

Financial Services

# powering Big Data Analytics everywhere in financial services

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big data

# In a Big Data world, it's all about turning complexity into simplicity

Today financial services organizations are awash with data, to the point that many now refer to 'data lakes' - where they can store all their data 'as is', unstructured (approximately 90% of the data) as well as structured, with the identifiers and metadata needed to enable rapid analysis. That is the key to making data a source of growing competitive advantage. Unless organizations can harness data to inform a current business situation, they are missing opportunities.

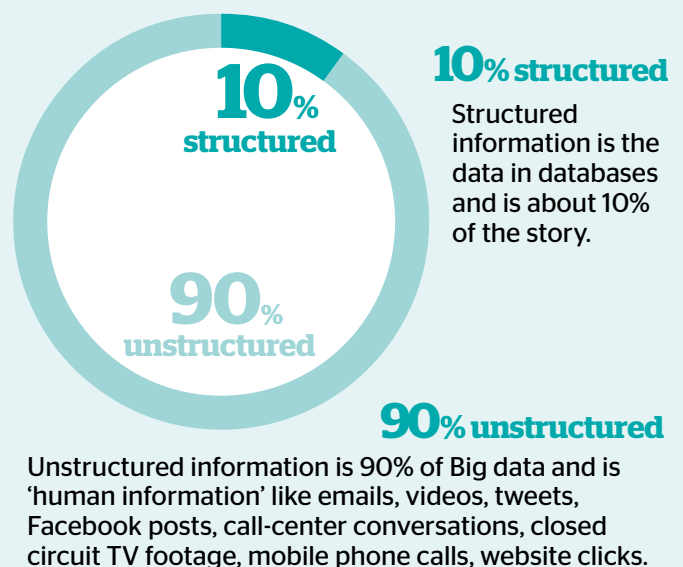
## Big Data is only getting bigger

90% of the data in the world today was created within the last two years.

It will likely reach '40,000 exabytes or 40 trillion gigabytes by 2020'



## Big Data is made up of structured and unstructured information



It is no coincidence that leading research firms are projecting huge growth for large-scale Big Data Analytics - where companies turn 'as is' data into actionable intelligence and competitive advantage. In 2015 investments in Big Data are meant to reach some \$16.9 billion, with financial institutions alone spending some \$6.4 billion (representing 38% of those investments). This translates to a 22% annual growth of Big Data in financial services - a clear indication that Big Data must now be a front and center consideration for any bank or insurer.

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

## Growth in the Big Data Market (International Data Corporation Forecast)

**\$3.2  
Billion**

**in 2010**

**\$16.9  
Billion**

**\$6.4b**

in Financial Services,  
22% annual growth

**in 2015**

## Why?

The companies that use analytics best are...

**2x**

More likely to have  
top-quartile financial  
performance

**5x**

More likely to make  
decisions "much faster  
than competition"

**3x**

More likely to execute  
decisions as intended

**2x**

More likely to use data  
very frequently when  
making decisions



<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>

# Driving analytics everywhere

Every financial services organization, and every person and process within that organization, are increasingly surrounded by growing flows of data. Banks and insurers need to understand the rich content that informs (and complicates) the data picture, and at the same time examine their own data infrastructure to see how data fits into their big picture and the market ecosystem.

Atos enables you, as a bank or insurer, to understand and increasingly control the Big Data that is everywhere: whether it's within your business, around your customers' increasingly mobile, digitally-enhanced lives and interactions, or present in the world.

In our complete approach to Big Data Analytics, we support you to use data from all sources in order to drive both operational efficiency, finance and risk management and richer customer interactions.

With our help, you can make more informed decisions, in real-time, to serve customers better and control your organization with greater precision.



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# Delivering new value for financial services organizations

Right across the financial services marketplace, Big Data Analytics are paving the way for new business models. Banks and insurers are finding ways to use analytics to improve two key areas above all: finance and risk management and customer engagement.

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## Finance and risk management

Driven by regulatory pressure, banks and insurance companies are required to improve the transparency, consistency and traceability of their data at once, and that requires a large-scale rethink of their data strategy. It's time to move away from data silos and move towards an enterprise-wide data layer and data lake. This is the key to using consistent analytics in finance and risk figures as the fundamental basis for regulatory reporting. Big Data Analytics not only streamlines and speeds up reporting and capital management, it also enables organizations to find non-compliant activities, which could remove the risk of billion-dollar fines.

## Customer engagement

Analytics is also vital for financial services organizations in order to find more effective and responsive ways to understand, profile and service customers of all kinds.

In the financial services world of the future, reactive services will evolve into proactive, and banks and insurers will know their customers in greater depth than has ever been possible. By using effective Big Data Analytics, banks and insurers can target customer needs more accurately, while the nature of customer relationships will be transformed and focus on higher-value interactions (as many others will be automated across all channels).

Use of Big Data Analytics can have an equally dramatic and positive impact on the way you build long-term intimacy with customers, leading to reduced churn and higher levels of both satisfaction and advocacy. For financial organizations, this is the key to building rich and detailed customer profiles, enabling a 'market of one' relationship with millions of people. It also enables banks to identify 'moments of

truth' in a customer's life, making it possible to be far more proactive in delivering precisely crafted services exactly when they are most needed. For insurers, the use of true, real-time data in place of actuarial algorithms opens up the possibility of behavior-based contracts and minute by minute pricing: a vital factor in transforming the market for the better.

## Using analytics to make decisions and drive value

Financial institutions are developing smarter business processes through comprehensive digital transformation of their businesses, with a new level of 'alertness' to everything that is going on inside and outside the business.

Analytics supports you across the entire organization to deliver targeted insight to where it is needed, so that organizations can respond effectively to the changing conditions around them. Indeed, studies show that organizations that use analytics best are 5x "more likely to make decisions much faster than competition" and 2x "more likely to have top-quartile financial performance".

The changes taking place in banking and insurance reflect wider social developments, combined with the disruptive impact of emerging technologies.

- ▶ The emerging omni-channel approach means that all customer contacts, through all channels and media can be analyzed to deliver up to the minute insights about needs and preferences
- ▶ Social networking means that consumer peer groups can ask for advice and discuss all aspects of service – good and bad – leaving clear traces about their opinions and preferences

- ▶ Real-time, real-world data, such as telematics information from motor vehicles, makes it possible to target and fine-tune insurance or loan contracts to be precisely right for individuals. This also opens up new opportunities for financial innovation, such as behavior-linked insurance, that can reduce commoditization and drive differentiation
- ▶ Mapping of key moments in people's lives allows to support them more effectively when they need it most
- ▶ Advanced risk management services, based on Big Data and real-time analytics ensure that financial institutions always comply with capital adequacy and liquidity regulations but do not need to keep additional capital tied up unnecessarily. The same mechanisms can be used to deliver advance warning of potential threats or risks.

Big Data is, above all, a key factor in driving better decision-making. By turning data flows into actionable Business Intelligence (BI), stakeholders become better informed, have an accurate and current single view of the truth, and are able to take business critical decisions faster and with greater confidence than before.

Powered by Big Data Analytics, all of your BI becomes far more precise and immediate, delivering true insight and predictive power to customer interaction and making it more personalized and relevant, while enabling real-time decisions to be made with greater certainty in financial and risk management. In today's environment, BI must be supported by analytics in order to deliver real value.



# A complete solution for Big Data Analytics in financial services

Atos places Big Data at the center of its vision for transformation of banks and insurers. This includes our Now Banking and Now Insurance solution sets, which provide an integrated approach to service optimization and delivery, based on continual service improvement driven by Big Data insights.

Big Data Analytics form an integral part of Now Banking and Now Insurance, delivering:

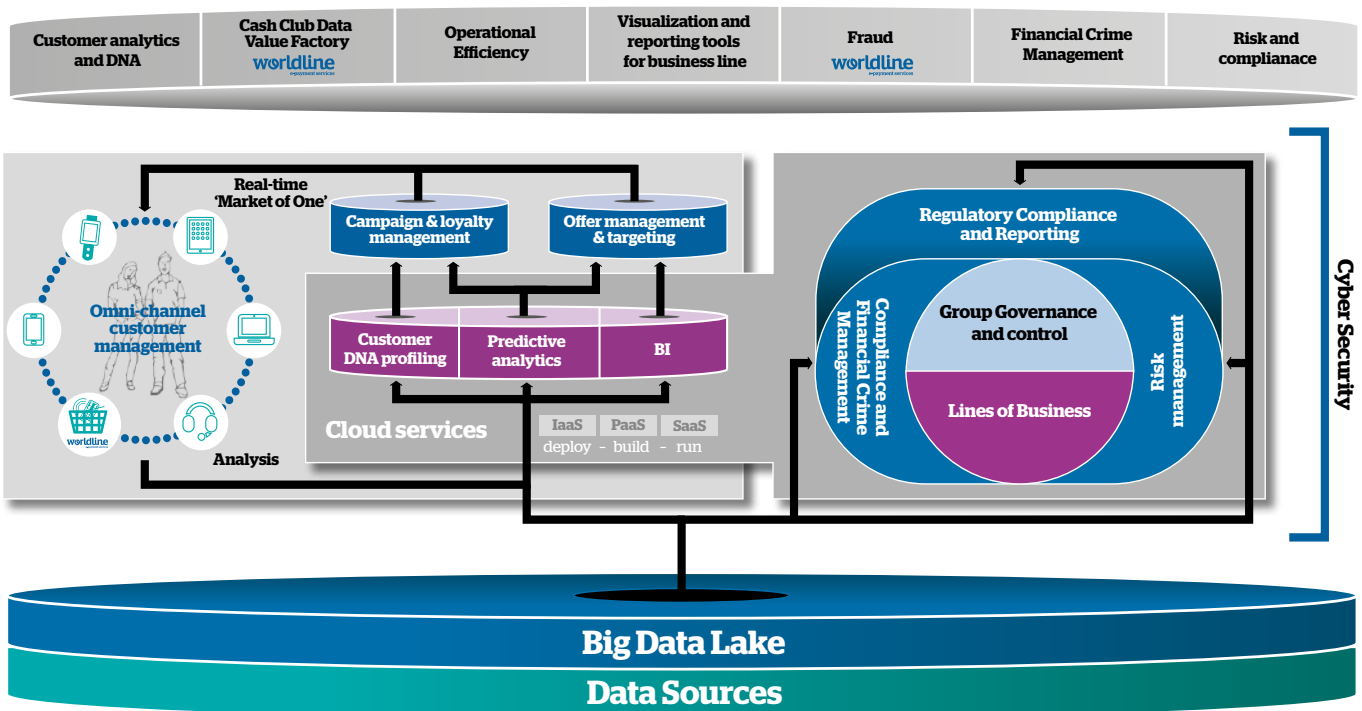
- ▶ Improved customer interaction and consistent service across all channels
- ▶ Enriched analysis of social media contacts and detailed customer information
- ▶ Proactive services
- ▶ More controlled and predictable financial and risk management
- ▶ Greater business efficiency.

By using Big Data in this active and creative way, Atos drives competitive advantage for its financial service clients across the entire market.

Atos' connected solutions (illustrated below) are designed to ensure our Big Data approach underpins and connects through the Financial Services value chain. This approach draws data from multiple **Big Data Sources** (including omni-channel contact points) and then stores this in the **Big Data Lake**, keeping it in a flat architecture and its native format. All data are

linked to identifiers and metadata that enables rapid search and analysis. It is then driven throughout the business in all areas of internal business processes, financial management, customer engagement and IT infrastructure:

## Financial Services Analytics Applications



## How Big Data Analytics interact with key business areas

The Atos approach ensures that all data, from all sources, flows into the Big Data Lake and then drives actionable information into, through and out of, key strategic areas such as:

- ▶ **Omni-channel management (left side of illustration opposite)** – fine-grain data is essential to understanding how to engage customers. Omni-channel customer management uses Big Data Analytics to achieve consistent understanding of context and define next steps of engagement with customers (and delivers more data back into the business) – ensuring consistently excellent service.
- ▶ **Governance and control (right side of illustration opposite)** – we control data through strict governance processes across all lines of business, so that data can be used to make compliance more effective, ensure fraud can be identified and prevented, and risks can be monitored and controlled with greater effect and understanding.
- ▶ **Cloud-based services (centre of illustration opposite)** and infrastructure, meanwhile, support critical activities in governance and control, as well as customer DNA profiling, predictive analytics and BI.

And of course every aspect of Big Data across all areas of the business are overseen, controlled and channeled through our leading **Cyber Security** processes and technology.

To ensure that every aspect of this model is connected and seamless, we deliver specific Big Data solutions designed for Financial Services (see below).

## Precise solutions to address key financial services needs



▶ **Customer analytics and targeting:** Atos supports banks and insurers to behave in new ways and personalize offerings, responding predictively to customer needs. Through our approaches to managing the Big Data Lake and driving customer analytics and predictive machine learning, we enable more real-time targeting based on behavior and needs. This means far more effective product and service recommendation, similar to 'Amazon' style functionality, guided by true behavioral segmentation. The overall effect includes improved customer engagement and dramatic improvement on campaigns of up to 6x ROI.



▶ **Worldline Cash Club:** This solution, delivered by Worldline, an Atos subsidiary and key payments partner, enables merchants and card issuers to deliver more targeted offers, improving customer engagement, driving revenue and differentiating their business. Cash Club delivers card-linked offers that enable merchants and issuers to manage their own marketplace, deliver more complete messages to customers, and mine information to turn Big Data into Smart Data. The result is that customers get more and merchants and banks generate new revenue, monetizing data: a win-win ecosystem.



▶ **Worldline Data Value Factory:** Through the Data Value Factory we build in-depth customer profiles and turn them into a source of value. Comprising a global offer delivering model creation, full client enrolment plan and campaign operation and management, the Data Value Factory enables sellers to monetize their consumer base by enriching and using knowledge more effectively.



▶ **Operational efficiency:** We drive efficiency across the financial organization by ensuring that decision-making, from the strategic to the tactical level, is delivered with more accurate, real-time and relevant data. We use Big Data Analytics to apply business process improvements through specific tools; for example, using Lean SixSigma for statistical deviations.



▶ **Visualization and reporting tools:** Having better Big Data Analytics is vital, but equally important is the ability to output, understand, organize and report on the use and nature of data within a diverse organization. Atos delivers the reporting tools that aggregate data from all internal and external sources and bring it together into new visualization tools offering new ways of analysis for the data scientist, so that everything from customer interaction, to infrastructure, to compliance can be measured, benchmarked and improved.



▶ **Worldline Fraud Risk Management:** It is a wide offering providing services, software, tools and people that cover the complete value chain of fraud risk management i.e. prevention, detection & reaction (from detecting fraud to contacting your customer, improving fraud detection results) and dispute management.



▶ **Financial crime management:** Our dedicated Financial Crime Unit provides in-depth data and transaction analytics to detect suspicious cases and monitors using real-time or near-real-time Fraud Data Analytics and Data Mining to detect and pursue fraudulent, or even terrorist transactions. Through this approach, we support banks and insurers to avoid financial crime such as money laundering or payment fraud – and keep financial institutions compliant with all relevant regulations.



▶ **Risk and compliance:** Atos helps financial institutions to bring together risk and finance data, from a broad range of sources, consolidating it into a consistent view, which makes data analysis, presentation and reporting of finance and risk data much simpler. We help construct accurate data models that turn legacy reporting into an enterprise-wide approach; giving real-time monitoring and analytics of email traffic to ensure communications compliance; and enable reporting of suspicious activity to relevant bodies. Atos keeps financial organizations compliant across the board and enables to assess and mitigate risks with greater predictability and accuracy through the use of Big Data Analytics.





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# Why Atos?

At Atos, 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 – and this is the way that we approach Big Data Analytics.

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We have the expertise and resources to use analytics to drive innovation and keep our customers ahead of the curve. We have acknowledged leadership positions in all of the key enabling technologies, including smart mobility solutions, cloud and Big Data. Our strong heritage in other industry sectors, most notably telecommunications and media, also gives us a deep understanding of the ways in which Big Data techniques are evolving more broadly. This unique knowledge and experience directly feeds into our financial services solutions.

A successful Big Data Analytics program can only be achieved with help from a skilled guide in technology, process and operational integration. That guide is Atos.

## How we get to work from day one

Beginning with an agreed project scope, we look at specific technology, organizational and process improvements that need to be made. At a high level, we 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.

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

## 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.

# The right analytics resources

Atos is a global force in Big Data Analytics. We bring together all the key technology and dedicated resources of specialist data scientists; experts highly experienced at turning raw data into meaningful business insights. We also provide comprehensive managed services to help you exploit this intelligence commercially.

## The right analytics credentials

- ▶ A global business analytics resource pool, spanning **business analytics consulting, data scientists, system integration services, and complete managed services**
- ▶ Our analytics ethos: **'Analytics Everywhere'**. We harness the optimum combination of the **cloud, portals, mobile platforms and social media** to deliver real-time insight
- ▶ 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, or 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 – 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').

Atos has the experience, capability and vision to help financial organizations make change work for them, these credentials and our vast experience have enabled us to deliver analytics implementations in truly complex and pressured businesses environments.

## About Worldline

Worldline, an Atos subsidiary and strategic partner, is a fully managed analytics-on-demand service provider, delivering an extensive range of innovative services from customer journey management, to connected living solutions.

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

Worldline is also one of the largest managers of payment transactions in the world, working with banks, insurers, retailers and other participants in a globalizing economy to ensure fast and secure transactions. Worldline has developed a world-class tool set and processes for keeping the payments marketplace secure and for identifying suspicious activities and patterns.

Worldline has more than 100 business analytics experts at its disposal, including 30+ data scientists.

**worldline**  
e-payment services

## The right analytics partnerships

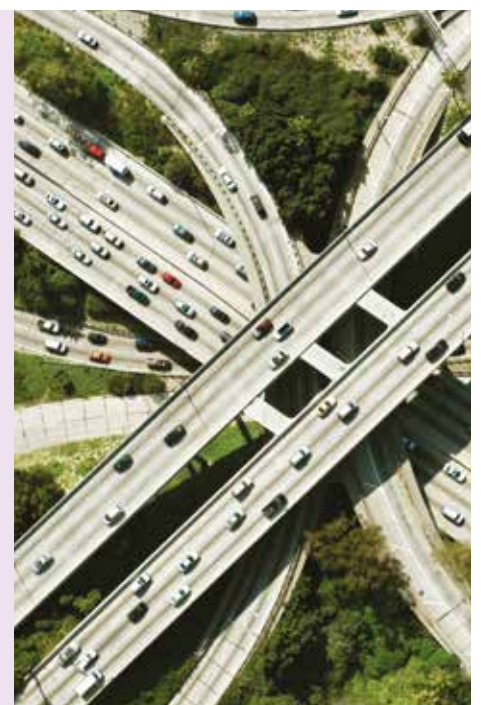
Although Atos is technology independent, our strong partner ecosystem means we are able to draw on exactly the right platforms and solutions for any given project. Our market-leading partners include Oracle, IBM, HP, Microsoft, SAP, Siemens, Pivotal, EMC, Samsung and a variety of business analytics specialists.

**EMC<sup>2</sup>** **SAMSUNG**

**Pivotal** **ORACLE**

**Microsoft** **SIEMENS**

**IBM** **hp** **SAP**



# Delivering real results from Big Data Analytics

Across every area of the financial services marketplace, Atos is putting in place the adaptive and flexible analytics which will enable organizations to create new business models, maintain customer loyalty, drive revenue and stay compliant.

**For banks and insurers across the world Atos is working right now to bring the benefits of Big Data Analytics into their businesses, enabling smarter business models and driving measurable service improvements.**

- ▶ For **Achmea**, one of the largest insurance groups in Europe and the largest in the Netherlands, Atos is extending its long-term managed service relationship into transformational change through cloud enablement and Big Data implementation. By deploying SAP HANA with Canopy cloud, Atos is improving data insight for users across the business. This means moving from information silos to a single Big Data approach, leading to better targeting and faster service delivery in the future.
- ▶ For **Siemens Financial Services**, a specialized bank that plays a vital role in enabling Siemens Group sales worldwide, Atos is developing a new approach to faster processing of queries, enabling more agile response to customers with lower risks. Using SAP HANA and a cloud-based platform, the result is a new generation approach that can be rapidly implemented without disruption to business as usual.

- ▶ **At a tier one Health Insurance provider in the Netherlands**, Atos is using Big Data Analytics based on Oracle technology to provide a more sensitive and accurate targeting of statutory healthcare solutions for millions of Dutch citizens. The new approach enables clearer understanding of causes for healthcare problems, together with insights about health product performance. That helps improve care for citizens while reducing costs to the state.
- ▶ Processing more than 1 billion transactions per year, **Belgian banks** have confided their card fraud monitoring to Atos. We have deployed our complete fraud management approach, combining data storage, management and mining with powerful rules-based systems, all backed up by our own leading experts in fraud detection and avoidance. As a result, our solutions and expertise are playing a major part in helping Belgium's banks to maintain their extremely low rate of electronics payments fraud.
- ▶ **NS&I is a leading UK financial institution**. Atos has been NS&I's strategic partner for almost 15 years and has helped the business transform itself to the point where it now has 24 million accounts, with levels of service excellence and loyalty that are unrivalled in the market. Atos now carried out all the analytics services needed to stay compliant, including Anti Money Laundering (AML), Political Exposed Persons management (PEP) or Sanctions management. Each day, our analytical engines detect around 3,000 exceptions in all data sets, which we then have to deal with.

## Atos First: a creative and innovative solution

The Atos First project is a solution for applying Big Data Analytics not simply to current data but to the massive quantities of historical data possessed by all financial institutions – data that is currently not fully exploited. We apply state of the art analytics to produce sentiment analysis, semantic insights and decision-support information, all derived from an increasingly stable and high-performing knowledge base.

Atos is currently market testing solution prototypes for:

- ▶ Retail brokerage, in which we combine hard market data with social media-derived customer and trader sentiment to provide accurate decision-support that users report is already providing competitive advantage.
- ▶ Sovereign debt management, combining market data with news, political and business trends, with insights on issues with the potential to impact on debt positions.

These are initial examples of how this revolutionary approach to harnessing Big Data Analytics as a decision tool is leading to better outcomes and reinforcing the status of Atos as an innovator and game-changer in the market.

**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:**

for banks at <http://atos.net/banking-bigdata>

for insurance organizations at <http://atos.net/insurance-bigdata>

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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)

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