The Utility Workforce

White Paper

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The Utility Workforce – Planned vs. Reactive

Key Topics

- The challenges and opportunities facing utilities globally
- Using Intelligent Fieldforce Management to improve productivity by 30-50%
- Exploiting organisational visibility and cost efficiency to meet regulatory requirements and deliver improved customer services

Executive Overview

Over the past decade, utilities have seen unprecedented change. Deregulation has introduced new opportunities and raised significant challenges with new entrants dramatically increasing competition.

Utilities are now operating in a commodity market, as costs are spiralling whilst competition is forcing prices down, prompting ever tighter margins. The only way to survive is to make quality of service, not price, a differentiator. As a result, organisations have looked to win customers through introductory offers, creating unprecedented levels of 'customer churn', with the most aggressive ones 'cherry picking' high value customer segments.

As a result, utilities particularly in the UK and Europe are facing a quantum shift in business focus. No longer is it enough to efficiently manage and maintain the generation network. To remain competitive in the current marketplace they need to achieve differentiation through customer service innovation that reduces churn.

Improved customer service means:

- Delivering flexible appointments, on time
- Offering varying service levels to meet specific customer needs
- Making intelligent use of detailed information to prioritise specific customer jobs against their value to the business

To address these new business challenges, utilities need to shift the business focus from network oriented to customer centric. To date, customer centric activities have focused on Customer Relationship Management (CRM) systems, however, this has failed to deliver real benefit throughout the organisation, since such solutions do not extend to the fieldforce, therefore constraining a utility's ability to cost effectively deliver new customer services.

By using intelligent fieldforce management to intelligently automate the coordination of fieldforce activity, organisations can increase the productivity of the fieldforce by 30-50%. The spare capacity released by this process can be utilised to deliver higher levels of customer service.

Key to the success of FPA is closing the loop between the fieldforce and customer service. The availability of real-time information throughout the organisation enables the delivery of new services, such as premium Service Level Agreements and flexible appointments, in a cost effective manner that will enable them to retain the most valuable customers. Additionally, the implementation of an intelligent fieldforce management solution, tightly integrated with other systems, such as billing, enables the utility to speed up administrative processes.

This paper examines the core elements of an intelligent fieldforce management solution that are required to enable a utility company to deliver new services at a price point that will also deliver shareholder value. It embraces scale and scope as well as real-time scheduling and monitoring.

It then outlines the business benefits that such a solution can enable, from improved customer satisfaction to the delivery of new services, and provides an overview of the issues that need to be addressed to achieve a successful implementation.

Business Challenges

The global utilities landscape is littered with organisations that have failed to come to terms with increased competition resulting from deregulated markets. The deregulated, commodity marketplace has created new business rules that extend the traditional model beyond delivering excellent, efficient power networks to the delivery of flexible, cost effective and responsive customer services.

At the same time, utilities are struggling with the need to deliver renewable energy, such as wind farms, and meet the challenges associated with metering as the market opens up. As research organisation Datamonitor asserts, ‘Whilst on one hand utilities need to retain their data collection and aggregation capabilities to service their customer management programmes, they also need to ensure their metering divisions are achieving a satisfactory level of efficiency and profitability.’

Over the past few years, merger and acquisition activity has been frantic, as the larger multinationals have looked to increase their geographical reach and leverage economies of scale through consolidated activity, particularly in the field. It is, however, important to note the dangers associated with failing to merge fieldforce service activity. Throughout the 1990s, cable and telco companies aggressively acquired each other. They failed to consolidate fieldforce activity, did not therefore attain economies of scale and were burdened with debt that has led many to the brink of bankruptcy.

The threat of acquisition grows ever greater for those organisations failing to deliver shareholder value. In a competitive, deregulated market, shareholder value depends on two key criteria, increased efficiency and productivity to reduce costs and improved customer service to reduce churn – the turnover of valuable customers to competitors.

To date, many utilities have failed drastically to understand how to attain customer loyalty – indeed, some UK utilities are reporting customer churn levels of up to 25% a year. With the cost of gaining a new customer estimated at around eight times the cost associated with managing an existing customer, the cost to the business of such high churn levels cannot be sustained long term.

Yet customer retention and customer loyalty becomes increasingly difficult as customers – both business and consumer – raise their demands. Customers require high levels of service, such as two-hour appointment slots, and flexible service agreements, such as premium rate, tailored to meet different business requirements.

With unprecedented levels of merger and acquisition activity in this sector, high churn levels – and the cost of servicing that churn – will make organisations further prey to acquisitive competitors or ‘best customer’ cherry picking by smaller, more nimble competitors.

In addition, service levels demanded by the regulator are also rising and utilities are under the increasingly beady eye of the media, keen to highlight perceived failures in service delivery. The regulators are also demanding price reductions for customers, increasing the pressure on utilities to reduce their internal cost structures.

New customer services cannot be introduced cost effectively by utilities still manually managing their fieldforce due to the cost associated with such processes. The lack of visibility between the fieldforce and customer services makes the allocation of two hour appointments, for example, impossible to service without incurring huge overtime costs.

Business Opportunities

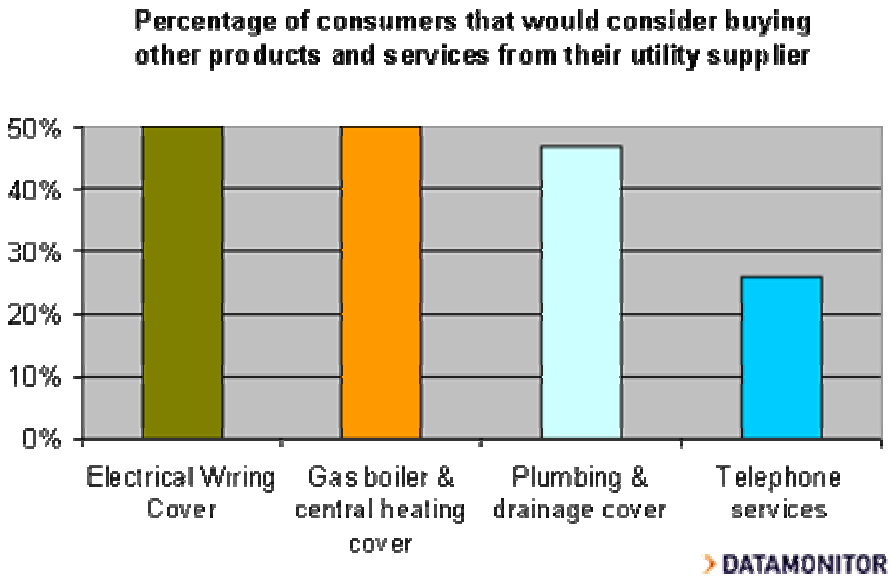
With tight margins and high levels of churn, the picture for utilities could look bleak. Figures from Datamonitor, however, suggest that energy management is fast emerging as a significant new revenue stream for Western Europe's utilities. The take-up rate of energy management solutions in the UK and Germany was 16% in both counties in 2000. This is expected to rise to 29% and 31% respectively by 2005. Overall, the value of Western Europe's energy management market is forecast to rise by up to 80% within five years.

Additionally, some utilities are opting to exploit their fieldforce service to offer metering services to others. In one recent deal, United Utilities has extended its role as provider of outsourced utility services by taking responsibility for eight million gas, water and electricity meters in the North of England for Centrica.

With the cost of metering in the UK the second highest in Europe, there is large scope for cost savings through outsourcing. This deal is just a small part of the continuing trend towards outsourcing in the utilities sector as companies look increasingly to focus on their core competencies, whether this is asset management, customer service or sales and marketing.

At the same time, deregulation of utility markets throughout Europe offers unprecedented opportunities for organisations to access new geographical markets and, as we have seen in the UK, leverage market position to diversify into different areas – such as telecoms and automotive – where traditional field service expertise can be exploited.

Indeed, figures from Datamonitor reveal that domestic customers are generally positive about buying more and different types of product from a single utilities supplier. 50% of survey respondents in Europe would consider purchasing electrical wiring cover and also gas boiler and central heating cover. 26% would consider buying telephone services from their utility supplier.



Intelligent Fieldforce Management

The key to achieving both cost reduction and enhanced customer service is to improve the productivity of the field service organisation. This will deliver immediate financial benefits and free up resources to address customer service issues.

Yet, to date, few organisations have managed to automate workforce processes or integrate these processes into core corporate systems. This is due to two main factors: the long-term emphasis on the development of excellent technology to deliver network management and the inherent limitations of existing fieldforce solutions.

To achieve true Intelligent Fieldforce Management requires integrated software that extends beyond basic scheduling, automated dispatch and integration with Customer Relationship Management (CRM). High levels of automated fieldforce processes can only be attained through intelligent, sophisticated software that delivers real-time monitoring and scheduling, effective exception management and the ability to intelligently react to business change – such as high priority incidents and missed appointments.

In order to maximise the Return on Investment (ROI), the software needs to be a core, integrated element of the IT infrastructure, tightly tied not only to a CRM application but also Enterprise Resource Planning (ERP), billing and human resources, as well as additional applications such as plant and equipment management and fleet management.

The goal is to achieve 95% automation of the coordination of fieldforce activity to:

- Drive the cost of fieldforce coordination as close to zero as possible
- Minimise mistakes made in deploying staff effectively by removing manual intervention

Intelligent Fieldforce Management

Excellent, timely information underpins successful intelligent fieldforce management. This information spans three key areas: location, personnel, and job profile.

- Location:
  Mainly comprising static data, location information has an important impact on field services. For example, travel times between locations have a direct effect on planning jobs.

- Personnel:

  Overlaid onto this geographic location information is staff information. This ranges from numbers of staff, skills profile and level of expertise, including certification, to specific employee job requirements. For example, by including information on staff preferred working days/hours as well as location, productivity rates are enhanced.

- Job Profile:

  Every field service organisation experiences peaks and troughs in initial calls during the day, week, and even year. Utilities are particularly prone to an increase in reported faults during bad weather. This profile of work is also not uniform across a country, with often more faults to repair in Scotland during a bad storm than in London, due, for example, to overhead cable damage. In addition, in London the likelihood of high priority and high premium customers places additional pressure to resolve outages quickly.

Successful intelligent fieldforce management solutions are based upon detailed information across all three of these areas.

In addition, an excellent intelligent fieldforce management solution needs to manage the scale and scope of the utility's business. This means coping with up to thousands of staff and jobs, of a diverse range, in many scenarios. This facility is increasingly important as many utility organisations are broadening their business portfolios as well as their geographic distribution, embracing water and telephone services, in addition to their traditional electricity and gas offerings.

Scope and Scale

Indeed, a good, integrated intelligent fieldforce management solution can enable one person to monitor up to hundreds of fieldforce staff. Real-time information and the use of artificial intelligence to automatically coordinate the knowledge of field workers' skills, availability and location against the customer requests enable organisations to move from a traditional ratio of one manager to eight fieldforce staff to a ratio of one manager for several hundred fieldforce staff.

In addition to managing diverse user skills and a broad range of job requirements, the solution must incorporate diverse customer service level agreements, such as Premium service users requiring fixes within a certain timeframe.

With penalties applicable for missed fixes, and missed appointments, diverse jobs and varying geographies, the intelligent fieldforce management solution needs to manage unparalleled complexity. It must also be able to switch parameters to deal with unexpected business scenarios without requiring high levels of manual intervention.

95 % Automation

Real benefit and value can only be achieved when an organisation automates as close to 100% of fieldforce coordination processes as possible. It is the manual intervention required to manage the non-automated process that increases costs and removes ROI. The process becomes less responsive, with the system failing to optimise the schedules or automatically raise alerts on SLA deadlines, for example, constraining the company's ability to escalate jobs and automatically reallocate staff to meet deadlines.

Achieving Automation

In addition to the fundamental scope and scale elements of an intelligent fieldforce management solution, there are many further features that play an essential role in delivering improved quality of service, enhanced productivity and reduced cost throughout the field service. The delivery of high levels of automation is underpinned by two core intelligent fieldforce management functions: real-time scheduling and real-time monitoring.

Efficient Resource Allocation

Real-time scheduling is a fundamental component of successful intelligent fieldforce management, supporting the 95% automation of fieldforce coordination. Most solutions use only one scheduling algorithm such as Rules Based scheduling, which can only manage a maximum of 50-60% utilisation of field staff.

To achieve higher levels of automation it is essential to combine many different schedulers. Supporting rules based scheduling with random scheduling to optimally fill gaps in the basic schedule, interrupt scheduling to prioritise jobs, tour build scheduling to provide an engineer with a complete day's schedule at the beginning of the day and heuristic scheduling to manage interdependent tasks ensures optimal scheduling.

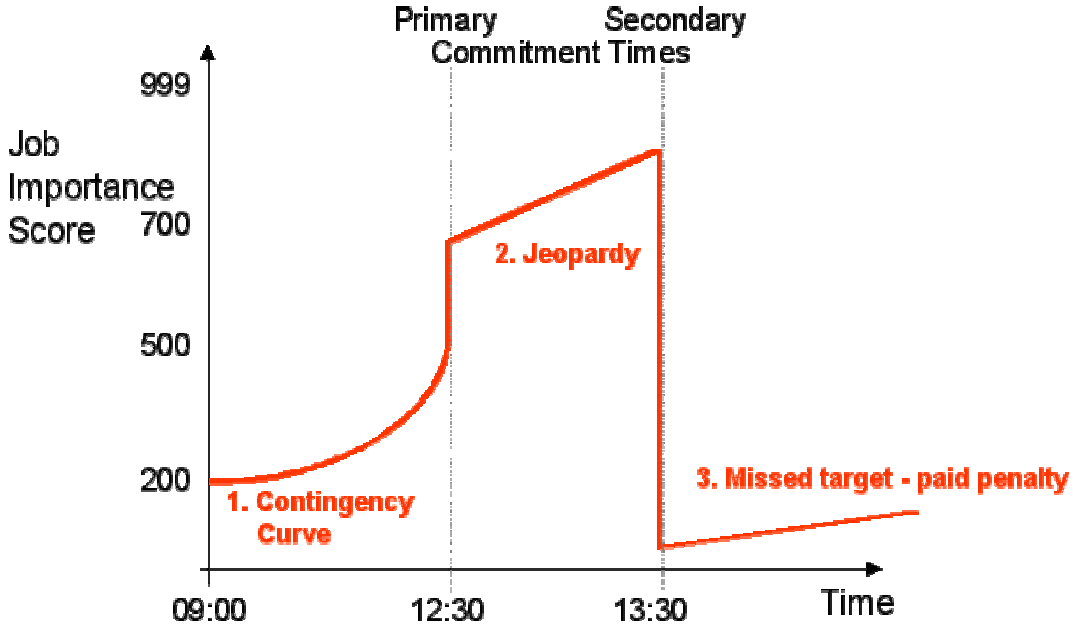
Automated Emergency Support

The system must also manage high priority or emergency events automatically and intelligently. Utilising artificial intelligence, a good fieldforce management system will immediately scan all 'on call' staff to see who has the most appropriate skills and is closest to the location. It will then interrupt that person and direct them immediately to the emergency location, although it will not interrupt an engineer already on a high priority job. Additionally, if an engineer is already at the same location as an emergency task the tasks may be related and therefore the same engineer is likely to be sent to the interrupt task.

Using this high level of intelligence, automation and real-time scheduling, a utility can be confident that even these high priority calls can be handled automatically and without manual intervention in a matter of seconds, ensuring they meet regulatory duties and high priority Service Level Agreements (SLAs) without additional administration cost to the business.

Effective Management

Real-time monitoring throughout the day also allows utilities to increase the priority of jobs as they approach a deadline. This avoids a company incurring penalties as a result of missing a SLA.



As shown above, the system automatically mirrors the concern experienced by a manager as the danger of breaking the SLA increases. As the penalty deadline approaches, the job's priority rating increases and the system reschedules tasks automatically to allocate appropriate personnel to the task. Once the deadline has been missed, and the penalty incurred, the job's priority drops back down.

The automation of job escalation in this way is essential for organisations looking to improve service delivery and therefore customer relationships and to deliver premium rate customer services cost effectively.

Improved service delivery, however, can only be achieved if the system can cope with data ambiguity without requiring manual intervention. Indeed, information uncertainty can seriously undermine the success of fieldforce management. If the system reacts to every incident of data inaccuracy by throwing up an exception that needs manual handling, the organisation will never achieve the 95% automation levels required to deliver optimal productivity and cost benefits.

To achieve high levels of automation, a system needs to be able to recognise uncertain data and automatically introduce approximation to enable scheduling to continue in an automated fashion. Without this ability, it is impossible for an organisation to maximise efficiency as the reliance on manual intervention increases. Indeed, if a system is consistently throwing out exceptions, those tasked with monitoring the fieldforce lose confidence in the system and increasingly opt to override it and manage more processes manually.

For example, during the day a task arises that requires a certain skill but it is not clear which of two people with that skill will finish their current task, and hence become available, first. Rather than throw up an exception that requires manual intervention, the system will arbitrarily allocate the task to one of the people. Then, should the other become available first, using real-time scheduling the task will be automatically re-allocated to them, and the original person's schedule amended accordingly.

Real-time Information

Of course, even with 95% automation, some exceptions will be thrown up by the system, for example, when there are no staff available in the desired area with the appropriate job skills.

A good intelligent fieldforce management system will also ease the management of these exceptions by providing the fieldforce manager with the information to rapidly resolve the problem. Not only is the information provided timely, but its fully interactive, graphical format allows the manager to understand the situation quickly and take appropriate remedial action.

In addition, constant real-time planning and assessment ensures exceptions are thrown up very early in the process. Automated reception and validation of work ensures from the outset that there is sufficient information to enable it to be scheduled and dispatched, flagging early any information gaps that demand manual intervention to fill.

For example, at 8am it will be clear what jobs cannot be fitted into the schedule as it stands and managers can respond appropriately, by updating the schedule to incorporate new parameters. These may include a member of staff being unavailable, bringing in additional staff or changing customer appointments in line with corporate objectives.

It is this minimising of exceptions that increases the number of field agents that can be managed by one person. Indeed, with excellent exception management, one person can cover the exceptions for several hundred field staff, leaving the fieldforce managers to focus on other areas.

Intelligent Appointments

To meet customer requirements, utilities are keen to deliver narrow appointment slots – but at an acceptable cost to the business. Intelligent Appointing technology uses real-time information to assess the cost of meeting a customer's requested appointment time; balancing customer satisfaction with cost of service delivery in real-time. The solution combines SLA information and availability of appointment slots with the cost of their delivery. Visually depicting high cost as red, medium cost as amber and lowest cost as green enables an organisation to make an informed business decision when offering the best appointment slot to their customers.

For example, a customer wants to make an appointment for a heating repair. When the call centre operative views the workforce information they see that appointments for the next morning are all Red, while those between 13:00 and 17:00 are Amber, and those after 17:00 and the following day are Green. The call centre can use this information to guide the customer towards a Green appointment, ensuring it can be cost effectively fitted into the schedules while meeting the customer's need and SLA commitments.

Improved Understanding

By closing the loop between the fieldforce and the rest of the organisation, a utility has complete visibility of its activities. This ensures engineers, for example, know if the job is bound by an SLA, and the customer service team know when that job has been completed and can inform the customer.

Information held within the intelligent fieldforce management solution can also form the basis for the Regulatory Reports required by all utilities. Increasingly information requirements include repair times, response time to repair, percentage of appointments missed or arrived late, as well as the standard Health & Safety information. Since this information is already available, using Business Intelligence software, the delivery of those reports can also be automated, further reducing the cost and time overhead to the company.

Additionally, using Business Intelligence and Segmentation tools, the utility can begin to create customer segments, which can be used to track customer churn and drive the delivery of new products and services.

Competitive Benefits

Once implemented, a good automation solution enables a utility to achieve a range of benefits that, critically, can evolve over time in line with changing business objectives. For utilities the primary objective is to improve fieldforce productivity and reduce costs to release resources that can be allocated to improving customer services.

Productivity

The achievement of 95% automation ensures manual intervention by managers is kept to a minimum. Since manual processes are always less efficient than automated ones, the high levels of automation ensure process efficiency and rapid return on investment. It also releases managers from a traditionally reactive approach to fieldforce activity, enabling them to proactively manage far greater numbers of field service personnel.

Combining the job, location and personnel information to deliver the most cost effective and efficient job allocations results in significant improvements in staff morale. Staff quickly realise that their local expertise is valued and that their specific qualifications are being exploited in the most appropriate manner.

Cost & Efficiency

The complexity of utility organisations creates the need for tight integration of information resources to drive smooth fieldforce processes. The availability of parts information, for example, ensures that engineers are appropriately equipped for each job, reducing the number of incomplete fixes requiring further visits.

Such efficiency improvements have a distinct impact on customer relationships, with more first time fixes improving the customers' perception of the organisation.

Customer Service
Low prices, high customer churn and increased global competition are driving requirements for new, cost effective customer services. By increasing fieldforce productivity and efficiency, utilities create a platform for the delivery of new customer services.

For example, at the most basic level, call centre staff have the information they need to reliably inform customers of the status of repairs. The organisation can then use 'Intelligent Appointing' to cost effectively introduce flexible appointment times.

The service can also be extended to Internet based appointments. This move towards self-service appointments will enable organisations to release call centre staff to increasingly sales oriented roles.

In addition, visibility of information ensures that engineers at a customer site have a full history of interactions with that customer so that they are aware of any previous problems. This detailed knowledge of the customer, without necessarily having been on site previously, further enhances the customer experience.

Reduce customer churn
All of these new services are designed to achieve customer loyalty. But, in a market where 25% customer churn annually is not unknown, it is also important to understand customer churn patterns.

By combining detailed field service customer information, such as speed of fault resolution, with sales information, the company has a complete overview of the customer interaction, which can be used to track customer churn activity. Once understood, the company can address these problems, introducing new services – from simple information programmes onwards – to reduce churn.

Additionally, the complete customer picture also allows the utility to segment customers based on their profitability to the utility. The utility can then ensure that resources are allocated appropriately to retain these most valuable customers as a priority.

New Business Ventures
Fieldforce flexibility and cross-organisational visibility also provide a platform for the introduction of new customer services, at an appropriate cost to the business. For example, business customers can opt for premium rate services that guarantee fault resolution within a specified timeframe – such as four hours.

Without the ability to balance cost control with quality of service, such initiatives are too expensive to be delivered viably to a business looking to balance customer service with shareholder value.

Flexible appointments, combined with a range of service options to meet customers' diverse requirements should reduce the incidence of 'best customer' cherry picking by smaller, more nimble competitors. It also provides a platform for competition on more than just price.

In addition, as merger and acquisition activity continues, the speed of integration of a fieldforce is a key element in the success or failure of a merger and in the delivery of shareholder value. The fieldforce, whose daily activity is automated, can be far more easily merged with another than one still using manual processes, since the intelligent fieldforce management solution can extend to handle the scope and scale of the additional fieldforce staff and activity.

Successful Implementation

What is the best approach to implementing a successful intelligent fieldforce management solution? There are two recommended options: either implement a proven packaged intelligent fieldforce management solution or opt for a Managed Service that will handle the fieldforce for you. In either case it is important to work with consultants who have gained experience of pitfalls associated with the process and know the best ways to approach the automation of fieldforce processes.

In brief, there are several key areas to address:

- Business Modelling

  Business modelling provides organisations with a clear indication of how the automation of fieldforce processes can be achieved in their business. A key element of this modelling is understanding the processes actually undertaken by the fieldforce. Invariably this is one area in which companies have limited information. How long does it take to complete a task? Where are staff located at any time during the day? It is lack of information in this area that often leads scheduling staff to approximate job time, resulting in missed or delayed appointments.

  Once an appropriate business model has been established, consultants then use the business goal of the organisation – to increase productivity, for example – to define new metrics which are then fed into the business model to assess their impact on the organisation's fieldforce.

  In addition to providing a clear indication of the value of automation, business modelling can be used to address a particular area of pain for a business, such as achieving higher levels of customer satisfaction through new Key Performance Indicators (KPI).

- Data accuracy

As mentioned above, inaccurate data can severely undermine the ROI of automation by creating many exceptions that require manual intervention. In addition to improving data quality as a result of the business modelling processes outlined, it is essential to validate the quality of information captured in the field. This is achieved through the introduction of fieldforce systems that are scripted to require specific information entry, with real-time validation to avoid errors.

This information should then be fed back into core business systems to drive integrated processes throughout the business.

- Systems integration

As demonstrated above, an intelligent fieldforce management solution can deliver significant efficiency and cost benefits. When integrated with other applications it offers real power to attain competitive benefit. Core applications include CRM, ERP, billing, HR and payroll, as well as spare parts, vehicle fleets and line testing systems. The integration goes beyond basic information links. For example, it is important that the CRM scripting process is adjusted to take into account the different levels of service and customer prioritisation to feed through into the automated system.

- Manage cultural change

IDC analyst Bill Clough identifies culture as one of the biggest stumbling blocks to CRM success, who says, “One of the biggest problems is people – the internal culture has to change.”

One of the potential downsides of intelligent fieldforce management is the negative morale in the fieldforce that arises as a result of a perceived loss of control over day to day work. Handled correctly this should not occur but it requires sensitive face to face education and training programmes to ensure the workforce understand why business processes are being automated. Working closely with consultants who have experienced automation before will introduce best practices to positively manage cultural change. The training process is fundamentally important: if users don’t like a system they will not use it, indeed with fieldforce systems those that are found frustrating to use are often deliberately damaged. This can be avoided by providing users with excellent training, tied in with the arrival of the systems, supported by good on line help where required.

Conclusion

Deregulation offers huge opportunities to develop new market share but the competition is fierce, and global. With tight margins and high customer churn, sustained business success demands new, efficient business processes and a platform for rapid, cost effective delivery of new services.

To compete in this open marketplace, utilities need to evolve beyond the delivery of excellent, efficient networks to competitive differentiation, which can only be achieved through excellent customer service.

Additionally, merger and acquisition activity remains at high levels and the merged organisation will only deliver shareholder value through achieving the economies of scale associated with an efficiently merged fieldforce.

Intelligent Fieldforce Management delivers the capability to achieve both. By empowering the workforce, intelligent fieldforce management ensures skills are maximised whilst retaining the central control to manage customer and business requirements. Additionally, automated, optimised scheduling delivers significant improvements in workforce productivity, extending the capacity of the existing workforce.

Correctly implemented, intelligent fieldforce management can reduce the cost of managing the fieldforce and improve the quality of customer services. It also provides the scale and scope to support new business ventures, including new fieldforces and business areas, to rapidly deliver the cost benefits required by merged and expanding organisations.