FINDING BUSINESS PERFORMANCE IMPROVEMENTS THROUGH TELECOMMUNICATIONS RE-ENGINEERING

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PROFESSIONAL PAPER

Restructuring within the Electricity Industry across Europe has, and continues to have, a huge impact on operational and financial performance. This alone presents issues for companies on how best to meet the telecommunications needs of a changing business, often having to cope with merging or de-merging organisations. However, when coupled to the process of de-regulation and the resulting re-structuring in the Telecommunications Industry, the potential for further destabilisation of the Electricity Industry increases.
Destabilisation does not, however, have to be a negative factor. In addition to having the potential for driving up telecommunication costs, restructuring across the two industries presents the electricity company or organisation with issues around:

- Changing Requirements and Increasing Demands - Driving Costs UP
- New Technologies and Rationalised Service Offerings - Driving costs DOWN
- New Ventures - Enabling the Generation of ADDITIONAL non-regulated income.

The following sections of this paper explore the differing issues presented by the three themes above from the point of view of the Electricity Industry.

Key words: Restructuring, Telecommunications Industry, Electric Industry.

1. CHANGING REQUIREMENTS AND INCREASING DEMANDS

There are a number of key drivers in this area covering both internal and external influences on the Electricity utility. These include:

- Regulatory schemes aimed at delivering better Value-for-Money and Quality-of-Service for the utility customer
- Internal efficiency initiatives aimed at producing greater returns for the business within the regulatory price controls
- The need to generate customer loyalty in an increasingly competitive market place.

1.1. Regulatory drivers for Customer Service Improvements

From the utility customers' perspective, the Value-for-Money and Quality-of-Service they receive can be measured against the number and frequency of interruptions to their electricity supply and the response they receive from the utility should their supply be affected.
Whilst both of the service metrics referenced above can benefit significantly from initiatives involving telecommunications, the approach taken and correct choice of technology or service to be applied is key.

1.1.1 *Interruptions to supply*

The performance of electricity utilities is often measured against the number of supply interruptions experienced by their customers and the length of such interruptions. Performance can be greatly enhanced in this area through the tactical implementation of automation and field working systems, which make extensive use of telecommunications. For a supply interruption at a customer location to register as such for regulatory measurement, it normally has to exceed a specific duration, three minutes in the UK. If the utility can detect a fault and take steps to reconnect or switch around the fault minimising its impact in less than this breakpoint duration, then the customer and regulatory impact can be reduced. If not, and the supply interruption is recorded, then the utility will, in the UK example, be subject to a regulatory financial penalty.
Many utilities are approaching this issue by installing remote switching equipment at remote locations. However, the rural nature of these locations often means that arranging for telecommunication connections between the automation or SCADA system and the remote switch, can be difficult or, at best, expensive.
By looking beyond the traditional wireless or fixed telecommunications solutions that are available, innovative alternatives can often be found. Following successful trials by a number of UK utilities, one electricity utility has decided, after a thorough technical review and investment appraisal, to implement a remote switching scheme using the control channel of its MPT1327 Private Mobile Radio (PMR) system as the remote communications bearer for the Remote Terminal Units (RTU) in the field.

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Overall benefits in delivering solutions in this area are defined by the specific drivers involved. However, by analysing the need prior to designing the solution, which applies telecommunications technology in an appropriate and cost-effective manner, utilities can ensure that the cost of ownership and operation of schemes that have significant telecommunications content are minimised.

1.1.2. *Duration of Interruption*

The length of time for which customers' supplies are affected is directly influenced by how quickly the utility can mobilise its engineers to repair the fault, along with their effectiveness when on site.

The key to mobilising the correct team of engineers to attend a fault, is knowing where the staff are in the first place. Remote vehicle communications coupled with Global Satellite Positioning (GPS) can provide accurate up-to-date information on the location of on-call personnel, in addition to providing a means of quickly highlighting instances of unauthorised vehicle use.

Once the most appropriate team to deal with an incident has been identified, they need to be advised of the job and its location. This task has been traditionally carried out over a voice communications network by a dispatcher. Through the implementation of mobile workforce data solutions a far greater level of information can be passed to the allocated repair team at the time of despatch. This information might include basic job details, such as location and nature of fault; through to more advanced information, such as location maps, photographs and network diagrams relative to the area of the fault.

The telecommunications initiatives above will enhance the utility's ability to respond and repair faults more quickly, thus reducing the potential duration of interruptions and, hence, improving the level of performance of the utility perceived by their customers.

1.2. Internal Efficiency Gains

The ever-increasing pressure, by regulatory authorities, for the privatised utility to reduce the price charged to the customer, is in direct conflict with that utility's need to deliver value to its shareholders.

In order to provide continuing returns for investors in the face of reducing revenues, privatised utilities must make operational efficiency savings.

Many savings initiatives can be enabled through the use of telecommunications. The main gains to be made are through obtaining increased performance from the same size, or indeed a smaller, workforce. One way of achieving this aim is through greater use of technologies in the area of mobile working, these include:

- Wider use of mobile telephony, GSM and GPRS
- Deployment of digital Private Mobile Radio (PMR) systems, Tetra, MPT 1327
- Mobile data solutions allowing greater independence for field staff
- Home based working enabled by broadband network connectivity.

1.3. Generating customer Loyalty

Customer churn may not be an issue for the immediate future in many newly privatised utilities. However, with the onset of competition, customer brand loyalty needs to be generated early to reduce churn in the future. For example, across the UK utility market, by 2005, Datamonitor predict that 16 million customers will have changed supplier and 70 % of those will do so more than once.

As a result of competition across Europe, in the energy supply sector, we have seen many customers transfer their business to other brands in return for lower bills. However, despite winning new customers many of the new entrant energy suppliers have failed to win their new customers' loyalty. Having invested heavily to win new customers, they are now experiencing heavy churn driven by the perceived poor quality of the customer relationship.

This paper will show that as regulation and margins tighten, utilities need to look at both improved operating efficiencies and brand expansion into non-regulated areas, in order to generate greater profits. The latter, whilst an attractive proposition, is only possible with significant customer confidence and loyalty.

In liberalised telecommunications markets service providers are increasingly focusing on "Customer Experience', an area the electricity industry could look to in order to gain significant benefit as their own market opens up.

The main regular contact a utility has with its customers is via their bill and any subsequent queries through the utility's call centre. It makes sense then to maximise the opportunity in these areas to enhance the utility's brand identity and loyalty.

For those utilities not offering on-line billing and payment services, then Electronic Bill Preparation and Presentation (EBPP) offers the next logical step in customer communication. A large proportion of calls handled by any utility are bill queries. By improving the connection between the meter, the bill and the customer, not only can confidence in the bill and brand be increased but the "post bill run' load on the call centre can be reduced.

The implementation of an EBPP solution, as described above, will give rise to a number of choices in terms of supporting telecommunications services or technology but, in turn, will affect others in a positive manner, such as reducing the load on a call centre's agents and systems.

1.4. Multi-Utility Trend

There is a general trend, spreading out from Europe, for the creation of large global Multi-Utilities from strong national champions. The issues raised earlier in this paper apply equally to large Multi-Utilities, with an even stronger emphasis on generating brand loyalty whilst continuing to deliver increased shareholder revenue.

The idea of brand or customer loyalty becomes ever more important when a utility becomes separated into separate supply and distribution businesses, a situation which is mandatory in the UK and becoming more prevalent throughout the rest of Europe.

One of the drivers for merging utility businesses is the potential savings to be made through the sharing of operational systems and resources. A merged business must also be able to show reduced costs through internal efficiency savings. These savings may come directly from moving to a shared telecommunications infrastructure; they

may also come from wider initiatives which need the support of new telecommunications services in order to succeed, such as the sharing of operational and maintenance best practice across the merged business.

2. NEW TECHNOLOGIES AND RATIONALISED SERVICE OFFERINGS

Liberalisation of telecommunications markets has given rise to many new technologies and changes in the way in which traditional services are delivered. This provides the utility with the opportunity for making savings in operational cost when compared to current solutions. These are to be found in many areas, such as fixed or wireless telecommunications services and include:

- xDSL - Broadband network access technology. Giving low cost, high speed access to the Internet suitable for domestic of small office applications
- IP-VPN - A data networking technology / service of fering which provides more flexible corporate network solutions at a potentially lower cost due to the shared network infrastructure
- Public TETRA - A shared radio infrastructure which is a viable alternative to traditional PMR
- LeoSat - New Low Earth Orbit satellite systems, which provide relatively low cost, low data rate solutions suitable for telemetry or remote site communications.

In addition to the potential to move to alternative technical solutions, such as some of those listed above, consideration should be given to how these internal communication services are delivered. With companies across market sectors concentrating on core skills as a means of reducing internal cost whilst offsetting operational risk, the trend of outsourcing is developing strongly, despite, often internal, resistance. Both internal IT and telecommunications are good examples of the type of service which a utility might outsource to its benefit, allowing it to keep up with the rapid pace of change of technology through the use of an external service provider.

Changes in technology and innovative new services present the utility with the opportunity to obtain equivalent services at a lower overall cost or, indeed, to implement more advanced services at limited, or even no additional, cost.

At a time when new technologies and services are being made available within the telecommunications market, the very same industry is undergoing significant change due to the financial status of a number of the major operators. There is a general glut in capacity, resulting in supply which well exceeds demand. The combination of reduced revenues and excessive investment has lead to a number of operators leaving the market, and those left are delaying the launch of new services such as Third Generation (3G) mobile phones. Those left in the market have to vie hard to retain their existing client base and are now focusing closer on large corporate users and their true needs. A robust approach to procurement will present the utility with the opportunity to negotiate attractive deals for existing or new services, and provided diligence is applied when assessing an external service provider's financial stability, benefits are achievable in the long term.

The expansion, in terms of number of providers and in the types of service offered, in the area of public telecommunications, has resulted in numerous alternatives to the traditional utility approach of building, owning and operating private infrastructure. Therefore, a key decision to be made, from a strategic perspective, prior to embarking on any project involving new technologies or service offerings, is whether to make use of Public or Private infrastructure. The nature of a project and the capital expenditure needed to implement it, should be reviewed in order to assess whether it would be more beneficial to go down the route of building a dedicated private infrastructure or to source from a public service provider.

3. NEW VENTURES

Regulatory "Squeeze' and the need to continually deliver increased shareholder value have led utilities to look for ways of generating revenue outside the financial and operational constraints applied to the regulated element of the utility's business.

One opportunity open to the utility is to leverage their existing asset base or internal skills in order to generate a revenue stream outside of their traditional business in the regulated electricity sector.

There have been a number of new ventures into the telecommunications market across Europe by utilities, mostly in the Electricity and Gas sectors but increasingly in the water sector utility's telecommun. The level of involvement across these ventures varies significantly, from merely leasing duct space to leasing spare capacity within the ications network, or even investing in and developing a completely separate telecommunications company offering commercial services under a new telcommunications licence.

Opportunities in these areas are well documented in reports such as "Strategies for Utilities in the European Telecommunications Market' and include:

- Leasing duct space or overhead line supports for the installation of fibre optic cable by a third party
- Leasing spare capacity within the utility's private infrastructure
- Installing additional telecommunications infrastructure then lease this on to a telecommunications operator, e.g. Dark Fibre
- Renting space within, or on top of, buildings or existing radio masts to cellular phone operators
- Leveraging customer base to deliver additional services under the same brand, such as domestic telephony or Mobile Virtual Network Operator (MVNO)
- Leveraging internal skills to offer facilities management type services to other organisations, e.g. IT or telecommunications support.

When exploring any potential opportunity the utility must make themselves aware of the true market value of any assets involved or services offered in order to ensure they both maximise the return and are able to demonstrate a clear boundary between regulated and unregulated income to the regulatory authorities.

A common issue that often occurs in situations where a utility embarks upon a new venture is that a lack of internal communication and assessment of company-wide objectives, results in ventures or service choices, which are not compatible with each other. Strategic decisions in both operational and new business need to be aligned if the ben-

efits are to be maximised though alignment as opposed to being negated through mismatched philosophies.

4. SUMMARY

This paper demonstrates that despite instability in the telecommunications markets and pressure on internal resources caused by industry restructuring and regulatory change, electricity businesses can capitalise on new technologies and services from the liberalised telecommunications market to reduce operational costs while maintaining or improving operational and financial performance.

In the electricity utility of today the use of modern digital communications is often the enabling factor when looking to overcome many of the issues facing the industry. It must be said, however, that no one solution is appropriate in all circumstances or to all companies.

Feasibility assessment and due diligence should be considered for any project or venture involving telecommunications, given the constant change in both emergent technologies and the financial status of those offering commercial telecommunications services in the market today.
The proven approach of using robust procurement practices must be followed if technical and commercial pitfalls are to be avoided en route to achieving true business benefit.
When entering into new ventures with the aim of generating additional revenue, it is vital to align internal telecommunications strategies with this aim, if maximum business benefit is to be achieved.
In the drive to improve performance and meet regulatory objectives innovative telecommunications based solutions can provide a key contribution towards core business performance improvements, provided any investment appraisal constraints identified are closely monitored.
Merging organisations are ideally positioned to exploit changes in the telecommunications markets; outsourcing telecommunications services may offer numerous benefits in this respect, an increasing trend amongst utilities.
Telecommunications solutions and services are key components of the customer experience which must be addressed in order to maintain customer loyalty and minimise churn; churn is a clear threat to revenues during the emergence of liberalised electricity markets.

NOVE POSLOVNE PRILIKE KROZ REDIZAJN TELEKOMUNIKACIJA

Restrukturiranje elektroprivrede u Europi ima i imat će jak utjecaj na proizvodne i financijske mogućnosti. Time se postavlja pitanje kompanijama kako zadovoljiti telekomunikacijske potrebe poslovanja u promjeni, često u situaciji organizacijskog spajanja ili razdvajanja. Međutim, povezano s deregulacijom i restrukturiranjem telekomunikacijske industrije, potencijal za daljnju destabilizaciju elektroprivrede raste.
Destabilizacija ne mora uvijek imati negativnu konotaciju. Uz to što može povećati telekomunikacijske troškove, restrukturiranje dvije tvrtke znači za elektroprivrednu kompaniju ili organizaciju sljedeće:

- Promjenu potreba i porast potražnje- što znači povećanje troškova
- Nove tehnologije i racionalizaciju ponude usluga- što znači smanjenje troškova
- Nove pothvate- što znači mogućnost dodatnog neregulirano troška.

Rad istražuje različite mogućnosti kroz gornje tri teme s gledišta elektroprivrede.

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