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APPROACHES TO QUALITY USED BY COMPANIES ON BOTH SIDES OF THE ATLANTIC

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Abstract

Quality as a tool for competitive advantage has been propounded for more than thirty years, and many high profile approaches to quality improvement are currently used by organisations around the world. Yet, criticisms of earlier approaches have been raised. For instance, Total Quality Management has been seen as a "fallen star" by Dale et al (2000), the weakening of its foundations has been identified by Dayton (2003) and innovation is seen as a more effective competitiveness tool by Rahman (2004). Its champions, however, remain in the form of such approaches as the European Foundation for Quality Management (EFQM) business excellence model, Six Sigma and Lean Sigma (Maguad 2006, Williams et al, 2006 and Green 2006). This paper presents a study of current approaches in the U.S. and Britain, their similarities, their differences and the enduring challenges facing organisations today.

Introduction

During the latter quarter of the 20th century, quality movements were seen as the way forward for companies facing increasing global challenges. Total Quality Management has been a banner under which many such initiatives were introduced. In more recent years, this philosophy, as an approach to tackling the most pressing problems of the twenty first century, has been called into question (Dale et al 2000, Dayton 2003, Rahman 2004). Dale, for instance, suggests that whilst many regard TQM as a fallen star, its replacement by the term excellence, as in the European Foundation for Quality Management (EFQM) model, may be detracting from the fundamentals of quality management (Dale et al 2000). Dayton suggests that the

absence of senior management valuing and living the TQM process, coupled with organisational inflexibility and inertia has created an environment that weakened and eroded the foundations of TQM. Rahman, on the other hand, argues that the importance given to the all pervasive soft aspects of TQM (i.e., the people dimension), has been overplayed in the context of a business environment which increasingly requires innovation to maintain competitive advantage rather than continuous improvement (Rahman 2004). The necessity of innovation and rapid flexibility was predicted as a result of an increased reliance on technology to monitor processes, anticipate problems and implement solutions (Conti et al, 2003; Adamson, 2005). Nevertheless, the underlying principles of TQM continue to be practiced within approaches such as the EFQM business excellence model, Six Sigma and Lean Sigma (Maguad 2006, Williams et al, 2006 and Green 2006).

The actual route to successful implementation of such practices throughout organisations has, however, been many and varied. The centrality of integration across the whole organisation as a core element of TQM continues to be stressed (Manglesdorf 1999). Further, beyond the boundaries of any organisation, others emphasise the importance of integrating quality management across the entire supply chain (Levy et al 1995, Kuei et al 2001, Casadesus and de Castro 2005). The importance of linking strategy and approaches to quality management has been another important theme in the quality literature (Chapman et al 1997, Leonard and McAdam 2002, Kelemen 2003, Foster 2007). Various barriers to the successful implementation of quality initiatives are also identified in the literature, such as the lack of commitment of upper level management (Soltani et al 2005), ineffective leadership and lack of employee involvement (Warwood and Roberts 2004), together

with inadequate human resources development, inadequate resources for TQM, and lack of key elements like leadership, planning for quality and customer focus (Sebastianelli and Tamimi 2003). In addition, the need for an appropriate culture continues to be an underlying principle in the quality literature (Gallear and Ghobadian 2004). Thus, it appears that faith in the soft aspects of TQM still pervade thinking on quality.

The research reported in this paper, looks at the quality initiatives undertaken in organisations over the last five years in the U.S. and Britain. This time span was selected to reflect recent thinking on quality initiatives within organisations that was likely to be reliably recalled by survey respondents. The aim of this study was to explore the impetus for recent changes, the implementation and evaluation methods for such initiatives and the level of involvement of quality managers. Thus, the purpose of this research is to answer the following questions: 1) does quality still live on in companies today?, 2) if so, why and in what forms, and 3) what challenges do companies face when undertaking such initiatives?

Research methodology

The survey results reported in this paper are part of a programme of international research involving collaborators in the U.S. and Britain, for the purpose of comparing and contrasting quality issues between countries. This study used a common questionnaire, which was developed initially for British research in 2007 [see Burcher et al 2009].

Data from companies in the U.S. were collected a year later (2008) using the same instrument, but it was distributed as a web-based survey to approximately 400 respondents who were members of the American Society for Quality and other company contacts. A total of 218 replies were received, of which 211 were useable. The American sample was split between manufacturing (54%) and service (46%) organisations. The majority (59%) of the companies represented in the American survey were small to medium sized organisations.

In Britain, the same survey was distributed via regular postal mail to a random sample of 1,000 members of the Chartered Quality Institute, and 175 useable responses were collected. The use of a web-based survey may account for the higher response rate in the American study compared with the response rate for the British postal survey. The sample in Britain was similarly split between manufacturing and service organisations with 55% of managers in manufacturing and 45% in services. In terms of company size, over 60% of respondents represented small to medium sized organisations. Thus, the samples of the organisations in the two countries are comparable in terms of size and demographics.

The respondents in both countries were mainly Quality Managers or Directors (52% in the U.S. and 56% in Britain); the remaining survey respondents had responsibility for quality, although they held a variety of other titles. In the U.S., 75% of companies surveyed indicated that they had introduced a new quality initiative in the last five years, whereas 87% of British companies surveyed said the same.

This research looks at quality initiatives undertaken in organisations in the U.S. and Britain in the last five years and examines the following specific research questions:

1. Why do companies continue to invest in quality initiatives?
2. What forms do these initiatives take?
3. What are the challenges presented when undertaking such initiatives?
4. Does quality still live on in companies today?

Results

The samples from both countries considered those organisations which both had and had not changed their quality systems during the last five years.

Sticking with the "tried and tested"

Amongst the American organisations, 25% had not introduced a new quality initiative in the past five years. Respondents indicated that their organisation's current approaches to quality improvement included:

- ISO 9000
- Six Sigma
- Company specific systems
- General quality improvement practices

Their main reasons for continuing with their current methodologies included:

- More than satisfied with their current quality system (‘if it ain’t broke, don’t fix it’!)
- They are meeting industry standards and requirements
- Customers and clients are happy with the current quality systems

Only 13% of British companies had not changed their approach to quality improvement during the past five years, and of these, over half had not even considered doing so. Of the rest, they had either considered or were currently considering an alternative approach, but had not actually undertaken the change. Respondents indicated that their organisation’s current quality systems included:

- ISO 9000
- TQM
- Customer Specific Quality System
- EFQM

The apparent lack of urgency regarding quality initiatives was reflected in their reasons for continuing with their present systems, as

- 77% saw them as “working OK”
- 9% quoted Inertia
- And another 9% said their current system was required by top management

For the American sample, they rated the success of their current approaches as an average of 6.23 on a 1-10 scale, where 10 = completely successful and 1 = completely unsuccessful. British respondents similarly rated the success of their current approaches as an average of 6.3 on the same scale.

The Recent Innovators

Drivers of change

Of the majority of the two samples who did undertake change, they were asked what or who were the sources of their new initiative. The impetus for change with both samples was mostly internal, i.e., Head Office Policy, American (46%) British (47%) or In-company Individuals, American (33%) British (46%) ($p < 0.027$). The other, less important impetus to change, was through customer pressure, American (16%) and British (8%). Thus individual change agents within the company are more common in the case of the British organisations, whereas the American companies appear to be more sensitive to customer pressure ($p < 0.035$).

Turning to the sources of the impetus for change, in the U.S., the in-company individuals driving change were mostly Quality Managers or Directors (40%), but Presidents, Chief Executive Officers and Plant Managers were also influential. In Britain, where in-company individuals were driving change, these were also predominantly Quality Managers or Directors (46%) but as with the American companies, board level appointees were also drivers of change in some companies.

Types of Initiatives

The forms of the new initiatives undertaken by the U.S. and British samples were varied as indicated in Table 1

Table 1 New initiatives undertaken by the U.S. and British samples*

Type of Initiative	**U.S. initiatives n=194**	**Britain initiatives n=211**
Zero defect	7%	4%
Quality Control (SPC)	11%	8%
Total Quality Management	12%	5%
Business Process Re-engineering (BPR)	15%	9%
EFQM Business Excellence model	1%	9%
ISO 9000	17%	23%
Six Sigma	23%	16%
Other**	14%	25%

*This table includes all the new initiatives undertaken in the previous five years, whereby some companies undertook more than one initiative

**This covers a range of alternatives, mainly industry/company specific systems.

For both countries, it was possible to categorise the approaches under five main headings. The categories in the following typology in Table 2 encompass a variety of initiatives with International and Industry Systems Standards covering ISO9000 and Industry Quality Systems, where standards are set from outside the organisation and accredited by outside bodies. The Early Quality Philosophies include TQM, BPR, Zero Defects (Crosby), PDCA (Deming) and Integrated (in-company) Systems, where the quality gurus of the time advocated that quality was not just the concern of a quality department but was the responsibility of everyone in the organisation. Other Tool Based Approaches cover Quality Control, Problem Solving and a Risk Based Approach. Here, there is essentially a "pick and mix" approach e.g., SPC, which is not organisation wide. Recent Quality Philosophies cover both Six Sigma, Lean Sigma and Lean, where responsibility for quality becomes organisation wide as in the Early Philosophies but with a system which signals more clearly the crucial role of leaders and project teams. Also a much wider range of tools and techniques are employed and improvement projects have to pass the hurdle of a cost benefit analysis before implementation. Self Assessment Auditing Tools like EFQM have elements in common with other organisation wide approaches but are specifically a measurement based technique to identify priorities for improvement based on the European Quality Award criteria. In the U.S. there was evidence of the use of the Malcolm Baldridge National Quality Award model for self assessment.

Table 2 Typology of new quality initiatives

APPROACH	AMERICAN initiatives n=193	BRITISH initiatives n=211	p value
International and Industry Systems Standards	21%	34%	0.001
Early Quality Philosophies	36%	22%	0.002
Other Tool Based Approaches	13%	17%	Not significantly different
Recent Quality Philosophies	28%	16%	0.005
Self Assessment Auditing Tools	2%	9%	0.002

In general, the range of approaches to quality is similar in the two countries but there are significant differences between the take-up in the two countries in all but the 'Tool Based' category. Not surprisingly, there was a low take up of the Self Assessment Auditing Tools in the USA, as this category is essentially a European initiative using EFQM. Aside from this anticipated difference, Britain appears to rely heavily on International and Industry Systems Standards (e.g., ISO9000), whereas the U.S. companies have turned more to either Early or More Recent Quality Philosophies. Generally, the organisations studied seem to take a fairly conservative stance to

tackling quality, relying on the tried and tested early quality approaches (36% in the U.S. and 22% in Britain). However, companies in the U.S. are more ready to break new ground by following the latest demonstrated paths to success, like GE and Motorola's Six Sigma initiatives (28% in the U.S. and only 16% in Britain).

Implementation Issues

All new initiatives in organisations provide challenges for management and these are explored in the two samples in terms of major issues during the implementation and evaluation processes and the main barriers identified in successfully undertaking such initiatives. The main sources of difficulty in both countries relate to motivational issues like commitment of the workforce and top management support and to more practical constraints like sufficient training of staff, time and resourcing. Also, a constraint is that many initiatives do not have a dedicated budget as is the case for 54% of companies in the U.S. and in Britain. Neither is a cost-benefit analysis the norm before organisations set about implementing their chosen path for 51% of American organisations and an even larger 64% of the British sample ($p<0.011$). More encouragingly, most initiatives have an implementation team which is drawn from across the organisation, including senior staff (82% in the U.S. and 80% in Britain). Also, having decided to go ahead, time scales are quite tight, as the majority are completed within the year (80% in the U.S. and 68% in Britain). This speed, however, appears to have been accomplished at the cost of not training all the staff, which could also reflect the lack of sufficient resources being dedicated to the initiative.

The results on how long it took to implement a quality initiative varied across the organisations but was fairly similar between the two countries as indicated in Table 3.

Table 3 The Time from Approval to Full Implementation of New Initiatives in American and British Organisations

Time for Implementation	**% American**	**% British**
1-6 months	48	37
7-12 months	32	31
13-24 months	20	28
Over 24 months	0	5

How Successful were the Changes?

Although a cost-benefit analysis was not the norm in many of the companies in both countries, a post implementation evaluation was the case for 68% of U.S. organisations and 76% of the British. Measures used in this evaluation in both countries were mostly service level improvement, quality defects and cost savings.

In terms of a measure of success for those that had implemented a new quality initiative in the past five years, on a scale of 1-10 where 10 = completely successful and 1 = completely unsuccessful, U.S. respondents scored an average of 7.8 and the British scored 7.2. This suggests that the companies who have taken a new initiative are more satisfied with their current system than the companies who have not changed

over the last five years, where satisfaction scores were 6.23 for the American organisations and 6.3 for the British. A t-test shows that US firms with new initiatives were judged significantly more successful at the 1% level with a p-value of 0.0005. Similarly, British firms reported significantly higher success scores at the 5% level with a p-value of 0.024.

Conclusions

The following sections summarize the findings for each research question that this study set out to answer.

Why undertake quality initiatives?

The samples of organisations in both countries fell into two groups, with the majority having undertaken a new quality initiative during the last five years (75% in the U.S. and 87% in Britain). Of the smaller proportion which had not changed, this was often because they were satisfied with the "tried and tested" system and felt no pressure to change. Amongst the main group of "changers" the quality initiatives undertaken to improve performance were mainly driven by internal forces within organisations in both countries. The pressure from Head Office policies was the greatest source of change in both the American and British organisations but in the case of the British companies, individual initiators were equally important. These individuals in both countries were predominantly Quality Managers or Quality Directors. Pressure from customers as a source of change was much less important than internal pressures in

both countries and customers were even less likely to be cited in the case of the British companies.

What were the quality initiatives?

As the types of changes undertaken in the organisations in both countries were very similar, it was possible to group these in terms of a five category typology, which ranged from international or industry systems and standards, early or more recent quality philosophies, tool based or self assessment systems. The emphasis on the different systems varied between the two countries, with the early and then recent quality philosophies being the most important initiatives for the U.S. companies, whereas amongst the British organisations, international systems standards followed by early quality philosophies were the most important vehicles of change. It appears that the American companies were more ready to embrace change philosophies that emphasise the importance of human factors both as individuals embracing new ways and teamwork, whereas, in the British organisations, the emphasis was more on formalised systems of control.

What are the challenges presented when undertaking such initiatives?

Turning to barriers for the successful implementation of new quality initiatives, various factors appear in the literature, including lack of aspects like leadership and commitment, employee involvement, customer focus and resources and these have been recognised as enduring problems by quality managers in this study. The majority of challenges cited by the organisations in both countries in this research ranged from

motivation and commitment of the workforce and the support of top management, through to practical constraints like appropriate training, timescales and resources dedicated to the initiative.

Does quality live on in companies today?

Perhaps the most encouraging point to be made from this research is that the vast majority of the organisations studied had undertaken some form of quality initiative during the last five years. This is an important indicator that "quality is not dead". Also, generally, quality initiatives were judged to be mainly successful, especially so in those organisations that did undertake the challenge of change, when compared with the much smaller group who no longer saw the need to go down the quality change route to business success.

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