

data driven government preparing for the age of the citizen



Insights for tomorrow's world

Governments are awash with information, and they face a deluge of data as far into the future as we can see. Big data is the key part of the digital transformation of our lives, and it presents amazing new opportunities for governments to improve how they work, and how they engage with us as citizens.

Governments can and must use the power of Big Data to be more citizen-focussed, to design cost-effective and responsive services, reinvent their business models and prepare for the challenges of a digitally transformed society.

Data provides a wealth of actionable intelligence never before attainable by governments. It can fuel insightful planning, enable predictive actions and differentiated strategies that enable personalized services at a level never imaginable in the past, and which put the citizen right at the center of its thinking and delivery.

Citizens are much more empowered and aware of their rights than ever before. They are equipped and comfortable with technology, connected anytime and anywhere, and demand the same tough standards and flexible delivery from public organizations as they expect from all consumer brands and providers that affect their lives.

Only the data driven government will be ready to rise to the challenge of meeting citizen's increasing demands and expectations.

Digital society

The digital revolution is accelerating our evolution. Linked to each other and to information sources all over the world, we citizens have access to limitless knowledge, and expect high standards of speed, joined-up service quality, and transparency from governments – just as we do in other aspects our lives.

We need immediacy, specialist services that match our individual needs, and excellent delivery. We expect governments to be flexible, and create and evolve products and services faster in response to our changing needs, behavior, and preferences.

Whether citizens or governments, the digital world presents new challenges for us all – we have growing concerns about access and disclosure on social network sites. We endlessly debate the balance between freedom of the Internet and its global providers on the one hand, and privacy protection and prevention of identity theft on the other.

We are even rethinking our ideas of trust. There may be myriad new ways for data to work for our benefit, but do we want to divulge more and more of our personal information without a second thought? Do we want to make payments for services over mobiles and tablets in the name of efficiency and cost savings? Do we trust that our digitised data can be stored safely, on the promise of improved services in future? These questions, and the answers to them, are of paramount importance to the X-generation who are now adults.

The data driven government needs to ensure it is addressing these challenges and the issue of trust in order to retain an engaged and progressive society.

Big Data: beyond our imaginations

Digital transformation has spawned a massive growth in volume, variety, velocity and veracity of information – ie. Big Data. Experts estimated 0.85 zettabytes of global data in 2010, and this figure is expected to rise to 44 zettabytes by 2020.

Like cloud, Big Data has grown faster than people's ability to define it. It also means different things to different organizations. For our purposes, Big Data is simply all data that is or could be relevant to an organization. Where has it all come from? Big Data has emerged from the interaction of a number of technology developments that have created a surge of digital information.

Mobile devices such as smart phones and tablets have put astounding processing capacity into the hands of individuals, so they can generate data where and when it was impossible to do so a decade ago.

Social media web sites prompt nearly one-quarter of Internet visits, and the data generated from extended conversations and imbedded content is vast.

Multimedia transactions enhance communication, but the most popular formats are heavily data dependent: photos, videos and audio files.

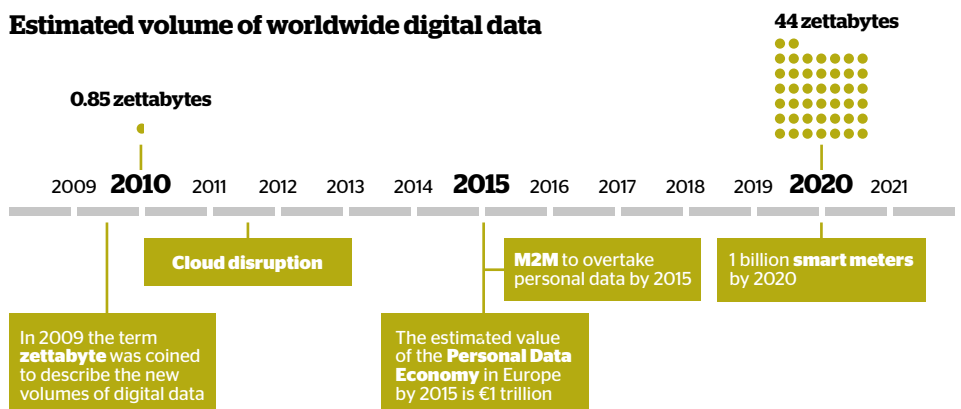
Sensors in meters and other devices are now collecting data about people's behavior 24 hours a day.

The **'Internet of Things'** is connecting more and more devices, and networking them to transfer vast amounts of data.

Expanding bandwidth has allowed much larger data file sizes to be transacted between individuals and organizations.

Information processing and storage capabilities has increased significantly, enabling organizations to transact and manage much larger volumes of data.

Estimated volume of worldwide digital data



Bigger and Bigger

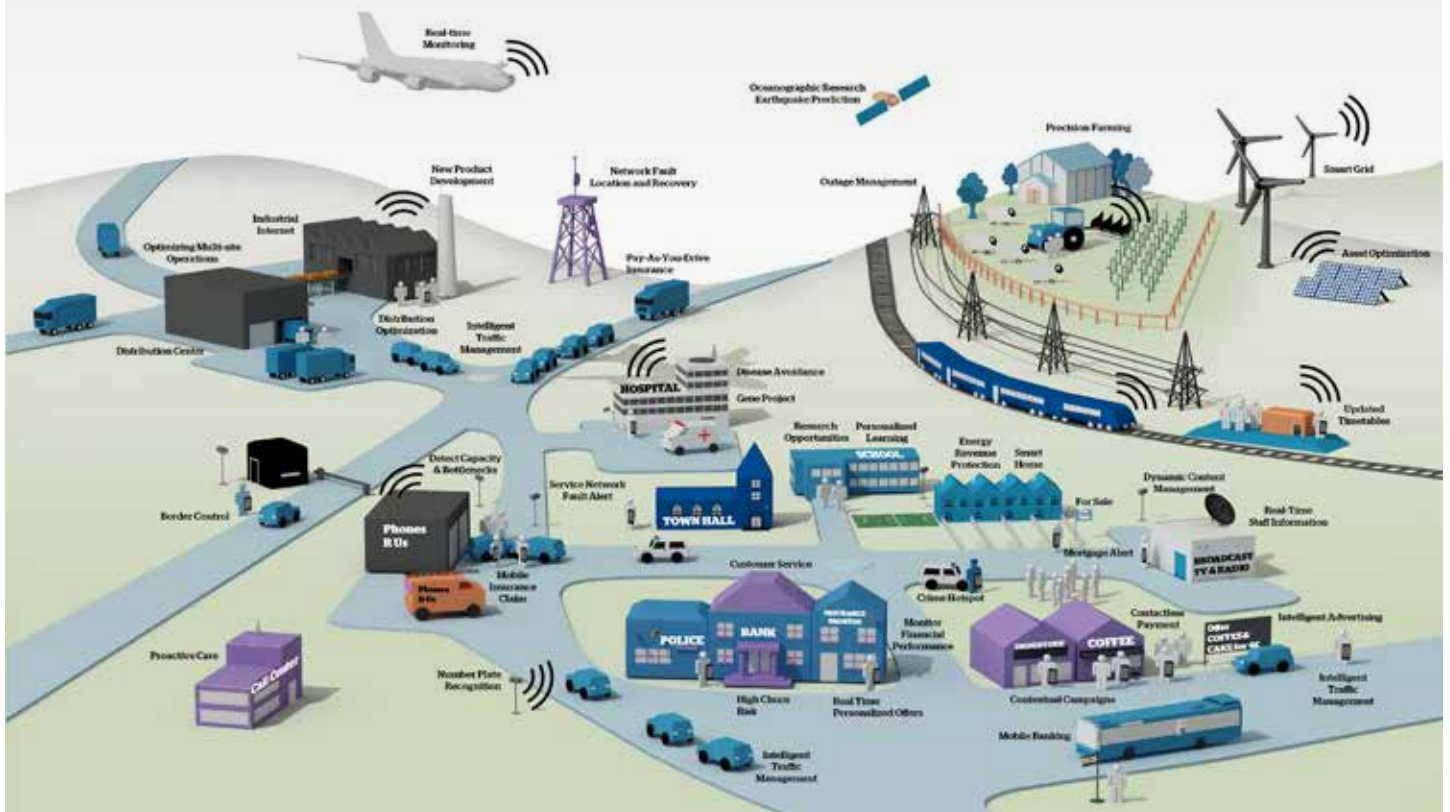
The volume and detail of information captured by organizations will grow exponentially for the foreseeable future – particularly in the form of unstructured data:

A data-led contract with citizens

So why is this data explosion so important for governments? Quite simply, Big Data is now touching, or will touch soon, every part of our economy and our lives. Governments and their agencies must harness the same data-led power that is changing citizens' perceptions of the world if they are to shape the intelligent, intuitive, and personalized engagement that citizens now expect.

Changing lives...and the ways citizens see the world

Big Data, generated from so many places, touches every part of economy and society:





Creating value out of data

It is happening now. All over the world, governments are exploiting Big Data to gain new insights and improve their services.

Saving lives

In a world where people can cross continents in hours and circle the globe in little more than a day, the threat posed by communicable diseases has never been greater. The increasing mobility of the population makes containment harder and the need to act quickly – and effectively – is essential to reduce the risk of an epidemic becoming a pandemic. And the one thing that can outpace an epidemic is data. By tracking and tracing incident reports in real time, analyzing patterns and predicting the risk of spread, governments now have the insight needed to coordinate an immediate and targeted response in collaboration with all the necessary stakeholders

Safer cities

Many cities are considering how to extract the maximum benefit from the opportunities presented by big data, but Eindhoven is one step ahead with an innovative CityPulse project.

In Eindhoven, the project collects data from a variety of existing data sources - including video, audio and social media - and analyses them to provide insight to the Eindhoven Police which allows them to recognize and identify potential incidents more quickly and so enables them to react more efficiently. But the concept of using Big Data analytics on the data that's gathered from a variety of existing sources can be extended to include a number of other areas - for example giving citizens alerts when pollution levels reach a certain threshold, or automatically redirecting traffic when parking or congestion parameters are reached.

Supporting vulnerable citizens

Many government bodies gather valuable information about the people they serve, but usually in isolation. Five public service organizations in South Wales are collaborating to track vulnerable citizens who slip between their separate databases. Local councils, health boards, and police are sharing information, deploying innovative data matching, and predictive analytics to better identify citizens and groups most at risk in the area.

Automated government

Connected citizens want public organizations to offer the same transaction speed and flexibility they enjoy in their homes and businesses - with anytime, anywhere access to automated services online. Purchasing services via mobile devices offers great convenience, so governments need to provide contactless and mobile payment facilities that offer total privacy and convenience. Automated government should also be 'joined up', so citizens get value and cross-service information when making transactions.

All over the world, governments are exploiting Big Data to gain new insights and improve their services...



Securing success

So opportunities to exploit Big Data are developing quickly, but governments need to be aware of the success factors they must achieve to be truly data driven:

Into the clouds

Data Analytics as a Service for Big Data is a cloud delivery model helping governments to gain valuable service insights with great cost effective benefits. It is being used to deploy predictive maintenance solutions in remote installations: detecting losses and fraud, analyzing service performance, and monitoring communications management and citizen behavior.

Personalized data

Citizens expect personalized services and processes in all aspects of their lives, and this will increasingly be expected in their relationships with governments. Self-service provides boundless opportunities for citizens to communicate directly with governments through e-channels, and become partners in a dynamic evolution of public services.

Cyber security

With more shared and analyzed personalized data, protection against threats is paramount. Data driven governments must take strong measures to prevent damage to, unauthorized use of, or exploitation of all electronic information and communications systems. They must also constantly revise laws and put effective privacy protections in place accordingly.

Managing data

Storing and managing the volume, velocity and variety of Big Data is a crucial task before its value can be extracted. Cloud solutions can deliver easy and cost-effective access to the computing power and storage capacity needed for new initiatives - with security and compliance issues resolved by the cloud provider. Cloud can also help to cut costs significantly by enabling computing power and additional services to be purchased as needed, with scaling of resources up or down to support fast reaction to changing citizen demands.

Improving performance

Big Data can add a new dimension to an old challenge: maximizing and optimizing operational benefits from digital assets. Big Data can sometimes seem overwhelming, and a barrier to performance improvement, but it should be a powerful tool: enabling design of services and processes that are streamlined and cost-effective, and comprehensive operational reporting systems that deliver faster and simpler compliance solutions.

New roles for government

Government tasks and roles are undergoing all kinds of change, and this will impact operations and digital relationships with citizens in fundamental ways. The European Commission's Europe 2020 Initiative is an important example: it sets challenges to improve productivity, research, and speed up innovation through improved data analysis. It seeks cost reductions through more personalized services, and increased efficiency across the public sector.

Extracting value

Extracting the real value of data for governments or any other organization requires sophisticated analysis and interrogation tools and disciplines.

Organizations need to ask themselves how confident they are to perform that analysis. Is their data accurate, current, and reliable enough to provide insight into their operations?

And do they need help? Analyzing unstructured data is even more challenging and it is important to partner with business technologists with the expertise and knowledge of these technologies.

The right way ahead

Governments have never been under so much pressure to deliver services to citizens more effectively, seamlessly and cost effectively.

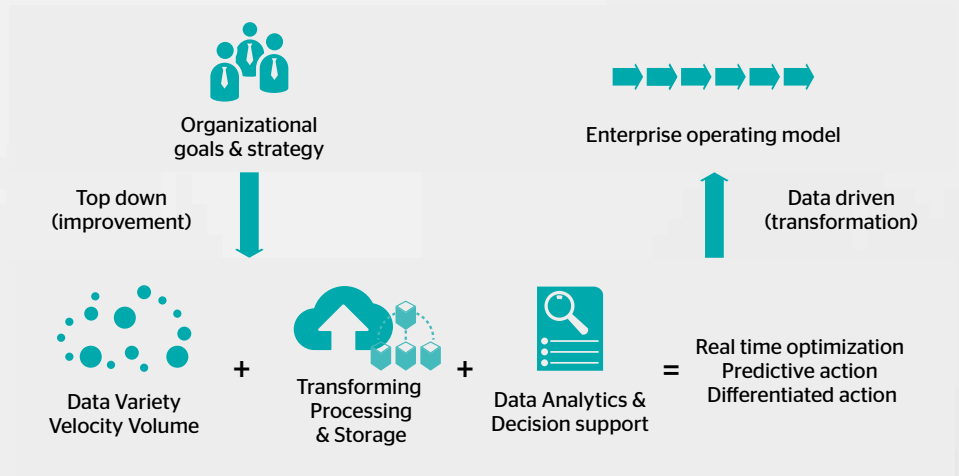
Citizens are empowered by technology, and are conscious of their rights as individuals. An ageing and more diverse population is also creating demands for new types of public services, while budgets simply cannot keep rising to match changing requirements.

Governments and public sector organizations must find new strategies to deliver cost-effective, rapid and robust services, while bringing the citizen into the center.

The most compelling solution is to be data driven, using powerful intelligence extracted from Big Data to establish an evidence-based foundation for addressing the challenges of digital transformation, and designing the most efficient, sustainable, secure, and responsive services for the citizen.

Public sector stakeholders need support to exploit this opportunity. Insightful analysis of ever-changing Big Data requires a responsive information and communications infrastructure, and a proven partner to provide advice and guidance along the way.

Big Data: concept



Data analysis objectives are common across many types of organization. The experience of Atos customers from a range of private sectors holds relevant lessons for many government agencies.

Akzo Nobel has harmonized and integrated its data from multiple, complex data sources to provide all staff with business insights, at any time, on any device. As a result it has gained faster time to market for its products, better aligned planning and production, and improved monitoring and financial consolidation.

A major agricultural equipment manufacturer has successfully implemented a global program that enables it to translate complex agricultural data into higher yields for its farmers. By combining real-time IoT data (on their farming equipment) with weather data and satellite images of crops (which can identify infestations) they are able to make recommendations to farmers on the actions they should take.

A cosmetic company which lacked a single consistent view of its data across its operations and systems has been able to harmonize financial control, centralize reporting across all systems and monitor financial performance across 82 countries and multiple business areas. Centralized architecture and governance now provides them with the ability to report and analyse globally, by country and by division.

Big Data requires a shift in our perceptions about the nature of intelligence that can be extracted



You are invited...

We offer a program of Big Data discovery initiatives especially for our Public Sector clients. Our data analytics and government specialists have combined resources and we are eager to invite you to join us.

As participants, you will have direct access to the full range of Atos expertise and experience in Information Management and Analytics. Our business technologists will begin by working with you to create your own vision for Big Data, asking how the advanced analysis of real-time and historical information can:

- ▶ **Contribute directly to the quality, intimacy and profitability of customer service**
- ▶ **Reveal the usage patterns around which you can design new services with confidence**
- ▶ **Augment the value of collaboration with partners from within and beyond your sector.**

We will set up explorations and proofs-of-concept very early during your discovery program. Taking advantage, for example, of our analytics-as-a-service capabilities, there is no reason why your organization should not be sharing new and differentiating insight in weeks not months.

About Atos

Atos SE (Societas Europaea) is a leader in digital services with 2014 pro forma annual revenue of €10 billion and 86,000 employees in 66 countries. Serving a global client base, the Group provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & Security solutions, as well as transactional services through Worldline, the European leader in the payments and transactional services industry. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defense, Financial Services, Health, Manufacturing, Media & Utilities, Public Sector, Retail, Telecommunications and Transportation.

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

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