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## *Working Together With Engineers by Roy Feltham*

*O wad some Pow'r the giftie gie us  
To see oursels as others see us!  
It wad frae mony a blunder free us,  
And foolish notion.*

Robert Burns (1759–1796) 'To a Louse'

### Introduction

A Working Together programme was implemented to help a group of engineers to understand what changes were needed to transform an internal service department into a commercially viable unit, competing for external business.

### Context

#### POLITICAL

The gas industry in the UK has been transformed over the past decade. Before 1994, British Gas was the monopoly supplier for gas transportation and trading and also operated in exploration, production, metering, usage, appliance retailing and customer home services.

From the mid-1980s, the UK government set out to introduce competition and choice for gas consumers as part of a programme of utility reforms and privatisation. The separation of transportation from trading was seen as the most significant impediment to effective competition in supply. After an initial period of resistance and defensiveness by the company, including several referrals to the Monopolies and Mergers Commission, the company was forced into profound organisational changes.

Full competition in gas supply was completed by 1998. There is now full competition in production, supply, trading and customer services, as well as competition for extensions to the transportation network and the prospect of further competition for metering services and the services needed to maintain and operate the monopoly transportation assets.

#### CORPORATE

British Gas was a functional, multi-disciplinary organisation, organised geographically into 12 regions and the national transmission system. The organisational hierarchy had up to 14 levels with, in general, a command and control culture and formal structures for strategic

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direction, policy formation and performance management. The management style was benignly paternalistic, which resulted in generally productive relationships with employees, trades unions, suppliers, consumer bodies and so on. There was a strong culture of service to customers and, among the technical fraternity, a dedication to high standards of system integrity; business performance and gas supply reliability. Management and employees shared a strong feeling of 'we know best', which led to high levels of confidence internally and strong perceptions of arrogance externally. The company made large profits and managed, against much opposition, to remain unchanged as a wholly integrated monopoly.

The company had expertise in every facet of the industry, including a strong reputation for engineering, research and technology across the entire gas chain. From the mid-1970s, following the conversion to natural gas, there had been a period of rapid expansion of the network, growth in customer numbers and increased sales. This period was associated with innovation and the introduction of new engineering methods to improve efficiency and establish a robust technical framework of strategies, policies and engineering standards.

From 1994, the company in the UK was restructured along business unit lines including the separation of transportation, trading, retail sales and service. Exposed to the reality of competition and by the clarity of disaggregated costs, these business units focused more on profitability, commercial performance and returns to shareholders. The newly formed transportation subsidiary, Transco, reorganised around core processes, with only six levels of hierarchy, and replaced the regional asset-related organisation with a district structure reporting to a small centre, and with central organisations for support functions. Relationships between Transco and stakeholders were characteristically different from the British Gas period. Ten years of adversarial relationships with the economic regulator following privatisation had resulted in a severe lack of trust or mutual respect. Relationships with Transco's customers, whose gas is transported to their customers the gas consumers, were very strained. This was partly due to the behaviour of some employees towards the changes to the structure with which they were familiar and, in particular, their behaviour towards the new companies entering the market. More significantly, the problems resulted from the inadequacy of the new computer systems that had been developed by British Gas to deal with transportation billing. Relationships with employees and trades unions were tested by substantial downsizing and the closure of many offices and by the selection and appointment process, which placed more emphasis on the preferred behavioural competences and less on operational experience, or job knowledge and understanding. There was a conscious strategy to challenge the old order, reject the past and 'reinvent the company'. The traditional authorities of the professionals, including finance, personnel and engineering, were subjugated and replaced with 'empowerment'. These structural changes resulted in significant improvements, and increased focus, on commercial performance, with an outlook that was strongly influenced by the five-year cycle of price control reviews.

Towards the late 1990s the company had recognised the need to embrace competition and developed a strategy that would enable the company to realise shareholder value by exploiting its capabilities outside the regulatory ring fence. This change in emphasis helped to reduce the tension with both the economic regulator and Transco's customers, who had each been seeking a more proactive approach by the company to competition. It also signalled a distinct change in the outlook for employees. Instead of feeling undervalued by progressive and relentless downsizing, there was the prospect of opportunities by recognising and valuing their capabilities and applying this expertise both to provide services to Transco and also to compete for work with other clients. At that time, the asset-related organisation was also

realigned with the physical infrastructure into 12 local zones and the national transmission system.

The company had also recognised that management systems needed to be improved to provide more effective controls of business risks. The empowerment culture had resulted in some confusion and ambiguity about the extent of managers' local discretion. Well-motivated initiatives had caused wide variations in practice and service delivery that were unacceptable to Transco's customers and the economic regulator. There was also evidence of local variations in the interpretations of engineering standards and operational practice, and considerable loss of operational experience as a result of progressive downsizing, early retirements and voluntary redundancies.

Among the changes introduced, an engineering department was formed to give the company confidence that it was able to sustain its complete compliance with statutory regulations and obligations in respect of its engineering work. New management systems were introduced to clarify the mandatory policies, procedures and specifications for all engineering activities and provide a formal process for authorising variations in practice and changes to policies or procedures to reflect operational experience, new technology or changes in requirements. The department also provided expertise and operational support to field personnel throughout the company.

Similar reinforcement of management systems were introduced for other key areas of business, including income recovery, IT applications development and health and safety management.

In the middle of 1998, it was decided to transfer most of the newly created engineering department to another part of the group, outside of Transco's regulated operations. The objectives were to:

- prevent the further loss of engineering expertise from the group of companies;
- protect Transco's reputation and performance by ensuring continued access to the necessary engineering skills and experience and
- leverage the capabilities of this group of technical experts to add shareholder value to the group by generating external revenues.

## PROJECT

A programme of work was organised to create a new business unit of nearly 200 engineers and support staff that would be transferred to BG Technology, the former R & D organisation of British Gas. The transfer from Transco to BG Technology represented a significant shift in purpose, from being an internal custodian of engineering standards, to competing with others to act as external advisers. This adjustment afforded an opportunity to resolve some tensions that resulted from confusion about role relationships. As an internal department, the engineers were expected to fulfil several different roles simultaneously.

- As engineering experts, the company depended on them for robust advice that would ensure full compliance with relevant legal and licence obligations. In this role, they were custodians of standards and the managing director was, effectively, the customer of the services provided; most significantly for the operation of a management system of policies, procedures and specifications. It was essential that the advice was consistent, and reflected the need for engineering work to be carried out to appropriate standards.

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- As specialists in their respective fields, the engineers were also expected to advise and support managers and staff responsible for asset management and operations. In this role there was an inevitable tension between the financial performance expected by Transco to achieve its business objectives and the engineering performance standards necessary to deliver the required levels of service, maintain the condition of long-life buried assets and maintain levels of safety performance and compliance. With the new constraints on local discretion, some managers, seeking relief from these tensions, appealed in vain to the technical experts for flexible interpretations of requirements. Some engineers were sufficiently skilled in both technical knowledge and personal relationships to be able to provide the technical advice and support without compromise to the required engineering standards. Others were seen to be more forthright and inflexible, which was viewed by these operational customers as lacking in customer focus and commercial awareness. In both cases, the engineers involved had experienced the discomfort of moving from a strong corporate conviction about technical standards up to the 1990s, through a period of uncertainty and ambiguity in the mid-1990s, back to a period where there was a firm commitment to technical governance, including the effective management of change and innovation. In these circumstances, the engineers were not easily minded to relax standards for a company whose core business is to transport a highly flammable product in buried pressurised systems.

The transfer proposals would result in a separation of these two roles. A small new engineering policy team in Transco was to be the custodians of the engineering management systems and standards and the transferred engineering services unit would support and advise both the policy team and operational managers. However, this clarity of purpose and change of role would mean a loss of authority and much greater dependence on social skills to satisfy customers, signalling the need for some new skills and changes in behaviour.

## The transfer programme

The transfer programme was designed and managed by the management team of engineering services, with substantial involvement by employees. The emphasis was on doing it 'with you' rather than 'to you'. The programme was organised into five workstreams, as shown in Table CS11.1.

**Table CS11.1** Five Workstreams

	<b>Workstream</b>	<b>Purpose</b>
1	Migration and infrastructure	Facilitate the migration of people and processes within agreed timescales and budgets, whilst maintaining service to customers
2	Commercial	Establish a robust commercial strategy for the new unit
3	Policy unit	Establish a new policy unit within the extant organisation that will deliver the required purpose and objectives without any discontinuity
4	Skills and competences	Identify and deliver the skills and competences required to ensure successful delivery of services to customers
5	People systems	Implement systems that harmonise and align the contribution of all employees towards the achievement of business objectives

Workstream 5 was managed by the head of the department, the others by his direct reports.

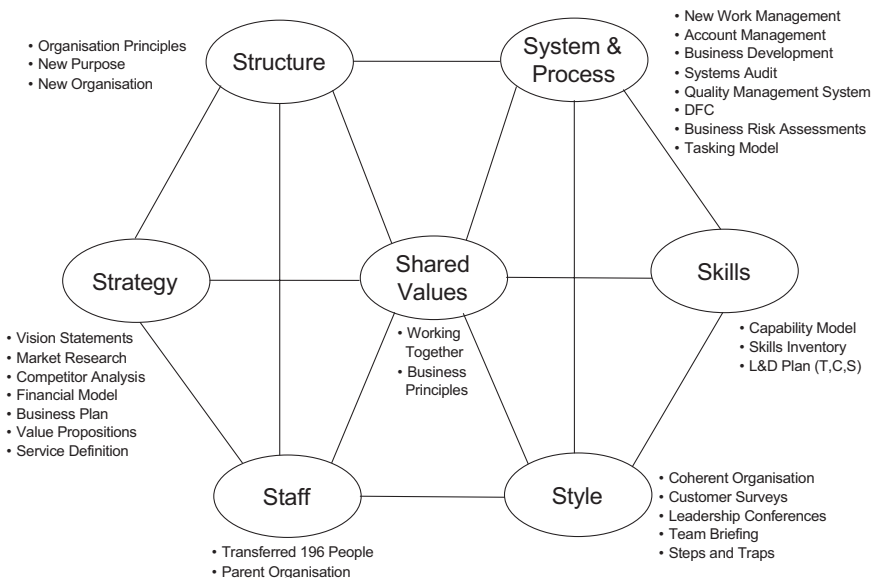
Additional work was also needed to obtain the approval of the economic regulator for the transfer. This work was managed separately by Transco, with support from managers in engineering services.

Workstream activities can also be redistributed around the McKinsey 7-S model, shown in Figure CS11.1, to illustrate the contribution of the Working Together programme.

## The Working Together programme

A Working Together programme was an important part of Workstream 5. The need for a programme was debated by the senior management team at a two-day workshop. At that time the high base workload was exacerbated by the need to resource the other workstream activities from the existing establishment of employees. This placed substantial additional workload on some staff and particularly the managers at a time when everyone was sensitive about the need to continue to provide good service in order to maintain the confidence of customers. Engineers have a reputation for being strongly task-oriented and focused on technical issues and problem solving. The head of the department and the management team recognised that they would need to be personally accountable for the programme if it was to be successful. So there was a very real issue about whether it was possible to resource a discretionary Working Together programme at the same time as ensuring service delivery and completing other, more imperative, commercial and technical workstream activities.

It was recognised that engineering services was a knowledge-based business. It was thought by the management team that the key to business success and personal fulfilment for employees was to create an organisation where knowledge, information and learning were available to everyone, and where employees collaborated as one virtual team to achieve a working environment where everyone was able to achieve their full potential. It was concluded



**Figure CS11.1** Transfer Programme and the McKinsey 7 S Model

that a workshop programme was therefore essential, but had to be limited to two days to avoid disruption of service to customers.

The purpose of the programme was to help to achieve a shared understanding about how employees can work together to make engineering services successful in meeting the needs of customers, the business and employees. The workshop content was selected from a much wider range of potential material to achieve the most appropriate emphases. The selected content included:

- a technical/commercial/social model of an enterprise;
- team membership and leadership steps and traps;
- definition and authorities of managers;
- authority and accountability;
- the nature of advisory relationships;
- values;
- mythologies;
- culture;
- tools of leadership;
- systems;
- systems, authority and power and
- task assignment.

### The workshop programme sequence

Most of the employees involved in the transfer programme had worked in the gas industry for many years. In recent years they had been exposed to a variety of 'change initiatives', 'culture change programmes' and training events intended to change the behaviour towards customers or business improvement or organisational change. A common feature of many of these initiatives was that they were managed as stand-alone activities, disconnected from normal business and, most often, delivered by independent – and commonly external – facilitators. This approach resulted in at least two unintended consequences. First, the initiatives had a very short shelf life before the energy and enthusiasm generated by the events dissipated and were finally forgotten as 'just another passing fad', disconnected from the previous initiatives. Second, and more importantly, the approach denied the opportunity for managers to demonstrate leadership both by identifying themselves with the programme and by incorporating the material into normal business.

To ensure the success of the investment in this programme, a more integrative approach was adopted and was sustained throughout the programme and afterwards. Key stages of the programme were:

1. *Commissioning*. The entire management team supported the decision to run the programme.
2. *Programme Design*. The management team was involved in the design, which included the decision to partner external consultants with the senior managers to co-facilitate the workshops.
3. *Rehearsal*. The management team and external consultants conducted a full rehearsal of the material. This enabled the internal facilitators to become more familiar with the material and highlighted the need for some minor adjustments to the timetable.

4. *Briefings.* Section leaders were briefed about the rationale for the programme, as part of the communications programme associated with the transfer programme. The importance of the programme was emphasised and their role was explained. Staff were then briefed by their section leaders.
5. *Development reviews.* At development reviews, section leaders or managers prepared individuals for the workshop by reiterating the rationale for the programme and conducting a simple 360° feedback process using a matrix derived from the team leadership and membership steps and traps. Employees were then invited to select a workshop date from a schedule of workshops that was convenient and did not cause disruption to service.
6. *Pre-reading.* Delegates were sent joining instructions and some pre-reading papers. Steps 4–6 were designed to ensure that delegates understood why they were attending, why it was important, what was expected of them and had some insights into the programme.
7. *Workshops.* Delegate registrations were managed to achieve a balanced mix of technical sections, work locations, gender and age. Workshops were organised at three different locations to reduce overall travelling time and provide reasonable access for employees who needed to be close to home.

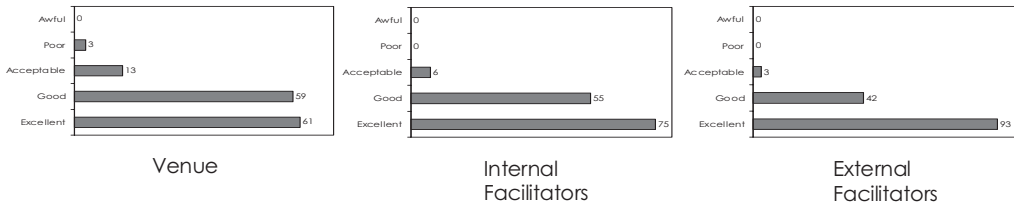
There were 16 workshops in total with between 10 and 15 delegates. Workshops were run at weekly intervals with a brief interlude bridging the Easter period, when it would have been difficult anyway to release employees without potential disruption to service.

8. *Interim review.* During the interlude, after the first five workshops, the management team and consultants conducted an interim review and made some refinements to the programme. The review also led to the production of a facilitator's guide to provide support to the internal facilitators and ensure a consistent format for workshops facilitated by different manager and consultant partners.
9. *Debrief with managers.* Delegates met with their manager or section leader on return, to debate the workshop content and review how the material could be applied.
10. *Workplace coaching and support.* Thereafter, employees were encouraged to provide mutual coaching, feedback and support to each other.
11. *Measurement.* Delegate feedback forms were collected from every workshop. This information was complemented by an additional survey conducted on completion of the programme.
12. *Review.* The management team and consultants met at the end of the programme to review the measurement data and decide further actions that were needed to embed the learning into normal business.
13. *Feedback.* The survey results and the outcome of the review were briefed to employees through normal team briefing arrangements.

## Conclusions from the review

### FEEDBACK

Delegates rated very highly the venues and the performance of both the internal and external facilitators. This is shown in Figure CS11.2.



**Figure CS11.2** Feedback – Venue and Facilitators

Figure CS11.3 demonstrates that delegates rated their own participation highly and their feedback was consistent with the observations of the facilitators. Course administration was also rated very favourably.

The workshop content was also rated highly and was regarded as being highly relevant to work, as shown in Figure CS11.4.

### What went well?

The success of the programme was attributed by delegates and the management team to a number of important features that are now regarded as essential for similar programmes:

#### 1. *Gaining commitment from the senior management team*

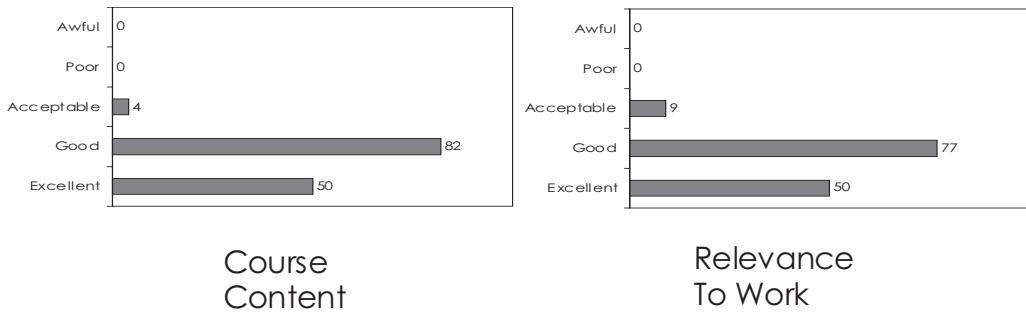
It has been established from previous change programmes and workshops that lack of commitment from senior managers, or even indifference, is communicated so powerfully throughout the organisation that the programme is undermined. The recognition by this management team of the value and importance of the programme, and their individual and collective leadership roles in assigning priority to the programme, was widely understood by employees. This commitment proved to be even more significant because it was discovered throughout the programme that many staff had formed strong adverse reactions to such programmes from their experience of previous change programmes and were very sceptical about the value of the exercise. Indeed, some employees reported at the end of the workshop that they had felt hostile towards the workshop and attended reluctantly, but were completely persuaded by the end of the first day that the material was relevant and helpful. Typical feedback could be paraphrased as ‘I have been angry about the way the company has wasted money on change programmes, insulted by their format and style and offended that the management paid lip-service to the content. This was the first workshop I have attended that made sense and gave me some models I can use in my work.’

The commitment from managers was also important in ensuring high attendance. Staff who did not attend were limited to those who were excused due to significant domestic problems or were working overseas.

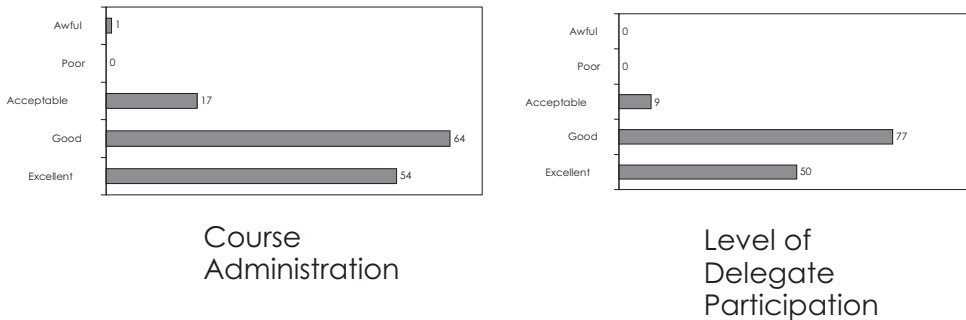
#### 2. *Co-facilitation*

Co-facilitation worked exceptionally well. The external consultants provided expertise and experience and supported the internal facilitators. The managers were able to place the material in a business context and provided examples that helped to reinforce the modelling. Since each manager co-facilitated three or four workshops, and was involved in the full dress rehearsal, there was effective training and knowledge transfer, which made it easier to embrace





**Figure CS11.3** Feedback – Course Administration and Delegate Participation



**Figure CS11.4** Feedback – Course Content and Relevance to Work

and apply the modelling at work. Co-facilitation between managers and consultants was itself a powerful demonstration of working together.

### 3. Full rehearsal

The full rehearsal was conducted by the management team, consultants and some local staff volunteers in February, in extreme adverse weather conditions, in the north of England. This was a good team building exercise for the managers and consultants. It enabled the ambitious workshop programme to be scheduled more accurately and the logistics and facilities to be tested. This detailed planning contributed to the smooth running of the subsequent programme.

One unexpected consequence was that news of the event spread quickly, in particular the completion of the outdoor exercises in freezing wind and pouring rain, and demonstrated that the management team were committed (or should have been).

### 4. Full-time course administrator

At the design stage of the programme, the consultants strongly recommended a dedicated course administrator. At that time, resources were seriously constrained so consideration was given to sharing the administrative support around the various offices. Fortunately, an ideal member of staff from another part of the organisation became available and was engaged to support the programme. This stroke of luck proved to be a decisive factor. The course administrator:

- provided a single point of contact for course bookings and enquiries;
- selected and visited the workshop venues;

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- organised all the site logistics and managed the hotel staff and bookings;
- circulated pre-reading material to delegates before the workshops;
- provided facilitators with details of delegates for each workshop;
- compiled workbooks for the delegates and
- assembled facilitator's notes for each of the facilitators.

It was initially thought that the course administrator would attend the first workshop at each of the three venues. From the experience of the problems that needed to be resolved, it was decided that she would attend every workshop, at least for the first day, to ensure that logistics problems did not lead to disruption of the programme.

### 5. *Workbooks*

It was decided to issue delegates with workbooks at the beginning of the workshop so they had a copy of all the overhead slides and flip-chart models that were used, and could make personal notes. Some text and captions were deliberately omitted so that delegates could embed their learning by adding the missing content. These workbooks provided a useful source of reference although it was found that the majority of delegates preferred to be involved and concentrate on the dialogue rather than making notes.

### 6. *Facilitator's notes*

The rehearsal raised concerns among the managers that they would be unable to present the models, with which they had only recently become familiar, and co-facilitate in a consistent way across the organisation. It was therefore decided to assemble very quickly some folders of overhead slides and supporting notes, organised in sequence with the schedule. These folders relieved the anxiety of the managers. They also gave them the confidence to flex the programme in response to particular issues that were raised by delegates, or allocate more time to dialogue that was particularly productive, with the knowledge that they could return to the schedule and make up time from other parts of the schedule. So each workshop was individually adjusted in response to the delegates' involvement; no two workshops were identical and there was a wide variety of co-facilitator pairings. However, there was consistency in the material that was covered by the workshops, which was important for when the delegates returned to work and compared experiences with their colleagues.

### 7. *Pre-course discussions with managers*

Delegates regarded the pre-course discussions with their managers as very important and helpful. It was not uncommon in the past for employees to be sent to workshops without any knowledge of why they were attending and what for. With hindsight, these conversations were even more important than had been thought because of the resistance to workshops that had accumulated from previous events.

### 8. *Attendance by the head of department*

The head of department attended all but two of the workshops and participated in some of the exercises and conversations. Each workshop included a session where he shared his views about the business context and engaged in dialogue with delegates about topics of their choice. He then joined delegates for dinner and further dialogue throughout the evening.

This involvement reinforced the leadership shown by the managers and demonstrated his support for them and the consultants. It also left no room for doubt about the commitment

of the management team to the programme and the workshop content. This was consistently reflected in feedback from delegates at the end of each workshop.

## What went not so well?

There were two key issues that put the programme at risk.

### *1. Failure to deal with a step change in work environment*

The least successful workshop occurred immediately after a major announcement about a company demerger that increased concerns about job security. The head of department was unable to attend this workshop because he was required to attend business briefings and then conduct cascade briefings the next day.

With the benefit of hindsight it would have been more appropriate to deal with this major announcement as soon as the delegates assembled and even incorporate the issues arising into the workshop material. Instead, being mindful of the tight schedule and also because this workshop was one of the earliest in the programme, the workshop was conducted as if nothing had happened. This event was difficult to manage and this was reflected in the delegate feedback. Moreover, adverse and now understandable comments about the workshop by delegates to colleagues back at work unsettled the programme briefly, before delegates had reflected on the announcement and, with support from managers, had realised that their immediate fears were misplaced.

### *2. Failure to conduct pre-course discussions*

Despite briefings and interventions by managers, pre-course discussions did not always take place. Ordinarily, this may not have attracted attention because this was normal practice. However, this was highlighted in the introduction to each workshop, at which point, some delegates became aware of the communications breakdown. Seventy per cent of delegates who had discussions with their managers reported that the exercise had been of some value or had been very worthwhile. There were some legitimate reasons why some meetings had not taken place, particularly for early workshops when managers were sick or working out of the country, or in different parts of the UK. However, the residual excuses given centred around work being more important than the programme. These behaviours may have been related to the bad experiences of previous programmes and reinforced by the consistent messages from the senior management team that the whole transfer programme should not lead to disruption of service to customers.

## Conclusions

It was concluded from the review that:

- The programme had repaired the damage caused by some previous change programmes.
- The programme contributed noticeably to the coherence of the engineering services unit. Given that the department was geographically dispersed and technically diverse, this was an important achievement.
- It increased the confidence of staff, ahead of the transfer.
- Some of the desired behaviours had already become embedded into working practices.

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- There had already been some vivid examples of feedback from customers and personnel in other parts of the business about changes in behaviour that had surprised and pleased them.
- Some of the modelling had been adopted.

Engineers often attract a reputation for being:

- commercially naïve
- obsessed with standards
- obsessed with technology
- risk averse and
- having poor social skills.

Typical responses from engineers to such feedback include:

- Pride in technical capabilities, notwithstanding critical feedback.
- Dismissing feedback on the grounds that critics simply don't understand.
- Reminding critics of the statutory obligations and the laws of physics, which must be satisfied.

These responses do little to understand or appreciate the differences in perception, and do nothing to improve effective working with others to achieve the business purpose. It is probable that all professions and functional disciplines experience similar differences of perceptions.

The Working Together programme did nothing to undermine the confidence, self-esteem or pride that engineers have in their work, or their achievements. However, through the continua of values and mythologies, the programme helped engineers to 'see themselves as others see them'. These insights demonstrated that the key to being more effective as engineers is not simply by increasing technical capability, but by becoming more skilful in predicting the behaviour of working partners and modifying their own behaviour, in anticipation of these predictions, so that the technical advice being offered is not rejected due to oversight, misunderstanding or prejudice. Demands from partners for solutions that are fit for purpose and commercially acceptable are examples of predicting behaviour, for example, a solution may be rejected because it is too expensive to a working partner whose needs are for short-term economies. The same solution may be acceptable to the organisation that has a different perspective and realises the solution is preferable for longer-term performance.

The Working Together programme also presented the three tools of leadership: systems, behaviour and symbols. This tripartite relationship is comparable with the interdependence between system design, efficient processes and feedback that are essential to control engineering processes. Engineers understand, for example, that if a machine is not maintained in accordance with a schedule that reflects its duty and design, the machine will exhibit symbols from which sub-optimum performance can be predicted unless something is done to change the system design or the (maintenance) behaviour.

The leadership model highlighted the need for actions that are necessary to achieve productive performance in working relationships. The programme also provided models and tools that were of immediate practical benefit to facilitate these actions.

Overall, it was concluded that the programme had achieved the purpose in helping to achieve a shared understanding about how everyone needs to work together to achieve personal and business success.