

Business Process Reengineering and Transformation to Asset Management company at ESB, Ireland

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SUMMARY:

This paper describes the stages by which ESB was restructured into an asset management company whose vision is to be 'the best small utility in the world'

- Ageing rural MV and LV infrastructure which had suffered a dearth of investment – just over €30m euros had been spent in 1999

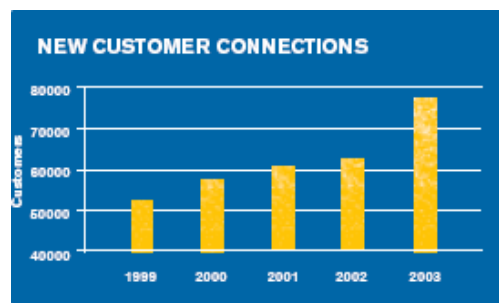
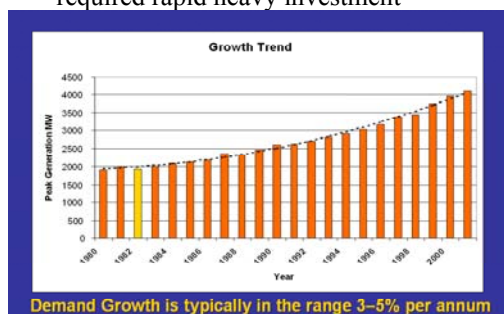
BACKGROUND:

In 1999 ESB was a traditional vertically integrated utility. It was established as a semi-state company in 1927, which provided Generation, Transmission, Distribution and Customer Supply services within Ireland. It had a system peak of 3,436 MW, 1.6m customers (50,000 new pa) and had been supporting GWh growth rates of over 6% pa. Turnover was €1.7b pa with overall capital expenditure within ESB of €416k. A defining characteristic of the ESB network is its dispersed nature, with about 12 customers per km of Distribution network. This compares to about 27/km in France and 35/km in UK. The overhead network is 160,000km in length with 175,000 pole mounted transformers.

Customer Services Business Unit (CSBU) looked after Distribution, Sales of Electricity, Sales of Retail Appliances and contracting. On the Distribution side ESB was organised along geographic lines, with the country divided into 6 Regions, each Region looking after the execution of major transmission projects, distribution maintenance and new works as well as customer connections and field services. Policy and Budgetary control was provided from a Head Office Distribution Department. The organisational structure had worked well until the mid 1990's, with the main concern being the continued expansion of the network. The extensive refurbishment required for an aging network now brought this into question.

In particular we faced a number of challenges:

- Rapid growth in electricity consumption and customer numbers with consequent pressure on the Distribution and Transmission networks required rapid heavy investment



- New industry structure as EU legislation required the opening of the electricity market, and the appointment of a Regulator with regulated control over the Transmission and Distribution businesses

Similarly, on the Customer Electricity Sales side, increased competition was expected from new Suppliers as well as the loss of market share that would be required to prove that the retail electricity market was competitive.

STRATEGIC INTENT:

It was recognised by CSBU management in late 1998 that the pressures arising from these drivers would require a fundamental re-evaluation of the business of CSBU, and that whilst this posed a challenge it also posed an opportunity to radically restructure the existing business. Accordingly, an in-depth Strategic Review of the CSBU business was carried out to evaluate CSBU's strategic options in the light the industry drivers, our core competencies, and possible future scenarios.

.The outcome was a Strategic Intent:

'To serve customers by delivering high quality infrastructure services through owning, managing and operating long-life, capital-intensive network assets'.

It was clear that our existing organisation, processes, skills and systems were inadequate to deliver the strategic intent it was estimated that it would take three to five years to turn the business around.

OPPORTUNITY ASSESSMENT:

In order to assess the benefits to the company of such a radical change in focus, an Opportunity Assessment (OA) using a Business Process Re-engineering (BPR) methodology was carried out in mid-1999. This exercise involved a small group of about ten ESB staff and five consultants to establish what overall level of improvement could be made by a radical review of processes, people, organisation and systems.

The focus of the BPR-OA was to fundamentally review the business process model with a view to achieving the new strategic intent. The organisation structure was then aligned with the process model, a high-level systems map was developed and a competency framework was defined. This enabled a gap analysis to be carried out with the existing business model. The value of focussing on processes is that a process is a related group of tasks that together result in value to a customer, so that there is an end to end responsibility. It helps to avoid overlaps and duplications between different areas of the organization. Once the processes are correctly designed and implemented the results then follow.

The problems found with the existing CSBU structure were as expected – processes highly complex, composed of many small jobs and burdened with an extensive supervisory superstructure, poor links between planning and work execution, duplication of effort in certain processes and requirement for a reduced cost base

So much for the concept, but as in many other areas it is the actual execution that is critical, and to this end each aspect of the BPR-OA was tightly managed:

Management Support:

The Managing Director and other senior managers fully supported the need for change and were committed to whatever change that would result from BPR-OA – to the extent that at the earliest stage each had to sign their commitment to 'the need for radical change' on a flip chart page which was then held on the wall in the MD's office – in the case of any back-sliding, the answer would be '*You signed your name to radical change along with everyone else and there's no going back on that commitment*'.

Communications:

Once an exercise such as BPR-OA begins, communication becomes very important, even before there are results or decisions to communicate! Absence of communication is in itself a signal: 'it must be something that is so bad that they won't tell us what is going on'. Accordingly each phase of the BPR-OA was communicated in a controlled way, with staff from all levels involved in workshops and the message consistently sent out that there was an urgent need to radically overhaul the business because of the huge difficulties that were about to be faced by ESB. Existing frustrations within the company were channelled into a desire to change; e.g. slow decision making and excessive governance were blamed on the business model. This helped create the 'burning platform' that would consolidate the need for change and gain acceptance for when change had to be implemented.

Similarly the top management in CSBU were also directly involved, with each senior manager interviewed by the team and their comments on how their particular area should be changed noted. However the overall output of the BPR-OA could only be signed off by senior managers as a whole; no senior manager could actually alter the proposals produced for their own area.

Quick Wins:

One of the areas that was seen as essential in communicating the need and benefit of change involved the utilisation of 'Quick Wins' which could be quickly implemented and which would signal that change was coming and would be beneficial. Two Quick Wins which were introduced were:

- a VISA Purchasing Card which avoided the need to write orders for small transactions and helped empower front line staff, and;
- a modification to the Construction Work system which allowed a customer reference number to be assigned to an individual new connection, so that a customer and their meter could be tracked from inception, allowing status of the connection to their new house to be confirmed directly by the Call Centre, rather than having to check with the local ESB office. This was particularly important to staff as this issue had long been an area of frustration.

Work Structure within BPR-OA:

ESB had a history of producing excellent, detailed, painstakingly accurate reports - but well after any deadline had passed. So the first signal of change would be to ensure that the final report (14 week deadline) was produced on time!

For the ESB members of the team this was also a learning experience as a delay in any piece of work affected all subsequent work; what was required was output which was sufficient to meet 90% of the requirements but produced on

time.(It also helped that the Consultants were on a fixed price contract!)

PRINCE methodology was used to manage the projects which had the advantage that there was a clear review and sign off at each stage of the project and no disputes as to what had been agreed.

In the event the project was actually completed nearly a week ahead of schedule, and this indicated to the team and those outside that the way in which CSBU operated was changing.

Results from BPR-OA:

At the end of the 14 weeks a new business model emerged which could deliver benefits across a range of issues including significant monetary savings and the way was now prepared for the detailed implementation planning of the changes required.

In particular BPR-OA identified that:

CSBU should be reorganised into the following components on a 'process' rather than a geographic basis:

- Asset Management: Asset strategy, regulatory interface, planning, development of work programmes and system operations.
- Supply Chain : Warehousing and logistics
- Network Projects : Major infrastructural programs on both Transmission and Distribution Networks
- Network Services : Customer connections, field services and fault repair
- Shared Services : HR, Payroll and IT Support

Customer Supply : to be separate entity involved in sale of electricity and ring fenced from Networks.

Within each component the organisation structure would be delayed and simplified reflecting the fundamental process structure required, with performance managed companywide through a 'Balanced Scorecard' system with an integrated set of KPI's. A Future IT Architecture was also produced to support the business model.

Transform:

Having proven that significant improvements could be produced by the BPR-OA change proposal, the next stage, which we called Transform, involved the establishment of 11 project teams to produce a detailed blueprint of the new business model with associated cost/benefit analysis for each area plus an implementation plan. This phase involved over 100 staff part-time with a core team of about 50 including consultants. The initial team from the BPR-OA was seeded into the Transform teams to help reinforce the need for change and to provide the required skill sets.

The disruption cause by the movement of 100 staff from the business plus the extensive amount of workshop activity involving other staff, indicated the level of commitment that ESB was investing in the changes proposed. At this stage staff generally felt that significant change was inevitable and that it was really now down to union negotiations on how this change would affect particular groups.

A major factor in the acceptance of the proposed changes was the heavy involvement of staff at every level in the organisation in the design of the future processes, this being achieved through the use of workshops and the involvement of staff on research exercises led by the Transform team member in that area. This level of involvement helped to overcome the "not developed here" syndrome and resulted in a high level of buy-in. A further factor in gaining support was the rigour in which the whole process was carried out: detailed process maps, activity levels, role definitions etc. Within the engineering culture of ESB this indicated a thorough approach which helped acceptance.

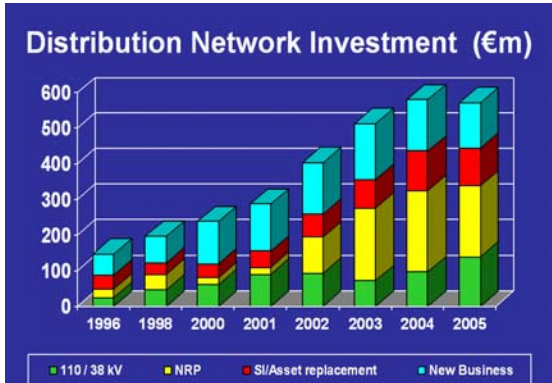
The business case justifying the establishment of an Asset Management approach was based on the expected savings calculated through a more centralised approach to decision making giving greater consistency and optimising value for money across different asset categories and types of projects.

The structure chosen was based on an Asset Management philosophy whereby planning, policy and decision making were separated from work execution. It also featured the widespread introduction of external contracting for the first time on ESB networks. This was necessary because of the huge scale of the refurbishment programme what was needed. The fact that the company was facing into a period of rapidly increasing work volumes meant that staff were more open to the introduction of contractors, as it was obvious that the program could not be tackled with ESB's resources alone. The volume of work required for Network Renewal and Customer Connections was so significant that there was also scope for extra work 'out of hours' for ESB Staff, but instead of paying this as overtime it would effectively be paid on a piecework basis.

Arising from this, a new organisation structure was created called ESB Networks which included management of the distribution and transmission assets. The Supply business was transferred to Power Generation and support services were outsourced to a business support organisation within ESB Group. Other main changes included:

- A central Asset Management organisation with responsibility for Regulation, Strategy, Asset Management, Network Operations, and Strategic Procurement. There is an investment plan of circa. €3.6b for the 5 year period from 2001. This is being spent largely on Distribution and

Transmission capital projects, with about 60,000 km of MV network being refurbished), 6 new EHV substations (220kV/400kV), 32 new 110kV Substations, 24 new 38kV Substations and a further 30 38kV Substations refurbished by 2005.



Plant is sourced globally – a typical customer connection would involve a pole from Scandinavia, a transformer from Ireland, Stay wire from the UK, Insulators from China, Crossarms from Turkey and OH conductor from EU, Eastern Europe and Indonesia.

- A national Customer Services organisation divided into seven divisions to look after customer connections, faults and field services (including metering); about 90,000 new customers are expected to be connected in 2004. This change included full business separation of distribution from supply for Regulatory reasons.
- A Project Management organisation with responsibility to oversee all capital projects including the management of external contractors, which has grown from zero to 1,800 contracting staff in a three year period . Currently about 16,000 km pa is being either converted to 20kV (50%) or refurbished at 10kV (50%).



- A new organisation was established to fulfil the role of the Meter Registration System Operator.

- All operational aspects of procurement were moved to a central Supply Chain organisation with responsibility for warehousing, logistics and fleet management. Changes here included the reduction of major materials stores from three to one, the outsourcing of materials delivery; the widespread introduction of direct deliveries by suppliers to site.
- Financial and personnel services were unitised, with the majority transferred to corporate Shared Services
- A comprehensive IT Applications Architecture was developed to support the new business model. This is currently being rolled out , initially with the implementation of a SAP-ISU system to support full market opening. Further work underway includes the development of a central asset register with maintenance management functionality, a mobile order scheduling system and ultimately an integrated work management system
- A performance management system was introduced based on Balanced Scorecard, which cascades down to front-line management.

Conclusion:

Overall the program has resulted in the most radical restructuring of the ESB in its 75 year history and allowed it to achieve the targets set and make the savings expected – in fact the savings in the Procurement area were achieved 2 years ahead of schedule.

Similarly the creation of a totally new contractor market with the introduction of 1,800 contractors from up to 20 different countries and the refurbishment of 16,000km pa of MV network (where previously ESB had struggled to do 3,000 km) must be counted as a resounding success. However, we did struggle somewhat with the management of such a large contracting resource and had to embark on an extensive training programme in project management for our front line staff; many of whom experienced significant role changes as a result.

The pressures of market opening have forced us to prioritise our IT expenditure to supporting the market and therefore the full benefits of the new business model remain to be achieved; it is hoped to roll out the supporting applications architecture over the next three years.

As we now head into our second Price Review a review of the validity of our Business Model up to 2010 has concluded that it is still well-founded.