

**Manufacturing, Retail & Transport**

# **turn-on** analytics everywhere

driving business value from big data

A large, bold, purple lowercase letter 'd' with a slight shadow effect, centered on the page.

**big data**

Dig value from Big Data

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# In a Big Data world, meaning is everything

Organizations today are awash with data, to the point that some companies now refer to 'data lakes' – where they store all data 'as is'. But unless they can harness that data to inform a current business situation, they are missing opportunities.

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It is no coincidence that leading research firms are projecting huge growth for large-scale data analytics – where companies turn 'as is' data into actionable intelligence and competitive advantage.

Respected analyst firm Gartner believes fact-based decision-making has benefits across a broad range of disciplines, including manufacturing and supply chain management. It notes that the relevance of analytics and practical opportunities are increasing too, as the cost of acquiring, storing and managing data continues to fall<sup>1</sup>.

For manufacturers, retailers and transport companies this is paving the way for new business models, as companies use Big Data Analytics not only to improve efficiency in their operations, but also as the basis for new value-added services.

But to achieve these strategic advantages it is vital that organizations choose the right technology partner.

## From data to valuable insights

If Big Data Analytics were straightforward, everyone would be benefiting from it. But it is a complex discipline that demands a deep understanding of how vast data resources can best serve a business.

Atos has been delivering rich, industrial-scale business insight for customers throughout its long history, drawing on our rich heritage in systems integration and business process optimization. We see large-scale analytics as a natural progression of what we have been doing for years as business technologists – helping our clients maximize advantage from their digital assets.

## Unlocking competitive advantage

Analytics are rising up the business agenda with good reason. In a highly competitive globalized world, where customers are continually asking for more, offering a good-quality product at an attractive price is no guarantee of success. Companies must be able to behave in new ways – personalizing their offerings, and responding to new customer needs before they are visible. To stay ahead of the game, organizations must be able to create new business models that blow their rivals out of the water. All of this while meeting ever stricter regulatory requirements.

What's needed now is a new level of 'alertness' to everything that is going on inside and outside the business. This is where sophisticated analytics come in – delivering targeted insight where it's needed, so that organizations can respond effectively to the changing conditions around them.

Evolution in the economic environment, in business practice and in individual market sectors is combining with faster, higher-capacity IT systems to make advanced analytics a critical part of an organization's make-up.

## The time is now

Analytics are critical to new innovation. The timelier and more honed the insights, the greater an organization's ability to be ahead of the curve.

Ubiquitous connectivity and the ability to 'digitize' inanimate objects are driving the opportunities for analytics to transform the way organizations behave. Tiny sensors now allow objects and machines to 'talk' to each other, and to centralized planning and control systems, over secure digital networks.

It is also becoming easier for companies to extract value from unstructured data, including information flowing over social media. Using these insights, companies can discover more about what their customers want, and how their products and services are being experienced in the real world.

Then there are the technologies that underpin all of these new opportunities. Advanced cloud services, sophisticated mobile data solutions and social collaboration tools are among the technologies playing a vital role in delivering timely intelligence to where it's needed.

Atos' expertise in all these key areas, and our broad portfolio of customers, gives us unparalleled insight into the needs of every industry sector and how analytics can be deployed to meet them. Day in, day out, we are creating growth for our customers by analyzing the context of millions of people, machines and devices in real time – to deliver the right product and service, to the right person or device, in the right place, at the right time, and via the right business model.

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<sup>1</sup>Gartner Predicts Business Intelligence and Analytics Will Remain Top Focus for CIOs Through 2017 (December 2013): <http://www.gartner.com/newsroom/id/2637615>; Gartner Predicts 2014: Big Data (November 2013): <https://www.gartner.com/doc/2626815>







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# Analytics in manufacturing, retail & transport

Properly implemented analytics can enable you to master subtle changes that can dramatically affect complex value chains.

Atos is positioned to deliver manufacturers, retailers and transport organizations the robust 'analytics everywhere' approach they need if they want to be an adaptable business and maintain flexibility.

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**In manufacturing**, data analytics are being used to optimize production operations and planning along the value chain, and to pre-empt maintenance requirements – increasing plant uptime. Intelligence is also being built into factory machinery and even products themselves – so that parts can report problems back to the manufacturer from the field before they fail.

Digital transformation is having an impact on all manufacturing activities to the point that every asset like customers and products and every action will soon leave a digital trace, and where each manufactured product has a digital life.

All of this is helping companies to develop new models for how production facilities will be managed in future. These changes will see the creation of 'living factories' where plant management is smarter and more virtual. It is also paving the way for manufacturers to develop new types of relationships with their customers.

Beyond the production environment, data analytics are having a profoundly transformational effect on manufacturers' business models, allowing them to launch exciting new services based on the intelligence their products collect. This helps differentiate these manufacturers in a competitive global market, and create profitable new revenue streams and longer-term customer relationships. Pioneers are already leading the way here, with impressive results.

**In retail**, large-scale analytics enable organizations to monitor and respond to even the subtlest changes in customer mood or behavior – as seen in stores, online or via social media – at the earliest opportunity. Sophisticated analytics can also be used to determine the optimum combinations of channels, days and times to reach certain demographics with targeted campaigns. All of this means they can adapt their promotional strategies and tactics in ever more subtle ways, making marketing budgets go further and getting customers to spend more. A more personalized and differentiated

customer experience, meanwhile, can have a positive impact on customer loyalty, reducing the cost of sale.

**In transport**, real-time analytics enable infrastructure and vehicles to be monitored in live situations – enabling more accurate planning and scheduling, and pre-emptive maintenance to keep fleets and people moving. But, more than that, Big Data Analytics means companies can start thinking about their business in new ways – for example starting to develop value-added services based on the data being collected, rather than simply products which have a limited, one-off profit margin.

In future, organizations will succeed or fail based on their ability to leverage data and analytics – to improve operational efficiencies, automate real-time business processes, make better tactical and strategic decisions, and create innovative products, services and business models. All while managing risk, security and privacy.

By bringing our analytics expertise and market-specific experience to bear, Atos ensures that organizations of all kinds can get the maximum value out of their data so that they can successfully adapt and compete in a fast-changing world.

## Combining Big Data Analytics, mobility and cloud services

One of the new technological developments driving a lot of new opportunities for manufacturing, retail and transport organizations is the ability to bring otherwise 'dumb' products to life. Sensors in the products, that feed back to IT systems across a network, enable detailed data to be captured and analyzed. This could be data about how they are being used, and how they are performing.

'Smart', connected products, supported by joined-up processes and teams, have exciting potential in any industry.

In factories, it can keep production lines working efficiently and dynamically re-route workloads, making optimum use of capacity, while out in the wider world, connected products such as cars, washing machines and TVs, or vital infrastructure, can help companies predict maintenance needs, and monitor how goods and services are used – so that designs can be refined in future.

Today, Atos manages over 270,000 external assets for Siemens, so that it in turn can provide value-added services to its customers. These services are based on

analyses of performance data harvested from everything from windmills to building automation systems.

Data harvested from smart products can also form the basis of new, value-added services for customers – creating the potential for new revenue streams.

Harnessing all of this potential relies on the coming together of a number of leading-edge technologies, including Big Data Analytics, advanced mobile solutions, and cloud-based services – technologies which Atos works with every day.

As well as bringing together the facilitating technology, Atos also has a dedicated resource of specialist Data Scientists who are highly experienced at turning raw data into meaningful business insights – on a scale that has never been possible before. Not only that, we also provide comprehensive managed services to help companies exploit this intelligence commercially.

A successful Big Data Analytics initiative is one that increases understanding, optimizing and transforming operations – through greater interconnectivity of people, processes and systems. This can only be achieved with help from a skilled guide in technology, process and operational integration. **That guide is Atos.**

# Driving excellence from analytics

We are 'business technologists' – which means that we never apply technology for its own sake. Without exception we start with the goals of the business and apply analytics in the most appropriate way for each organization.

Within Big Data we provide not only business technologists, but also Data Scientists; our team includes a number of specific data experts whose role it is to put the information and insights within your business to use, extract the most value and create the technology and processes to ensure long-term benefit can be extracted from the ever-escalating quantities of information entering the system.

#### Our analytics credentials include:

- ▶ A vast, global business analytics resource pool, spanning **business analytics consulting, system integration services**, and **complete managed services**
- ▶ Our analytics ethos: **'Analytics Everywhere'**. We harness the optimum combination of **cloud, portals, mobile platforms and social media** to get real-time insight to the people who need it
- ▶ Our cloud credentials. Cloud-based data services are often the key to large-scale analytics and Atos supports a range of enterprise-class cloud services. We do this through the secure **Canopy** platform and through our managed, end-to-end high-volume transaction processing service, **Worldline**

- ▶ Our **Data Analytics as a Service (DAaaS)** provides advanced analytical capabilities – such as anomaly detection, predictive analytics and advanced pattern recognition – via a cost-effective Software-as-a-Service (SaaS) model
- ▶ Our **specialist technology labs** – dedicated solution practices for SAP, Oracle, EMC / Pivotal, Microsoft, IBM and Teradata – work continuously at the cutting-edge of business analytics
- ▶ Our robust European standards of data privacy, thanks to our involvement in the Virtual Schengen (the 'great firewall of Europe').

These credentials and our vast experience have enabled us to deliver analytics implementations in truly complex and pressured businesses environments.

#### The right partnerships

Although Atos is technology independent, our strong partner ecosystem means we are able to draw on exactly the right platforms and solutions for any given project. Our market-leading partners include Oracle, IBM, Microsoft, Teradata, SAP, Siemens, Pivotal EMC, Samsung, SAS and a variety of Business Analytics specialists.

#### The right approach

In addition to targeted, optimized solutions and a range of delivery options, Atos provides a complete portfolio of professional services, frameworks and methodologies to accelerate the delivery of real business outcomes.

Our end-to-end services across the project lifecycle span Advisory services, Strategy and Transformation services, Benefits realization, and the delivery of Big Data platforms.

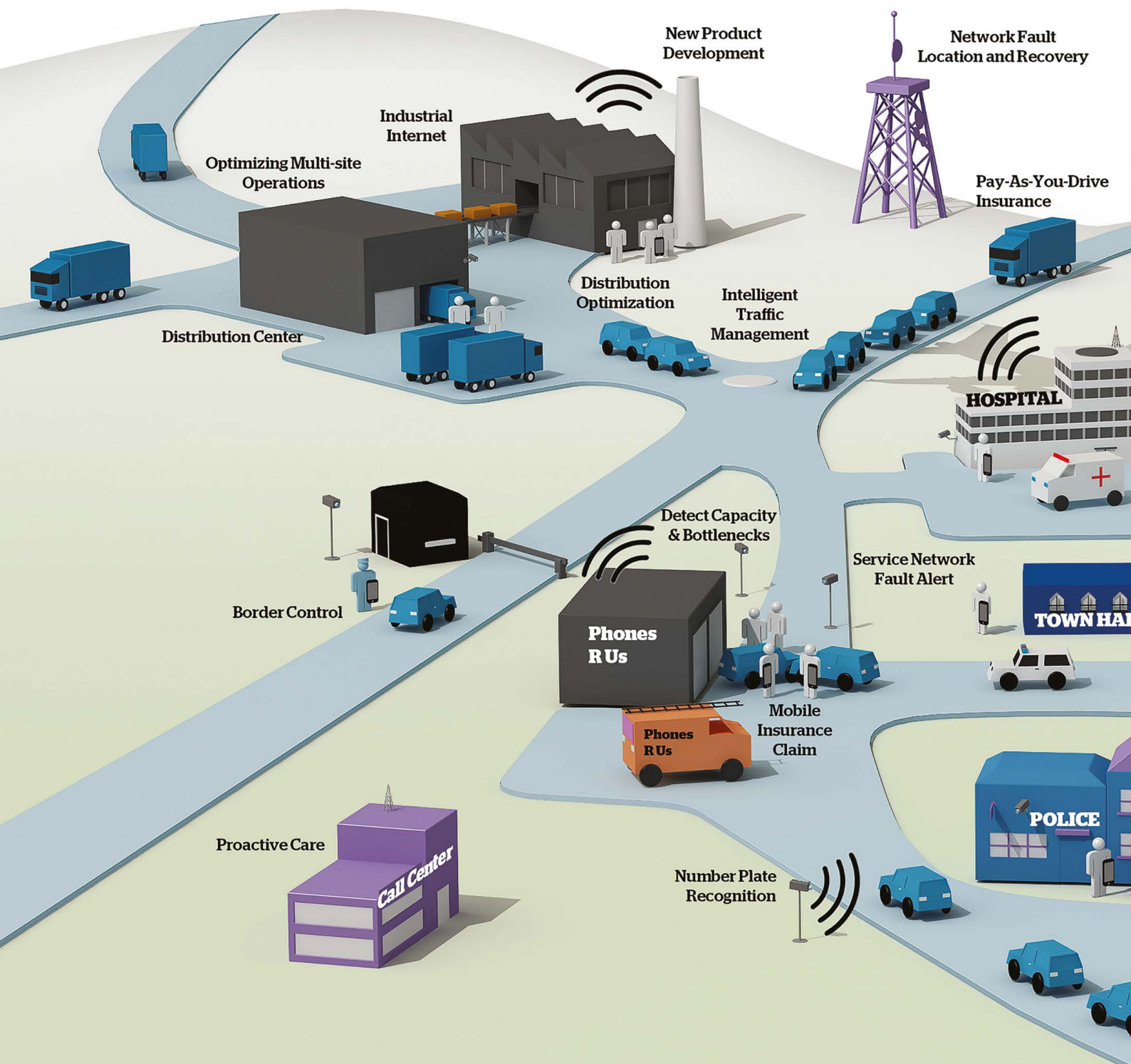


# Analytics everywhere: Big Data touches every part of economy and society

As every organization, machine and even human being becomes enmeshed in data - producing, channeling, reacting to and complicating the data picture - so all organizations need to look at their own data

infrastructure, and the way their infrastructure fits the big picture. Atos enables you as a manufacturing business to see and improve the way analytics is used within your business - and support you to use the data flooding into your

value chain from across every other part of the economy and society and customers more effectively.







Real-time Monitoring



Oceanographic Research  
Earthquake Prediction

Precision Farming

Outage Management



Smart Grid



Asset Optimization

Disease Avoidance

Gene Project

Research Opportunities  
Personalized Learning

Energy Revenue Protection  
Smart Home

For Sale

Mortgage Alert

Dynamic Content Management

Real-Time Staff Information

Customer Service

Crime Hotspot

Monitor Financial Performance

Contactless Payment

Intelligent Advertising

High Churn Risk

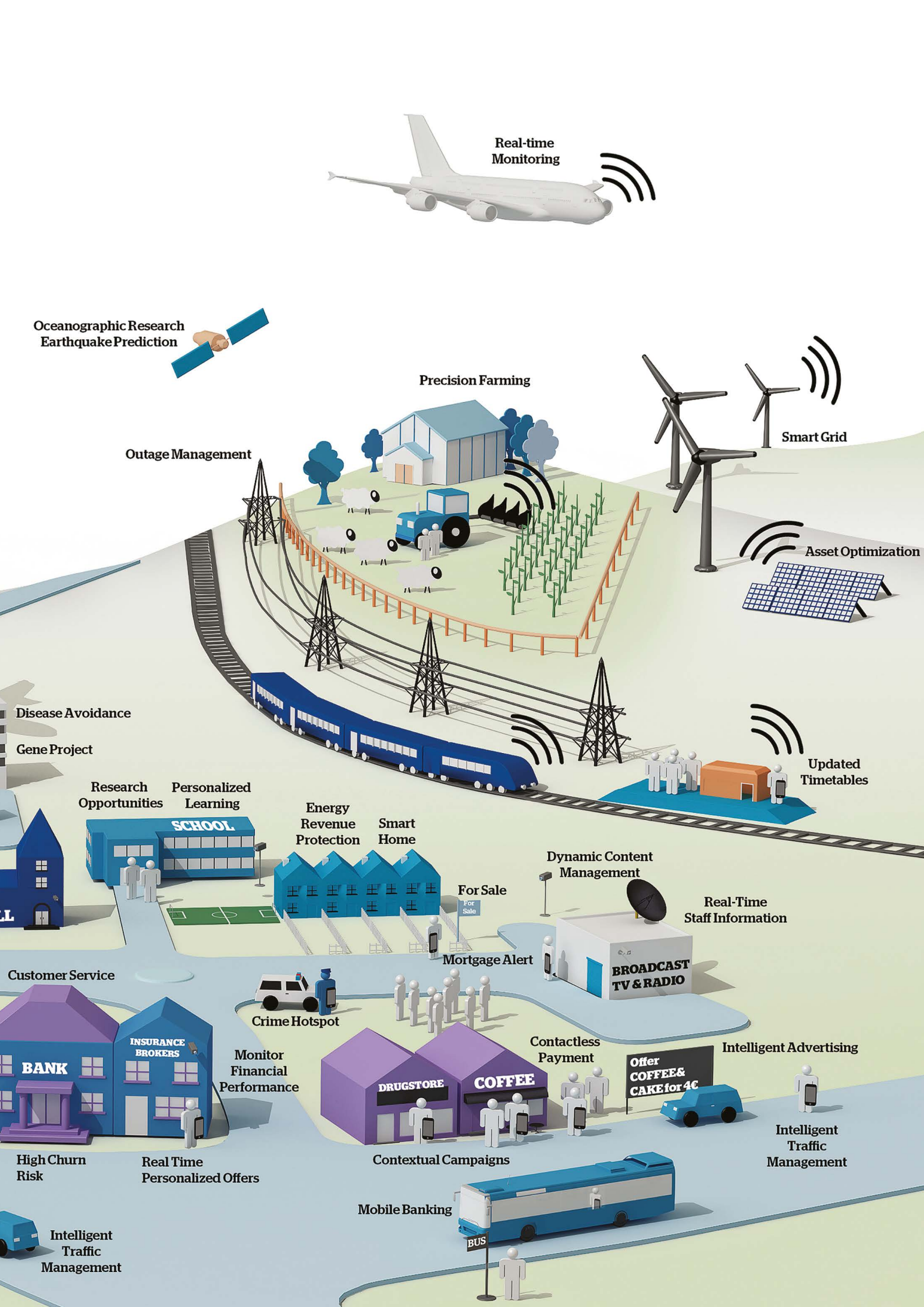
Real Time Personalized Offers

Contextual Campaigns

Intelligent Traffic Management

Mobile Banking

Intelligent Traffic Management

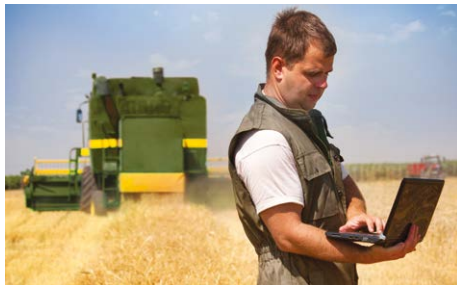


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# Driving real results from Big Data Analytics

Across every area of manufacturing, retail and transport, Atos is putting in place the adaptive and flexible analytics which will enable organizations to find new models, maintain customer loyalty, drive revenue and reduce costs.

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## From manufacturer to Agricultural Context Broker:

Atos is currently working with a global agricultural equipment manufacturer on an ambitious Farm Sight project involving connected vehicles which provide rich data for analysis. This intelligence is collected from agriculture machines out in the field to help farmers improve their yields. In this way, the organization is branching out from farm plant provision into value-added information services, with the potential to develop profitable new revenue streams.

Atos is responsible for the Big Data capture and analytics platform underpinning the new services. We advised on the possibilities and have designed and brought together a range of large-scale analytics technologies – including Hadoop, Mongo DB and our own Node architecture – to realize our client's vision.



## Greater financial visibility

At a cosmetic giant, Big Data Analytics from Atos is making life easier for financial controllers, who now have a clear line of sight across the budgeting and financial performance of 2,000 people in 82 countries. This is driving greater accountability among budget-holders in all countries – against the same measures.

This vast, transformational project was completed within just 18 months, thanks to Atos' experience and methodologies. Our strategic partnerships, industrial-strength integration capabilities, and robust project management skills played a vital role too.



## Global operational efficiency improvement

At a world-class process manufacturer, Atos is driving continuous improvements in operational performance through consolidation and harmonization of its systems and process, and real-time data analytics. The efficiencies we're enabling are vital in a competitive market, while new operational flexibility and central coordination mean our clients can count on a consistent and reliable supply of high-quality chemicals.

Atos has created a single, centrally-coordinated network of facilities. This means the manufacturer can switch production from one plant to another, or move production closer to new customers, while maintaining performance and efficiency across all operations.

To underpin this new way of working, Atos has helped establish complete, real-time, end-to-end visibility and intelligence across a unified factory network.

Key points along the journey included harmonization of extremely complex environments and the creation of real-time dashboards, incorporating consolidated data from distributed control systems at each site. The organization also benefits from real-time production accounting and integrated financial management.

## Industrial Data Analytics

**Atos is the IT partner of Siemens, one of the largest industrial players, for their Data Analytics initiative. We are jointly developing with Siemens a unique analytics platform that is designed to support a wide range of use cases and be leveraged across the Industrial Data Analytics needs of Siemens and also addresses customer requirements across many markets that Atos is bringing to the project.**

**Using this insight and at the same time respecting the proprietary content of Siemens, Atos is positioned to replicate the same approach for major industrial players in other fields; our proven experience means we can do so in a way that ensures the delivery of real business value and guarantees security of data and business know-how. We are also now ready to promote value-added data-based services, and specific use cases, for instance CRM 360, tailored for our Retail focused customers.**

**Through this joint investment with Siemens, we are reinforcing our Data Analytics capabilities and developing a reusable, cloud-ready, foundation platform, which will enable us to continue to deliver faster go-to-market approaches and realize even greater business value.**











# Getting started in analytics with Atos

Once we have agreed the project scope we can start to look at specific technology, organizational and process improvements that need to be made. At a high level, we will assess your needs in terms of requirements for:

- ▶ **Foundation IT:** Harmonization & Consolidation of core IT platforms
- ▶ **Operational Excellence & Performance Management:** driving greater efficiency and better performance out of global operations
- ▶ **Digital Transformation:** including Smart products, connected machines, mobility, cloud-based IT and information delivery, and specific Big Data Analytics initiatives.

Atos has over 3,500 Information Management & Business Analytics Experts at its disposal, including a significant set of data science specialists covering a variety of statistical and non-statistical analytics approaches.

In the transport sector, we process data from millions of connected vehicles in Europe in real time, to optimize fleet management and fuel consumption. Within the retail, we also analyze the shopping preferences and activities of millions of consumers in order to support retailers to increase consumer engagement and loyalty.

To find out more about Atos and the exciting work we are doing with advanced analytics across a wide range of market sectors, please visit us at [atos.net](http://atos.net)

## Our Big Data and Analytics framework

### Advisory

- ▶ Big Data Awareness and Innovation Workshop
- ▶ Opportunity Assessment
- ▶ Readiness Assessment
- ▶ Proof of Value.

### Strategy & Transformation

- ▶ Big Data Strategy and Design
- ▶ Business process modeling and reengineering.

### Insights

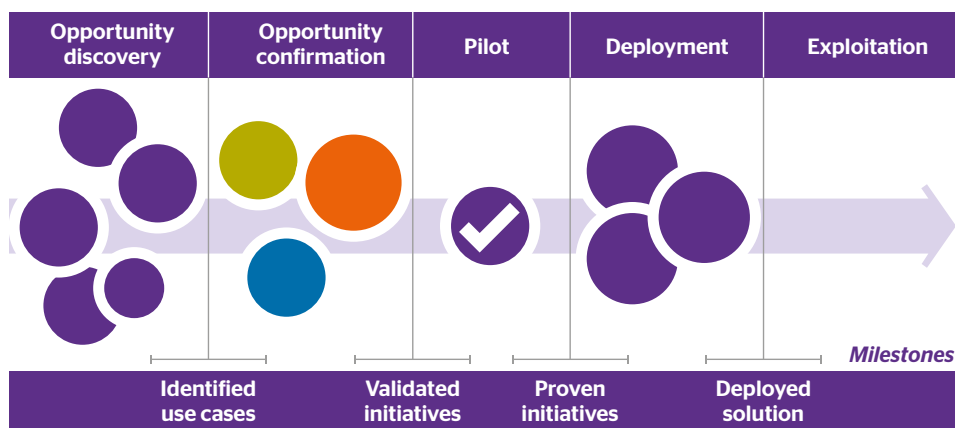
- ▶ Big Data Visualization
- ▶ Big Data Analytics
- ▶ Big Data Patterns
- ▶ Insight Services.

### Big Data Platform

- ▶ Big Data Implementation
- ▶ Architecture Services
- ▶ Integration Services
- ▶ Storage Services
- ▶ Hosting Services
- ▶ DAaaS.

## Big Data Services, from critical IT to business support

Unlock business value by exploiting selected initiatives



## Why Atos?

- ▶ Deep industry knowledge and experience to bring data into a business context needed to turn information into values
- ▶ Experienced in handling large volumes of data in real-time for manufacturing, retail and transport customers
- ▶ References supporting leaders to stay ahead of competition
- ▶ 3350+ experts in data management, business intelligence, analytics and business process integration, with a global reach
- ▶ Vendor-independent, but strong partnerships with key technology vendors
- ▶ Partnership with Siemens providing Industry Data Analytics (IDA) services to Atos and Siemens customers
- ▶ Capability to source and provide computing, storage and software for on-premise and managed Data Analytics environments through an attractive CAPEX / OPEX model
- ▶ Adherence to global security policies and standards
- ▶ Acquisition of Bull, creating an European global leader in Cloud, IT Security solutions, and Big Data.

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# About Atos

Atos SE (Societas Europaea) is an international information technology services company with 2013 annual revenue of €8.6 billion and 76,300 employees in 52 countries. Serving a global client base, it delivers IT services in 3 domains, Consulting & Technology Services, Systems Integration and Managed Services & BPO, and transactional services through Worldline. With its deep technology expertise and industry knowledge, it works with clients across the following market sectors: Manufacturing, Retail & Services; Public sector, Healthcare & Transports; Financial Services; Telco, Media & Utilities.

Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. It is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and is quoted on the NYSE Euronext Paris market. Atos operates under the brands Atos, Atos Consulting & Technology Services, Worldline and Atos Worldgrid.

For more information, visit: [atos.net](http://atos.net)