

# CONCEPTS OF QUALITY AND QUALITY MANAGEMENT IN INDUSTRY AND THE SERVICE SECTOR

By Brian Moores

**Abstract:** The article (chapter) opens with a brief history of the quality movement from the early emphasis on inspection to the emergence of a set of concepts and approaches which are often collectively referred to as TQM. It seems to be appreciated by an increasing number of organisations that a concern for quality translates through to the bottom line. It is also the case that successful quality initiatives go hand in glove with greater work force participation. When one moves from the manufacturing sector to service industries we see that a whole new range of considerations come into play. Here we find a need to emphasise the determination of customer needs and the putting into place of systems for measuring customer satisfaction. These two particular issues are of obvious relevance to those charged with the provision of library and information services. Finally there is reference to the expanding concept of "Service Guarantees" which could conceivably also be of relevance in this sector.

When the typical text on Quality Management runs to several hundred pages, it has to be apparent that a five page paper has to be both tightly written and highly selective of the material covered. The first part of this paper presents an overview of the development of quality management concepts whilst the second part is concentrated on customer, service issues some of which have obvious and not so obvious relevance to the library service.

With the advent of modern industrial methods, it was felt that there existed a need to impose an inspection function. How else could one ensure that the desire of operatives to earn an output related bonus wouldn't serve to generate a less than healthy interest in the quality of what was being produced? Hence was conceived the sharp divide between production and inspection which was to characterise the typical workplace for almost a century. Some employees were paid to make things whilst others were paid to check on the quality of the output from their incentivised efforts.

The growth of the newly emerging discipline of statistics gave rise to a switch in emphasis in a limited number of American manufacturing companies in the

1930s. Recognising that most production processes delivered a variable output, statisticians at Bell Laboratories developed methodologies which enabled processes rather than output to be monitored. **Statistical Process Control (SPC)** switches the emphasis from checking on the quality of a batch of finished products to determining whether or not the process is delivering consistent output. *Building good quality in as distinct from not checking bad quality out* is the aphorism which neatly captures this fundamental difference in ethos. A little reflection reveals that this change brings with it an even more fundamental change in the pattern of work. To be effective, SPC requires that the production worker checks the process over which he has control. No longer is this auditing left to an inspector.

The concepts were not widely adopted in either America or Europe. However, in the immediate post-war years, those who had developed the SPC approach were asked to advise Japanese industrialists as to how they could set about improving the quality of that country's output. Only by so doing, could that nation hope to enter into much needed trading relationships with the West. The rest is history. Instead of being thought of as garbage, Japanese products became synonymous with quality and reliability. Whole sectors were dominated by the fruits of their efforts. Eventually, it was the Japanese who were pioneering the introduction of ever more sophisticated approaches to quality improvement. Statistical concepts were, however, only one part of the picture. Their culture apparently warmed to the increased worker participation which inevitably flowed from the adoption of these concepts. Other forms of participation, including **Quality Circles**, emerged as key components of this national drive towards manufacturing excellence. This particular concept, which involves small groups of workers identifying and resolving problems which are standing in the way of quality output, is a notable success story in that culture. Attempts to translocate the concept to the West have produced highly variable results. Another manifestation of the readier preparedness of Japanese industry to appreciate that the work force don't leave their brains at home when they come to work is the huge numbers of highly productive proposals which materialise from their well structured and well documented suggestion schemes.

In the early 1980s, American industry began to appreciate that Japanese superiority in such product groups as cars, hi-fi's and televisions did not derive from a low wage economy. This recognition can be dated from a TV documentary featuring Edwards Deming, one of the aforementioned post-war consultants after whom Japan's most prestigious quality award is named. Prior to that seminal media event, American industry had actually begun to appreciate, as had Japan, that there were solid financial imperatives underpinning a *get-it-right-first-time* ethos.

The costs of non-conformance associated with scrap, rework or the honouring of warranties could consume 25% or more of sales turnover. Published **Costs of Quality** figures of this order of magnitude jolted companies into realising that something had to be done. Philip Crosby was one of those who was most instrumental in popularising the concept via his widely read and readable book *Quality is Free*. He it was who was also responsible for promulgating the concept of **Zero Defects** which somewhat paralleled the mistakeproofing (*Poka-Yoke*) approach originally developed at Toyota.

In more recent years, the main developments have been focused on external relationships. The notion of workers auditing quality of their own outputs sits uncomfortably alongside the idea of checking on the quality of components received from suppliers whether it be on the basis of 100% inspection or some more sophisticated statistically based acceptance sampling plan. Many companies which have pursued a Quality Management initiative internally have, almost inexorably, moved towards some form of vendor rating. This greater interdependence between purchaser and supplier invariably brings a reduction in the size of the supplier base and a virtual elimination of the traditional goods-inwards form of inspection. Such close relationships are, of course, an essential prerequisite for Just-in-Time manufacturing systems.

It would be fair to report that Britain's lone contribution to the quality movement has been the formalisation of one such form of quality accreditation. Since adopted in its entirety as ISO 9000, BS 5750 constitutes a systematised procedure for ensuring that an organisation's quality systems are as they say they are. The fact that a company's quality systems are judged sufficient for BS 5750 accreditation says nothing about the quality of goods and services it delivers. However, the underlying assumption is that, the more robust the system, the more likely is it that the output will pass muster. The other relatively new external dimension is **Benchmarking**. Pioneered by Xerox when it was discovered that their manufacturing costs exceeded the selling price of virtually identical machines produced by their Japanese affiliate, this approach involves determining best practice elsewhere for all elements of a company's operations. These comparative indicators provide the hard evidence of just how well a company is performing. It is not unusual to find that the company performing *best-in-class* on some aspect is two or three times better than the average. Not surprisingly, a growing awareness of what is possible is leading more and more organisations to conceive of quantum jumps in performance. **Re-engineering** is the label attached to a part of this type of thinking which, interestingly, appears to be at variance with the continuous quality improvement strategy favoured by the Japanese.

Both the Americans and the Europeans have acknowledged the value of recognising those companies which deliver outstanding quality. The Baldrige award has seen five sets of award winners including three service-based companies, whilst 1992 saw Rank Xerox receiving the first European Quality Award. In both cases, the criteria place a considerably emphasis on customer satisfaction and clear evidence that benchmarking constitutes a key component of a company's quality system. Equally importantly, the examiners are most anxious to ascertain whether or not a genuine obsession with quality permeates the whole organisation. Ensuring that the whole workforce is committed to a customer imperative requires more than just mere exhortations. Invariably, it involves the actual involvement of all staff in a variety of quality improvement projects which are typically based on team efforts. All in all, it would be fair to say that it would now be relatively easy to gauge just where a company is located on a quality spectrum. At the bottom end of the scale, we would still find an emphasis on quality control as distinct from quality assurance. Staff involvement in anything other than wage negotiation would be minimal and *Putting things right* as distinct from *getting things right-first-time* would still be the order of the day. At the opposite end of the spectrum, one would find companies anxious to discover just how they stack up against Baldrige or EQA criteria. Everyone in the organisation would relate to a customer imperative and this would be manifested in a never-ending search for quality improvements. There would also be an acceptance of the concept of the internal customer which involves each employee being aware of his or her role in the customer supply chain.

This last concept is of particular relevance in the service sector. In truth though, all of the issues addressed thus far have direct applicability in a service context. For example, it is frequently claimed that the costs of non-conformance in the service sector can do exceed the aforementioned 25% of turnover figure. Likewise, staff employed by a telephone company are just as likely to proffer suggestions as to how the quality of service can be enhanced as are their counterparts in say a chemical complex. Benchmarking service standards and performance can be just as insightful to a service provider as to a manufacturer. A little reflection leads one to conclude that it is more than likely to prove revealing in a library setting. How quickly does the best performing library deliver an interlibrary loan request to a reader? How many more hours is one library open than the average? These are but two examples of issues which could be addressed in this manner. Likewise, there is no reason at all for believing that the discipline imposed by ISO 9000 couldn't be just as valuable to a library as it has proven to be to a general medical practitioner or to IBM's manufacturing facilities.

In addition to the value of transferring these production-based quality concepts to the service sector, there are, though, some additional ideas which are of particular relevance in an environment where the customer is an integral part of the process. Returning to the Quality Cost theme, there are at least two additional considerations which are germane to the situation. Recent research has revealed that loyal customers spend ever increasing amounts with service providers whose level of performance is such as to create the loyalty. This ever increasing spend, when combined with the costs associated with the initial recruitment of the customer, has the effect of producing surprisingly high returns for just marginal increments in customer retention. For example, reducing this so called *churn* by just five percentage points can positively impact on profitability by over 70% in the credit card business. Similar increases materialise in a wide range of industries from Industrial Laundries (45%) to Software (35%). In the last named industrial sector, it is easy to see that another element in this customer retention equation is the reduced cost of doing business with a service provider the longer the length of the relationship. It is of more than passing interest to report that one commercial supplier of information services was so persuaded of the importance of customer retention that he has introduced a staff bonus system based on this single-parameter.

Another area in which service industries have tended to lead the way is the determination and prioritising of customer needs. In manufacturing, the approach of **Quality Function Deployment** has the same objective but, in truth, it is not too widely adopted. The idea of discovering what it is that customers want is, of course, at variance with the all too frequently encountered belief that companies know best what customers need. It is now widely accepted that a real gap can, and often does, exist between what customers want and what company executives believe those wants to be. Discovering customer needs can involve a variety of devices, perhaps the most popular, at least in the first instance, being the use of **Customer Focus Groups**. In these settings, groups of up to a dozen customers are encouraged to opine on a variety of issues. The objective is to ascertain not only what issues are of concern to them but also to secure some idea of the relative importance of each of these issues. In a library context, a group of customers might indicate that hours of opening is of critical concern. Likewise, the library's ability to secure inter-library loans might be deemed to be of considerable importance. There again, it might be that the customers have some reservations about such *hygiene* factors as the lighting, seating, noise levels or air conditioning. Determining these **customer defined service attributes** is vital if the library is to affect improvements to those characteristics which are judged to be of particular relevance. Having determined the attributes and their perceived *importance*, it

might then prove insightful to embark on a study of how well the library is felt to be *performing* against each of these attributes. The representation of the perceived importance/performance indices on a two dimensional display can be a revealing, albeit a relatively naive, form of presentation.

Discovering just what concerns customers is a necessary precursor to the **Measurement of Customer Satisfaction**. Practised by an ever increasing number of service organisations, it is usually self evident when the associated questionnaire has been developed without the previous step having been undertaken. In such circumstances, the questions relate to issues which are of only marginal interest to customers. Worse, they can feel quite exasperated if the questionnaire does not address issues which they judge to be of more pressing concern. In such circumstances, is it any wonder that the response rates to such questionnaires is depressingly low? Most hotel chains feature this type of innocuous or bland survey instrument.

Berry's team has concluded that across a range of industries, customers are concerned about five broad characteristics of the service encounter namely Reliability, Staff Attitude, Tangibles, Empathy and Responsiveness. Their work also reveals that reliability is by far and away the dominant set of issues. They also believe that, when customers rate aspects of service, they tend to contrast what they have received with what which they had been expecting to receive.

The emphasis in Berry's work is, therefore, on securing a pair of assessments of perception and expectation both based on Likert style questions. It would, though, have to be reported that there is a growing disaffection with the notion of asking customers what they would expect of a hypothesised excellent service provider. Why, so it is argued, should this produce anything but a fairly predictable top of the scale set of responses? There is also a discernable shift towards the use of semantic scales as distinct from those of the more readily produced Likert variety. Thus, in a library context, a Likert scale relating to say the availability of reference materials could take the form:

<i>In this library, we experience only the odd occasion when reference materials cannot be obtained on the same day.</i>	Strongly Agree	Strongly Disagree
--	----------------	-------------------

The alternative semantic scale might involve the following two additional statements and respondents would be asked to choose between what are supposed to be three mutually exclusive and exhaustive alternative responses.

*It is irksome how often we encounter quite longish delays in getting hold of reference materials.*

*In truth, the inability of the library to secure reference materials within a reasonable time frame is so bad that I usually go elsewhere for them.*

In the commercial world, the more enlightened organisations appreciate that securing customer satisfaction survey results is only one part of the overall picture. There still remains the more telling issue which is bringing about the necessary improvements to those characteristics judged to be less than satisfactory. The Quality Improvement Team or Quality Circle concept can be brought to play here just as in a manufacturing context. Certainly, it was used successfully by British Airways throughout its well regarded *Putting Customers First* campaign. In a library context, there would appear to be some mileage in involving customers in such team efforts. These same leading edge companies are increasingly cognisant of the fact that, in a service industry, the calibre of the front line personnel is crucially important. Hence the premium now placed in selecting staff who are naturally motivated towards delivering good service. Having selected appropriate personnel, there then arises the equally important need to ensure that their subsequent training is orientated towards this same end. It is, perhaps, worth observing here that *excellent* has been chosen quite deliberately as distinct from *satisfactory*. There is now ample evidence that repurchase intention is dependent upon customers leaving a service encounter more than merely satisfied. Hence the efforts by companies to determine how they might produce *delighted* customers.

Finding out what customers need; putting in place systems to deliver their needs; selecting staff who are committed and trained to deliver them and measuring the extent to which customers are satisfied with the results are all obvious components of any sensible strategy. However, with the best will in the world, mistakes can and do happen in a service environment. There then arises a need to have in place well thought out recovery systems. We know that the overwhelming majority of dissatisfied customers do not trouble to complain. Somewhat paradoxically therefore, there arises a need to encourage customers to complain. Only in that way do you have any chance of rectifying the problem and thereby preventing 91% of them never returning and telling ten acquaintances of the bad service experience.

One very powerful vehicle for encouraging the voicing of complaints is an **Unconditional Service Guarantee**. This concept involves providing a customer who has received a less than perfect service experience with appropriate recompense. *Pizzas there in 30 minutes or they're free* is one such example as is the guarantee offered by the Hampton Inn chain of motels. Their's is a very powerful and uncomplicated offer to the effect that *if for any reason you should not be*

*satisfied with your stay you are not expected to pay.* Some 3% of customers do not pay but the power of the offer is such that it is 3% of a much larger number of guests than were coming to the motels before. Obviously, before such offers can be made on rational economic grounds, a good deal of time and effort needs to have been directed at ensuring that the service delivery systems have been properly designed. It could, therefore, be argued that those companies which are in a position to offer such guarantees are the ones which boast systems worth emulating. There seems no good reason why libraries should be immune from the spread of this phenomenon and it might be quite instructive to reflect on the form such guarantees could assume.

Brian Moores  
Manchester Business School  
Institute of Service Management  
Booth Street West  
Manchester M15 6PB  
United Kingdom