



## Best Practices

# Northumbrian Water Transforming Field Service with Mobile Workforce Management

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## IDC ENERGY INSIGHTS OPINION

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Northumbrian Water Limited (NWL) is a water and sewerage company supplying water and wastewater services to 2.7 million customers in the northeast of England as Northumbrian Water, and water services to 1.8 million customers in parts of Essex, Suffolk, and Norfolk as Essex & Suffolk Water.

As part of its vision to be the U.K.'s leading water and wastewater company, in 2012 NWL embarked on a program aimed at transforming field service operations. The objective was to implement significant and sustainable improvements to field service operations by designing and implementing changes to NWL processes and technology to ensure that the company delivers work at the right time with the right people in the right place.

Key features of the program include the following:

- The development of a transformative operational business vision of field services jointly executed by business and IT in four months as the foundation for change.
- The deployment of a consistent end-to-end field service management process across the serviced territory.
- The implementation of a new mobile workforce solution executed in about 15 months by Infosys in collaboration with NWL using Oracle Utilities Mobile Workforce Management (OUMWM) software. The solution has been in operation since November 2014.
- While still in deployment the field service program generated financial benefits of about £1.2 million. Even more is expected in the future considering the project is improving productivity in planning, scheduling, execution, and completion of works. Manual processes and hand-offs are eliminated resulting in lower costs and risk of errors as well as improved safety in operations. Significant savings are also coming from having aligned processes across the entire service territory.

## IN THIS STUDY

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In 2012 Northumbrian Water Limited (NWL) embarked on a program to transform field service operations. The first step was to develop an operational business vision as a foundation for change to then move to implementation. This study describes NWL's new mobile workforce management (MWM) solution implementation, using the Oracle Utilities Mobile Workforce Management product and executed by Infosys. It also describes the approach taken, the business value, and the lessons learned.

## IDC Energy Insights Case Study Series

IDC Energy Insights' case study series provides utilities with fact-based, comparable, consistent, and independent views on interesting projects implemented across geographies. The focus is on IT and operational technology solutions or, more broadly, on energy technology initiatives contributing to innovation and sustainability. Collaborating with utility companies and vendor personnel directly involved in the projects, IDC Energy Insights analysts gather all relevant information and provide an analysis of the approach and the solution's success in meeting the organization's stated goals. Case studies are assessed against four criteria that IDC Energy Insights believes are critical to generate additional value: contribution to operational effectiveness, degree of technological innovation, transformational impact on the company's businesses, and, more broadly, on the utilities industry value chain.

### *Why This Case Study?*

This case study was selected as a best practice example taken by a water company in implementing enterprise mobility and transforming field services. The study demonstrates how the latest mobile technologies enable innovation in the area of field worker operation, positively impacting efficiency, safety, and worker empowerment, as well as ultimately supporting the company's business goals of operational excellence and superior customer service.

## SITUATION OVERVIEW

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### England and Wales Water Industry

The water industry in the U.K. is privatized and intensely regulated. According to Ofwat, there are 32 regulated companies in the water and sewerage services sector in England and Wales, including 10 regional monopoly companies that took over from 10 public water and sewerage bodies which were privatized in 1989, and provide both water and wastewater services. In addition to the private regional companies, a number of smaller privately owned "water only" companies continued to operate more or less as they had done prior to privatization.

Currently, water and sewerage companies are vertically integrated and responsible for providing a range of services, from managing the collection, storage, treatment, and distribution of water and sewage, to dealing with customer inquiries. Since the privatization, a regulatory framework has been in place to ensure that consumers receive high standards of service at a fair price.

The water industry in the U.K. is highly regulated. The Water Services Regulation Authority, Ofwat, is the economic regulator of the water industry in England and Wales, and is responsible for protecting customers as well as assessing the performance of both water and sewerage companies and water-

only companies. One of Ofwat's main roles is to set the investment and service package that customers receive, as well as setting limits on the prices the companies can charge their customers. Since Ofwat sets pricing limits every five years, water companies are currently in the last year of the 2010-2015 price control period and submitted a new five-year business plan in 2014 for the next price review, which will determine the next price control period from 2015 to 2020.

In addition to Ofwat, the water industry is also overseen by other bodies including the Environment Agency and the Drinking Water Inspectorate, which regulates water quality, and the Consumer Council for Water, which represents the interests of water consumers across England and Wales. The industry must also comply with national and European legislation.

The new Water Act 2014 was one of the most significant reforms in the sector since the 1989 privatization and introduced competition in the non-domestic market. The measures introduced are designed to overhaul the water industry while maintaining a stable regulatory environment, making it more competitive, innovative, and responsive to customers, increasing the resilience of water supplies to natural hazards such as drought and floods, and planning for a smooth transition to a free water market over the longer term. Key reforms in the act include:

- Opening of competition in the non-household retail market in England from April 2017
- Establishing a joint retail water market between England, Wales, and Scotland
- Developing a national water supply network by making it easier for water companies to buy and sell water from each other
- Enabling owners of small-scale water storage to sell excess water into the public supply
- Providing measures to restore the sustainable abstraction of water
- Improving the way water resource management and drought planning are managed by providing ministers and Ofwat with new powers and duties
- Providing powers to streamline the environmental permitting framework

## Company Overview

Northumbrian Water Group (NWG) is a U.K. holding company with subsidiaries operating in the areas of water supply and wastewater services, water and wastewater contracts, and technical and consultancy services focusing on water and environmental issues. The largest company in NWG's portfolio is Northumbrian Water Limited (NWL), which is one of 10 privately owned regional monopoly companies licensed to provide both water and sewerage services England and Wales.

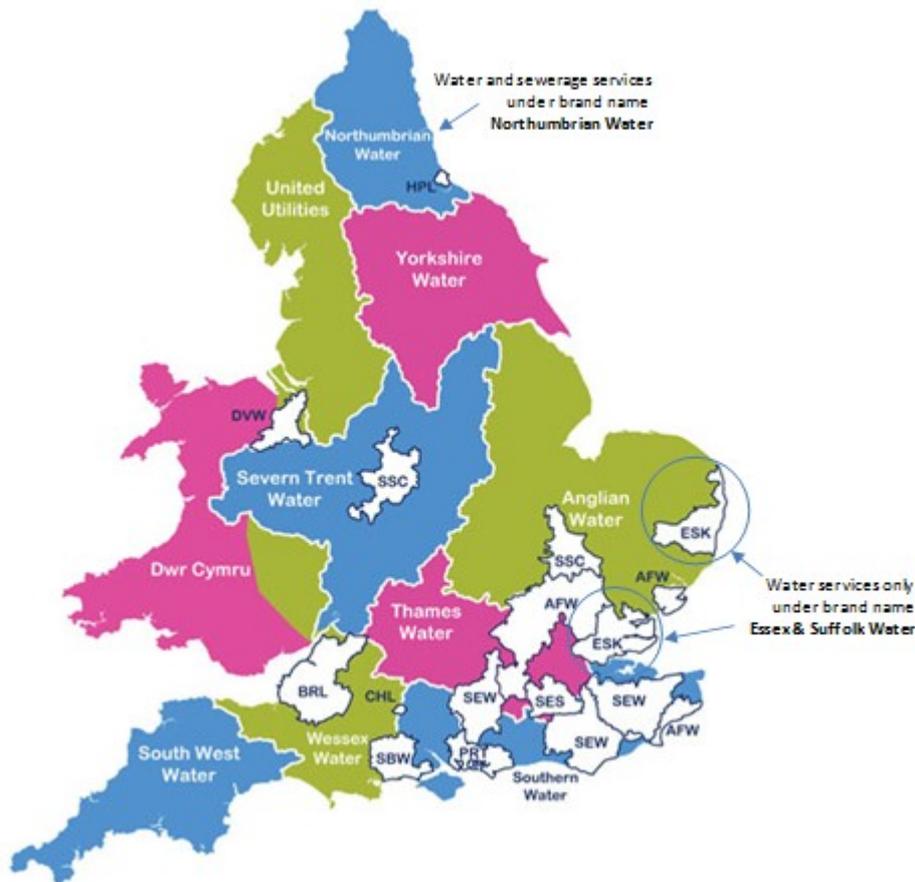
Previously known as Northumbrian Water Authority (NWA) – one of 10 public sector regional water authorities created under the Water Act 1973 – NWG (and NWL, comprising NWA's former water and sewerage activities) was formed under the Water Act 1989 as part of the U.K. government's program for the privatization of the water industry, and privatized in October 1989. NWG's current asset holdings structure stems from the acquisition of the group by France's Lyonnaise des Eaux in 1995 and the later merger of Lyonnaise-owned North East Water (1996) and Essex & Suffolk Water (2000) into NWL. Following a cash acquisition by UK Water (2011) Limited – a company formed by a Hong Kong-based consortium led by Cheung Kong Infrastructure Holdings Limited, Cheung Kong (Holdings) Limited, and Li Ka-shing Foundation Limited – NWG was delisted from the London Stock Exchange in October 2011.

NWL is the principal water and sewerage service provider in the northeast of England and parts of North Yorkshire, where it operates as Northumbrian Water. It also provides water services in southeast England under the brand name Essex & Suffolk Water (see Figure 1). Overall, the company serves 2.7

million people in the north with water and sewerage services and 1.8 million people in the southeast with water services. The company supplies over 1,200 million liters of clean water a day and is responsible for collecting, treating, and releasing back to the environment the wastewater this generates in the northeast (within NWL's areas of supply in the southeast, sewerage services are provided by Anglian Water and Thames Water).

**FIGURE 1**

**Northumbrian Water Limited's Service Area**



Source: Ofwat, 2014

NWG is an extensive asset owner. The company owns and manages around 25,545km of water pipes and 29,724km of sewers, 44 impounding reservoirs, 57 water treatment works, 344 water pumping stations, 338 water service reservoirs, 765 sewage pumping stations, and 418 sewage treatment works over a 12,300 square kilometer service area. The company employs around 3,000 people, including 370 field technicians and back-office support staff.

## Business Needs

NWL's vision is to be the national leader in the provision of sustainable water and wastewater services. The company is constantly looking for more efficient and innovative ways to improve its services.

From an infrastructure perspective the company's goal is to operate and maintain all assets to ensure they are able to provide good service now and in the future. Securing asset health and working efficiently on assets is critical to keep bills as low as possible. About 1,000 people, one in three of NWL's employees, are mobile workers. This makes mobile strategy the pillar of the field service transformation.

## Management Challenges

As mentioned, NWL operates in the northeast and southeast of England. The two areas have very different economic, demographic, and water resource characteristics.

In the northeast, there has been a gradual fall in overall water demand in recent decades as a consequence of a reduction in industrial demand for water. This trend is expected to continue but the pace of decline has now stabilized after some industrial closures during the economic recession. In the northeast security of water supply is high and Northumbrian Water also provides the highest levels of compliance for wastewater.

The southern operating area is in a water-scarce region that is forecast to experience further economic and population growth in the medium term. While this area has also seen a reduction in demand from heavy industry, the recent economic growth has led to significant housing growth. The company recently launched a major water resources scheme which will secure supplies in the driest region in the U.K. for many decades.

Field service operations across operating areas have to cope with several challenges. In the two regions that the company operates in, it was working with an unaligned organization with regional variations of the same processes. Overall, manual scheduling was not optimizing resource allocation and was costly, there was no forecasting capability, and field workers were frustrated with receiving outdated information about the equipment they were maintaining. From an IT and device perspective there were too many applications and outdated devices, like PDAs.

In this context, NWL decided to innovate field services through a mobile strategy capable of delivering the right information to the right people at the right time. Mobile workforce management (MWM) plays a central role in achieving NWL's goals. The company wanted to:

- Improve operational efficiency and customer service by mobile-enabling its workforce
- Enable its remote workforce to minimize water service disruptions
- Establish economies of scale with a scalable mobile development, integration, and deployment architecture

## THE BEST PRACTICES

### Project Background and Objectives

NWL's field service transformation program was initiated in 2012. The objective was to deliver significant and sustainable improvements to field service operations by designing and implementing change to NWL processes and technology that ensure the company delivers work at the right time with the right people in the right place.

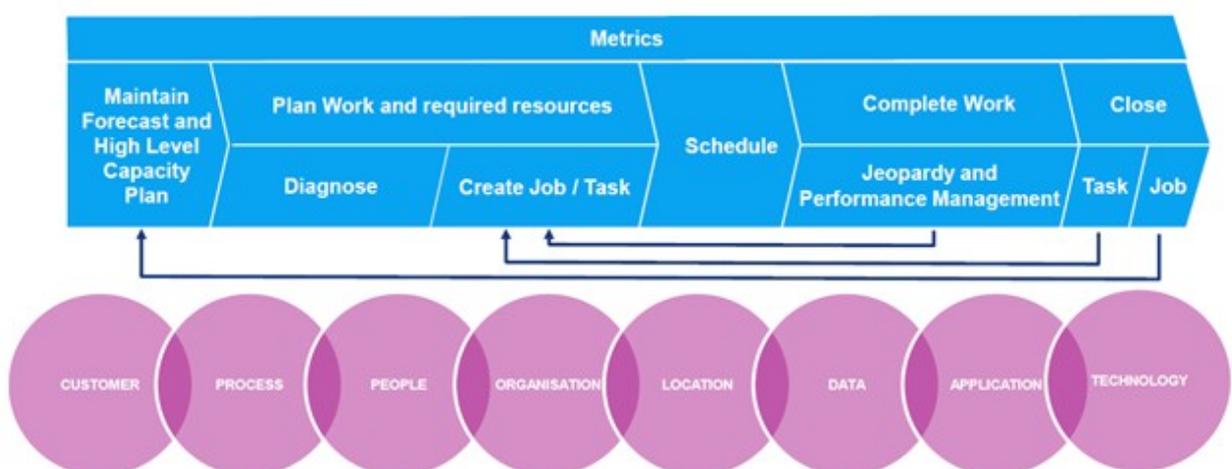
The scope of the program was an end-to-end field service management process considering multiple components in the vision, as shown in Figure 2.

The program was articulated along three stages:

- **Vision: from September 2012 to January 2013.** The transformative operational business vision was developed working on real scenarios. Fifteen workshops involving 92 line workers were set up to redefine activities and identify requirements. This vision was the foundation for change within the company.
- **Blueprint: from February 2013 to August 2013.** During this stage, field devices (Panasonic Toughpads and iPhones) were evaluated and the MWM solution proof of concept executed (with Oracle Utilities Mobile Workforce Management software). This was the first stage in process alignment. This stage was critical to validate the business case and set the investment to move the program forward.
- **Implementation: from September 2013 to end of 2014.** The deployment was organized along three major deliveries: September-November 2013 for iPhone and time capturing app; May-July 2014 for Panasonic Toughpads and GIS; September-November 2014 for Oracle Utilities Mobile Workforce Management, executed by Infosys.

FIGURE 2

### Field Service Transformation Program: Process Scope and Vision Components



Source: NWL, 2014

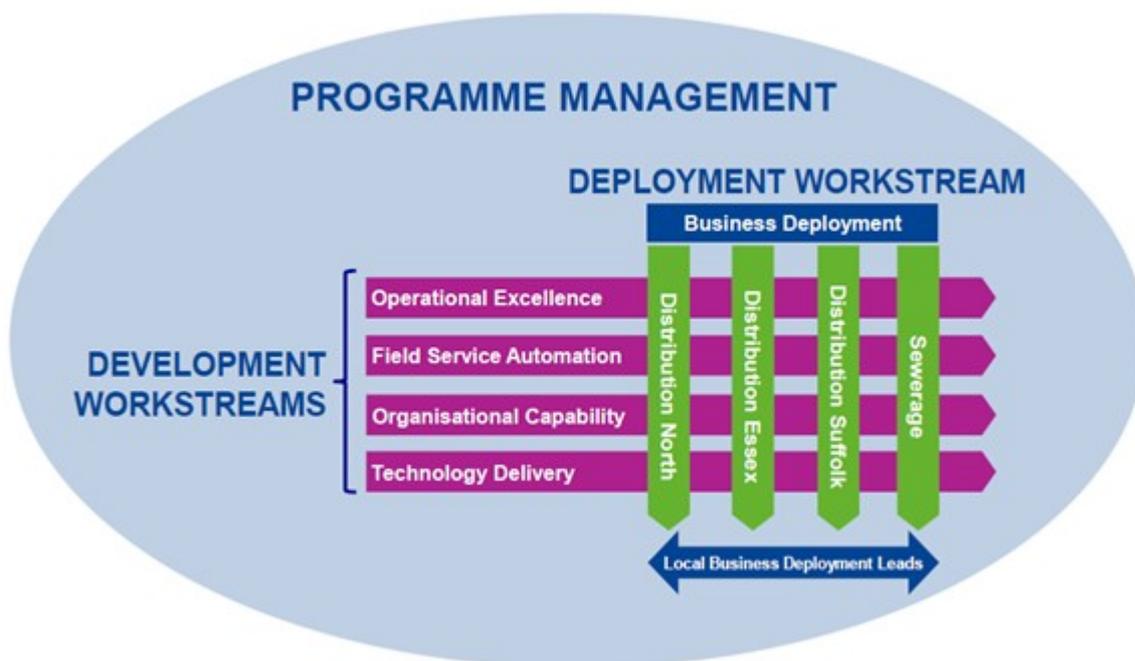
To overcome the issues encountered during previous unsuccessful field service transformation attempts, the following principles informed NWL's approach to execution:

- Confidence built via incremental benefits: attaching and releasing benefits for each stage of the project, including visioning and blueprinting
- High front-line engagement: facilitating discussion of options even if the most likely solution was obvious
- As much as possible done internally: selective and focused use of consulting firms, systems integrators, and specialist expertise plus a steep learning curve
- Strong business sponsorship: water director (EVP) as sponsor
- Accountable business leadership: senior business managers in key roles
- One Program... One Team: co-location of business and technology

The overall program management was articulated in workstreams for development and deployment, as described in Figure 3.

**FIGURE 3**

**Field Service Transformation: Program Organization**



Source: NWL, 2014

**Solution Description**

A new mobile workforce management solution, with a more advanced and real-time scheduling and dispatching system, has been implemented to streamline and replace the disparate scheduling procedures which were paper based and manual.

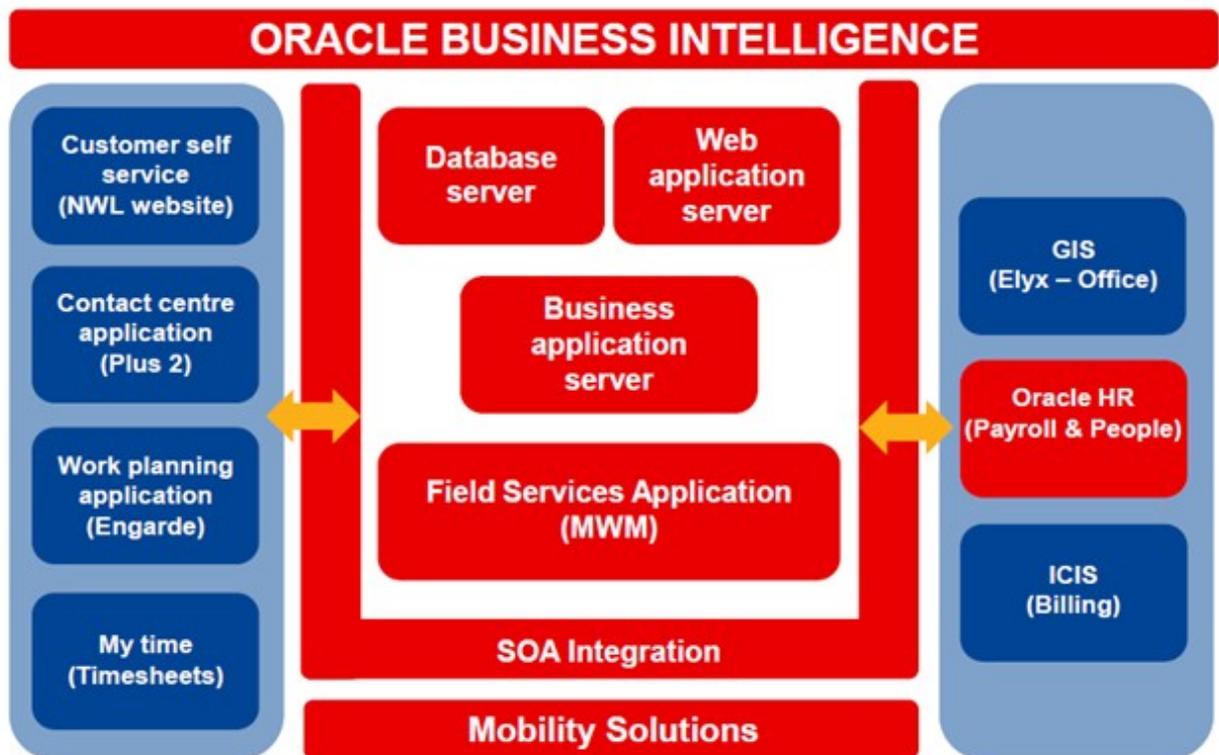
The implemented solution has three distinct functional components:

- **Resource planning and scheduling.** Supports resource planners, dispatchers, and service managers in managing resources, planning shifts, and scheduling work. The system manages activity requests sent in from host systems, automatically generates shifts, and allocates activities to shifts based on skill set match, duration, and time windows. The scheduling engine also optimizes the schedule based on business rules.
- **Common dispatching functionality.** Supports dispatchers as they handle exceptions throughout the day, and enables context-based decision making at the dispatcher level. Alert types are defined in the system to alert the dispatchers of any issue so that they can intervene manually to resolve the situation. The system can be configured to automatically dispatch all activities or limit auto-dispatching to a certain number or activity types or shifts.
- **Mobile communications platform.** Supports mobile crews as they perform service work, facilitating communication with the dispatcher, providing GPS-based mapping services, and processing activity status updates and work completion details. The application runs on a mobile data terminal (MDT) device. This platform enables the application to work in offline mode in case of network disconnects or network black spots and synchronizes with the server when it comes back into connectivity.

Figure 4 shows the overall application landscape from the mobile workforce management solution viewpoint. The product selected was Oracle Utilities Mobile Workforce Management (OUMWM).

**FIGURE 4**

**Architectural Approach**



Source: NWL, 2014

The red boxes are Oracle modules and products. The blue boxes are existing enterprise modules in NWL. Two of the key enterprise systems integrated were:

- "EnGarde" – the core Work and Asset management system in NWL and the primary source of all planned asset maintenance and inspection related work that is sent to MWM
- "Plus2" – the Customer Contact Application and the primary source of all customer-related work for MWM

To implement all identified integration interfaces, Oracle SOA Suite was used as the middleware integration platform and Oracle Service Bus as the core service bus. This was the first time that service-oriented architecture (SOA) was used at NWL. From the beginning of solution design, one of the key considerations was to look for "extensibility" and "future proofing." In this way if NWL decides to implement Oracle Customer Care and Billing or Oracle Utilities WAM in future, integration with the mobile workforce management solution will become seamless as the newly constructed SOA framework can be used to bring on additional components on the stack with minimal effort.

Some other aspects to consider are:

- Availability of intranet apps to field workers through direct access (akin to VPN-based security access)
- Windows 8.1 on Panasonic Toughpad FZ-G1
- Clustering of servers to enable "high availability" of the system
- Solaris 11 – Unix operating system
- Future functionality extensible – OUAF framework based development
- Underlying framework for Oracle Business Intelligence (BI) through Oracle Business Intelligence Enterprise Edition (OBIEE); MWM Analytics for BI

## Selecting the Solution

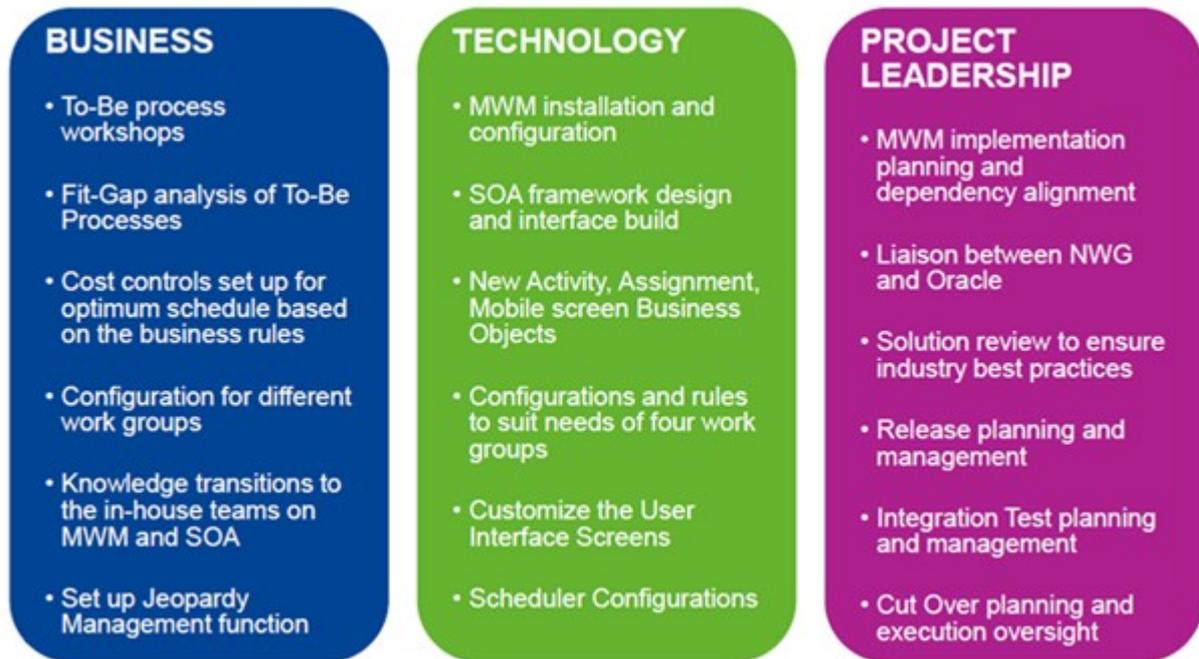
OUMWM was shortlisted and selected, in combination with Oracle Utilities Mobile Application Framework, among other software solutions. As already described, NWL has other Oracle software like Oracle HR and Oracle Business Intelligence and is planning to roll out a new customer billing system as well as a new enterprise asset management solution in the future. On top of matching requested functionalities, NWL selected OUMWM as it enables these future rollouts with reduced impact. It is device-independent and easy to configure, and SOA support is available out of the box.

## Implementing the Solution

Northumbrian Water selected Infosys to implement the solution. The main reasons for selecting Infosys were its deep domain and product expertise and track record, as well as its delivery capabilities. Additionally, NWL valued Infosys' understanding and ability to fulfill its partnership needs. A close coordination has been established to allow the company to achieve its field service program objectives. Figure 5 recaps the system integrator's contribution. The development was executed in multiple locations, including Infosys' Indian development centers, and the go-live organized by user groups.

FIGURE 5

## Northumbrian Water Field Service Transformation: Infosys' Contribution



Source: NWL, 2014

### Business Value

The water business is highly regulated and companies must contend with strict pricing mechanisms to continuously reduce operating costs. At the same time, they have to meet strict targets in terms of quality delivered.

While still in deployment the field service program generated financial benefits of about £1.2 million. Even more is expected in the future considering the project is improving productivity in planning, scheduling, execution, and completion of works. Manual processes and hand-offs are eliminated, resulting in lower costs and risk of errors as well as greater visibility of what the crews are doing and increased safety in operations. Significant savings are also coming from having aligned processes across the entire service territory.

From a qualitative business value perspective, the empowerment of front-line field crews and the refocusing of team leader and scheduler roles have improved field service operations.

### Lessons Learned

From the very beginning the program has been characterized by high levels of engagement with front-line staff members who have been involved in every aspect of the work.

Since the very beginning the program has been characterized by high levels of engagement with front-line staff members who have been involved in every aspect of the work.

Strong business sponsorship of the program and collaboration were key success factors. The program was a joint initiative of IT and business. Front-line users were involved from the outset to provide feedback and to build trust. Change management required attention and the appropriate level of effort as NWL wanted operational managers to buy into a "program culture," and the project affects the way hundreds of people work.

The decision to do as much as possible internally, adopting a selective use of consulting and system integration firms, proved to be the right one. NWL discovered that organizations can be more self-sufficient than they initially imagine. At the same time the creation of a genuine partnership with Infosys and the other people involved in the implementation helped maximize the value of the different team members' contribution regardless of employer company.

From a technical perspective, it was important to prepare the technical team to work with unfamiliar technologies at an earlier stage. The solution proof of concept was important to ensure all relevant business processes were mapped and aligned before starting the full solution development and integration.

## FUTURE OUTLOOK

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### Next Steps

The investment plan submitted to Ofwat in 2014 includes investments to maintain, upgrade, repair, and replace pumping stations, mains, sewers, and more broadly NWL's entire infrastructure.

Providing field workers with the right information at the right time is fundamental to efficiently execute and achieve the final objective of delivering good quality water at the lowest cost. Not surprisingly, mobility will continue to be a key focus area and a key enabler of NWL's strategy, to innovate both internal company processes and customer-facing activities. On the latter, the plan is to implement systems enabling customers to book appointments and track progress of NWL work from their computer or mobile device.

## ESSENTIAL GUIDANCE

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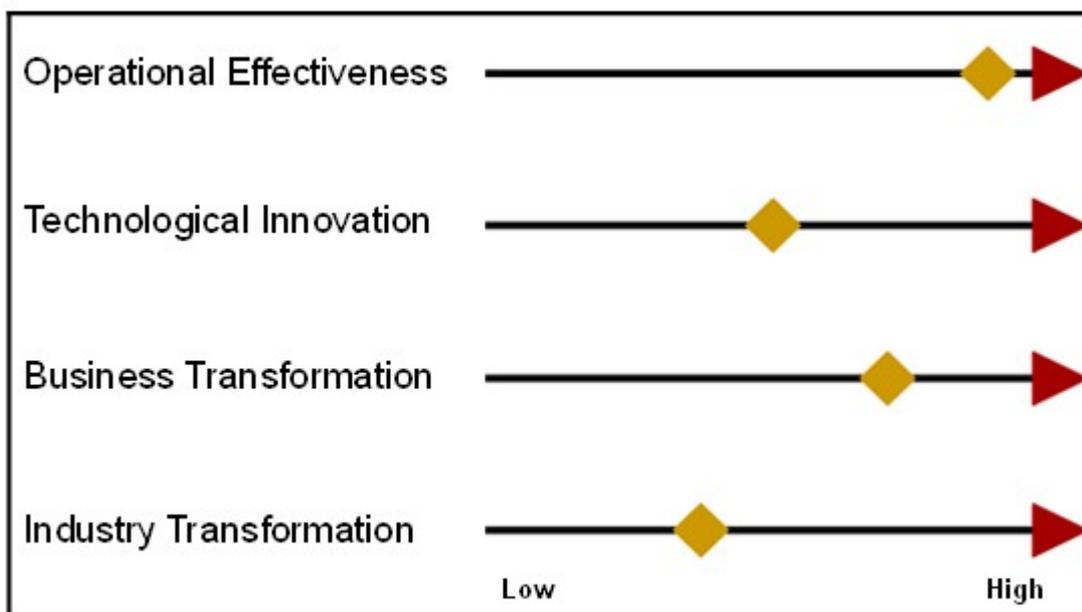
### Project Impact Assessment

IDC Energy Insights believes that the operational efficiencies enabled by the implementation of the new Northumbrian Water Limited MWM solution are extremely high. Process efficiency and accuracy is increasing, thanks to the elimination of manual activities and the availability of better planning and forecasting capabilities. NWL has fully exploited the technology's potential, innovating the way activities are organized and executed. The establishment of an enterprise mobility framework makes it easier to move NWL's mobile strategy forward, and beyond the boundaries of field services. Additionally the creation of consistent field services operations across NWL's two operating regions is transforming business. These factors make it an excellent project and a very relevant case study for other utilities.

Figure 6 presents IDC Energy Insights' project impact assessment for NWL's field service transformation.

FIGURE 6

## Northumbrian Water Field Service Transformation: Project Impact Assessment



Source: IDC Energy Insights, 2015

### Actions to Consider

Mobility has always been, and will continue to be, a top priority for utilities. Enterprise mobility impacts utilities in two main ways – supporting internal company activities and processes, and supporting customer-facing activities. IDC Energy Insights surveys consistently confirm that utilities are moving toward a more mobile workforce to create efficiencies in operations, with both technical field staff and sales staff able to potentially carry out more tasks on mobile devices. However, challenges with integration, security, and costs mean that only a small minority have already invested in mobile devices such as tablets or smartphones. The concept of mobility for customers (e.g., making energy consumption data available outside the home, providing remote control applications via smartphones or other portable devices) is gaining interest as a means to improve consumer engagement.

When addressing enterprise mobility, IDC Energy Insights recommends utilities to consider the following:

- **A journey not simply about technology.** Mobility impacts company processes, people, customers, and even business models. Utilities are challenged to keep up with changes in doing business because of mobility. They must understand the new ways, what new solutions are available, and select, prioritize, and successfully design, develop, and implement mobility devices, apps, solutions, and services to address changing business needs. To meet these challenges, every utility must develop enterprise mobility that is adapted to their own situation. This is a journey that will require a focus on evolving the maturity of each dimension of enterprise mobility (strategy, platforms, apps, processes, and people).
- **A common architecture to handle agility and savings.** Sometimes utilities handle mobility by coping with pressing demands and delivering short-term answers rather than looking at the

problem globally and with a strategic, longer-term perspective. This creates problems for the IT organization with duplicate, redundant, and inconsistent solutions that will need to be resolved sooner or later. To some extent, this approach is similar to creating instances with ERPs. The most effective approach is to look for commonality and consistency as early as possible. A common architecture, including security and data architecture, integrated in the enterprise architecture, will eventually provide savings, agility, and speed to better support different needs.

- **Invest in mobile management and security tools.** The adoption of multiplatform mobile device management will be essential to manage a mobile enterprise within acceptable risk parameters.
- **Business transformation is the king.** Keep your focus both on the business problem that enterprise mobility is helping to solve and on the innovation mobility can bring to the business. It is easy to get caught up in mobility technology itself and the eye-popping applications and functionalities that can be delivered via a mobile form factor. Start with the end result of what you are seeking to develop.

## LEARN MORE

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### References

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  - James Robbins, CIO, Northumbrian Water Group
  - Kush Sharma, Head of Europe Utilities, Infosys
- *Field Service Transformation at Northumbrian Water* presentation made at Oracle Open World 2014 by James Robbins (NGW), Tim Burfoot (NWG), Surya Chavali (Infosys)
- [www.nwg.co.uk](http://www.nwg.co.uk)
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- [www.eswater.co.uk](http://www.eswater.co.uk)
- [www.ofwat.gov.uk/industryoverview](http://www.ofwat.gov.uk/industryoverview)

### Related Research

To learn more about mobility in the utilities industry please refer to the following IDC Energy Insights documents:

- *IDC MaturityScape: Enterprise Mobility* (IDC #253113, December 2014)
- *IDC FutureScape: Worldwide Utilities 2015 Predictions* (IDC Energy Insights #EISC04W, December 2014)
- *Business Strategy: What About Utilities' IT Budget? Results from Western European Survey 2014* (IDC Energy Insights #EIOS09W, December 2014)
- *Utilities IT Investment Priorities for Solutions and New Technologies: Results from the Western European Utilities 2013 Survey* (IDC Energy Insights #EIOS08V, January 2014)
- *Next-Generation Mobile Workforce Management Delivered at Enel Distribuzione* (IDC Energy Insights #EIOS07V, December 2013)
- *EMEA Utilities Getting Enterprise Mobility Right* (IDC Energy Insights #EIOS05V, September 2013)

- *IDC Maturity Model: Enterprise Mobility – A Guide for Success* (IDC #240968, May 2013)

To learn more about case studies discussing best practices in utilities, please refer to the following IDC Energy Insights documents:

- *Reinventing GIS for the Modern Utility: The United Utilities Enterprise GIS Solution* (IDC Energy Insights #EIOS08W, September 2014)
- *Smart Customer Management: The First Utility Way* (IDC Energy Insights #EIRS03W, May 2014)
- *Think Big, Start Small, and Scale Fast: GDF SUEZ Energia Italia's Cloud CRM Platform Based on salesforce.com, Delivered by WebResults* (IDC Energy Insights #EIOS02W, March 2014)
- *Thames Water's AORTA: Wipro Enables Real-Time Insights for Thames Water's Asset Operations* (IDC Energy Insights #EIRS03V, September 2013)
- *Anglian Water Moves Closer to a Smart Water Network with a Leakage and Pressure Management Solution* (IDC Energy Insights #EIOS03V, June 2013)
- *ScottishPower Trials Long-Range Radio for Smart Metering Communications* (IDC Energy Insights #EIRS53V, April 2013)
- *Low Carbon London, Promoting Innovation in the Distribution Network* (IDC Energy Insights #EIRS04U, December 2012)
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- *Best Practices in Building Energy Management: Høje-Taastrup and Middelfart Municipalities Partner with Schneider Electric to Improve Buildings Performances* (IDC Energy Insights #EIRS01U, January 2012)
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- *Best Practices: Thames Water Adopts BPMS Solution to Streamline Its Customer Services, With Wipro as Systems Integrator* (IDC Energy Insights #EIOS05T, August 2011)
- *Best Practices: Veolia Water Transforming Metering – The m2ocity Innovative Business Model and Oracle Utilities MDM Deployed by Power Reply* (IDC Energy Insights #EIOS04T, May 2011)
- *Data Privacy and Security for Smart Metering: Alliander Certification Case Study* (IDC Energy Insights #EIOS52T, March 2011)
- *Best Practices: GasTerra Flexes up Its IT Application Portfolio by Choosing Oracle Utilities Solutions* (IDC Energy Insights #EIOS03S, May 2010)
- *Best Practices: Mobile Work Force Management Solution, Enel Style* (IDC Energy Insights #EIOS02S, February 2010)
- *Best Practices: Palm Utilities Deploys Oracle Utilities Customer Care and Billing Solution* (IDC Energy Insights #EIOS08R9, October 2009)
- *Best Practices: Pioneering Smarter Metering in Gas – The Gas Natural AMM Project Case Study* (IDC Energy Insights #EIOS06R9, September 2009)

- *Best Practices: Enabling Electric Vehicles in Denmark – The EDISON Consortium Project* (IDC Energy Insights #EIRS02R9, September 2009)
- *Iberdrola's Control Center for Renewable Energy (CORE): A Model for Grid Integration of Renewable Energy* (IDC Energy Insights #EIRS54Q, June 2008)
- *Utility Remote Wind Power Management: EdP Bets on Logica's IT Solution* (IDC Energy Insights #EIRS53Q, April 2008)

## Synopsis

Northumbrian Water Limited (NWL) is a water and sewerage company supplying water and wastewater services to 2.7 million customers in the northeast of England as Northumbrian Water, and water services to 1.8 million customers in parts of Essex, Suffolk, and Norfolk as Essex & Suffolk Water. As part of its vision to be the U.K.'s leading water and wastewater company, in 2012 NWL embarked on a program to transform field service operations. This study describes NWL's new mobile workforce management (MWM) solution implementation, which uses the Oracle Utilities Mobile Workforce Management product executed by Infosys. The study describes the approach taken, the business value, and the lessons learned.

"Enterprise mobility is a top priority for utilities, and more pervasive, sophisticated, and innovative approaches are progressively being implemented. Northumbrian Water Limited's field service transformation program demonstrates the value delivered to business by the adoption of mobile technologies," said Roberta Bigliani, associate vice president and head of Europe, the Middle East, and Africa, IDC Energy Insights. "Process efficiency and accuracy increased, thanks to the elimination of manual activities and the availability of better planning and forecasting capabilities. We have seen the benefits of mobile technology, innovating the way activities are organized and executed. The establishment of an enterprise mobility framework makes it easier to move NWL's mobile strategy forward, and beyond the boundaries of field services."

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