Utilize smart meter data to Turn revenue protection into a corporate-wide function

Turn Every Employee into the Eyes and Ears of the Revenue Protection Department.

In recent years, there has been significant strides made in providing mobile or wireless workforce management tools to field workers within the utility workforce. These tools are in most instances, specific to the particular job function of the field worker and due to high costs, generally not available to all staff within an organisation. One of the consequences of this from a revenue protection perspective is that instances of revenue loss or tamper could go unreported as there are no easily accessible channels for every utility employee to report on suspicions of tamper or losses, which they may come across.

With recent advances in ICT technology, it is time for utilities to re-examine how they support their field operations, and provide mobile tools to a much wider user base within the utility workforce. There are considerable advantages to utilities if all their field workers can be connected to their back offices through shared wireless workforce management - WFM platforms as this improves the efficiency and effectiveness of the data capture and reporting processes.

Wireless Workforce Management System Trends

Many traditional wireless WFM solutions are built on client server architecture. This is where a client application, running on the mobile device interacts with a server to perform its function. In this model, the client application requests information from the server, via a communication channel whenever it needs to, but most functionality is embodied in the client application itself.

There is however, a clear trend for WFM solutions to move away from client-server to a web-based architecture, with many vendors and utilities embracing this approach.

In the web-based architecture model, the mobile device uses a thin-client – such as a web-browser, to interact with server based applications and to provide the mobile WFM functionality. Web-based architecture has significant advantages. Web-based architecture makes it relatively easy to build an interface for a mobile device to interact with utility systems. As functionality changes on the back-end, these automatically filter through to the mobile environment.

Another advantage is that it increases hardware flexibility. A key to providing universal wireless mobile access to all workers is the necessity that applications can work seamlessly across a number of different types of mobile devices, from more traditional low cost feature phones to Smartphone's, PDA's tablets and PC's. The burden and disruption of upgrading traditional client-server based mobile software is considerable, and increases exponentially as the number of mobile devices increases.

Although client-server based mobile workforce management will remain relevant for some time – especially where utilities have already made an investment in this technology – utilities that are investing in new systems will be wise to consider web-based solutions.

Mobile Hardware Trends

Throughout the world, all categories of mobile devices have shown significant growths in user penetration in recent years. Latest research puts the number of active SIM cards in the South African market at a penetration level of 105% - meaning there are more active SIM cards than we have people in the country. This is significant because it means that there is almost universal access to some form of mobile technology throughout the country.

Whether it's a personal phone or a mobile device provided by your business, it is safe to assume almost every person in formal employment in South Africa will have access to some form of a mobile device.

The challenge then is to look at how an organisation can benefit from these tools already in the market and how to integrate them into current operational processes.

Mobile Devices

The rapid growth of mobile phones and tablet computers is transforming the options available to utilities, and making the vision of the universally connected utility field worker a possibility. Although most existing solutions use expensive customised hardware, many analysts are expecting to see an increased shift to low cost mobile hardware platforms for utility workers.

How can you use these different mobile devices already in the hands of your employees?

Where a device is company owned, this is easier to achieve. It's where the device is a personal phone of an employee that the utility needs to look at creative ways of getting their buy-in. This can be as simple as providing a nominal monthly allowance for data charges that could accrue from using the phone as a part time tool of the trade. An alternative could be to incentivise the employee in the case where a suspected tamper alert submitted using their phone has resulted in incremental revenue accruing to the utility on resolution of the tamper.

One also has to look at the extent to which you're asking your staff members to use their own phones for business purposes. As an ongoing operational process, this is often not going to be well received and supported, but as an exception reporting tool, it is certainly within the realms of what the utility could expect from a member of staff.

In South Africa, feature phones still account for almost 85% of all phone sales, although the adoption of Smartphone's is growing at a rapid rate. This means that to effectively deploy mobile workforce tools throughout the organisation, using a combination of personal and business phones, you need to ensure the technology is accessible to the lowest technology level phone.

Flexible Wireless WFM Software Tools

Touchwork has developed Operational Insight solutions, which are flexible wireless application solutions that enables utilities to develop mobile wireless applications on-the-fly. Using the system, utilities can identify

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work-processes that can benefit from automation, define both front-end and back-end functionality, and deploy these solutions in the field. This provides great flexibility to the utility as well as cost advantages over fully custom solutions.

Although a detailed discussion of the system is outside the scope of this paper, the tool is based on the following concepts:

- Fully configurable access control
- Real-time reporting solution
- Concept of assets that are optionally linked to locations – assets can be a meter, seal, transformer etc
- Fully flexible data capture structures, including photo's and geo-location data
- Workflow tools
- Integration with back-end databases
- Fully flexible dashboards and reporting

Using these solutions, utilities can obtain the benefits of a customisable wireless workforce application, that is fully supported across multiple devices, universally accessible, and offers accelerated ROI.

Revenue Related Applications

The previous discussion provided an overview of trends in mobile technology and wireless WFM in general and a discussion of a technology framework that enables utilities to virtually connect the majority of its workforce at low cost using a range of mobile devices.

Wireless WFM can have specific relevance for revenue protection departments, since many RP processes are field intensive and rely on physical inspection and recording of data collected. Many RP departments are under-

funded, and being able to derive some level of automation benefit at low cost is important from a budgeting perspective. In addition, RP is impacted by a number of different processes and people within an organisation, and the ability to extend the reach of the RP department to every employee, in every function within the utility can have a significant impact on the overall effectiveness of the operation.

Example – Theft Detection

An area where access to wireless WFM can offer immediate value to RP departments is in the detection of theft or tamper space. A utility has many employees in the field doing different functions and coming into contact with different aspects of the business being managed by the utility. For example where there is a meter measuring some form of usage, there is a need for physical inspections to be performed on a regular basis, to collect the meter read data.

If all utility fieldworkers are connected through their mobile devices, they can all have access to web based WFM applications to perform these tasks. And in addition, if anyone – for example the meter reader – comes across a suspicious installation or sees evidence of suspected tamper, they can immediately report it and collect evidence on the fly. They could record relevant details, take and upload photographs as evidence before there is the chance of the tamper being removed, and immediately open a tampering case for further investigation. All of this is done in real time using a standard mobile phone.

Example – Physical Asset Management Inspections

As with inspections of meters, assets owned by the utility also need to be effectively managed and require ongoing physical inspections to ensure the asset is correctly

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reflected in the Asset Register. Asset management decisions feed on detailed data on condition, resources, performance and demand, and without ongoing and accurate data input, Asset Registers can soon become materially out of date.

Without these critical pieces of information, companies cannot gain clarity on returns, constraints or perform business critical 'what-if' analyses. The end result is hard to defend decision-making.

Physical inspections using mobile technology can be used to regularly update or verify an Asset Register by asking the following questions of the physical assets:

- What Assets do I own?
- Where are my Assets located?
- Who is using my Assets?
- What are the characteristics or attributes of my Assets?
- Is my Asset Register compliant with the applicable legislation and accounting standards?
- … and many more smarter business critical questions…

These audits will be at the forefront of converting asset monitoring/measuring to enhanced collaboration and ultimately to an increased revenue driven solution.

Conclusion

Utilities will continue to explore wireless workforce management applications that are built on web-based architecture, and that operate on low cost mobile devices. There are significant benefits to automating as many utility processes as possible and providing access to these to as many people within the organisation as possible. The low cost nature of this approach means that many smaller

utilities can now also obtain the benefit of wireless workforce automation where previously it was too expensive.

Although this paper has only touched on the real-time reporting of theft and physical asset management inspections within a revenue space, there are many other opportunities within the utility environment where much value can be obtained. Ultimately, utilities are data driven organisations, and having better real-time mechanisms to collect and manage data results in better operational management, efficiency and competitiveness.

About Touchwork

Touchwork is a global leader in mobile actionable intelligence solutions that help organisations worldwide capture, analyse, and act on information in real-time – anytime, anywhere. Touchwork's enterprise solution puts the right information in the right hands at the right time. In doing so, organisations can achieve first class customer experience and field service performance; reduce costs and liability; and generate revenue and gain a competitive advantage.

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