
integrated water management

sustainable and effective futures



Your business technologists. Powering progress

Atos



Water is life

Water is not just about drinking, cooking and washing - it's about energy and power, food production and manufacture, leisure and transport - it's the foundation of all human activity. We owe it to the world to make sure that every advance in business technology helps progress the management of this most valued of natural resources.

Challenge and change

Although we live in a period of massive urbanization, the rules which governed the very earliest centers of population still apply: the limits of the water supply dictate the limits of urban development. But for today's water management professionals, the challenges reach far beyond production, transport, storage and distribution.

Changing relationships

Water companies, whether in public or private ownership, must drive change in their relationships with those they serve.

Electricity companies are now in the front line of education for more responsible power consumption. Water companies must do even better. They must develop a position of leadership in social endeavor, helping businesses and citizens learn how to optimize their own water consumption.

This is nothing new. Water companies have been encouraging people to fix drips and put "bricks in cisterns" for forty years and more. But today, they have tools and techniques for managing leaks and wastage, social education and financial incentive that would have been science fiction just a generation ago.

But it's not just the consumers where better relationships are demanded. Water companies must also establish effective communication across their own workforce. They also need to maintain close and responsive relationships with government and regulatory bodies – and with the complex networks of civil engineers and contractors who are changing our urban landscapes.

Water remains the most precious of all our natural assets and the massive increase in demand for water can place an almost impossible strain on resources. Worldwide, we consume around one billion liters of water every six seconds.

Domestic: In our homes, we use baths, showers, washing machines and dishwashers. Domestic metering is not yet the norm in all countries, and most people are more likely to think about power than water consumption.

Industrial and agricultural: Around 70% of the world's water is consumed by agriculture, with industry of every kind getting thirstier. It can take, for example, as much as 4000 liters of water to produce a single liter of bio-fuel. Water is also essential to power generation.

Civil: Our cities and civil authorities are massive consumers too, requiring constant and high-volume supply for everything from street cleaning and irrigation to leisure activities.

But it's not just usage which changes.

- ▶ **Climate change** means increasingly violent swings between flood and drought conditions, with the need to manage the consequences in terms of availability, supply and quality.
- ▶ Water management authorities need to plan and fund a continual cycle of maintenance and renewal of **aging infrastructure** dealing with leaks and in parallel with extension into newly urbanized areas.
- ▶ **Regulation and deregulation** create new models of private and public partnership, in which water companies need to both deliver a service to the consumer and a business return to the financial stakeholders.

And beneath all this activity, one common imperative holds constant: **water supply and water quality** must remain of paramount importance. Every water company needs to ensure that where water is declared potable, it is protected against both accidental and malicious contamination.

Understanding difference - exploiting similarity

As an international company with operations in over 40 countries around the world, Atos is acutely aware of the need to understand and adapt to local conditions. This is particularly true in water management where the traditions, culture, operational models and climatic conditions differ so widely.

Even before we look beyond Europe, the differences are dramatic: in parts of Northern England, for example, people are used to annual rainfall of around 3200mm while in Southern Spain, 350mm is considered a wet year. But modern living is modern living, and people in Manchester and Malaga both expect to use their dishwashers and washing machines at least two or three times a week.

But difference is about more than climate ...

Ownership and operation

Every combination of public and private ownership can be found in water management.

Scale and focus

Water management has traditionally been organized at a municipal or regional level. But the mix is changing, as the largest private operators seek international expansion.

Governance and regulation

Even where full privatization is the norm, the industry is rightly subject to strict regulation - both with regard to price and water quality.

Technological maturity

Levels of technological maturity differ widely across the water industry.

Water companies are already beginning to mirror the developments in smart grid and smart metering driven by the electricity providers.

As a specialist provider of ICT services and solutions to the water industry, Atos is acutely aware of the need to be able to respond to these many local differences.

At the same time, we are keen to help our clients gain the immediate benefit of shared best practice and experience - because despite the differences, we encounter critical common concerns in every country in which we do business.

Shared experience

When 20% of your country is below sea level, it's not surprising that you learn a lot about water management. Our Dutch water management experts work in close collaboration with public and private sector organizations. We have similar levels of expertise in Spain, a country with very different challenges in water. Across Atos, our water experts work collaboratively, sharing ideas and experience to create new value for our water industry clients.



Common concerns - shared experience

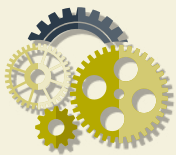
Every water company we meet shares certain common objectives. Our clients recognize that their ability to manage water safely, efficiently and profitably is increasingly tied to their ability to manage information.

This requirement falls into five distinct categories:



Customer service

Changing the relationship with domestic, enterprise and civil customers - involving them in service improvement and optimizing all aspects of account handling, billing and payment. By allowing customers to track and modify their own consumption patterns, the water company customer service is end-to-end - from meter to cash.



Process control

Ensuring that a clear, timely and actionable view of all aspects of water processing, transport, storage and distribution is available - and that real time automated control processes can be exploited to the max. We help our customers in their desire to move from local to global supervision, for a joined up view across multiple plants.



Quality and diagnostics

Being able to identify and act on data from massive installations of simple sensors. Ensuring that reactive maintenance needed for repair is efficient and that effective preventative maintenance can be planned and executed for renewal according to impact and urgency. In combination, this becomes the foundation for rule-based predictive maintenance.



Resource management

Helping maximize the productivity of extended teams of support and maintenance workers, taking full advantage of GPS and job planning on the one hand, and on ruggedized field-force devices on the other. We deliver mobile workforce management systems, closely linked to both our customers' Geographical Information Systems and Enterprise Asset Management Systems.



ICT orientation and strategy

Helping water companies envision and implement their ICT strategies. We ensure that information and communication systems remain closely aligned with evolving business need, managing both large scale transformation programs and day-to-day change.

In all these activities, the nature of information is changing. Fragmented silos shift to big data models. We are moving from **reporting** to **real-time** - from the need to gather information after the event to the need to produce current intelligence which is **immediately actionable**.

If you are able to make this shift from "reactive" to "predictive", then you create clear benefit for your company, your clients and indeed for our wider environment.

- ▶ Incidents can be identified and rectified before they become more serious - and more costly to correct.
- ▶ Continual analysis of water quality and demand allows treatment to be fine-tuned - saving resources, chemicals, energy and money while lowering risk to health and reputation
- ▶ Customers become actively involved in the service relationship - modifying their own behavior for a better deal and lower peak consumption



Time to connect

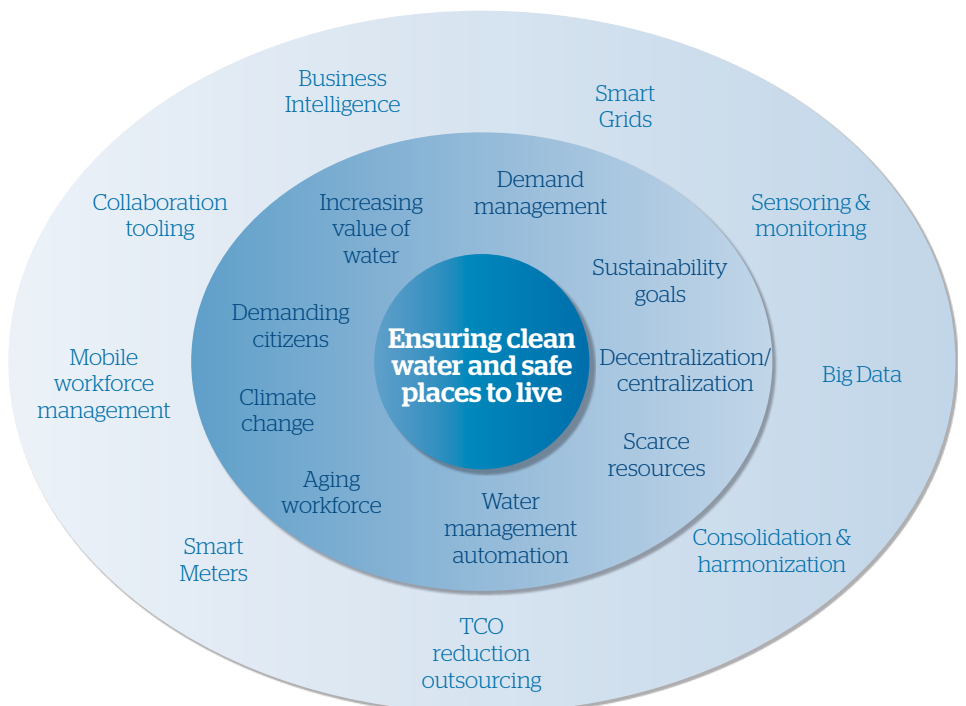
The information systems in daily use by most water companies are rarely fully integrated. Many legacy systems are obsolete and are now showing their age. They may manage to fulfill the functions for which they were originally developed - but are they fit and affordable for future purpose?

"If it ain't bust, don't fix it." This approach is fine if all you want to do is carry on exactly as you are. It cannot, however, help you meet the dynamic challenges that lie ahead. The good news is that you can control and plan system change to meet new objectives in a way which will ultimately reduce cost and increase opportunity.

Today	Tomorrow
When systems are siloed people think and act in silos. Incident reporting, job prioritization, scheduling and repair, for example, are linear and barely joined up - frustrating for workers and customers.	Openness and interoperability boost efficiency and value. Could you, for example, provide a public incident reporting portal, and reward customers who use it, raising your own reputation by automating notice of resolution?
The cost and diminishing skills base needed to support legacy systems limit the scope and resource available for developing new high-value applications.	Shifting to industry-standard application environments speeds development while minimizing management costs. There is no value in inventing what already exists.
Batch processing of accounts and billing adds nothing to the value of the client relationship.	Using standard customer portals and communication tools allows you to offer flexible payment options - minimizing debt and extending client relationships.

The key to driving these changes lies in your ability to see the big picture - to understand the potential associations and dependencies between the business (IT) and operational (OT) systems on which you rely.

The Atos team uses a comprehensive model which enables you to analyze and audit your current systems landscape. We do this from a combined operational, business and technology perspective. With this approach, we can explore priorities, make connections, and craft viable and affordable roadmaps for change. Application rationalization is at the heart of this activity.



Transformation for real

Here are just a few examples of Atos engagements with water industry clients. Each of these reflects our intense focus on creating new and sustainable business value. In each of these cases, one common factor underpinned success: our clients' willingness to embrace change.

Paris Mery sur Oise (France)

Veolia is the world's number one in water management. At the Méry sur Oise plant to the North of Paris, they needed to anticipate and respond to frequent changes in demand – always making water quality the top priority.

The fully automated Atos solution delivers real-time operational data from the SCADA system, to the intelligence repository that powers the plant's expert systems. The entire operation - from pump to tap for millions of customers - is completely unmanned at night and over weekends.

The Atos solution also delivers sophisticated predictive maintenance, ensuring minimum cost of intervention and maximizing the safe working life of all components.

Geneva Water and Waste (Switzerland)

Services Industriels de Genève manages over 80 water purification and waste management plants. They also provide hydro-electric power. As with many water management companies, energy costs were their biggest outlay.

The Atos SCADA solution not only allows them to fine tune energy consumption, it also allows them to get the best deal by producing water according to the most favorable spot price.

Aigues Reus (Spain)

When the three Catalan municipal water companies of Reus, Vilafranca and Tremp located in north-eastern Spain decided to share a single SAP ISU solution, they chose Atos to integrate and optimize their individual investments.

Atos has helped achieve global management savings and synergies. We continue to provide application management services and the development of new solutions to meet changing business needs.

Metropolitana Milanese (Italy)

This integrated water and waste management service provider needed to optimize field call-outs, accelerating the time-to-resolution in one of Europe's busiest cities.

Atos deployed a workforce management solution, integrated both with GIS and the company asset register. This enables the nearest available engineer to get to the job, with full documentation on hand.

KWR - Watercycle Research Institute (The Netherlands)

For the influential Watercycle Research Institute, Atos implemented Watershare - a collaboration solution. This dynamic workplace helps their widely distributed community of associates work together even more effectively.

Atos in water management

Atos has a team of some 3000 specialists serving the utilities sectors. We are a respected provider of water management IT solutions and services across Europe.

Most water supply and sanitation companies are still focused on local, municipal and regional markets. We serve these players across the EU in Spain, Italy, France and the Netherlands, and across the EU. We also work closely with the major international water industry players to help them develop local business through our own network of worldwide operations.

We are active participants in numerous specialist Water Industry forums, including WssTP and Acaqueau.

We partner with leading technology players whose products and technologies are increasingly being adopted by water companies. These include SAP, EMC and VMware. We are also working in partnership with specialized water and civil engineering companies. With Witteveen + Bos, for example, we published the acclaimed white paper, **Urban Water Cycle Future Visions, 2023**.

Next steps

Water supply and sanitation companies still remain in charge of water management at a local level. There is no way that a municipal water company can match the research and technology budgets found, for example, in the pharmaceutical or defense sectors.

For this reason, it becomes even more important to share ideas and to adopt common platforms and practices.

Atos is eager to help share a wealth of experience and best practice. This not only relates to the emerging trends and technologies which are about to transform so much working practice. It relates to the process of change too – we are ready to help you prioritize, plan and budget too.

Whether your immediate focus is on how to harness the potential of low-cost sensors in the distribution network; to create a more interactive platform for client communication; or to boost efficiency for your maintenance crews - we're ready to deliver.

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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 over 76,000 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.

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For more information:
Please contact marketing@atos.net
or visit atos.net

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