

**SWP 19/91 COMING TO GRIPS WITH SERVICE INTANGIBLES
USING QUALITY MANAGEMENT TECHNIQUES**

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by

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ABSTRACT

Making judgements about marketing opportunities in the 1990s needs a flexible view, with the emphasis on relationship building. Yet few companies really understand their customers. To make matters worse, even when good research is available, many companies are defeated by the task of converting that research into design plans, or diagnostic work on service defects. To do this means coming to grips with service intangibles. This paper outlines some of the quality management techniques involved, and the implications for 'internal marketing'.

COMING TO GRIPS WITH SERVICE INTANGIBLES USING QUALITY MANAGEMENT TECHNIQUES

During the 1980s we have seen a radical shift in management thinking. Interest in service quality improvement, which had some early and superficial expression as *customer care*, is being refuelled by problem solving techniques (with origins in Total Quality Management) and broad based staff involvement with those techniques (with origins in Participative Management). These practices are not new but they are now often fused together in one cascading company-wide event. Furthermore, the marketing environment has changed. Every industry is now potentially a 'service' industry. Every company has the opportunity to design and manage its own unique set of solutions to meet customer problems but this also requires service support of various kinds, and information and advice giving on an on-going 'relationship' basis.

The Quality Management Gap

With symptoms of company failure all around us, it is not surprising that many marketing activities turn out to be no more than tactical. Marketing plans often fail to build on their gains after the first few years because there is a quality management gap within the organisation.

The goal of quality management is to narrow the 'quality gap' between what customers expect, and what they experience. This not only facilitates getting customers, but *keeping* them. As quality goes up, non-value wastes and time related costs come down¹. When staff participate in the quality improvement process the beneficiaries are the staff, shareholders and customers, because expectations are not in tension with each other.

W Edwards Deming and J M Juran are widely regarded as the men who taught the Japanese to achieve high quality at low cost after World War II. Deming had worked with Dr Walter Shewhart in America before the War and his methods were used extensively during that War. Afterwards, markets for American goods sought volume, and quality was put to one side. Meanwhile, the Japanese faced a 'do or die' economic situation, and they listened to Deming, Juran and others. Over the last 40 years, both Deming and Juran developed from their immediate post War experience in Japan distinctive management philosophies now known as total quality management (TQM). In Deming's case in particular, the message to management has

become more blunt and urgent: the basic cause of sickness in industry and resulting unemployment is the failure of management to manage².

One of the most remarkable features of Total Quality Management (TQM) is the way in which it has drawn practising managers from many parts of an organisation to work together across traditional functional boundaries to improve quality and productivity. This points up a rather simple yet dramatic conclusion that has not yet been widely brought to attention. It is this: *quality has become an integrating concept between production-orientation and marketing-orientation*³. Marketing has always lacked a method of making the production/consumption connections between what the customer wants on the one hand and 'back office' activities of a firm, on the other. Now *quality management* is the missing link.

Value Chains

Through quality management we can find a structure for planning, and introducing the kinds of internal changes that need to be made to build a loyal customer base. Knowing what the customer expects on the one hand, and experiences on the other has its origins in the *customer value chain*.

We can define the concept of the customer value chain as a series (or linkage) of things a customer does that produce value for that customer. A firm's offering is input into the customer value chain⁴. The activity patterns of a customer are represented by the links in the chain. These control or modify the way in which a firm's output is actually used. For example, a bank savings account may be input into a customer value chain as a bill paying device, an investment for a 'rainy day' or a day to day savings account, according to how the customer goes about managing money and the priorities which are given value. Tracing out what value a customer draws from the firm's offering is to begin to understand how it fits into that customer's value chain. The aim is always to identify what a customer *is trying to do* with the firm's offering before jumping to any conclusions about what is valued and why. The customer value chain concept shows us that making a unique offer may be a waste of money if that offer does not fit beneficially into the activities, sequences and links in the customer value chain.

The value a firm creates for its customers is a function of the alignment it can achieve between the *firm's* value chain and the *customer's* value chain. It is about

adjusting the way a firm manages its service intangibles. How can we come to grips with this?

Consider first a sole trader or self-employed professional. The activities he or she performs on behalf of a customer are sequenced and integrated without the need for any command structure or functional differentiation within the 'organisation'. The whole design, production, delivery, and personal service is integrated within one head. However, if the business grows in staff, co-ordinating work activities arise, which require functional specialisation and some kind of hierarchical command and control. This is fine for a while, but as the size of the business increases, and the vertical controls are strengthened, the integration of work activities between people and across departments usually receives less corrective attention.

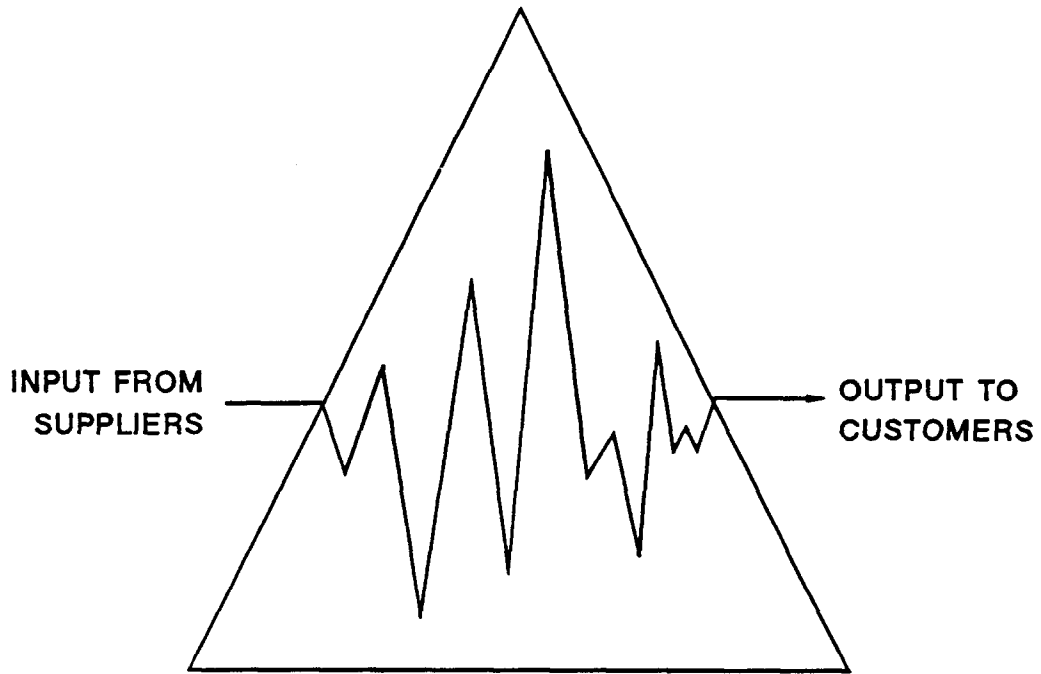
The essence of many quality problems will be found *between* departments rather more than *within* departments. To the extent that one department's output is mismatched with another department's input needs, there is a quality gap. Failure to manage work flow, laterally across the organisation, has a way of multiplying costs and quality failures all along the firm's value chain, through to the customer. The cost of quality is swollen by the sum total of all these mismatched activities, which invoke delays and higher level 'fire fighting' decisions (see Figure 1). One key task of quality management is to identify and examine the most critical cross-functional work flows and remove any blockages, thereby reducing the cost of achieving quality.

Cross Functional Work Flows

Reducing or minimising blockages in the work flows really begins 'upstream' in the value chain, at the service design stage. In this way quality can be 'built in'. Yet even with access to market information about customer wants and expectations, integrating this information into the design process has been a vexing task for many companies.

One powerful integrative technique is called Quality Function Deployment (QFD). This is a technique for translating customer requirements (the true quality characteristics) into design requirements (counterpart characteristics). The QFD methodology is not complex conceptually but requires careful attention to detail in the building up of a series of charts which show how customer requirements and design requirements come together. QFD is not exclusively a manufacturing design

THE CROSS FUNCTIONAL QUALITY MISMATCH



Cross functional work flows which go unmanaged
invite delays and 'high level' fire fighting activity

tool. Its valuable discipline is that by listening for the customer's 'voice' 'upstream' at the design stage in the value chain, activity 'downstream' can be slotted in correctly⁵.

Another way of examining cross-functional work flow starts by locating a generally agreed problem area within some work activity. Even better, start with a single customer concern that has been signalled from customer complaints or from a market research study. Either way, the idea is to trace a sequence of activities 'upstream' back to their original sources of input. Some of these processes may appear to be totally without co-ordination or control, or appear to be outside the control of the firm, or of a particular department or division within it.

The rationale for this kind of investigation is that all work activities eventually connect 'downstream' through the value chain to the end customer. Every work activity is part of a process and every process is a link in the value chain. The important issue is whether these activities add value to the firm and to the customer (or merely add cost). The way we begin to differentiate between the two is using a technique called *flow charting* (sometimes called 'blueprinting').

Flow Charting

Flowcharting may not seem very much like a traditional marketing activity, yet this technique has proven potential for designing-in value for customers of a kind that exceeds the cost to the firm. Indeed, the cost of quality falls in overall terms as sub optimality is addressed.







The aim is to break the flow of activities within a defined process down into logical steps and sequences. The flowchart itself is a diagram which shows a series of events that occur from beginning to end, keeping in mind of course that it is the customer that is 'calling the tune' and that the end of one process (output) is the beginning of another (input). The flowchart is made up of symbols that help identify what type of action occurs at each step of the process (see Figure 2). Inevitably performance *variability* is associated with any process, due to the effects of human judgement, random unpredictability, or assignable causes. These quality management topics, with notable exceptions, are seldom discussed in marketing literature⁶.

The flowchart is really a picture of the steps in the interaction between people, materials, equipment, information, methods and environment, within particular

WHAT IS A FLOW CHART ?

It is a diagram which shows a series of events that occur in a process from beginning to end, made up of symbols that help to identify what type of action occurs at each step in the process.

The table below defines each symbol used to draw a Flow Chart.

ACTIVITY	DESCRIPTION
	<p><u>INSPECTION</u> A checking function</p>
	<p><u>OPERATION</u> Indicates the main steps in a process. It involves the addition of information to a paper or a handling operation, such as stapling, folding, sorting, collating, assembling, filing and so on.</p>
	<p><u>DELAY</u> This symbol means that there is a time delay in the process</p>
	<p><u>COMBINED ACTIVITY</u> When two activities are performed at the same time, or at the same work station</p>
	<p><u>TRAVEL</u> Traveling occurs when something is moved from one place to another.</p>
	<p><u>STORAGE/FILING</u> This symbol is used when a form or document is filed or stored for a period of time</p>

processes or linked processes. The mapping out of the steps brings to light any inefficiencies (time or resources) in any process linkages. The places where the steps can be redesigned and simplified (with saving of customer's time and the firm's time and resources) often become 'obvious' once they are committed to paper in this way.

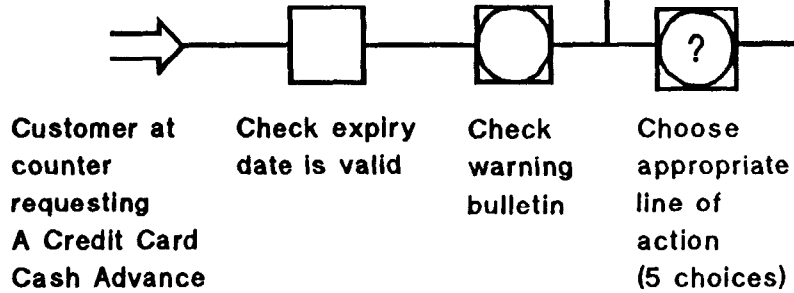
An example (see Figures 3 and 4) shows the 'before' and 'after' flowcharting of a process for a credit card cash advance at a retail bank. In the 'before' example, bank tellers were required to choose one of five procedures according to the type of card and the policy discretion for certain cash amounts allowed to the particular teller. Cash advances outside the teller's discretion had to be authorised by the Credit Card Centre via a phone call. Flowcharting this process showed up right away just how complex the process was and why tellers had great difficulty in 'carrying out laid down procedures'. The procedures were inherently mistake prone. What was even more interesting was that the authorisation call to the credit card centre was a fee for service charged back to the bank, that is, not a transfer cost but a real cost. Furthermore, delays for authorisation were common which increased the call time and the ability of the teller to deal with the transaction efficiently. While the teller waited for authorisation, customer service was delayed as new customers entering the bank and were forced to wait their turn.

The solution proved to be quite simple once the problem was signalled to the bank's data processing department. A relatively simple programme rewrite would enable the tellers' electronic terminals to be connected on-line to the credit card customer database. Effective 'authorisation' could then be obtained at the teller's workstation without costly phone calls, and without all the delays. Approval to make the changes was obtained quickly because the flowchart highlighted the problem and the solution opportunities with more impact than a departmental report. The bank saved almost one million pounds in call costs in the first year, plus time saved by tellers and flow-on efficiencies. Some larger branches were even able to reduce the number of telephone hand sets which gave an additional saving on telephone rentals!

The reason these changes had not been designed-in before is simple. From the perspective of data processing alone, the cost of the programme rewrite could not be justified because the benefits were not clear. When the cross-functional work flow was charted, the connection could for the first time be made between the waiting time from the customer's point of view, the critical time wasted from the teller's point of view, and the hidden costs.

CREDIT CARD CASH ADVANCE (before)

Teller makes offer to electronically link Credit Card

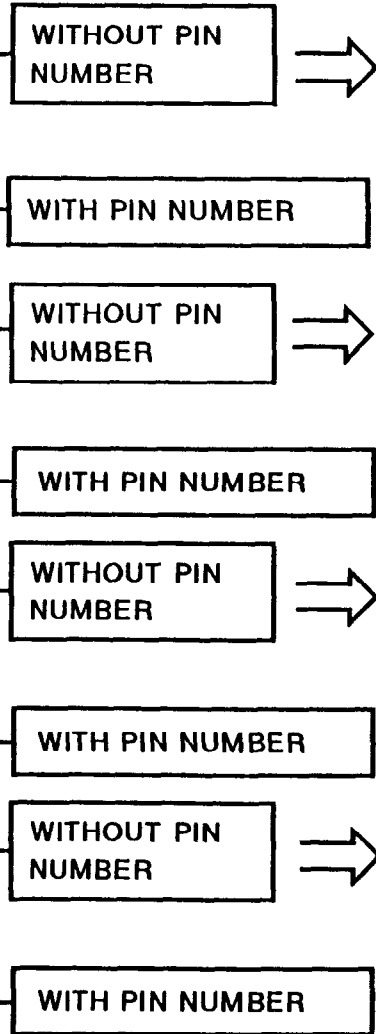


Customers who produce Card identification

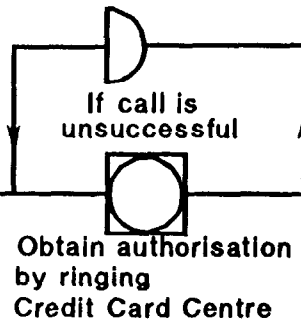
Own branch customers of good credit standard

Own branch customers whose credit is unknown

Other branch customers



Transaction outside cash discretion limit



AND SO IT GOES ON & ON

CREDIT CARD CASH ADVANCE (after)

Teller makes offer to link
accounts electronically
i.e. order a pin number
on their card

CARD WITHOUT
PIN NUMBER

3
Enter card
number in
terminal

4
Teller reads
terminal's
insructions
giving
authorisation

5
Teller gives
customer
receipt &
cash

1
Check expiry
date is valid

2
Check warning
bulletin

Customer requests
Cash Advance amount

CARD WITH
PIN NUMBER

3
Swipe card in
transaction
terminal

4
Teller reads
terminal's
insructions
giving
authorisation

5
Teller gives
customer receipt
& cash

Flowcharting can be made more powerful by introducing *time lines* (to show the elapsed time for discrete stages in a process) and to show how the customer is involved in the process, either waiting (dead time), participating (active time), or non-participating (absent time). Research and design teams and manufacturing management have used work flow design and control methods for years. What they often lack (and Marketing input must provide) is a customer orientation, and more specifically, 'downstream' data on service quality gaps and customer expectations.

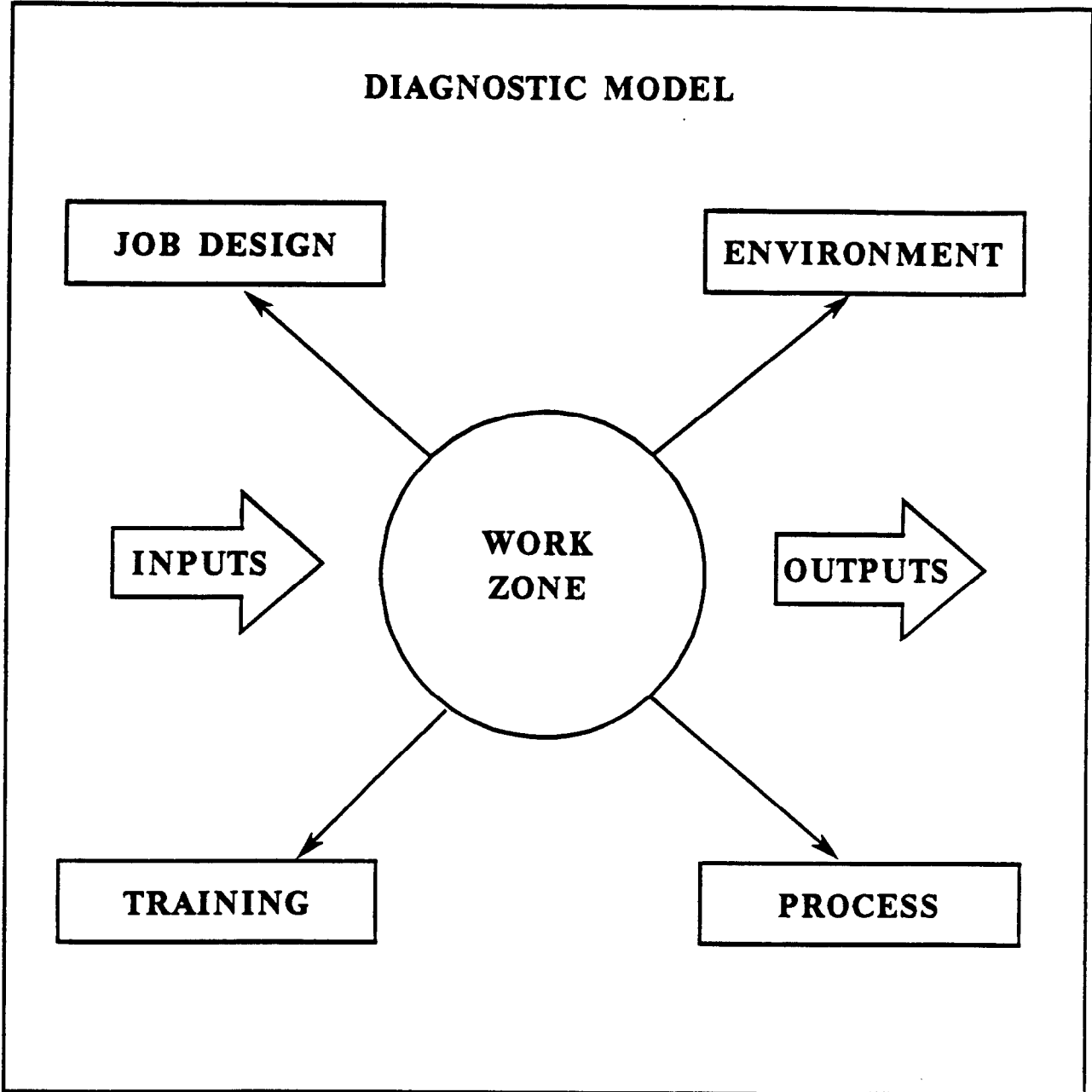
Internal Customers and Internal Suppliers

The concept of *internal customers* and *internal suppliers* follows naturally from an examination of flowcharting techniques. The people who are involved in particular tasks identified by flowcharting as a particular process are 'internal suppliers', and those who next follow that identified process are the 'internal customers'. Therefore everybody within the firm is both a customer and has customers.

Tracing these links *within* the firm from their starting point with the external customer, represents real opportunities for quality improvement. By carefully defining the ways customers use the firm's offering, large or small modifications can be made within the firm in terms of job designs, work environments, work processes, and training, to mention some key areas for diagnostic review (see Figure 5). What we see is how internal customers and internal suppliers each supply the other, invisibly connected, but nonetheless connected in terms of the input-output links in the value chain.

Success in reshaping external markets requires the involvement of marketing in the reshaping of *internal* markets. Building these internal markets is also called *Internal Marketing*. This phrase can be used to describe any form of marketing within an organisation which focuses staff attention on the internal activities that need to be changed in order that marketing plans may be implemented⁷. However, Internal Marketing as a concept can be extended to involve creating an organisational climate where cross-functional quality improvement can be sponsored and worked on by the staff whose job tasks are involved. The Internal Marketing task might further extend to empowering and enabling internal customers and internal suppliers to get together in quality review teams.

One method of review for internal markets is 'Department Purpose Analysis' (DPA) which has as its objective the clarification of buyer-supplier links within the



organisation (although external customers and suppliers need not in principle be excluded). The approach aims first to get a better understanding of the importance and performance of various activities within a particular work area, which might be contributing to an internal 'quality gap'. The department then identifies by working with its internal customers and internal suppliers the key opportunities for improvement. Small problems are best tackled first to build mutual confidence through results⁸.

A useful diagnostic tool which can be used here to explore improvement opportunities is the so-called *fishbone*, also called an Ishikawa diagram after its inventor, Dr Kaoru Ishikawa in Japan (see Figure 6).

Ishikawa (Fishbone) Diagrams

The fishbone is a creative way of structuring a particular work process by representing all the probable cause and effect relationships in a simple diagram. The 'effect' is really the problem (or its symptoms) being studied and is represented by the pointed end of the central backbone of the 'fish'. The various fishbones are used as a way of structuring thoughts about the causal elements and each main 'bone' represents a particular category of causal elements. Once people get the hang of the creative use of the fishbone as a diagnostic tool, they are soon looking at the causal elements in greater detail and finding subsidiary factors that need investigation. These are written in as 'tiny bones', connected to main causal elements.

Once a particular problem is mapped out in this way, any particular factor that seems promising for whatever reason can be looked into. A second stage in using the fishbone is to shift the emphasis from *problem analysis* to *solution analysis*. This time, the solution opportunity is entered in at the head of the fishbone as the 'effect' being studied and the diagram then becomes a set of categorised factors which potentially contribute to the solution. As before, the process is a creative one but the aim is 'breakthrough' results.

Marketing managers should find plenty of applications within their sphere. Remember that cause and effect relationships identified on the fishbone are *possible* cause-effect relationships. Only data will point to *actual* causes. This is not a problem, only a starting point.

ISHIKAWA (FISHBONE) DIAGRAM

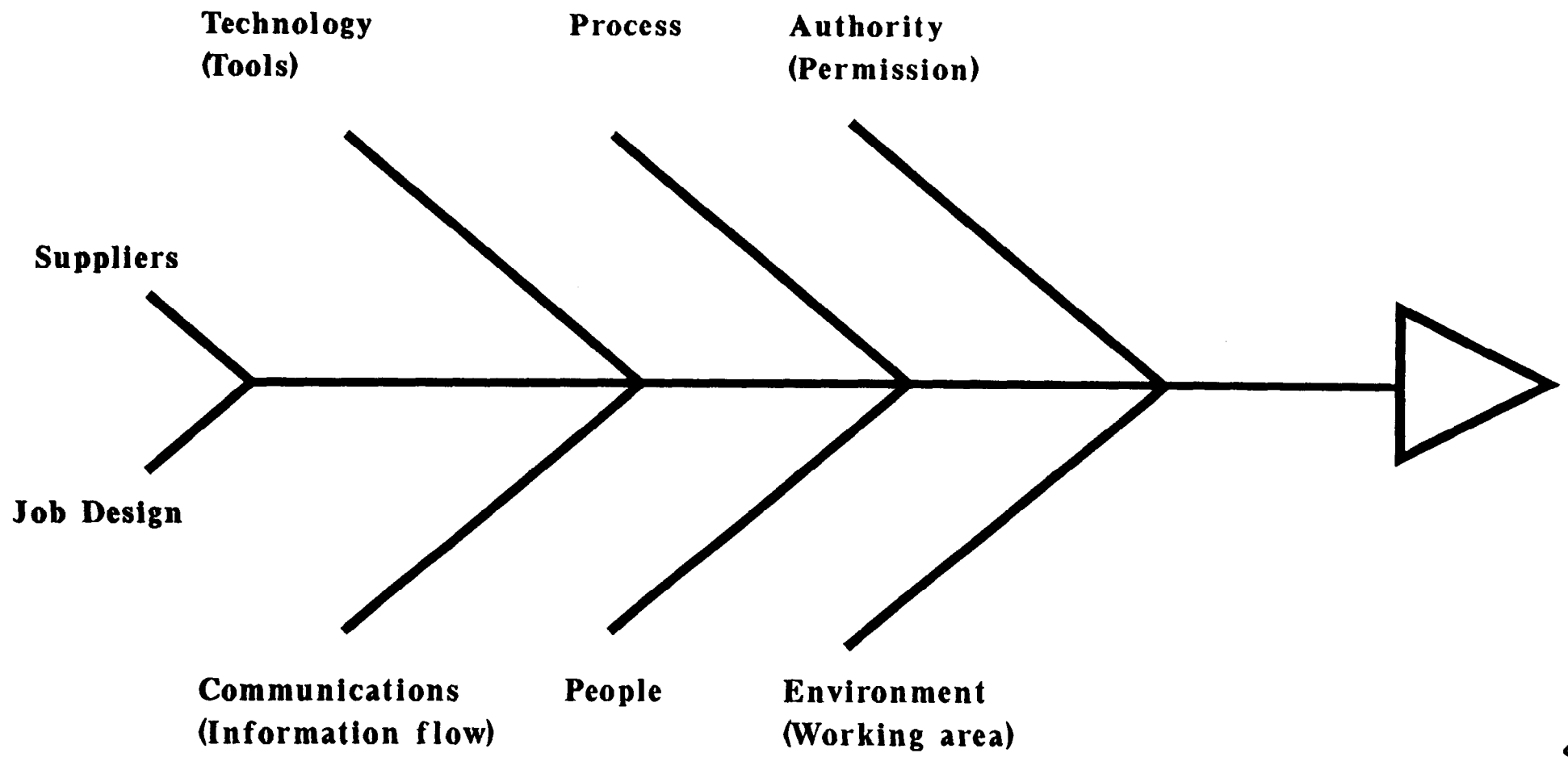


Fig 6

Variability Of A Process Is Built In

Our examination of the value chain has shown how service processes are linked (output to input), and that there are opportunities for the examination of these linkages, with a view to quality improvement. Every work process generates outputs which in some way fall short of perfection and uniformity. All processes contain sources of variability and these differences may be large, or measurably very small. Variability in service performance can be reduced but it can never be entirely eliminated. The goal is to reduce these variations in quality, so long as the value being added exceeds the total cost of achieving it.

Process variation is generated and passed along the whole chain of internal customers and suppliers to the final customer. Indeed, one eminent Japanese statistician, Genichi Taguchi, says that there is an incremental economic "loss" for each deviation from customer 'target requirements', which has a flow-on effect to society as a whole⁹.

There are two kinds of process variation. These can be identified using statistical methods¹⁰. Obvious marketing applications would be in the analysis of customer complaints, and as a customer loss/retention measure. Firstly there are *assignable causes* of variation which can be traced to a particular process, setting or input, that is, in some special way related to materials, equipment, information, methods, environmental characteristics, people or job tasks. Secondly, there are *random sources* of variation, which are common to the process, that is, inseparable from the process itself.

Continuous Improvement

The challenge of survival in the 1990s in volatile markets demands a marketing orientation which accepts and works on continuous service quality improvement and innovation. The choice management must make is whether to drive service staff harder at their assigned tasks, or whether to invite them to *participate* in generating new ways of improving the performance system, by using quality management techniques. The first way treats people as 'prisoners' of the process and the second invites people to be agents of the process - a distinct and separate contribution for which their experience *within* the process makes them ideally suited.

Coming to grips with service intangibles challenges our traditional understanding of the relationship between staff performance and the performance of the organisation as a totality. At first glance we tend to attribute the quality of 'front line' service to the strengths or weaknesses of service staff. This is a natural enough perception but it is nonetheless only a partial observation. What constitutes 'performance' is the sum of the performance processes of which staff are the agents. Certainly 'front line' service staff must perform well and need training in customer service skills. This is a separate and important marketing function. However, efforts to improve 'front line' service performance by improving staff 'customer service' training add cost, not value, unless the design of work activities, the environment in which service is delivered, and the work processes involved are also targeted for improvement, part of a continuous total quality review.

As quality management techniques move out from the factory floor to purchasing departments on the one hand, and distribution and marketing on the other, service intangibility represents an opportunity and a case for marketing planning in new ways. There is a role for marketing, in liaison with operations and personnel managers, to get the quality planning cycle and the internal communications right. The Internal Marketing objective should be to encourage and participate in the use of quality management techniques across the organisation. It is through use of these common methods that organisations can learn to speak a common language, enabling internal barriers to quality to start to fall away.

REFERENCES

- 1 LEONARD, F S and SASSER, W E, 'The Incline of Quality', *Harvard Business Review*, September-October 1982.
- 2 JURAN, J M, *Juran on Leadership for Quality*, The Free Press, New York, 1989, DEMING, W E, *Out of the Crisis*, Massachusetts Institute of Technology, Cambridge, 1982, 1986; CROSBY, P B, *Quality is Free*. McGraw-Hill, New York, 1979; FIEGENBAUM, A V, *Total Quality Control: Engineering and Management*, McGraw-Hill, New York, 1970.
- 3 GUMMESSON, E, 'Service Quality and Product Quality Combined', *Review of Business*, Vol 9, No 3, Winter 1988.

- 4 PORTER, M E, *Competitive Advantage: Creating and Sustaining Performance*, Free Press, New York, 1985, p 130.
- 5 BURN, G R, 'Quality Function Deployment', in DALE, B G and PLUNKETT, J J, *Managing Quality*, Hemel Hempstead, Phillip Allan/Simon and Schuster, .1990; HAUSER, J R and CLAUSING, D, 'The House of Quality', *Harvard Business Review*, May-June 1988, pp 63-73.
- 6 SHOSTACK, G L, 'Designing Services that Deliver', *Harvard Business Review*, January-February 1984; SHOSTACK, G L, 'Service Positioning through Structural Change', *Journal of Marketing*, January 1987; and WYCKOFF, D D, 'New Tools for Achieving Service Quality' in LOVELOCK, C H (ed), *Managing Services*, Prentice-Hall International, London, 1988.
- 7 BERRY, L L, 'Services Marketing is Different' in LOVELOCK, C H, *Services Marketing*, Prentice-Hall, Englewood Cliffs, 1984; GRONROOS, C, *Strategic Management and Marketing in the Service Sector*, Chartwell-Bratt, Bromley, Kent, 1984; and PIERCY, N and MORGAN, N, 'Internal Marketing', *Long Range Planning*, Spring 1990.
- 8 OAKLAND, J S, *Total Quality Management*, Heinemann Professional Series, Oxford, 1989, pp 30-35.
- 9 DISNEY, J and BENDELL, A, 'The Potential for the Application of Taguchi Methods of Quality Control in British Industry', in DALE, B G and PLUNKETT, J J (eds), *Managing Quality*, Hemel Hempstead, Herts, Phillip Allan/Simon and Schuster, 1990. See also TAGUCHI, G, and CLAUSING, D, "Robust Quality", *Harvard Business Review*, January-February 1990, pp 65-75.
- 10 OAKLAND, J S, *Statistical Process Control*, Heinemann, London, 1986.