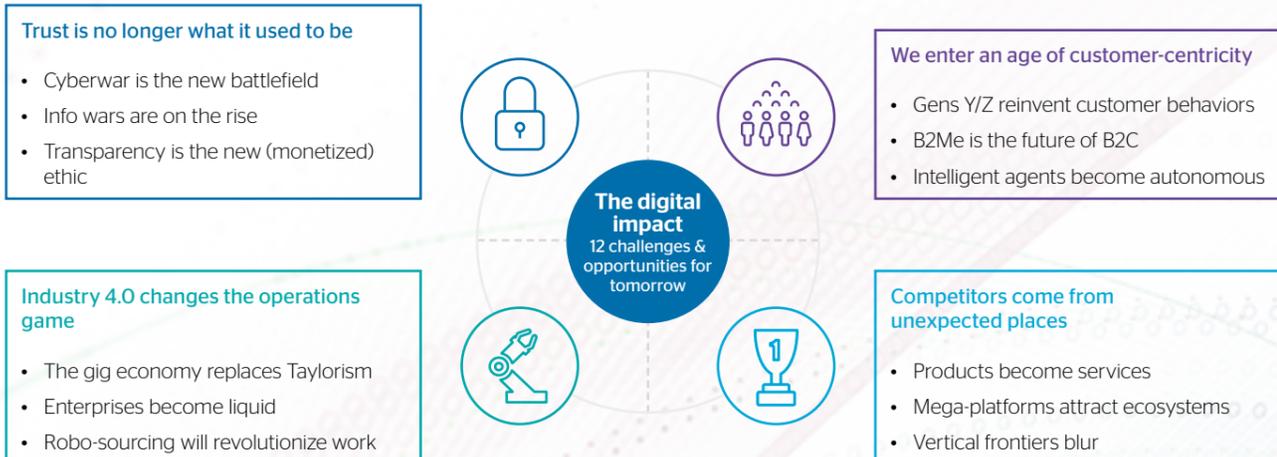
- **Products become services:** By enabling connected services and new business models such as the sharing or as-a-service economy, 'servitization' is deeply transforming all industries. Much beyond B2C, it may disintermediate or commoditize numerous players across many verticals.
- **Mega-platforms attract ecosystems:** A networked world has strong characteristics: while it favors a long tail of small and agile players, the network gravity effect is also driving the rise of overarching mega-players! By 2022, mega-platforms will rise in 60% of industries.
- **Vertical frontiers blur:** As players rearticulate around customer-centric ecosystems and services, traditional business frontiers tend to fade. In many sectors, up to 40% of revenue in the next decade will come from new services.

### Industry 4.0 changes the operations game

- **The gig economy replaces Taylorism:** Popularized by Uber and Airbnb, the sharing economy is about much more than just taxis or houses! Everywhere, marketplaces flourish – also in services and even consulting. Up to 30% of jobs may be leveraged by freelancers by 2025.
- **Enterprises become liquid:** On both sides of the spectrum, digital favors the behemoths and the constellations of microstructures adapting to markets in real-time through marketplaces. In tomorrow's networked world, enterprise organizations' practices will change to favor fluidity and scalability. The era of the liquid enterprise has come.
- **Robo-sourcing will revolutionize work:** After offshore, automation promises to dramatically reduce costs further. By 2025, 40% of current tasks could be automated, changing the nature of work, with humans and robots working side by side.

### Trust is no longer what it used to be

- **Cyber is the new battlefield:** With the cost of cybercrime cost set to rise up to \$1 trillion and more in the coming years, cyber has become much more than a risk: it's the next strategic threat. What's at stake: not just making trust a differentiator, or risk being left behind, but ensuring absolute defense and sovereignty.
- **Info wars are on the rise:** As data becomes the new gold, information property, control and legitimacy become crucial for countries, business and people. Tomorrow's fourth generation wars may be informational as well as economic and military. According to analysts, 50% of information consumed in 2022 may be fake news, requiring organizations to set up powerful data protection measures.
- **Transparency is the new (monetized) ethic:** A reputation takes years to build; on social networks, it may be lost in seconds. In tomorrow hyperconnected world, never have transparency and traceability been so essential. They will be more than a requirement – they may well be a condition for survival.



For players, these megatrends pose strategic challenges. They also open multiple opportunities to respond to market requirements better, adapt operations, innovate in business and become secure. To leverage all these opportunities in an increasingly data-driven world, building and operate **intelligent business platforms** will be paramount for success.

# Building the intelligent business platforms of tomorrow

As digital transformation accelerates across all verticals, today's decision-makers now face a strategic challenge: how to survive and thrive in a fast-changing, unpredictable business environment?

## The wake of a new era

For years, digital transformation has been at the heart of C-level executives' agendas. It is now **at a turning point**. With the rise of Cloud, AI, the IoT and hyper-connectivity, it is no longer only revolutionizing process management and people communications; **it is profoundly impacting business models themselves**. This is offering huge prospects not only in B2C but also, and most importantly, in the whole B2B space.

Until now, enterprise and public digital transformation efforts have mostly been focused on the first waves of applications and digital benefits:

- **The introduction of digital efficiency** in all processes, boosting agility and enabling strong CAPEX and OPEX reductions.
- **The improvement of digital customer experience** and digital-based design of new products and services.

With the rapid adoption of the 'digital intelligence' technologies that are hitting the market in all industries, comes **a new wave of digital transformation**.

As our whole environment becomes sensitive, analyzable and actionable, the impact is tremendous:

- **Digital-driven businesses rapidly evolve toward information-based business models**. Everywhere, the efficient use and good governance of data from every possible source have become the primary source of value creation and competitive differentiation. Turning data into customer knowledge becomes the key driver for innovation in products and services.
- **Organizations are gradually, but increasingly, becoming data-driven**. Thanks to the intelligence-enabling technologies, from machine learning to analytics and bots, **information now begins to be able to manage itself**.

## Toward AI-driven data intelligence

From manufacturing to transport, retail, utilities, telco, financial or public and healthcare domains, these evolutions are **changing the game dramatically**. After B2C, which has been the primary field disrupted until now, digital will hit B2B considerably in the future.

**The challenges for business: survive and thrive in uncharted territories** where customers, competitors and business models themselves evolve at the speed of light within complex, multi-players ecosystems across all industries. **What's needed: become ADAPTIVE in a real-time, prescriptive way.**

In the face of billions of customers and objects evolving at each instant, human reactivity alone is no longer sufficient. How to get actionable, instant insights from zettabytes of data flow? How to no longer adapt in a reactive but instead in a predictive and even prescriptive way? As online and digital worlds blur, **intelligent, data-driven automation becomes necessary** across all functions, whether in the front or back office.

**This is where the promise of the long-awaited AI technologies comes in**. They are currently emerging from a long research winter thanks to the rapid progress of algorithms and High-Performance Computing. This burgeoning of multiple technologies is blossoming from multiple vendors, start-ups and, most importantly, from the players that have the largest data sets to manage and the most massive computing capabilities: internet companies.

What's at stake:

 **ENHANCING CUSTOMER EXPERIENCE**  
Conversational interfaces – such as chatbots, virtual assistant, robo-advisors, smart objects and more – will enable to serve customers, citizens and employees significantly better along their entire journey.

 **BOOSTING OPERATIONAL EXCELLENCE**  
Robotic Process Automation (RPA) and expert systems for process optimization, shop floor 4.0 and more promise much more than a step change in productivity: they promise a dramatic leap forward in agility.

 **DEVELOPING NEW BUSINESS MODELS**  
Smart machines and automated systems for new mobility services, personalized offerings, outcome-based services and more will transform models and open avenues for new monetization streams.

 **FOSTERING TRUST AND COMPLIANCE**  
With intelligent prescriptive cybersecurity and compliance systems, intelligent defense, and more, it will no longer be enough just to fight threats: it will be possible to prevent them before they strike.

In the wake of this transformation, **some players are at the forefront of the data-intelligence revolution and have taken a step ahead: the GAFAs\***.

Born with the internet, they have accumulated both the main data sources in their hands – in B2C at least – together with **some of the most advanced digital technologies of this new wave**. They practically invented them, from hardware to software: Natural Language Processing (NLP), image recognition, Deep Learning, etc. By combining these two assets with very high investment capabilities, they may breach many enterprise digital business fields, with first innovations and incursions in IoT, autonomous transport, the smart home, ... showing the breadth of their innovation capabilities.

**This poses both opportunities and challenges to all incumbent players**. How to catch up with new best practices and technologies? How to develop possible partnerships with new players and startups, while staying a step ahead in vertical business expertise, data ownership and value proposition? **How to work with GAFAs as partners, rather than as competitors?**

These challenges will be at the heart of enterprise strategies in the years to come.

## Building the intelligent business platforms of tomorrow: Being ready for the next wave

These transformations impact enterprise and public services' **business, organizational and human strategies** heavily. They also impact the very core of their **technology foundations**.

For decades, incumbent public and private organizations have built bullet-proof information systems to meet the challenges of the first digital waves. **We're now at a crossroad**. Built in isolation across departments, based on dated 'first wave' technologies, most of these systems now fail to provide the agility and openness organizations need in today's fast-moving landscape.

In previous years, all organizations launched a strong wealth of modernization initiatives. Motivations varied: catching up with digital innovation, experimenting with the Cloud, developing mobile services or even improving customers' or citizens' digital experience. While success has been plentiful, ever-increasing competition from new disruptive players means **organizations must accelerate their efforts**.

Adapting to the new era requires a quantum leap. To embrace the challenges of a digital world and take a winning position within it, aligning with digital megatrends and strategic signals will be essential to fine-tune strategies. At a time when the world becomes the computer with IoT, intelligence takes control of the machines with AI, and infrastructure becomes a commodity with Cloud, three core principles will be essential:

1. **Become customer experience-centric**, moving from a pure 'produce and sell' to a 'sense-&-respond' customer-led approach. What's at stake: **ensuring 360°, seamless engagement across all digital and physical touchpoints**. In this domain, the advantages of owning connected physical assets (connected factories, connected cars, connected stores, connected products, ...) become essential for incumbents to differentiate if they completely digitize their business environment.
2. **Provide intelligent data-driven orchestration**, being able to **adapt to market changes and evolving customer demands in a real-time, prescriptive way**. For that, leveraging AI and data-driven automation becomes necessary across all functions. The strategic challenge for business: orchestrate multiple technologies each adapted to their own data sets, specific usages and very specific business challenges across enterprise applications.
3. **Adopt open platform foundations** and real-time process automation with the hybrid Clouds that combine private and public assets. The objective is to **deliver the best products and services at the lowest cost** while being ready to adapt in hours or just seconds.

To thrive, companies will also need to create the right partnership and convene the largest ecosystem to enrich their offering, services and channels.

**In a networked world, no organization is an island**. How to smoothly collaborate with other players, orchestrate multi-sourced services, enable partners to leverage shared data and APIs to build complementary services, and help match the best mix of offerings to serve customers better? **This will be the battlefield of the future: build an open and scalable platform to be able to attract, federate, collaborate or integrate with the best ecosystem** to deliver the most differentiated and profitable services to customers. This will be all the more important as verticals will blur around customer-centric services ecosystems in the future, gathering multiple multi-sided players that will have to interact in real-time.

\*Google, Apple, Facebook and Amazon

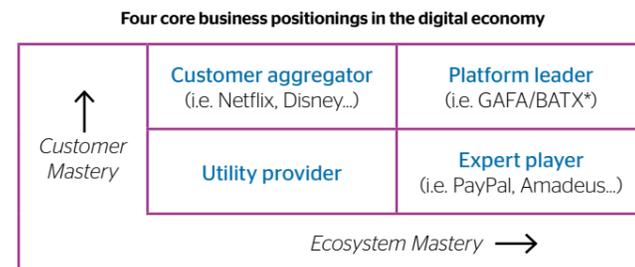


# Accelerating in the digital transformation race

Faced with a rapidly digitalizing world, the questions you must be asking is not 'Why change?' but 'Which direction?' and 'How?'. Three key steps will be essential along the road.

## 1. Know where you want to go: Design your digital strategy

When defining your digital strategy, the first step is figuring out the role you want to play within changing markets. In tomorrow digital ecosystems, strategies will often articulate around **two strategic axes**: do you want to **position yourself as your customers' primary partner** or stay in the utility game, and do you want to **create your own ecosystem** or **join another one?** Along these two axes, four core types of business positioning may be pursued, each with its pro and cons.



This is a strategic choice for organizations:

- Be a utility provider and mainly play the scale and cost game?
- Focus as an expert player and category killer?
- Be the multimodal services aggregator for customers?
- Or aim to become the overarching ecosystem platform driver?

Priorities and strategies will vary considerably based on these choices.

## 2. Build your intelligent business platform

Having made that strategic choice, you must next **embark on a journey of progressive and continuous transformation**, combining people, organization and technology streams. Depending on customer priorities, supplier ecosystems and digital overall digital maturity, approaches may vary across verticals but usually with a focus on costs or customer relations first.

The typical **digital platforms, emerging technologies radar and roadmaps** for each vertical developed in Look Out 2020+ will help in this process.

Along this entire process, pairing the physical and digital worlds will be essential in the next digital wave, driven by the IoT and AI. **Digital Twins-based innovative approaches will be strategic for differentiation** not only in the Industry 4.0/Industrial Internet worlds but also in B2C domains, such as Healthcare, Retail or even Insurance.

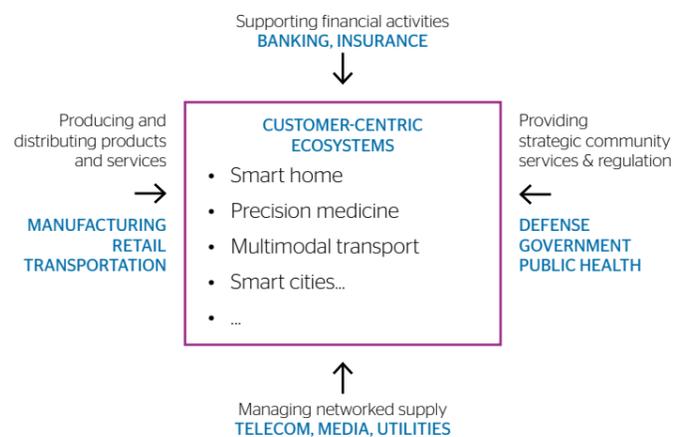
\*Google, Apple, Facebook, Amazon / Baidu, Alibaba, Tencent, Xiaomi

## 3. Breed your new digital and vertical ecosystems

The unstoppable growth of the IoT and AI takes place at the **intersection of the physical and digital worlds**. Tomorrow's revolution may well take place at the intersection of functions and verticals as divisions between traditional departments, such as R&D, customer experience, product innovation, marketing, sales and support blur. With the collaborative economy, frontiers between enterprises and customers are also disappearing. Digital may well also **abolish vertical frontiers around customer-centric ecosystems**.

These transformations are already clearly visible in multiple sectors. In the race to serve the digital customer better and develop data-driven value chains, many B2C and B2B manufacturers are developing Direct-to-Consumer (D2C) initiatives and servitization strategies, such as subscription-based models. Making the opposite move, some retailers are becoming manufacturers and creating their own products with their own label. In the US, for example, Amazon is now among the leaders in several CPG segments. Similar changes are taking place in transport - where manufacturers and service providers are converging around multimodal transportation - as well as healthcare, the smart home, etc.

This ecosystem transformation will be the **key battlefield for tomorrow**.



Which fundamental digital challenges, opportunities and best practices are driving your own industry? **Explore them on [atos.net/lookout](https://atos.net/lookout)**

## How to start?

Digital transformation is a long, multi-year journey. In the approaching hyperconnected world, a willingness to think differently, develop collaboratively and move fast will be key. At a time when customers and markets can change in just a blink of an eye and new entrants continuously emerge to try to change the game, perpetual testing, learning and improvement will be essential to survive.

To succeed in a data-driven world, there are many questions you must ask yourself:

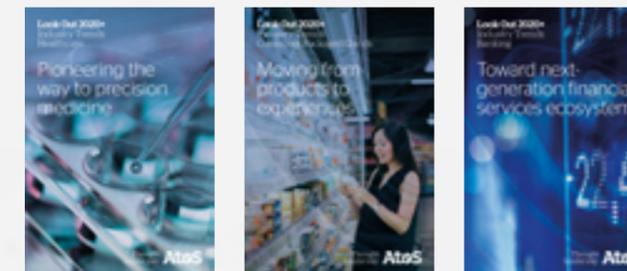
- "What do I process...?"
- "Which data do I already have access to, and which must I strive to get access to through new services or partnerships?"
- "How do I begin to leverage this data?"

Throughout these phases, an open approach to innovation, such as the **Digital Business Continuum** approach developed by Atos, will be paramount to success. Developing partnerships, creating or joining a digital consortium or an incubator, launching innovation challenges or hackathons, or even setting up a venture capital fund may help. In an ecosystem world where start-ups appear and spread at internet speed, **openness is the best way to capture collective intelligence**.

In tomorrow's uncharted world, the future is uncertain. What's at stake: **organize your own disruption before being disrupted by competitors.**



## Explore all the detailed Look Out 2020+ industry reports



Which fundamental digital challenges, opportunities and best practices are driving each industry?

Get detailed insights in the Look Out 2020+ industry reports for Aerospace, Automotive, Consumer Packaged Goods, Defense, Financial Services, Government, Healthcare, Sports & Entertainment, Retail, Telco, Transport and Utilities.

[atos.net/lookout](https://atos.net/lookout)

## 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: [> atos.net/btic](https://atos.net/btic)



**EXPLORE** how the latest technologies can boost your own practice.

Leverage our experts and labs to build POCs tailored to your own business: [> atos.net](https://atos.net)



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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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Let's start a discussion together

