FOURTH EDITION

TOTAL QUALITY MANAGEMENT AND OPERATIONAL EXCELLENCE

Text with cases

JOHN S. OAKLAND

Total Quality Management and Operational Excellence

The notion of 'Quality' in business performance has exploded since the publication of *Total Quality Management* in 1989. Today there is a plethora of performance improvement frameworks including Baldrige, EFQM, Lean, Six Sigma and ISO 9001, offering a potentially confusing variety of ways to achieve business excellence.

Quality guru John Oakland's famous TQM model, in many ways a precursor to these frameworks, has evolved to become the ultimate holistic overview of performance improvement strategy. Incorporating the frameworks that succeeded it, the revised model redefines Quality by:

- accelerating change
- reducing cost
- protecting reputation.

Oakland's popular, practical, jargon-free style, along with ten case studies, eight of which are brand new, effortlessly ties the model to its real-life applications, making it easy to understand how to apply what you've learned to your practices and achieve sustainable competitive advantage.

Total Quality Management and Operational Excellence: Text with Cases (Fourth Edition) is supplemented for the first time with a suite of online teaching aids for busy tutors. This exciting update of a classic text is perfect for all students studying for professional qualifications in the management of quality, or those studying science, engineering or business and management who need to understand the part TQM may play in their subjects.

John S. Oakland is Chairman of Oakland Consulting LLP and Head of its Research and Education Division. He is also Emeritus Professor of Business Excellence & Quality Management at Leeds University Business School, UK. For over 30 years he has researched and consulted in all aspects of quality management, strategic process management and business improvement in thousands of organizations. Professor Oakland is a Fellow of the Institute of Directors, Chartered Quality Institute and Royal Statistical Society. He is also a Member of the American Society for Quality.

A range of further resources for this book are available on the Companion Website: www.routledge.com/cw/oakland

'*Total Quality Management* is here to stay, and this new edition from John Oakland is a testament to why this should be the case. This book is well written in a clear and simple language, embracing and explaining all of the sometimes competing tools and techniques. The big TQM picture is painted vividly for all to enjoy; novices and champions alike.'

Bill Black, *Senior VP Quality & Operational Excellence, ABB*

'An essential read for anyone who wants to make a difference in business. John Oakland has the ability to demystify TQM in a clear and concise way, the case studies offer excellent learning examples for the translation of theory into practice.'

Ian Mitchell FCQI CQP, *Head of Quality, Network Rail, UK*

'In first edition of this book, in 1989, John Oakland clearly laid out TQM as it began to take shape. In his second edition he expanded that understanding at a time when it was greatly needed. In this fourth edition he brings it up to date, adding Lean and Six Sigma as well as expanding content. Quality without a system supporting its methods and tools has little chance of providing great value. John's work on TQM is the closest thing to a complete approach to quality and has been very helpful in my own work. The writing style doesn't just say "what" it also has a good balance of "how." I highly recommend this book.'

Jerry J. Mairani, *Senior Managing Partner & Chief Learning Officer, Precipio Management Consulting*

'John Oakland has written a comprehensive book that delves into the theoretical aspects of TQM and their application in the real world. The case studies demonstrate the importance of quality in improving products and services.'

Fabio Gualandris, *Executive Vice President for Product Quality Excellence, STMicroelectronics*

'This fourth edition takes on board changing ideas in the world of Quality and demonstrates the adaptability and applicability of the various tools available. With up-to-date and varied case studies and real-life scenarios bringing the theory to life it's both a handbook and a textbook.'

Amanda Craib, *Director, Governance Risk & Compliance, Fujitsu UK & Ireland*

'If I were looking for one book to help deliver sustainable business improvement then John Oakland's *Total Quality Management and Operational Excellence: Text with Cases* would be my first choice. The author's compelling, no nonsense approach to the subject is refreshing, and he combines this with clear and simple guidance reinforced by real business examples. This book does what it says on the tin!'

Roger Wotton, *former Business Improvement Manager at Shell Services International*

'The fourth edition of *Total Quality Management and Operational Excellence* by Professor Oakland is an achievement; it ascertains the large and sometimes elusive field of Total Quality in a thorough and precise way, with the use illustrative case studies. This book integrates the perspectives brought by ISO norms of management, the combination of which can structure efficently the Total Quality approach within economical organisms.'

Dr Michel Jaccard, *author of* The Objective is Quality

'John Oakland has occupied the very top tier of this profession for several decades and in reading *Total Quality Management and Operational Excellence* it is easy to see why. He takes a subject frequently not well understood and makes it interesting, uncomplicated and relevant. The quality landscape is littered with jargon and acronyms but Oakland's narrative accommodates and makes sense of it all. This has to be a seminal text not just for those aspiring to the quality profession but, or even especially for those who consider themselves experts. The case studies section is particularly useful.'

Simon Feary, *Chief Executive,*
Chartered Quality Institute

'Total Quality Management and Operational Excellence is a "must read" text for any student or business professional that questions how the management of quality has developed into the new century and what it means in the context of their business or studies. It bristles with practical advice that is presented in that no nonsense style of John Oakland. The basic premise is that every business should look to satisfy their customers' needs through a holistic approach to delivering those needs in a repeatable way.'

Ian Kendrick, *Manager Process Management,*
TNT Express

'I have had earlier editions of John's work on my bookshelf, and often open on my desk for many years. Oakland's *Total Quality Management and Operational Excellence* is the bible for people who want to understand and implement Total Quality Management.'

Estelle Clark, *Group Safety & Business Assurance Director,*
Lloyd's Register

'When faced with opportunities for improvement in the heat of a busy and challenging working environment, there is on occasion a need for pragmatic reflection on what we are trying to achieve before we set about how to deal with the issues about us. In his inimitable style of a true Yorkshire man, and with his extensive experience, John Oakland has provided us with practical, no nonsense approaches that will help us to "see the wood for the trees" and put us on the right path toward our goals.'

Jonathan Davies, *FCMI, MCQI (Director Quality &*
Operational Excellence, Electronics Sector)

'If you want to understand the precepts and improvement potential of Total Quality Management then this fourth edition is for you! Written with students and practitioners in mind John Oakland brings quality concepts alive in his own inimitable style. Unparalleled case studies – a must read!'

Edel O'Neill, *Reader in Management, Ulster Business School, University of Ulster, Northern Ireland*

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John S. Oakland

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First edition 1995
Third edition 2003
Fourth edition 2014
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge
711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
Oakland, John S.
Total quality management and operational excellence: text with cases/
John Oakland.—Fourth Edition.
pages cm
Includes bibliographical references and index.
1. Total quality management. 2. Total quality management—Case studies.
I. Title.
HD62.15.O173 2013
658.4′013—dc23
2013036192

ISBN: 978-0-415-63549-3 (hbk)
ISBN: 978-0-415-63550-9 (pbk)
ISBN: 978-1-315-81572-5 (ebk)

Typeset in Palatino and Univers
by Florence Production Ltd, Stoodleigh, Devon, UK

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PREFACE

When I wrote the first edition of *Total Quality Management* in 1988, there were very few books on the subject. Since its publication the interest in TQM and business performance improvement has exploded. There are now many texts on TQM and its various aspects, including business/operational excellence, business process management, Six Sigma and Lean manufacturing based approaches.

So much has been learned during the last 30 years of TQM implementation that it has been necessary to rewrite the book and revise it again. In essence this is the sixth edition since TQM was first published in 1989 (two editions of *Total Quality Management* and four editions of *TQM Text & Cases*). The content and case studies in this edition have been changed substantially to reflect the developments, current understanding, and experience gained of TQM and a completely new chapter on lean systems has been included. The result is a new book: *Total Quality Management and Operational Excellence* (*TQM & OpEx*).

Increasing the satisfaction of customers and other stakeholders through effective goal deployment, cost reduction, process improvement, people involvement and supply chain development has proved essential for organizations to stay in existence in the twenty-first century. We cannot avoid seeing how quality has developed into a most important competitive weapon, and many organizations have realized that TQM and its relatives is *the* way of managing for the future. Neglect of product and service quality can have disastrous consequences, as we have seen repeatedly in recent years around the globe. Consequential reputational damage is deeper and quicker now than ever before because information, opinion, and ultimately consumer choice, is affected at scale due to the nature of modern communication technologies. Of course, TQM is far wider in its application than assuring product or service quality – it is a way of managing organizations to improve every aspect of performance, both internally and externally.

This book is about how to manage in a total quality way through excellent operation. It is structured in the main around four parts of what has become known as the 'Oakland model for TQM' – improving *Performance* through better *Planning* and management of *People* and *Processes* in which they work. The core of the model will always be performance in the eyes of the customer, but this must be extended to include performance measures for all stakeholders. This core still needs to be surrounded by *Commitment* to quality and meeting customer requirements, *Communication* of the quality message and recognition of the need in many cases to change the *Culture* of most organizations to create total quality. These three Cs are the 'soft foundations' which must encase the 'hard management necessities' of the four Ps.

Under these headings the essential steps for the successful implementation of TQM & OpEx are set out in what I hope is still a meaningful and practical way. The book should guide the reader through the language of TQM and all the recent developments,

and set down a clear way to manage change – new material has been included on these aspects. The Oakland DRIVER improvement methodology is a major contribution to this.

Many of the new approaches related to quality and improving performance appear to present different theories. In reality they are talking the same 'language' but may use different 'dialects'; the basic principles of defining quality and taking it into account throughout all activities of the 'business' are common. Quality has to be managed, it does not just happen. Understanding and commitment by senior management, effective leadership, teamwork, good process management and sound improvement methods and tools are fundamental parts of the recipe for success. I have tried to use my extensive research and consultancy experience to take what, to many, is a jigsaw puzzle and assemble a comprehensive, pragmatic, working model for total quality. Moreover, I have tried to show how holistic TQM now is, embracing the most recent models of 'excellence', Six Sigma, Lean and a host of other management methods and teachings.

To support the 19 chapters of text are ten case studies, eight of which are brand new. I have again presented these together at the end of the book as many overlap different topics in the chapters, but I have offered guidance on which parts are illustrated by the particular cases.

The book should meet the requirements of the increasing number of 'students' who need to understand the part TQM & OpEx may play in their studies of science, engineering or business and management. I hope that those engaged in the pursuit of professional qualifications in the management of quality, such as the Chartered Quality Institute, the American Society for Quality and similar ones around the world, will make this book an essential part of their library. With its companion book, *Statistical Process Control* (now in its sixth edition), *Total Quality Management and Operational Excellence: Text & Cases* documents a comprehensive approach, one that has been used successfully in many organizations across the globe. In the interest of brevity, the terms Total Quality Management (TQM) and Total Management & Operational Excellence (TQM & OpEx) will be interchangeable throughout the book; generally the term TQM will be used.

I would like to thank my colleagues in Oakland Consulting for the sharing of ideas and help in their development. The book is the result of many man-years collaboration in assisting organizations to introduce good methods of management and embrace the concepts of total quality. I am also most grateful to the busy senior managers in the case study organizations for their contributions in pulling together the cases and for obtaining permission for their publication.

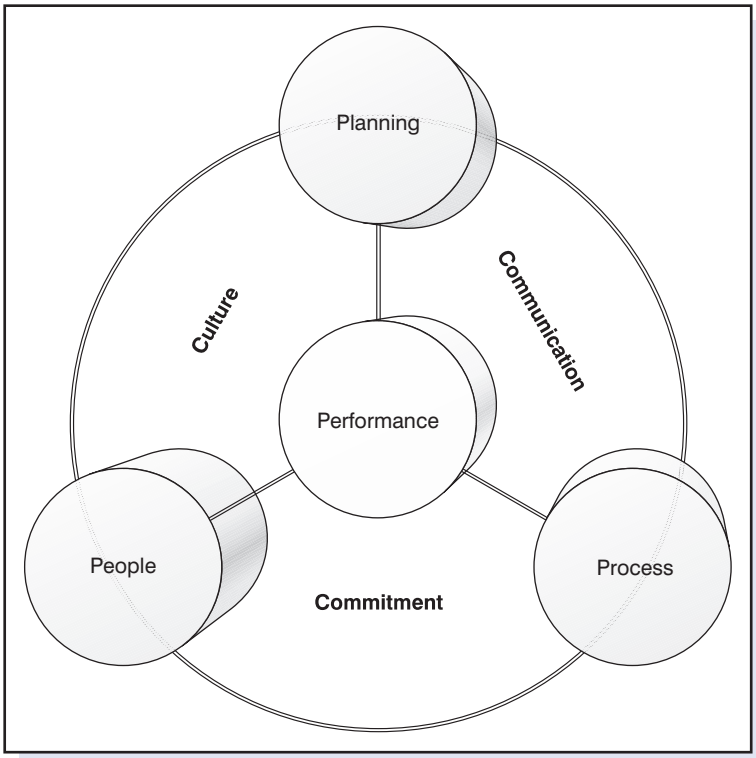
John S. Oakland

Part I

The foundations of TQM

Good order is the foundation of all good things.

Edmund Burke, 1729–1797,
from 'Reflections on the Revolution in France'



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Chapter 1

Understanding quality

Quality, competitiveness and customers

In recent times, organizations have experienced a period of great change in their markets and operations. International as well as domestic competition has meant that many organizations have faced an increasingly turbulent and hostile environment. The pace of technological change has quickened to lightening speed, customers have become more demanding and competition has become more intense and sophisticated. Regulators and consumer groups have also added to these pressures.

Good quality performance has always been a key strategic factor for business success but it is now more than ever required to compete successfully in the global markets of the twenty-first century. Many organizations have adopted a range of improvement approaches in response to these forces. We have seen the growing adoption of a range of quality and management systems standards, the emergence of total quality management (TQM), business process re-engineering (BPR), business excellence, performance excellence, Lean thinking, Six Sigma, statistical process control, etc, etc. The battle weary could be excused from taking a rather jaundiced view of this ever-lengthening list of 'quality' offers but, by and large, they share many of the principles and elements that are found in TQM.

Whatever type of organization you work in these days – a bank, a hospital, a university, an airline, an insurance company, local government, a factory – competition is rife: competition for customers, for students, for patients, for resources, for funds. Any organization basically competes on its *reputation* – for quality, reliability, price and delivery – and most people now recognize that quality is the key to achieving sustained competitive advantage. If you doubt that, just look at the way some organizations, even whole industries in certain countries, have used quality strategically to win customers, obtain business resources or funding and be competitive. Moreover, this sort of attention to quality improves performance in reliability, delivery and price.

Reputations for poor quality last for a long time and good or bad reputations can become national or international. Yet the management of quality can be learned and

used to improve reputation. For any organization, there are several aspects of reputation which are important:

1. It is built upon the competitive elements of being 'On-Quality; On-Time; On-Cost'.
2. Once an organization acquires a poor reputation for product or service quality or reliability, it takes a very long time to change it.
3. Reputations, good or bad, can quickly become national reputations.
4. The management of the competitive weapons, such as quality, can be learned like any other skill and used to turn round a poor reputation.

Before anyone will buy the idea that quality is an important consideration, they would have to know what was meant by it.

What is quality?

Quality starts with understanding customer needs and ends when those needs are satisfied. 'Is this a quality watch?' Pointing to my wrist, I ask this question of a class of students – undergraduates, postgraduates, experienced managers – it matters not who. The answers vary:

- 'No, it's made in Japan.'
- 'No, it's cheap.'
- 'No, the face is scratched.'
- 'How reliable is it?'
- 'I wouldn't wear it.'

My watch has been insulted all over the world – London, New York, Paris, Sydney, Dubai, Brussels, Amsterdam, Leeds! Clearly, the quality of a watch depends on what the wearer requires from a watch – perhaps a piece of jewellery to give an impression of wealth; a timepiece that gives the required data, including the date, in digital form; or one with the ability to perform at 50 metres under the sea? These requirements determine the quality.

Quality is often used to signify 'excellence' of a product or service – people talk about 'Rolls-Royce quality' and 'top quality'. In some manufacturing companies the word may be used to indicate that a piece of material or equipment conforms to certain physical dimensional characteristics often set down in the form of a particularly 'tight' specification. In a hospital it might be used to indicate some sort of 'professionalism'. If we are to define quality in a way that is useful in its *management*, then we must recognize the need to include in the assessment of quality the true requirements of the 'customer' – the needs and expectations.

Quality then is simply *meeting the customer requirements and* this has been expressed in many ways by other authors:

- 'Fitness for purpose or use' – Juran, an early doyen of quality management.
- 'The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs' – BS 4778. 1987 (ISO 8402, 1986) *Quality Vocabulary; Part* 1, *International Terms.*

- 'Quality should be aimed at the needs of the consumer, present and future' – Deming, another early doyen of quality management.
- 'The total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which the product and service in use will meet the expectation by the customer' – Feigenbaum, the first man to publish a book with 'Total Quality' in the title.
- 'Conformance to requirements' – Crosby, an American consultant famous in the 1980s.
- 'Degree to which a set of inherent characteristics fulfils requirements' – ISO (EN) 9000:2000 *Quality Management Systems – Fundamentals and Vocabulary*.

Another word that we should define properly is *reliability*. 'Why do you buy a Japanese car?' 'Quality and reliability' comes back the answer. The two are used synonymously, often in a totally confused way. Clearly, part of the acceptability of a product or service will depend on its ability to function satisfactorily *over a period of time* and it is this aspect of performance that is given the name *reliability*. It is the ability of the product or service to *continue* to meet the customer requirements. Reliability ranks with quality in importance, since it is a key factor in many purchasing decisions where alternatives are being considered. Many of the general management issues related to achieving product or service quality are also applicable to reliability.

It is important to realize that the 'meeting the customer requirements' definition of quality is not restrictive to the functional characteristics of products or services. Anyone with children knows that the quality of some of the products they purchase is more associated with *satisfaction in ownership* than some functional property. This is also true of many items, from antiques to certain items of clothing. The requirements for status symbols account for the sale of some executive cars, certain bank accounts and charge cards, and even hospital beds! The requirements are of paramount importance in the assessment of the quality of any product or service.

By *consistently* meeting customer requirements, we can move to a different plane of satisfaction – *delighting the customer.* There is no doubt that many organizations have so well ordered their capability to meet their customers' requirements, time and time again, that this has created a reputation for 'excellence'. A development of this thinking regarding customers and their satisfaction is *customer loyalty*, an important variable in an organization's success. Research shows that focus on customer loyalty can provide several commercial advantages:

- Customers cost less to retain than acquire.
- The longer the relationship with the customer, the higher the profitability.
- A loyal customer will commit more spend to its chosen supplier.
- About half of new customers come through referrals from existing clients (indirectly reducing acquisition costs).

Many companies use measures of customer loyalty to identify customers which are 'completely satisfied', would 'definitely recommend' and would 'definitely repurchase'.

The ability to meet the customer requirements is vital, not only between two separate organizations, but within the same organization.

When the air stewardess pulled back the curtain across the aisle and set off with a trolley full of breakfasts to feed the early morning travellers on the short domestic flight into an international airport, she was not thinking of quality problems. Having stopped at the row of seats marked 1ABC, she passed the first tray onto the lap of the man sitting by the window. By the time the second tray had reached the lady beside him, the first tray was on its way back to the hostess with a complaint that the bread roll and jam were missing. She calmly replaced it in her trolley and reached for another – which also had no roll and jam.

The calm exterior of the girl began to evaporate as she discovered two more trays without a complete breakfast. Then she found a good one and, thankfully, passed it over. This search for complete breakfast trays continued down the aeroplane, causing inevitable delays, so much so that several passengers did not receive their breakfasts until the plane had begun its descent. At the rear of the plane could be heard the mutterings of discontent. 'Aren't they slow with breakfast this morning?' 'What is she doing with those trays?' 'We will have indigestion by the time we've landed.'

The problem was perceived by many on the aeroplane to be one of delivery or service. They could smell food but they weren't getting any of it, and they were getting really wound up! The air hostess, who had suffered the embarrassment of being the purveyor of defective product and service, was quite wound up and flushed herself, as she returned to the curtain and almost ripped it from the hooks in her haste to hide. She was heard to say through clenched teeth, 'What a bloody mess!'

A problem of quality? Yes, of course, requirements not being met, but where? The passengers or customers suffered from it on the aircraft, but in part of another organization there was a man whose job it was to assemble the breakfast trays. On this day the system had broken down – perhaps he ran out of bread rolls, perhaps he was called away to refuel the aircraft (it was a small airport!), perhaps he didn't know or understand, perhaps he didn't care.

Three hundred miles away in a chemical factory . . . 'What the hell is Quality Control doing? We've just sent 15,000 litres of lawn weed killer to CIC and there it is back at our gate – they've returned it as out of spec.' This was followed by an avalanche of verbal abuse, which will not be repeated here, but poured all over the shrinking quality control manager as he backed through his office door, followed by a red faced technical director advancing menacingly from behind the bottles of sulphuric acid racked across the adjoining laboratory.

'Yes, what is QC doing?' thought the production manager, who was behind a door two offices along the corridor, but could hear the torrent of language now being used to beat the QC man into an admission of guilt. He knew the poor devil couldn't possibly do anything about the rubbish that had been produced except test it, but why should he volunteer for the unpleasant and embarrassing ritual now being experienced by his colleague – for the second time this month. No wonder the QC manager had been studying the middle pages of the *Telegraph* on Thursday – what a job!

Do you recognize these two situations? Do they not happen every day of the week – possibly every minute somewhere in manufacturing or the service industries? Is it any different in banking, insurance, health services? The inquisition of checkers and testers is the last bastion of desperate systems trying in vain to catch mistakes, stop defectives, hold lousy materials, before they reach the external customer – and woe betide the idiot who lets them pass through!

Two everyday incidents, but why are events like these so common? The answer is the acceptance of one thing – *failure*. Not doing it right the first time at every stage of the process.

Why do we accept failure in the production of artefacts, the provision of a service, or even the transfer of information? In many walks of life we do not accept it. We do not say, 'Well, the nurse is bound to drop the odd baby in a thousand – it's just going to happen'. We do not accept that!

In each department, each office, even each household, there are a series of suppliers and customers. The PA is a supplier to the boss. Are the requirements being met? Does the boss receive error-free information set out as it is wanted, when it is wanted? If so, then we have a quality PA service. Does the air steward receive from the supplier to the airline the correct food trays in the right quantity, at the right time?

Throughout and beyond all organizations, whether they be manufacturing concerns, banks, retail stores, universities, hospitals or hotels, there is a series of *quality chains* of customers and suppliers (Figure 1.1) that may be broken at any point by one person or one piece of equipment not meeting the requirements of the customer, internal or external. The interesting point is that this failure usually finds its way to the interface between the organization and its outside customers, and the people who

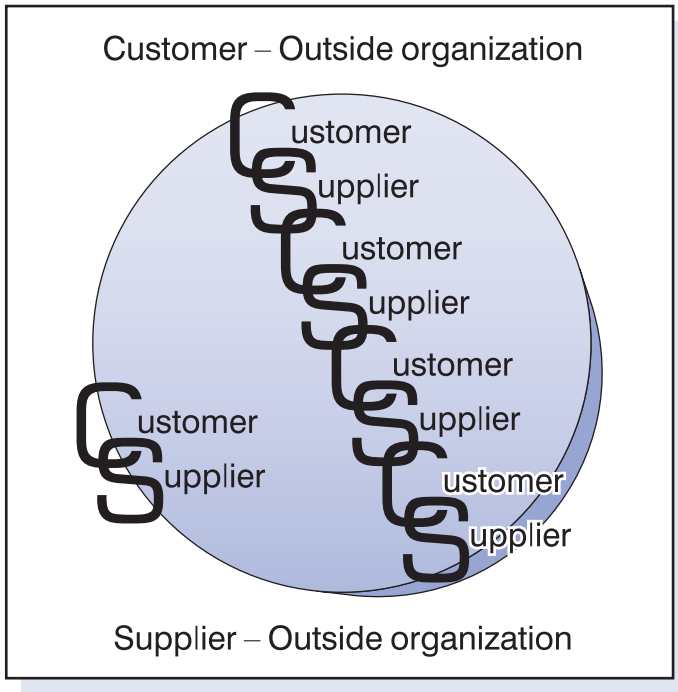

Figure 1.1
The quality chains

operate at that interface – like the air hostess – usually experience the ramifications. The concept of internal and external customers-suppliers forms the *core* of total quality management.

A great deal is written and spoken about employee motivations as a separate issue. In fact the key to motivation *and* quality is for everyone in the organization to have well-defined customers – an extension of the word beyond the outsider that actually purchases or uses the ultimate product or service to anyone to whom an individual gives a part, a service, information – in other words the results of his or her work.

Quality has to be managed – it will not just happen. Clearly it must involve everyone in the process and be applied throughout the organization. Many people in the support functions of organizations never see, experience or touch the products or services that their organizations buy or provide, but they do handle or produce things like purchase orders or invoices. If every fourth invoice carries at least one error, what image of quality is transmitted to customers?

Failure to meet the requirements in any part of a quality chain has a way of multiplying and a failure in one part of the system creates problems elsewhere, leading to yet more failure, more problems and so on. The price of quality is the continual examination of the requirements and our ability to meet them. This alone will lead to a 'continuing improvement' philosophy. The benefits of making sure the requirements are met at every stage, every time, are truly enormous in terms of increased competitiveness and market share, reduced costs, improved productivity and delivery performance, and the elimination of waste.

Meeting the requirements

If quality is meeting the customer requirements, then this has wide implications. The requirements may include availability, delivery, reliability, maintainability and cost-effectiveness, among many other features. The first item on the list of things to do is find out what the requirements are. If we are dealing with customer-supplier relationship crossing two organizations, then the supplier must establish a 'marketing' activity or process charged with this task.

Marketing processes establish the true requirements for the product or service. These must be communicated properly throughout the organization in the form of specifications.

The marketing process must of course understand not only the needs of the customer but also the ability of their own organization to meet them. If my customer places a requirement on me to run 1,500 metres in 4 minutes, then I know I am unable to meet this demand, unless something is done to improve my running performance. Of course I may never be able to achieve this requirement.

Within organizations, between internal customers and suppliers, the transfer of information regarding requirements is frequently poor to totally absent. How many executives really bother to find out what their customers' – their PA's or secretary's – requirements are? Can their handwriting be read, do they leave clear instructions, does the PA/secretary always know where the boss is? Equally, does the PA/secretary establish what the boss needs – error-free word processing, clear messages, a tidy office? Internal supplier-customer relationships are often the most difficult to manage in terms of establishing the requirements. To achieve quality throughout an organization, each person in the quality chain must interrogate every interface as follows:

Customers

- Who are my immediate customers?
- What are their true requirements?
- How do or can I find out what the requirements are?
- How can I measure my ability to meet the requirements?
- Do I have the necessary capability to meet the requirements? (If not, then what must change to improve the capability?)
- Do I continually meet the requirements? (If not, then what prevents this from happening, when the capability exists?)
- How do I monitor changes in the requirements?

Suppliers

- Who are my immediate suppliers?
- What are my true requirements?
- How do I communicate my requirements?
- How do I, or they, measure their ability to meet the requirements?
- Do my suppliers have the capability to meet the requirements?
- Do my suppliers continually meet the requirements?
- How do I inform them of changes in the requirements?

The measurement of capability is extremely important if the quality chains are to be formed within and without an organization. Each person in the organization must also realize that the supplier's needs and expectations must be respected if the requirements are to be fully satisfied.

To understand how quality may be built into a product or service, at any stage, it is necessary to examine the two distinct, but interrelated aspects of quality:

- Quality of design
- Quality of conformance to design.

Quality of design

We are all familiar with the old story of the tree swing (Figure 1.2), but in how many places in how many organizations is this chain of activities taking place? To discuss the quality of – say – a chair it is necessary to describe its purpose. What it is to be used for? If it is to be used for watching TV for 3 hours at a stretch, then the typical office chair will not meet this requirement. The difference between the quality of the TV chair and the office chair is not a function of how it was manufactured, but its *design.*

Quality of design is a measure of how well the product or service is designed to achieve the agreed requirements. The beautifully presented gourmet meal will not necessarily please the recipient if he or she is travelling on the motorway and has stopped for a quick bite to eat. The most important feature of the design, with regard to achieving quality, is the specification. Specifications must also exist at the internal supplier-customer interfaces if one is to achieve a total quality performance. For example, the company lawyer asked to draw up a contract by the sales manager requires a specification as to its content:

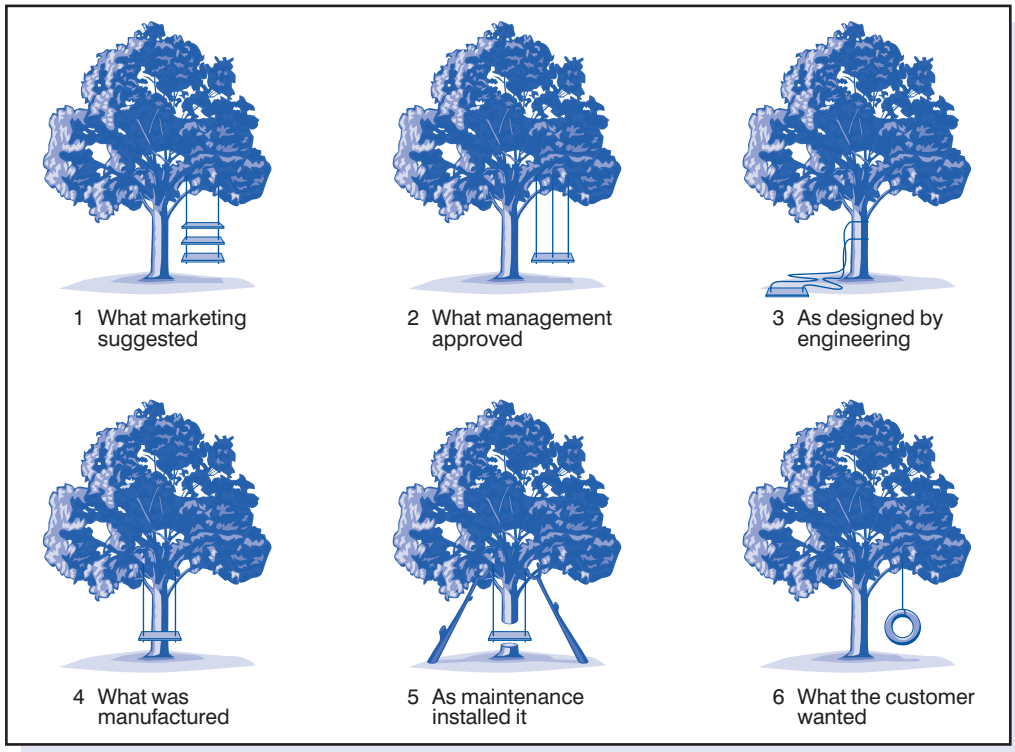

Figure 1.2
Quality of design

1. Is it a sales, processing or consulting type of contract?
2. Who are the contracting parties?
3. In which countries are the parties located?
4. What are the products involved (if any)?
5. What is the volume?
6. What are the financial aspects, e.g. price escalation?

The financial controller must issue a specification of the information he or she needs, and when, to ensure that foreign exchange fluctuations do not cripple the company's finances. The business of sitting down and agreeing a specification at every interface will clarify the true requirements and capabilities. It is the vital first stage for a successful total-quality effort.

There must be a corporate understanding of the organization's quality position in the market place. It is not sufficient that marketing specifies the product or service 'because that is what the customer wants'. There must be an agreement that the operating departments can achieve that requirement. Should they be incapable of doing so, then one of two things must happen: either the organization finds a different position in the market place or substantially changes the operational facilities.

Quality of conformance to design

This is the extent to which the product or service achieves the quality of design. What the customer actually receives should conform to the design, and operating costs are tied firmly to the level of conformance achieved. Quality cannot be inspected into products or services; the customer satisfaction must be designed into the whole system. The conformance check then makes sure that things go according to plan.

A high level of inspection or checking at the end is often indicative of attempts to inspect in quality. This may well result in spiralling costs and decreasing viability. The area of conformance to design is concerned largely with the quality performance of the actual operations. It may be salutary for organizations to use the simple matrix of Figure 1.3 to assess how much time they spend doing the right things right. A lot of people, often through no fault of their own, spend a good proportion of the available time doing the right things wrong. There are people (and organizations) who spend time doing the wrong things very well, and even those who occupy themselves doing the wrong things wrong, which can be very confusing!

MANAGING QUALITY

Every day two men who work in a certain factory scrutinize the results of the examination of the previous day's production, and begin the ritual battle over whether the material is suitable for despatch to the customer. One is called the production manager, the other the quality control manager. They argue and debate the evidence before them, the rights and wrongs of the specification, and each tries to convince the other of the validity of his argument. Sometimes they nearly start fighting.

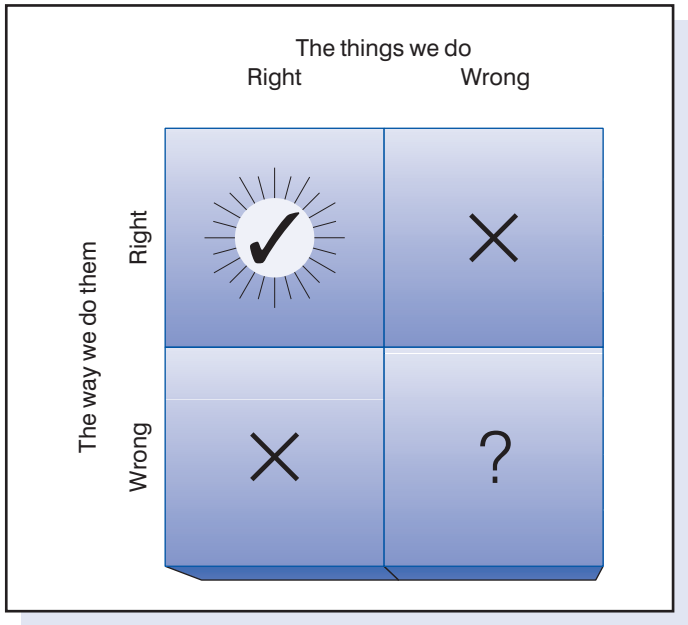

Figure 1.3
How much time is spent doing the right things right?

This ritual is associated with trying to answer the question, '*Have we done the job correctly?'*, correctly being a flexible word, depending on the interpretation given to the specification on that particular day. This is not quality *control,* it is *detection* – wasteful detection of bad product before it hits the customer. There is still a belief in some quarters that to achieve quality we must check, test, inspect or measure – the ritual pouring on of quality at the end of the process. This is nonsense, but it is frequently practised. In the office one finds staff checking other people's work because they expect errors, validating computer data, checking invoices, word processing etc. There is also quite a lot of looking for things, chasing why things are late, apologizing to customers for lateness and so on. Waste, waste, waste!

To get away from the natural tendency to rush into the detection mode, it is necessary to ask different questions in the first place. We should not ask whether the job has been done correctly, we should ask first '*Are we capable of doing the job correctly?'* This question has wide implications, and this book is devoted largely to the various activities necessary to ensure that the answer is yes. However, we should realize straight away that such an answer will only be obtained by means of satisfactory methods, materials, equipment, skills and instruction, and a satisfactory 'process'.

Quality and processes

As we have seen, quality chains can be traced right through the business or service processes used by any organization. A process is the transformation of a set of inputs into outputs that satisfy customer needs and expectations, in the form of products, information or services. Everything we do is a process, so in each area or function of an organization there will be many processes taking place. For example, a finance department may be engaged in budgeting processes, accounting processes, salary and wage processes, costing processes, etc. Each process in each department or area can be analysed by an examination of the inputs and outputs. This will determine some of the actions necessary to improve quality. There are also cross-functional processes.

The output from a process is that which is transferred to somewhere or to someone – the *customer*. Clearly to produce an output that meets the requirements of the customer, it is necessary to define, monitor and control the inputs to the process, which in turn may be supplied as output from an earlier process. At every supplier-customer interface then there resides a transformation process (Figure 1.4), and every single task throughout an organization must be viewed as a process in this way. The so-called 'voice of the customer' is a fundamental requirement to good process management and the 'voice of the process' provides key feedback to the supply side of the process equation: right Suppliers + correct Inputs = correct Outputs + satisfied Customers (SIPOC).

Once we have established that our process is capable of meeting the requirements, we can address the next question, '*Do we continue to do the job correctly?'* which brings a requirement to monitor the process and the controls on it. If we now re-examine the first question, 'Have we done the job correctly?' we can see that, if we have been able to answer the other two questions with a yes, we *must* have done the job correctly. Any other outcome would be illogical. By asking the questions in the right order, we have moved the need to ask the 'inspection' question and replaced a strategy of *detection* with one of *prevention*. This concentrates attention on the front end of any process – the inputs – and changes the emphasis to making sure the inputs are capable

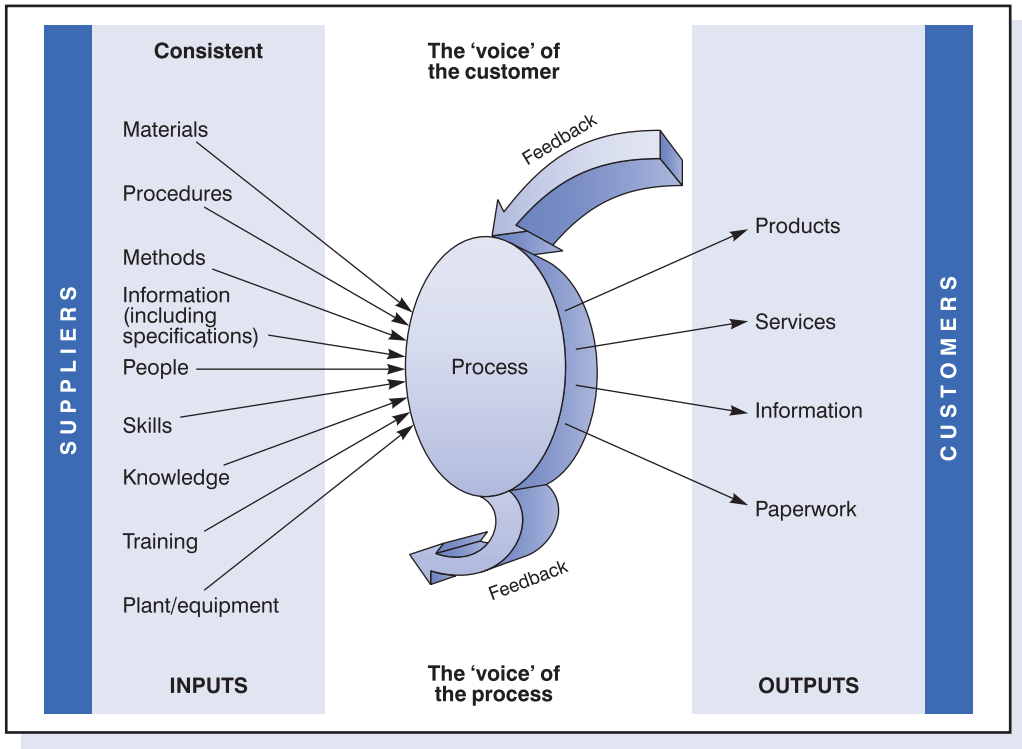

Figure 1.4
A process – SIPOC

of meeting the requirements of the process. This is a managerial responsibility and is discharged by efficiently organizing the inputs and its resources and controlling the processes.

These ideas apply to every transformation process; they all must be subject to the same scrutiny of the methods, the people, skills, equipment and so on to make sure they are correct for the job. A person giving a conference presentation whose audio/visual equipment will not focus correctly, or whose material is not appropriate, will soon discover how difficult it is to make a presentation that meets the requirements of the audience.

In every organization there are some very large processes – groups of smaller processes often called *core business processes.* These are activities the organization must carry out especially well if its mission and objectives are to be achieved. The area will be dealt with in some detail later on in the book. It is crucial if the management of quality is to be integrated into the strategy for the organization.

The *control* of quality can only take place at the point of operation or production – where the letter is word-processed, the sales call made, the patient admitted or the chemical manufactured. The act of *inspection is not quality control.* When the answer to 'Have we done the job correctly?' is given indirectly by answering the questions of capability and control, then we have *assured* quality, and the activity of checking

becomes one of *quality assurance* – making sure that the product or service represents the output from an effective *system* to ensure capability and control. It is frequently found that organizational barriers between functional or departmental empires has encouraged the development of testing and checking of services or products in a vacuum, without interaction with other departments.

Quality control then is essentially the activities and techniques employed to achieve and maintain the quality of a product, process, or service. It includes a monitoring activity, but is also concerned with finding and eliminating causes of quality problems so that the requirements of the customer are continually met.

Quality assurance is broadly the prevention of quality problems through planned and systematic activities (including documentation). These will include the establishment of a good quality management system and the assessment of its adequacy, the audit of the operation of the system and the review of the system itself.

QUALITY STARTS WITH UNDERSTANDING THE NEEDS

The marketing processes of an organization must take the lead in establishing the true requirements for the product or service. Having determined the need, the organization should define the market sector and demand, to determine such product or service features as grade, price, quality, timing, etc. For example, a major hotel chain thinking of opening a new hotel or refurbishing an old one will need to consider its location and accessibility before deciding whether it will be predominantly a budget, first-class, business or family hotel.

The organization will also need to establish customer requirements by reviewing the market needs, particularly in terms of unclear or unstated expectations or preconceived ideas held by customers. It is central to identify the key characteristics that determine the suitability of the product or service in the eyes of the customer. This may, of course, call for the use of market research techniques, data gathering and analysis of customer complaints. If necessary, quasi-quantitative methods may be employed, giving proxy variables that can be used to grade the characteristics in importance, and decide in which areas superiority over competitors exists. It is often useful to compare these findings with internal perceptions.

Excellent communication between customers and suppliers is the key to a total quality performance; it will eradicate the 'demanding nuisance/idiot' view of customers, which even now still pervades some organizations. Poor communications often occur in the supply chains between organizations, when neither party realizes how poor they are. Feedback from both customers and suppliers needs to be improved where dissatisfied customers and suppliers do not communicate their problems. In such cases, non-conformance of purchased products or services is often due to customers' inability to communicate their requirements clearly. If these ideas are also used within an organization, then the internal supplier/customer interfaces will operate much more smoothly.

All the efforts devoted to finding the nature and timing of the demand will be pointless if there are failures in communicating the requirements throughout the organization promptly, clearly and accurately. The marketing processes should be capable of producing a formal statement or outline of the requirements for each

product or service. This constitutes a preliminary set of *specifications*, which can be used as the basis for service or product design. The information requirements include:

1. Characteristics of performance and reliability – these must make reference to the conditions of use and any environmental factors that may be important.
2. Aesthetic characteristics, such as style, colour, smell, task, feel, etc.
3. Any obligatory regulations or standards governing the nature of the product or service.

The organization must also establish systems for feedback of customer information and reaction, and these systems should be designed on a continuous monitoring basis. Any information pertinent to the product or service should be collected and collated, interpreted, analysed and communicated, to improve the response to customer experience and expectations. These same principles must also be applied inside the organization if continuous improvement at every transformation process interface is to be achieved. If one function or department in a company has problems recruiting the correct sort of staff, for example, and HR has not established mechanisms for gathering, analysing and responding to information on new employees, then frustration and conflict will replace communication and co-operation.

One aspect of the analysis of market demand that extends back into the organization is the review of market readiness of a new product or service. Items that require some attention include assessment of:

1. The suitability of the distribution and customer-service processes.
2. Training of personnel in the 'field'.
3. Availability of 'spare parts' or support staff.
4. Evidence that the organization is capable of meeting customer requirements.

All organizations receive a wide range of information from customers through invoices, payments, requests for information, complaints, responses to advertisements and promotion, etc. An essential component of a 'customer relationship management' system for the analysis of demand is that this data is channelled quickly into the appropriate areas for action and, if necessary, response.

There are various techniques of research, which are outside the scope of this book, but have been well documented elsewhere. It is worth listing some of the most common and useful general methods that should be considered, both externally and internally:

- Surveys – questionnaires, etc.
- Panel or focus group techniques
- In-depth interviews
- Brainstorming and discussions
- Role rehearsal and reversal
- Interrogation of trade associations.

The number of methods and techniques for researching the market is limited only by imagination and funds. The important point to stress is that the supplier, whether the internal individual or the external organization, keeps very close to the customer. Good research, coupled with analysis of CRM data, is an essential part of finding out

what the requirements are, and breaking out from the obsession with inward scrutiny that bedevils quality.

Quality in all functions

For an organization to be truly effective, each component of it must work properly together. Each part, each activity, each person in the organization affects and is in turn affected by others. Errors have a way of multiplying, and failure to meet the requirements in one part or area creates problems elsewhere, leading to yet more errors, yet more problems and so on. The benefits of getting it right first time everywhere are enormous.

Everyone experiences – almost accepts – problems in working life. This causes people to spend a large part of their time on useless activities – correcting errors, looking for things, finding out why things are late, checking suspect information, rectifying and reworking, apologizing to customers for mistakes, poor quality and lateness. The list is endless, and it is estimated that about one-third of our efforts are still wasted in this way. In the service sector it can be much higher.

Quality, the way we have defined it as meeting the customer requirements, gives people in different functions of an organization a common language for improvement. It enables all the people, with different abilities and priorities, to communicate readily with one another, in pursuit of a common goal. When business and industry were local, the craftsman could manage more or less on his own. Business is now so complex and employs so many different specialist skills that everyone has to rely on the activities of others in doing their jobs.

Some of the most exciting applications of TQM have materialized from groups of people that could see little relevance when first introduced to its concepts. Following training, many different parts of organizations can show the usefulness of the techniques. Sales staff can monitor and increase successful sales calls, office staff have used TQM methods to prevent errors in word-processing and improve inputting to computers, customer-service people have monitored and reduced complaints, distribution has controlled lateness and disruption in deliveries.

It is worthy of mention that the first points of contact for some outside customers are the telephone operator, the security people at the gate or the person in reception. Equally the e-business, paperwork and support services associated with the product, such as websites, invoices and sales literature and their handlers, must match the needs of the customer. Clearly TQM cannot be restricted to the 'production' or 'operations' areas without losing great opportunities to gain maximum benefit.

Managements that rely heavily on exhortation of the workforce to 'do the right job right the first time', or 'accept that quality is your responsibility', will not only fail to achieve quality but may create division and conflict. These calls for improvement infer that faults are caused only by the workforce and that problems are departmental or functional when, in fact, the opposite is true – most problems are inter-departmental. The commitment of all members of an organization is a requirement of 'organization-wide quality improvement'. Everyone must work together at every interface to achieve improved performance and that can only happen if the top management is really committed.

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Chapter highlights

Quality, competitiveness and customers

- The reputation enjoyed by an organization is built by quality, reliability, delivery and price. Quality is perhaps the most important of these competitive weapons.
- Reputations for poor quality last for a long time, and good or bad reputations can become national or international. The management of quality can be learned and used to improve reputation.
- Quality is meeting the customer requirements, and this is not restricted to the functional characteristics of the product or service.
- Reliability is the ability of the product or service to continue to meet the customer requirements over time.
- Organizations 'delight' the customer by consistently meeting customer requirements, and then achieve a reputation of 'excellence' and customer loyalty.

Understanding and building the quality chains

- Throughout all organizations there are a series of internal suppliers and customers. These form the so-called 'quality chains', the core of 'company-wide quality improvement'.
- The internal customer/supplier relationships must be managed by interrogation, i.e. using a set of questions at every interface. Measurement of capability is vital.
- There are two distinct but interrelated aspects of quality, design and conformance to design. *Quality of design* is a measure of how well the product or service is designed to achieve the agreed requirements. *Quality of conformance to design* is the extent to

which the product or service achieves the design. Organizations should assess how much time they spend doing the right things right.

Managing quality

- Asking the question 'Have we done the job correctly?' should be replaced by asking 'Are we capable of doing the job correctly?' and 'Do we continue to do the job correctly?'
- Asking the questions in the right order replaces a strategy of *detection* with one of *prevention*.
- Everything we do is a process, which is the transformation of a set of inputs into the desired outputs.
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Quality starts with understanding the needs

- Marketing processes establish the true requirements for the product or service. These must be communicated properly throughout the organization in the form of specifications.
- Excellent communications between customers and suppliers is the key to a total quality performance – the organization must establish feedback systems, such as CRM, to gather customer information.
- Appropriate research techniques should be used to understand the 'market' and keep close to customers and maintain the external perspective.

Quality in all functions

- All members of an organization need to work together on organization-wide quality improvement. The co-operation of everyone at every interface is necessary to achieve improvements in performance, which can only happen if the top management is really committed.

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1 Chapter 1 Understanding quality

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2 Chapter 2 Models and frameworks for Total Quality Management

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CHAPTER HIGHLIGHTS

Early TQM frameworks

• There have been many attempts to construct lists and frameworks to help organizations understand how to implement good quality management.

• The ‘quality gurus’ in America, Deming, Juran and Crosby, offered management fourteen points, ten steps and four absolutes (plus fourteen steps) respectively. These similar but different approaches may be compared using a number of factors, including definition of quality, degree of senior management responsibility and general approach.

• The understanding of quality developed and, in Europe and other parts of the world, the author’s early TQM model, based on a customer/supplier chain core surrounded by systems, tools and teams, linked through culture, communications and commitment, gained wide usage.

Quality award models

• Quality frameworks may be used as the basis for awards for a form of ‘selfassessment’ or as a description of what should be in place.

• The Deming Prize in Japan was the first formal quality award framework established by JUSE in 1950. The examination viewpoints include: top management leadership

and strategies; TQM frameworks, concepts and values; QA and management systems; human resources; utilization of information, scientific methods; organizational powers; realization of corporate objectives.

• The USA Baldrige Award aims to promote performance excellence and improvement in competitiveness through a framework of seven categories which are used to assess organizations: leadership; strategic planning; customer and market focus; information and analysis; human resource focus; process management; business results.

• The European (EFQM) Excellence Model operates through a simple framework of performance improvement through involvement of people in improving processes.

• The full Excellence Model is a non-prescriptive framework for achieving good results – customers, people, society, key performance – through the enablers – leadership, strategy, people, processes, products, systems, partnerships and resources. The framework includes feedback loops of learning, innovation and creativity and proposed weightings for assessment.

The four Ps and three Cs – a model for TQM

• Planning, People and Processes are the keys to delivering quality products and services to customers and generally improving overall Performance. These four Ps form a structure of ‘hard management necessities’ for a simple TQM model which forms the structure of this book.

• The three Cs of culture, communication and commitment provide the glue or ‘soft outcomes’ of the model which will take organizations successfully into the twenty-first century.

3 Chapter 3 Leadership and commitment

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CHAPTER HIGHLIGHTS

The Total Quality Management approach

• TQM is a comprehensive approach to improving competitiveness, effectiveness and flexibility through planning, organizing and understanding each activity, and involving each individual at each level. It is useful in all types of organization.

• TQM ensures that management adopts a strategic overview of quality and focuses on prevention, not detection, of problems.

• It often requires a mindset change to break down existing barriers. Managements that doubt the applicability of TQM should ask questions about the operation’s costs, errors, wastes, standards, systems, training and job instructions.

Commitment and policy

• TQM starts at the top, where serious obsession and commitment to quality and leadership must be demonstrated. Middle management also has a key role to play in communicating the message.

• Every chief executive must accept the responsibility for commitment to a quality policy that deals with the organization for quality, the customer needs, the ability

of the organization, supplied materials and services, education and training, and review of the management systems for never-ending improvement.

Creating or changing the culture

• The culture of an organization is formed by the beliefs, behaviours, norms, dominant values, rules and climate in the organization.

• Any organization needs a vision framework, comprising its guiding philosophy, core values and beliefs and purpose.

• The effectiveness of an organization depends on the extent to which people perform their roles and move towards the common goals and objectives.

• TQM is concerned with moving the focus of control from the outside to the inside of individuals, so that everyone is accountable for his/her own performance.

Effective leadership

• Effective leadership starts with the chief executive's vision and develops into a strategy for implementation.

• Top management should develop the following for effective leadership: clear beliefs and objectives in the form of a vision; clear and effective strategies and supporting plans; the critical success factors and core processes; the appropriate management structure; employee participation through empowerment and the EPDCA helix; the challenge is to achieve shared goals and common action across the supply chain – 'Quality in the 21st Century'.

Excellence in leadership

• The vehicle for achieving excellence in leadership is TQM. Using the construct of the Oakland TQM Model, the four Ps and four Cs provide a framework for this: Planning, Performance, Processes, People, Customers, Commitment, Culture and Communications.

Part I Discussion questions

1. You are planning to start an on-line retail business and have secured the necessary capital. Your aim is to attract customers who normally visit the high street to do their shopping. Discuss the key implications of this for the management of the business.

2. Explain the difference between quality and reliability; and between quality of design and quality of conformance.

3. Discuss the various facets of the ‘quality control’ function, paying particular attention to its interfaces with the other functional areas within the organization.

4. Explain what you understand by the term ‘Total Quality Management’, paying particular attention to the following terms: quality, supplier/customer interfaces, process.

5. Present a ‘model’ for total quality management, describing briefly the various elements of the model.

6. Select one of the so-called ‘Gurus’ of Quality Management, such as Juran, Deming, Crosby, Ishikawa, and explain their approach, with respect to the ‘Oakland Model’ of TQM. Discuss the strengths and weaknesses of their approach using this framework.

7. Compare and contrast the three models for total quality described by the Deming Prize in Japan, the Baldrige Award in the USA and the European Excellence Award.

8. In your new role as quality manager of the high-tech unit of a large national company, you identify a problem which is typified by the two internal memos shown below. Discuss in some detail the problems illustrated by this conflict, explaining how you would set about trying to make improvements. From: Marketing Director To: Managing Director c.c. Production Director Works Manager Date: 4 August We have recently carried out a customer survey to examine how well we are doing in the market. With regard to our product range, the reactions were generally good, but the 24 byte microwinkle thrystor is a problem. Without exception everyone we interviewed said that its quality is not good enough. Although it is not yet apparent, we will inevitably lose our market share. As a matter of urgency, therefore, will you please authorise a complete redesign of this product? From: Works Manager To: Production Director Date: 6 August This really is ridiculous! I have all the QC records for the past three years on this product. How can there be anything seriously wrong with the quality when we only get 0.1% rejects at final inspection and less than 0.01% returns from customers?

9. Explain how the culture in an organization develops over time and describe the main components. How would you go about addressing negative cultural and behavioural aspects

in a factory which are clearly leading to quality problems in the market place?

10. What are the aspects of leadership which are key to a successful total quality approach? Describe how you would go about helping a senior management team in a hospital gain the commitment of the medical, nursing and administration staff to deliver quality health services to the local community.

4 Chapter 4 Policy, strategy and goal deployment

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CHAPTER HIGHLIGHTS

Integrating TQM into the policy and strategy

• Policy and strategy is concerned with how the organization implements its vision and mission in a clear stakeholder-focused strategy supported by relevant policies, plans, objectives, targets and processes.

• Senior management may begin the task of alignment through six steps: • develop a shared vision and mission • develop the critical success actors • define the key performance indicators (balanced scorecard) • understand the core process and gain ownership • break down the core processes into sub-processes, activities and tasks • ensure process and people alignment through a policy deployment or goal translation process.

• The deliverables after one planning cycle will include: an agreed policy/goal deployment framework; agreed mission statements; agreed CSFs and owners; agreed KPIs and targets; agreed core processes and sponsors; whats/hows deployment matrices; focussed business improvement plans.

The development of policies and strategies

• The development of policies that require a detailed review of the major stakeholders' needs, the performance of competitors, the market/industry/sector conditions to form the basis of top level goals, planning activities and

setting of objectives and targets.

- The common themes for planning strategies may be considered under the headings of customers/market, shareholders/major stakeholders, people, processes, partners, resources and society.

- The field of policy and strategy development is huge and the text by Johnson, Scholes and Whittington is recommended reading.

5 Chapter 5 Partnerships and resources

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CHAPTER HIGHLIGHTS

Partnering and collaboration

• Organizations increasingly recognize the need to establish mutually beneficial relationships in partnerships. The philosophies behind TQM and ‘Excellence’ lay down principles and guidelines to support them.

• How partnerships are planned and managed must be in line with overall policies and strategies and support the operation of the processes.

• Establishing effective partnerships requires attention to: strategic alignment, customer focus, decision making and governance, communications and transparency, and investment and improvement.

Global outsourcing

• The top two reasons organizations select global suppliers are the pursuit of new markets and reducing cost, yet poor quality quickly, quietly and devastatingly demolishes the benefits of any new market gains or cost reductions.

• The difficulty of managing quality increases in direct relation to the distance between an organization and its

partners, so a good ‘assurance’ model is needed.

• Three key areas of opportunity and risk that are common across both global in-sourcing and outsourcing are: managing performance and exposure to risk, getting organized for success and delivering better value from the supply chain.

Supply chain effectiveness in global economies – the secret of safe

sourcing

Reliance upon a single source of supply can be risky so an organization must establish

whether it is at risk.

• To strengthen sourcing security in terms of quality, timeliness and cost, by sourcing a second supplier: decide the selection criteria; make an initial selection; toughen up the criteria and make a shortlist; conduct site visits, make a final selection and choice.

Role of purchasing in partnerships

• The prime objective of purchasing is to obtain the correct equipment, materials and services in the right quantity, of the right quality, from the right origin, at the right time and cost. Purchasing also acts as a ‘window-on-the-world’.

• The purchasing system should be documented and assign responsibilities, define the means of selecting suppliers and specify the documentation to be used.

• Improving supplier performance requires from the suppliers’ senior management commitment, education, a policy, an assessed quality system and supplier approval.

Just-in-time (JIT) management

• JIT fits well under the TQM umbrella and is essentially a series of operating concepts that allow the systematic identification of problems and tools for correcting them.

• JIT aims to produce or operate, in accordance with customer requirements, without waste, immediately on demand. Some of the direct techniques associated with JIT are batch or lot size reduction, flexible workforce, Kanban

cards, mistake proofing, set up time reduction, standardized containers.

• The development of long-term relationships with a few suppliers or ‘co-producers’ is an important feature of JIT. These exist in a network of trust to provide quality goods and services.

Resources

• All organizations assemble resources to support operation of the processes and deliver the strategy. These include finance, buildings, equipment, materials, technology, information and knowledge.

• Investment and/or funding is key for future development of all organizations and often determines strategic direction. Financial goals and performance will, therefore, drive strategies and processes. Use of a ‘balanced scorecard’ approach with continuous appraisal helps in understanding the long-term impact of financial decisions.

• In the management of buildings, equipment and materials, attention must be given to utilization, security, maintenance, inventory, consumption, waste and environmental aspects.

• Technology plays a key role in most organizations and management of existing alternative and emerging technologies need to be identified, evaluated and deployed to achieve organizational goals.

• There are clear links between the introduction of new or the replacement of old technologies and process redesign/engineering (see Chapter 10). The roll out of any new systems also involves people across the organization and good communications are vital.

Collaborative business relationships (BS 11000)

• BS 11000 provides a strategic framework to establish and improve collaborative relationships in organizations of all sizes to ensure they are effective, optimized and deliver enhanced benefits to the stakeholders.

• BS 11000 outlines different approaches to collaborative working that can be successful in businesses of all sizes and sectors. It shows how to eliminate the known pitfalls of poor communication by defining roles and responsibilities, and creating partnerships that add value

to a business.

- The standard lists the benefits of using the approach, including defining roles and responsibilities to improve decision making processes, sharing cost, risks, resources and responsibilities, providing staff with wider training opportunities and building better relationships that lead to quicker results. BS 11000 also gives ‘ten top tips’ for implementation.

6 Chapter 6 Design for quality

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CHAPTER HIGHLIGHTS

Innovation, design and improvement

• Design is a multifaceted activity which covers many aspects of an organization.

• All businesses need to update their products, processes and services.

• Innovation entails both invention and design, and continuous improvement of existing products, services and processes.

• Leading product/service innovations are market-led, not marketing-led.

• Everything in or from an organization results from design decisions.

• Design in an on-going activity, dynamic not static, a verb not a noun – design is a process.

The design process

• Commitment at the top is required to building in quality throughout the design process. Moreover, the operational processes must be capable of achieving the design.

• State-of-the-art approach to innovation is based on a strategic balance of old and new, top management approach to design and teamwork.

• The ‘styling’ of products must also be matched by secondary design considerations, such as operating instructions and software support.

• Designing takes in all aspects of identifying the need, developing something to satisfy the need, checking conformance to the need and ensuring the need is satisfied.

• The design process must be carefully managed and can be flow-charted, like any other process, into: planning, practice codes, procedures, activities assignments, identification of organizational and technical interfaces and design input requirements, review investigation and evaluation of new techniques and materials, and use of feedback data from previous designs.

• Total design or ‘simultaneous engineering’ is similar to quality function deployment and uses multifunction teams to provide an integrated approach to product or service introduction.

Quality function deployment (QFD) – the house of quality

• The ‘house of quality’ is the framework of the approach to design management known as quality function deployment (QFD). It provides structure to the design and development cycle, which is driven by customer needs rather than innovation in technology.

• QFD is a system for designing a product or service, based on customer demands, and bringing in all members of the supplier organization.

• A QFD team’s purpose is to take the needs of the market and translate them into such a form that they can be satisfied within the operating unit.

• The QFD team answers the following question. WHO are the customers? WHAT do the customers need? HOW will the needs be satisfied?

• The answers to the WHO, WHAT and HOW questions are entered into the QFD matrix or quality table, one of the seven new tools of planning and design.

Specifications and standards

• There is a strong relation between standardization and specifications. If standards are used correctly, the process of drawing up specifications should provide opportunities to

learn more about innovations and change standards accordingly.

• The aim of specifications should be to reflect the true requirements of the product/service that are capable of being achieved.

Quality design in the service sector

• In the design of services three distinct elements may be recognized in the service package: physical (facilitating goods), explicit service (sensual benefits) and implicit service (psychological benefits). Moreover, the characteristics of service delivery may be itemised as intangibility, simultaneity and heterogeneity.

• Services may be classified generally as service factory, service shop, mass service, professional service and personal service. The service attributes that are important in designing services include labour intensity, contact interaction, customerization, nature of service act, and the direct recipient of the act. Use of this framework allows services to be grouped under the five classifications.

• Parasuraman's five dimensions of service quality (reliability, responsiveness, assurance, empathy and tangibles) are a very useful framework for assessing service quality weaknesses and for benchmarking service quality.

• A standard set of survey questions have been developed and validated and hence they provide a mature and well-tried performance measurement and benchmarking tool for the services sector.

• Lawyers and other professions are in fundamental transformation with conventional legal advisers much less prominent in the future; there are two major forces that are shaping and characterizing legal services: market pull towards commoditization and pervasive development & uptake of information technology.

• The evolution of the legal services portfolio is now like a conveyor belt that moves through bespoke, standardized, systemized, packaged and commoditized, although some organizations are polarizing toward the ends

Failure mode, effect and criticality analysis (FMECA)

• FMEA is the study of potential product, service or

process failures and their effects. When the results are ranked in order of criticality, the approach is called FMECA. Its aim is to reduce the probability of failure.

• The elements of a complete FMECA are to study failure mode, effect and criticality. It may be applied at any stage of design, development, production/operation or use.

• Moments of truth (MoT) is a similar concept to FMEA. It refers to the moments in time when customers first come into contact with an organization, leading to judgements about quality.

The links between good design and managing the business

• Research has led to a series of specific aspects to address in order to integrate design into an organization.

• The aspects may be summarized under the headings of: leadership and management style; customers, strategy and planning; people – their management and satisfaction; resource management; process management; impact on society and business performance.

• The research shows that strong links exist between good design and proactive flexible deployment of business policies and strategies – design needs co-ordinating and managing right across the organization.

Part II Discussion questions

1. Describe the key stages of integrating total quality into the strategy of an organization of your choice.

2. Explain the difference between the ‘Whats’ and the ‘Hows’ of a company in the utilities sector. Identify likely critical success factors for such an organization and list possible key performance indicators for each one.

3. A legal firm is concerned about the changes taking place in its sector and believes that the market is ‘polarising’ into a high value – high fees end and a ‘quick and dirty’ – cheaper service associated with lower quality. Prepare a presentation to the senior management of the firm which provides an alternative view and show them how they could look at developing their business accordingly in the future.

4. You are the manager of a busy insurance office. Last year’s abnormal winter gales led to an exceptionally high

level of insurance claims for house damage caused by strong winds, and you had considerable problems in coping with the greatly increased work load. The result was excessively long delays in both acknowledging and settling customers' claims. Your area manager has asked you to outline a plan for dealing with such a situation should it arise again. The plan should identify what actions you would take to deal with the work, and what, if anything, should be done now to enable you to take those actions should the need arise. What proposals would you make, and why?

5. Discuss the preparations required for the negotiation of a one-year contract with a major material supplier. What are the major factors to consider in partnering with key suppliers?

6. Imagine that you are the chief executive or equivalent in a company which has operations across the globe, and that you plan to introduce best practice supply chain management into the organization. a) Prepare a briefing of your senior managers, which should include your assessment of the aims, objectives and benefits to be gained from the approach. b) Outline the steps you would take to develop an excellent supply chain and explain how you would attempt to ensure its success.

7. You are a management consultant with particular expertise in the area of product and service design and development. You are at present working on projects for four firms: a) a chain of hotels b) an internet order goods firm c) a furniture manufacturer d) a road construction contractor. What factors do you consider are important generally in your area of specialization? Compare and contrast how these factors apply to your four current projects.

8. Discuss the application of quality function deployment (QFD) and the 'house of quality' in a fast moving consumer good (fmcg) company which designs and produces personal products.

9. Explain in full how Failure Mode Effect and Criticality Analysis (FMECA) can help a company improve customer satisfaction. Describe in detail the method and consider some of the barriers that may arise.

10. Discuss the application of 'Hoshin Kanri' as a strategic planning methodology. Include a presentation to the senior management of an organization in the service sector showing how the approach could add value and create

a platform for performance improvement, paying particular attention to the nature of services and the customer-supplier interfaces. This page intentionally left blank

7 Chapter 7 Performance measurement frameworks

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CHAPTER HIGHLIGHTS

Performance measurement and the improvement cycle

• Traditional performance measures based on cost-accounting information provide little to support TQM, because they do not map process performance and improvements seen by the customer.

• Measurement is important in tracking progress, identifying opportunities and comparing performance internally and externally. Measures, typically non-financial, are used in process control and performance improvement.

• Some financial indicators, such as ROI, are often inaccurate, irrelevant and too late to be used as measures for performance improvement.

• The Deming cycle of Plan Do Check Act is a useful design aid for measurement systems, but firstly four basic questions about measurement should be asked i.e. why, what, where and how.

• In answering the question ‘how to measure?’ progress is important in five main areas: effectiveness, efficiency, productivity, quality and impact.

• Activity-based costing (ABC) is based on the activities performed being identified and costs traced to them. ABC uses cost drivers, which reflect the demands placed on activities.

Costs of quality

• A competitive product or service based on a balance between quality and cost factors is the principal goal of responsible management.

• The analysis of quality related costs may provide a method of assessing the effectiveness of the management of quality and of determining problem areas, opportunities, savings and action priorities.

• Total quality costs may be categorized into prevention, appraisal, internal failure and external failure costs, the P-A-F model.

• Prevention costs are associated with doing it right the first time, appraisal costs with checking it is right and failure costs with getting it wrong.

• When quality awareness in an organization is low, the total quality related costs are high, the failure costs predominating. After an initial rise in costs, mainly through the investment in training and appraisal, increasing investment in prevention causes failure, appraisal and total costs to fall.

The process model for quality costing

• The P-A-F model or quality costing has a number of drawbacks, mainly due to estimating the prevention costs, and its association with an ‘optimized’ or minimum total cost.

• An alternative – the process costs model – rationalizes cost of quality (COQ) into the costs of conformance (COC) and the cost of non-conformance (CONC). COQ = COC + CONC at each process stage.

• Process cost modelling calls for choice of a process and its definition; construction of a process diagram; identification of outputs and customers, inputs and suppliers, controls and resources; flowcharting the process and identifying owners; allocating activities as COC or CONC; and calculating the costs. A process cost report with summaries and results is produced.

• The failure costs of CONC should be prioritized for improvements.

A performance measurement framework

• A suitable performance measurement framework (PMF) has four elements related to strategy development, goal deployment, process management, individual performance management and review.

• The key to successful performance measurement at the strategic level is the identification of a set of critical success factors (CSFs) and associated key performance indicators (KPIs).

• The key to success at the process level is the identification and translation of customer requirements and strategic objectives into a process framework, with process performance measures.

• The key to success at the individual level is performance appraisal and planned formal reviews, through integrated performance management

• The key to success in the review stage is the use of appropriate innovative techniques to identify improvement opportunities followed by good implementation.

• A number of factors are critical to the success of performance measurement systems including top management support for non-financial performance measures, the identification of the vital few measures, the involvement of all individuals in the development of performance measurement, the clear communication of strategic objectives, the inclusion of customers and suppliers in the measurement process, and the identification of the key drivers of performance.

The implementation of performance measurement systems

• The value of any measure must be compared with the cost of producing it. All critical parts of the process must be measured, but it is often better to start with the simple measures and improve them.

• Process-owners should take part in defining the performance measures, which must reflect customer requirements.

• Prior to introducing TQM measurement, an audit of existing systems should be carried out to establish their effectiveness, compatibility, relationship and closeness to the customer.

• Following the audit, there are twelve basic steps for implementation, six of which are planning steps. The measurement system, then, must be designed, planned and implemented to reflect customer requirements, give visibility to the processes and progress made, communicate

the total quality effort and drive continuous improvement.
It must also be periodically reviewed.

8 Chapter 8 Self-assessment, audits and reviews

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CHAPTER HIGHLIGHTS

Frameworks for self-sssessment

• Many organizations are turning to total quality models to measure and improve performance. The frameworks include the Japanese Deming Prize, the US Baldrige Award and in Europe the EFQM Excellence Model.

• The nine components of the Excellence Model are: leadership, strategy partnerships, people, resources and processes (ENABLERS), people results, customer results, society results and key results (RESULTS).

• The various award criteria provide rational bases against which to measure progress towards TQM in organizations. Self-assessment against, for example, the EFQM Excellence model should be a regular activity, as it identifies opportunities for improvement in performance through processes and people.

Methodologies for assessment

• Self-assessment against the Excellence Model may be performed using RADAR: results, approach, deployment, assessment and review.

• There are a number of approaches for self-assessment, including groups/workshops, surveys, pro-formas, matrices, award simulations, activity/process audits or hybrid approaches.

Capability Maturity Model Integration (CMMI) assessments

• In CMMI a set of requirements for increasing levels of maturity are defined and assessments are made to determine how mature the assessed entity is.

• Maturity is defined in a framework that sets out the

‘criteria’ that make up excellence in the area of focus; for each criterion, a set of requirements are arranged in a hierarchy, usually with 5 levels: basic at level 1 and world class at level 5, with possible intermediate steps in between.

• CMMI assessments should prompt appropriate action by showing both the current status and what needs to be done next to advance up the maturity curve; the assessments often lead to standardized reports.

Securing prevention by audit and review of the system

• There are two major elements of error or defect prevention: checking the system, and error/defect investigations and follow-up. Six methods of checking the quality systems are in general use: audits and reviews, surveys, inspections, tours, sampling and scrutinies.

• Investigations proceed by collecting, checking and selecting data, and analysing it by deciding causes, notifying people, recording and reporting findings and outcomes.

Internal and external quality management system audits and reviews

• A good management system will not function without adequate audits and reviews. Audits make sure the actual methods are adhering to documented procedures. Reviews ensure the system achieves the desired effect.

• System assessment by internal audit and review is known as first party, by external customer as second party, and by an independent organization as third party certification. For the latter to be of real value the certification body must itself be recognized.

9 Chapter 9 Benchmarking and change management

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Figure 9.6

Carbon reduction aspects mapped onto figure of 8 framework Readiness for Change Need for Change Leadership and Direction Planning Implementing Change Organization and Resources Behaviours Systems and Controls Processes Carbon Trading and Offsetting Carbon Footprint Assessment Low-Carbon Technology 3 rd Party Verification Goal Alignment Leadership Capability Stakeholder Engagement Carbon Briefings Implementation Plan Peformance Management Carbon Stream Mapping (see Chap 15) Legislation Watch Utility Metering

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CHAPTER HIGHLIGHTS

The why and what of benchmarking

• Benchmarking measures an organization’s products, services and processes to establish targets, priorities and improvements, leading in turn to competitive advantage and/or cost reductions.

• Benefits of benchmarking can be numerous and include creating a better understanding of the current position, heightening sensitivity to changing customer needs, encouraging innovation, developing stretch goals, and establishing realistic action plans.

• Data from APQC suggests an average benchmarking study takes six months to complete, occupies a quarter of the team members' time and the average return was five times the costs.

• The four basic types of benchmarking are: internal, functional, generic and competitive, although the evolution of benchmarking in an organization is likely to progress through focus on continuous improvement.

The purpose and practice of benchmarking

• The evolution of benchmarking is likely to progress through four focuses: competitive products/services; industry best practices; all aspects of the business; in terms of performance gaps; and ending with focus on processes and true continuous improvement.

• The purpose of benchmarking is predominantly to change perspective, compare business practices, challenge current practices and processes, and to create improved goals and practices, with the focus on customer satisfaction and business results.

• A simple scoring proforma may help an organization to assess whether it is ready for benchmarking, if it has not engaged in it before. Help may be required to establish the right platforms if low scores are obtained.

• The benchmarking process has five main stages: plan, collect, analyse, adapt and review. These are focussed on trying to measure comparisons and identify areas for action and change.

The role of benchmarking in change

• An important aspect of benchmarking is gaining an understanding of how other organizations achieve superior performance. Some of this knowledge will result in 'quick wins', with low risk but relatively low levels of benefit.

• Step changes are of a more fundamental nature, usually require further investment in time and money, will need to be carefully planned and systematically implemented, and typically carry a higher risk.

• A change model or 'footprint' should lead to the chosen destination – improved performance through the adoption of best practice – and show the role of benchmarking.

Communicating, managing stakeholders and lowering barriers

• Communication is vital during change, and a vital element is targeting the right audience, with the right message, in the right way at the right time.

• Defining and understanding the key stakeholders is a wise investment of time. This should be followed by building and managing good relationships. This falls on the benchmarking team.

• Elements of successful stakeholder group management include: defining and mapping; analysing and prioritising; research key players/groups; developing and deploying a strategy; and reviewing effectiveness.

• Objective measurement is key to targeting change wisely and provides a reliable baseline for decisions. Baselining performance allows teams to monitor and understand success in delivering beneficial change.

Choosing benchmarking driven change activities wisely

• Organizations should start benchmarking driven improvement activities only with consideration of their impact on existing initiatives. Questions to be asked include those related to the scale of the change, the financial and people resources (including skills) required, the impact and disruption aspects, the degree of support to the business goals, and the cultural implications.

• Benchmarking may be used to drive revisions in business management systems, facilitate the application of new technologies, and generally to help people to see how processes might be different.

• Properly conducted systematic benchmarking studies can aid the definition of clearer objectives and help their deployment through well executed change management.

A framework for organizational change

• Based on research an organizational change framework has been developed to provide a powerful aid for organizations wishing to undertake any change programme, or who were in the processes of delivering change and want to increase their success.

• The framework, which is in the shape of a figure of 8,

identifies two main constructs of change management in the form of two interacting cycles, readiness for change (strategic) and implementing change (operational).

• The figure of 8 framework may be used as a simple diagnostic based on likely outcomes from missing area focus and adapted for use in many areas, including carbon emission reduction strategies.

Part III Discussion questions

1. a) Using the expression: ‘if you don’t measure you can’t improve’, explain why measurement is important in service delivery improvement, giving examples. b) Using your knowledge of process management, show where measurement should take place in a global manufacturing and distribution company and how should it be conducted.

2. Discuss the important features of a performance measurement system based on a TQM approach. Suggest an implementation strategy for a performance measurement system in a progressive company which is applying TQM principles to its business processes.

3. It is often said that ‘you can’t control what you can’t measure and you can’t manage what you can’t control’. Measurement is, therefore, considered to be at the heart of managing business processes, activities and tasks. What do you understand by improvement-based performance measurement? Why is it important? Suggest a strategy of introducing TQM-based performance measurement for an organization of your own choice in the public sector.

4. List the main categories of the US Baldrige Performance Excellence Model. How may such criteria be used as the basis for a self-assessment process?

5. Self-assessment using the EFQM Excellence Model criteria enables an organization to systematically review its business processes and results. Briefly describe the criteria and discuss the main aspects of self-assessment.

6. Self-appraisal or assessment against a hybrid ‘Excellence Model’ can be used by organizations to monitor their progress. Design the criteria for such a hybrid framework and explain the steps that an organization would have to follow to carry out a self-assessment. How could self-assessment against the model be used in a large multi-site organization to drive continuous improvement? What additional requirements would be introduced for an

organization that was asked by customers to assess against the CMMI framework?

7. Benchmarking is an important component of many companies' improvement strategies. What do you understand by benchmarking? How does benchmarking link with performance measurement? Suggest a strategy for integrating benchmarking into a TQM approach.

8. a) Some people would argue that benchmarking is not different from competitor analysis and is a practice that organizations have always carried out. Do you agree with this? How would you differentiate benchmarking and what are its key elements? b) Suggest and describe in full an approach to change management that would be suitable for implementing the findings from benchmarking studies for a progressive company that has no previous knowledge or experience of doing this.

9 a) What are the major limitations of the 'Prevention-Appraisal-Failure (PAF)' costing model? Why would the process cost model be a better alternative? b) Discuss the link between benchmarking and quality costing.

10. A construction company is concerned about its record of completing projects on time. Considerable penalty costs are incurred if the company fails to meet the agreed contractual completion date. How would you investigate this problem and what methodology would you adopt?

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CHAPTER HIGHLIGHTS

Process management vision

• Everything organizations do to create value for customers of their products or services is a process. Process management is key to improving performance.

• Process managed organizations see things from a customer perspective – as a series of inter-connected work and information flows that cut horizontally across the business functions.

• The key or core business processes are well defined and developed sequences of steps with clear rationale, which add value by producing required outputs from a variety of inputs.

• Deployment of a common high-level process framework throughout the organization gives many benefits, including reduced costs and increased flexibility.

• Process management best practices include: identifying the key business processes, managing processes systematically, reviewing processes and setting improvement targets, using innovation and creativity to improve processes, changing processes and evaluating the benefits.

Process classification framework and process modelling

• The APQC's Process Classification Framework creates a high level generic, crossfunctional process view of an enterprise – a taxonomy of business processes.

• The IDEF (Integrated Definition Function Modelling) language provides a useful structured graphical framework for describing and improving business processes. It consists of a hierarchical series of diagrams and text, cross-referenced to each other through boxes. The processes are described in terms of inputs, controls, outputs and resources (ICOR).

Process flowcharting

• Flowcharting is a method of describing a process in pictures, using symbols – rectangles for operation steps, diamonds for decisions, parallelograms for information and circles/ovals for the start/end points. Arrow lines connect the symbols to show the 'flow'.

• Flowcharting improves knowledge of the process and helps to develop the team of people involved.

• Flowcharts document processes and are useful as

trouble-shooting tools and in process improvement. An improvement team would flowchart the existing process and the improved or desired process, comparing the two to highlight the changes necessary.

Leadership, people and implementation

• Top management who have used process management to great effect recognize its contribution in creating knowledge and eliminating waste, yet they understand the importance of involving people, measurement and good communications.

• Process owners are key to effective process management. They have responsibility for and authority over process design, operation and measurement of performance.

• Managing the people who work in the processes requires attention to training programmes, performance targets, communicating changing customer needs, negotiation and collaboration.

• Moving to process management requires some challenging fundamental changes, leading to new ways of working and managing. Current initiatives should be carefully examined to ensure good planning and an understanding of what needs to be done first.

• As with all change initiatives, delivering some tangible measurable benefits early on will help overcome the inevitable resistance.

• With the wider introduction of e-commerce systems, there will be greater pressure to run rapid, fault-free business processes. Some of the processes will need to change ‘shape’ as demands, technologies and markets change.

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CHAPTER HIGHLIGHTS

Process redesign, re-engineering and lean systems

• The main movements influencing process redesign over recent years are ‘lean production’ and ‘process re-engineering’. The first has its roots in reviews of causes of inefficiency in mass production; the second was born out of the potential provided by information technology for traditional processes to be fundamentally redesigned.

• Lean focuses on the customer, the process, the elimination of waste and the maximization of value.

• The primary forms of waste are overproduction, waiting, excess conveyance, extra processing, excessive inventory, unnecessary motion and defects requiring rework or scrap.

Re-engineering the organization?

• When a major business process requires radical re-assessment, perhaps through the introduction of new technology, discontinuous methods of business process re-engineering or redesign (BPR) are appropriate.

• The opportunity for radical change in processes may involve collaboration across the supply chain and this might be best achieved through partnerships among organizations.

• Drivers for process change include information technology (IT), political, financial, cultural and competitive aspects. These often require a change of thinking about the ways processes are and could be operated.

• IT often creates opportunities for breakthrough performance but BPR is needed to deliver it. Successful practitioners of BPR have made striking improvements in customer satisfaction and productivity in short periods of time.

• Inter-organizational integration of IT is one of the greatest opportunities and challenges facing the sector – it has the potential to unlock significant value.

What is BPR and what does it do?

• There are many definitions of BPR but the basic elements involve a fundamental re-think and radical redesign of a business process, its structure and associated management systems to deliver step improvements in performance.

• BPR and TQM are complementary under the umbrella of process management – the continuous and discontinuous improvements living side by side. Both require the involvement of customers and suppliers and their future requirements.

• BPR challenges managers to re-think their traditional methods of doing work and to commit to customer-focussed processes. This breaks down organizational barriers and encourages cross-functional teams.

Processes for redesign/focus on results

• Much larger savings and head count reductions are possible through properly applied BPR than simply automating existing processes. The larger the scope of the process, the greater and farther reaching the consequences

of the redesign.

• A thorough understanding of the current process is needed before embarking on a re-engineering project. Documentation of processes through mapping and flowcharting allows inter-relationships to be clarified.

• Focussing on results rather than activities can make the difference between success and failure in BPR and other change projects, but the measures used are critical. Benchmarking is a powerful tool for BPR and often the trigger for many projects.

The redesign process/assumption busting

• BPR has a top-down approach and needs an objective overview of the process to be redesigned to drive the project.

• Typically a BPR project will have seven phases: discover – identifying the problem or unacceptable outcome; establish redesign team; analyse and document processes; innovate and rebuild; re-organize and re-train; measure performance; continuous redesign and improvement.

• Assumption busting is a useful eight-step BPR method which aims to identify and challenge the 'rules' and assumptions that govern and underlay the way business is done. A team is formed to: identify the core value to be delivered to customers and stakeholders; map the process at high level; select problems to resolve and collect performance data; brainstorm and test the rules; rigorously review each rule to uncover underlying assumptions; identify modified assumptions and process rules; identify impact and construct new set of process principles; develop revised process and test validity.

BPR – the people and the leaders

• For an organization to focus on its core processes requires an understanding of its core competencies, and the channelling of these into outcomes that deliver strategic competitive advantage.

• BPR has profound impacts on employees from the top to the bottom of an organization. In order to be successful, significant changes in organization design and enterprise culture are also often required. This requires commitment from the leaders to undertake these changes.

- TQM ideals and concepts provide a perfect platform for BPR projects and the creation of a ‘learning organization’ capable of adapting to a radically changing environment.

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Why a quality management system

• An appropriate quality management system will enable the objectives set out in the quality policy to be accomplished.

• The International Organization for Standardization (ISO) 9000 series sets out methods by which a system can be implemented to ensure that the specified customer requirements are met.

• A quality system may be defined as an assembly of components, such as the management responsibilities, process and resources.

Quality management system design and ISO 9000

- ISO 9000 links management system quality to product and process quality through a focus on demonstrating customer satisfaction and continuous improvement.

- Quality management systems should apply to and interact with processes in the organization. The activities are generally processing, communicating and controlling. These should be documented in the form of a quality manual.

- The system should follow the PLAN DO CHECK ACT cycle, through documentation, implementation, audit and review.

- The ISO 9000 family together form a coherent set of quality management system standards to facilitate mutual understanding across national and international trade.

Quality management system requirements

- The general categories of the ISO 9001:2000 standard on quality management systems include: management responsibility, resource management, product realization, measurement analysis and improvement, which are detailed in the standard.

Other management systems and models

- The International Standard ISO 14001 contains specifications for environmental management systems for ensuring and demonstrating compliance with the stated policies and objectives, and acting as a base for auditing and review schemes.

- ISO 14000 shares common principles with the ISO 9001 standard on quality management systems. The latter shows, by ‘correspondence’ between the two, under the main headings of both standards, that the quality standard has been aligned with the requirements of the environmental standard.

- ISO 9000 also makes comments on the relationship between quality management systems and excellence models. The two are based on the common principles of identifying strengths and weaknesses, evaluation, continuous improvement, external recognition.

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CHAPTER HIGHLIGHTS

Approaches, methodologies and tools

• Continuous improvement must be linked to organizational strategy, have a defined structure, a chosen approach, a methodology and an associated tool kit.

• A generic eight stage structure for CI may be applied to most organizations; it involves: leadership and top down cascade of objectives, supporting infrastructure, pragmatic, fact-based methodology yielding rapid results (e.g. Lean Six Sigma), skilled improvers, widely shared continual improvement culture, circulation of talent, measurable improvements in the service/ delivery areas, sustained improvement.

The ‘DRIVER’ framework for continuous improvement

• A fully closed loop improvement methodology, which brings together the best of Lean, Six Sigma and Cost of Quality approaches is ‘DRIVER’ with the stages of Define, Review, Investigate, Verify, Execute and Reinforce.

The need for data and some basic tools and techniques

• Numbers and information will form the basis for understanding, decisions and actions in never-ending improvement – record data, use/analyse data, act on results.

• A set of simple tools is needed to interpret fully and derive maximum use from data. More sophisticated techniques may need to be employed occasionally; the effective use of the tools requires the commitment of the people who work on the processes, which in turn needs management support and the provision of training.

• The basic tools and the questions answered are: • Process flowcharting – what is done? • Check/tally charts – how often is it done? • Histograms – what do variations look like? • Scatter diagrams – what are the relationships between factors? • Stratification – how is the data made up? • Pareto analysis – which are the big problems? • Cause and effect analysis and brainstorming (also CEDAC and NGT) – what causes the problem? • Force-field analysis – what will obstruct or help the change or solution? • Emphasis curve – which are the most important factors? • Control charts (including cusum) – which variations to control and how?

Statistical process control

• People operating a process must know whether it is

capable of meeting the requirements, know whether it is actually doing so at any time and make correct adjustments when it is not. SPC techniques will help here.

• Before using SPC, it is necessary to identify what the process is, what the inputs/outputs are, and how the suppliers and customers and their requirements are defined. The most difficult areas for this can be in non-manufacturing.

• All processes can be monitored and brought ‘under control’ by gathering and using data. SPC methods, with management commitment, provide objective means of controlling quality in any transformation process.

• SPC is not only a tool kit, it is a strategy for reducing variability, part of neverending improvement. This is achieved by answering the following questions: • Are we capable of doing the job correctly? • Do we continue to do the job correctly? • Have we done the job correctly? • Could we do the job more consistently and on target?

• SPC provides knowledge and control of process capability.

• SPC techniques have value in the service sector and in the non-manufacturing areas, such as marketing and sales, purchasing, invoicing, finance, distribution, training and personnel.

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CHAPTER HIGHLIGHTS

Some additional techniques for process design and improvement

• Seven ‘new tools’ may be used as part of quality function deployment (QFD, see Chapter 6) or to improve processes. These are systems and documentation methods for identifying objectives and intermediate steps in the finest detail.

• The seven new tools are: affinity diagram, interrelationship digraph, tree diagram, matrix diagrams or quality table, matrix data analysis, process decision programme chart (PDPC) and arrow diagram.

• The tools are interrelated and their promotion and use should lead to better designs in less time. They work best when people from all parts of an organization are using them. Some of the tools can be used in activities related to problem solving and design.

Taguchi methods for process improvement

• Genichi Taguchi has advanced ‘quality engineering’ as a technology to reduce costs and make improvements.

• Taguchi’s approach may be classified under four headings; total loss function; design of products, services and processes; reduction in variation; and statistically planned experiments.

• Taguchi methods, like all others, should not be used in isolation, but as an integral part of continuous improvement.

Six Sigma

• Six Sigma is not a new technique – its origins may be found in TQM and SPC. It is a framework through which powerful TQM and SPC tools flourish and reach their full potential. It delivers breakthrough benefits in the short term through the intensity and speed of change. The Excellence Model is a useful framework for mapping the key Six Sigma breakthrough strategies.

• A process that can achieve six sigma capability (where sigma is the statistical measure of variation) can be

expected to have a defect rate of a few parts per million, even allowing for some drift in the process setting.

• Six Sigma is a disciplined approach for improving performance by focusing on enhancing value for the customer and eliminating costs which add no value.

• There are five fundamental phases/stages in applying the six sigma approach: Define, Measure, Analyse, Improve and Control (DMAIC). These form an improvement cycle similar to Deming's Plan, Do, Check, Act (PDCA), to deliver the strategies of process design/redesign, management and improvement, leading to bottom line achievements.

• Six sigma approaches question organizational cultures and the measures used. Six sigma organizations, in addition to focusing on understanding customer requirements, identify core processes, involve all employees in continuous improvement, are responsive to change, base management on fact and metrics and obtain outstanding results.

• Properly implemented six sigma strategies involve: leadership involvement and sponsorship, organization-wide training, project selection tools and analysis, improvement methods and tools for implementation, measurement of financial benefits, communication, control and sustained improvement.

• Six sigma process improvement experts, named after martial arts – Master Black Belts, Black Belts and Green Belts – perform the training, lead teams and carry out the improvements. Mature six sigma programmes have about 1 percent of the workforce as Black Belts.

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CHAPTER HIGHLIGHTS

Introduction to lean thinking

• Womack, Jones and Roos first introduced the concept of Lean Manufacturing by describing an approach that had been adopted by the Japanese car industry, led primarily by Toyota - the so-called Toyota Production System.

• The evolving nature of the lean approach means that the practices need tailoring to the specific context of the organizations adopting them; many industries and sectors have discovered that lean concepts and practices are transferable and adaptable, including to the public sector.

• There are certain myths and facts about lean which lead to four issues to consider: lean is transferable, lean does not necessarily mean losing people, lean is not a fashionable idea that will go away eventually, and lean is an investment.

Lean and Six Sigma

• There has been a lot of interest and success in combining the two approaches of Lean and Six Sigma into 'Lean Six -Sigma' or 'Lean Sigma' programmes, where the lean element

addresses waste and lead times and the six sigma element addresses process variation and quality; this combined view produces a holistic approach and provides a broad set of improvement tools and techniques.

Approaches to lean interventions

• Womack and Jones identified five key principles to guide an organization's implementation of lean: provide the Value actually desired by customers; identify the Value Stream for each product; line up the remaining steps in a Continuous Flow; let the customer Pull value from the firm; endlessly search for Perfection.

• The emphasis placed on lean is that of understanding the 'core value-adding processes' and the stripping out of all non-value adding activity; all supplying and support processes need to be designed and run to deliver as a continuous flow so that, as activity is pulled through the system by customer demand, things get done only when they are required to be done, so eliminating waste activity, unnecessary inventory and time delays.

Value stream mapping

• Value stream mapping (VSM) studies the set of specific actions required to bring a product family from raw material to finished goods, as per customer demand, concentrating on information management and physical transformation tasks.

• The outputs of a VSM based study are a current state map, future state map and implementation plan for getting from the current to the future state.

• A development of VSM by the author and his colleagues is 'Carbon Stream Mapping' (CSM) in which processes are studied to identify carbon emission at various stages.

• In all organizations there are processes that, when broken down into the component steps, actually pass through the same stages, often worked on by the same departments and/or people; when different processes share the same process structure, they can be described as being in the same 'process family.'

The building blocks of lean

• The building blocks of lean include tools and techniques such as Just in Time, Kanban, Total Productive Maintenance

(TPM), Cellular Production and Flow, PokaYoke and 5S (CANDO in health sector); these are designed to implement the required change; no doubt new tools more specific to service environments will emerge as lean becomes more widespread in its application.

DRIVER: a context-dependant process view of lean

• Organizations that have succeeded in implementing lean approaches have done so by adapting or developing approaches based on the underlying principles of lean, i.e. by focusing on what the customer sees as being of value, and then identifying activities that do not add value and taking steps to eliminate them.

• The 'DRIVER' improvement methodology has been successfully tried and tested in many private and public sector organizations. It is clear that the DRIVER approach embraces the concepts of lean whilst allowing sufficient flexibility for the detailed tools and techniques that could and should be used; it is therefore presented as a pragmatic improvement approach for lean interventions.

Part IV Discussion questions

1. Explain what is meant by taking a business process management (BPM) approach to running an organization outlining the main advantages of adopting BPM successfully. What would be the key components of an implementation plan for BPM?

2. Develop a high level process framework for an organization of your choice identifying the 'value adding' processes and the main support processes. Give a breakdown to the first level sub-processes of one value adding process and one support process.

3. Using an appropriate process modelling technique show the core processes for a company manufacturing and selling fast moving consumer goods. Identify the key inputs and outputs for the processes and explain how you would engage the senior management of the company in the development of the process framework for the business.

4. Explain the basic philosophy behind quality management systems such as those specified in ISO 9000 series. How can an effective quality management system contribute to continuous improvement in an international banking operation?

5. Explain what is meant by independent third part certification to a standard such as ISO 9000 and discuss the merits of such a scheme for an organization.

6. Compare and contrast the role of quality management systems in the following organizations: a) a private hospital; b) a medium-sized engineering company; c) a branch of a major bank.

7. English Aerospace is concerned about its poor quality and delivery performance with the EA847. Considerable penalty costs are incurred if the company fails to meet agreed specifications or delivery dates. As the company's new Chief Quality and Business Improvement Officer you have been asked to lead an improvement programme. Describe the approaches and methodologies you would adopt and list some of the tools and techniques that might be used in a systematic approach.

8. The marketing department of a large chemical company is reviewing its sales forecasting activities. Over the last three years the sales forecasts have been grossly inaccurate. As a result, a process improvement team has been formed to look at this problem. Give an account of how you would advise that team in this situation and outline a programme of work for them to consider.

9. It has been suggested by Deming and Ishikawa that statistical techniques can be used by staff at all levels within an organization. Comment on this view and explain how such techniques could help: a) Senior managers to assess performance b) Sales staff to demonstrate process capability to customers c) Process teams to achieve quality improvement.

10. 'Lean thinking and systems' have been used widely in many sectors to bring about performance improvement. Prepare a presentation on 'Lean' for the senior management team of an organization of your choice, so that they may understand the concept and its building blocks. Recommend an appropriate systematic approach and tool kit. Make proposals on how they should go about implementing Lean in their organization. This page intentionally left blank

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CHAPTER HIGHLIGHTS

Strategic alignment of HRM policies

• In recent years the way people are managed has been recognized as a key to improving performance. Recent research (ECforBE) on world-class, award winning organizations has identified the main people management activities used in leading edge organizations.

• World-class organizations value and invest in people through: strategic alignment of HRM policies, effective communications, employee empowerment and involvement, training and development, teams and teamwork and review and continuous improvement.

• Leading edge organizations adopt a common approach to aligning HR policies with business strategy. Key elements of policy such as skills, recruitment and selection, training health and safety, appraisal, employee benefits and remuneration, are first identified. The HR plan is then devised as part of the strategic planning process, following a plan, do, check, improve (PDCI) cycle.

Effective communication

• Regular two-way communication, particularly face-to-face, is essential for success.

• Again the PDCI cycle provides a systematic process for ensuring effective communications, which uses benchmarking and self-assessment as part of the improvement effort.

Employee empowerment and involvement

• To encourage employee commitment and involvement, successful organizations place great importance on empowering employees. This can include people setting own goals, judging own performance, taking ownership of actions and identifying with the organization itself (perhaps as shareholders).

• Common initiatives include: employee suggestion schemes, culture change programmes and measurement of KPIs. Generally commitment is increased by involving more employees in planning and shaping the vision.

• Publicly recognizing excellent contributions by individuals and teams is an essential part of a HR programme.

Training and development

• Training and development has been highlighted by many initiatives as a critical success factor, although lack of effective training still predominates in many organizations.

• In successful organizations, training is planned through needs analysis, use of databases, training delivery at local levels and peer assessments for evaluation.

Teams and teamwork

• Leading edge organizations place great value in people working in teams, because this motivates and causes them to work better.

• Teams are most effective when their activities are clearly linked to the strategy, which in turn is communicated to influence direction. Cross-functional teams are particularly important to address end-to-end processes.

• World-class companies take the same planned and structured approach to social activity as they do to everything else they do.

Organizing people for quality

• The quality function should be the organization’s focal point of the integration of the business interests of customers and suppliers into the internal dynamics of the organization.

• Its role is to encourage and facilitate quality and process improvement; monitor and evaluate progress; promote the quality chains; plan, manage, audit and review systems; plan and provide quality training, counselling and consultancy; and give advice to management.

• In larger organizations a quality director will contribute to the prevention strategy. Smaller organizations may appoint a member of the management team to this task on a part-time basis. An external TQM adviser is usually required.

• In devising and implementing TQM for an organization, it may be useful to ask first if the managers have the authority, capability and time to carry it through.

• A disciplined and systematic approach to continuous improvement may be established in a steering committee/council, whose members are the senior management

team.

• Reporting to the steering committee are the process management teams or any site steering committees, which in turn control the quality improvement or Kaizen teams and quality circles.

Quality circles or Kaizen teams

• Kaizen is a philosophy of small step continuous improvement, by all employees. In Kaizen teams the suggestions and rewards are small but the implementation is rapid.

• A quality circle or Kaizen team is a group of people who do similar work meeting voluntarily, regularly, in normal working time, to identify, analyse and solve workrelated problems, under the leadership of their supervisor. They make recommendations to management. Alternative names may be given to the teams, other than ‘quality circles.’

• Rapid benefits realization and effective employee engagement are clear features of the so-called ‘Kaizen Blitz’ approach which uses short duration events, with multifunctional teams, focused on single problems or pieces of plant.

Review, continuous improvement and conclusions

• Effective organizations use processes for reviewing performance and continuous improvement at the individual, team, divisional/departmental and organizational levels. These include surveys of staff, committees/teams and ongoing performance feedback.

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CHAPTER HIGHLIGHTS

The need for teamwork

• The only efficient way to tackle process improvement or complex problems is through teamwork. The team approach allows individuals and organizations to grow.

• Within fragmented supply chains there is often a need for effective teams that cross organizational boundaries.

• Employees will not engage continual improvement without commitment from the top, a quality 'climate' and an effective mechanism for capturing individual contributions.

• Teamwork for quality improvement is driven by a strategy, needs a structure and must be implemented thoughtfully and effectively.

Running process management and improvement teams

• Process management and improvement teams are groups brought together by management to improve a process or tackle a particular problem on a project basis. The running of these teams involves several factors: selection and

leadership, objectives, meetings, assignments, dynamics, results and reviews.

• The need for training in the basic skills of team leadership should not be underestimated if successful outcomes are sought.

Teamwork and action-centred leadership

• Early work in the field of human relations by McGregor, Maslow and Hertzberg was useful to John Adair in the development of his model for teamwork and actioncentred leadership.

• Adair's model addresses the needs of the task, the team and the individuals in the team, in the form of three overlapping circles. There are specific task, team and individual functions for the leader, but (s)he must concentrate on the small central overlap area of the three circles.

• The team process has inputs and outputs. Good teams have three main attributes: high task fulfilment, high teams maintenance and low self-orientation.

• In dealing with the task, the team and its individuals, a situational style of leadership must be adopted. This may follow the Tannenbaum and Schmidt, and Blanchard models through directing, coaching and supporting to delegating.

Stages of team development

• When teams are put together, they pass through Tuckman's forming (awareness), storming (conflict), norming (co-operation) and performing (productivity) stages of development.

• Teams that go through these stages successfully become effective and display clear objectives and agreed goals, openness and confrontation, support and trust, co-operation and conflict, good decision-making, appropriate leadership, review of the team processes, sound relationships and individual development opportunities.

Personality types and the MBTI

• A powerful aid to team development is provided by the Myers-Briggs Type Indicator (MBTI).

• An individual's type is the combination and interaction

of the four scales and can be assessed initially by completion of a simple questionnaire. There are sixteen types in all, which may be displayed for a team on a type table.

Interpersonal relations – FIRO-B and the elements

• The FIRO-B (Fundamental Interpersonal Relations Orientation – Behaviour) instrument gives insights into the needs individuals bring to their relationships with other people.

• The FIRO-B questionnaire assesses needs for inclusion, control and openness, in terms of expressed and wanted behaviour.

• Typical manager FIRO-B profiles conflict with some of the demands of TQM and can, therefore, indicate where particular attention is needed to achieve successful TQM implementation.

• The inclusion, control, and openness dimensions form an ‘openness’ cycle which can help groups to understand how to develop their individual and joint behaviours as the team is formed. An alternative negative cycle may develop if the understanding of some of these behaviours is absent.

• Increasing the extent to which the workforce is included in the goals & objectives of change and empowering them to make change happen results in greater levels of contribution to improvement; by valuing and recognizing the increased contribution, leaders increase levels of inclusion and reinforce the cycle and the negative spiral is reversed.

• The five As: for any of the teamwork models and theories, the individuals must become aware, need to accept, adopt and adapt, in order to act. A skilled facilitator is always necessary.

18 Chapter 18 Communications, innovation and learning

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CHAPTER HIGHLIGHTS

Communicating the total quality strategy

• People's attitudes and behaviour can be influenced by communication, and the essence of changing attitudes is to gain acceptance through excellent communication processes.

• The strategy and changes to be brought about through TQM should be clearly and directly communicated from top management to all staff/employees. The first step is to issue a 'total quality message'. This should be followed by a signed TQM directive.

• People must know when and how they will be brought into the TQM process, what the process is, and the successes and benefits achieved. First-line supervision has an important role in communicating the key messages and overcoming resistance to change.

• The complexity and jargon in the language used between

functional groups needs to be reduced in many organizations. Simplify and shorten are the guiding principles.

• ‘Open’ methods of communication and participation should be used at all levels. Barriers may need to be broken down by concentrating on process rather than ‘departmental’ issues.

• There are four audience groups in most organizations – senior managers, middle managers, supervisors and employees – each with different general attitudes towards TQM. The senior management must ensure that each group sees TQM as being beneficial.

• Good leadership is mostly about good communications, the skills of which can be learned through training but must be acquired through practice.

Communication, learning, education and training

• There are four principal types of communication: verbal (direct and indirect), written, visual and by example. Each has its own requirements, strengths and weaknesses.

• Education and training is the single most important factor in improving quality and performance, once commitment is present. This must be objectively, systematically and continuously performed.

• All education and training should occur in an improvement cycle of ensuring it is part of policy, establishing objectives and responsibilities, establishing a platform for a learning organization, specifying needs, preparing programmes and materials, implementing and monitoring, assessing results and reviewing effectiveness.

A systematic approach to education and training for quality

• Responsibility for education and training of employees rests with management at all levels. The main elements should include error/defect/problem prevention, reporting and analysis, investigation and review.

• Education and training procedures and records should be established to show how job competence is demonstrated.

Starting where and for whom?

• Education and training needs occur at four levels of the

organization: very senior management, middle management, first level supervision and quality team leaders, and all other employees.

Turning education and training into learning

• For successful learning all quality training should be followed up with improvement projects and ‘surgery’ workshops.

• It is useful to draw the distinction between explicit knowledge (that which we can express to others) and tacit knowledge (the rest of our knowledge which cannot be communicated in words or symbols).

• The creation and expression of knowledge takes place through social interaction between tacit and explicit knowledge, which takes the form of socialization, externalization, internalization and combination.

• When knowledge is made explicit it becomes ‘information’, which in turn has value as an input to human decision-making and capability. Tacit knowledge (simply ‘knowledge’) remains intrinsic to individuals who have the capacity to act effectively in its use.

• One way of thinking about learning and knowledge management is as a dynamic cycle from tacit knowledge to explicit knowledge (information) and back to tacit knowledge.

The practicalities of sharing knowledge and learning

• In world-class organizations there is clear evidence that knowledge is shared to maximize performance, with learning, innovation and improvement encouraged. This is often achieved through an ‘intranet’ or common network mounted file servers, providing common on-line access to information.

• Managing intellectual property is key to success in many sectors and this has strong links with learning and innovation. Where information must be made available as widely as possible, internal performance of this aspect can be valuable.

• The clear feedback loops of ‘innovation and learning’ in the EFQM Excellence Model drive increased understanding of the linkages between the results and the enablers, and between the enabler criteria themselves.

Part V Discussion questions

1. The so-called process approach has certain implications for organizational structures. Discuss the main organizational issues influencing the involvement of people in process improvement.

2. Various TQM teamwork structures are advocated by many writers. Describe the role of the various ‘quality teams’ in the continuous improvement process. How can an organization ensure that the outcome of teamwork is consistent with its mission?

3. Describe the various types of quality teams which should be part of introducing a total quality approach. Explain the organizational requirements associated with these and give some indication of how the teams operate.

4. A large insurance company has decided that teamwork is to be the initial focus of its TQM programme. Describe the role of a Quality Council or Steering Group and Process Quality Teams in managing teamwork initiatives in quality improvement.

5. Explain the difference between Quality Improvement Teams and Quality Circles. What is their role in quality improvement activities?

6. Discuss some of the factors that may inhibit teamwork activities in a TQM programme.

7. Suggest an organization for teamwork in a quality improvement programme and discuss how the important aspects must be managed, in order to achieve the best results from the use of teams. Describe briefly how the teams would proceed, including the tools they would use in their work.

8. Describe in full the various types of quality teams which are necessary in a total quality programme. Give some indication of how the teams operate at each level and, using the ‘DRIVER’ model, discuss the problem-solving approach that may be adopted.

9. Discuss the various models for teamwork within a total quality approach to business performance improvement. Explain through these models the role of the individual in TQM, and what work can be carried out in this area to help teams through the ‘storming’ stage of their development.

10. Teamwork is one of the key ‘necessities’ for TQM. John Adair’s ‘Action Centred Leadership’ model is useful to explain the areas which require attention for successful teamwork. Explain the model in detail showing your understanding of each of the areas of ‘needs’. Pay particular attention to the needs of the individual, showing how a psychometric instrument, such as the Myers Briggs Type Indicator (MBTI) or FIRO-B, may be useful here.
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CHAPTER HIGHLIGHTS

TQM and the management of change

• Senior managers in some organizations recognize the need for change to deal with increasing competitiveness, but lack an understanding of how to implement the changes.

• Successful change is effected not by focusing on formal structures and systems, but by aligning process management teams. This starts with writing the mission statement, analysis of the critical success factors (CSFs) and understanding the critical or key processes.

• Senior managers may begin the task of process alignment through a self-reinforcing cycle of commitment, communication and culture change.

Planning the implementation of TQM

• Making quality happen requires not only commitment but competence in the mechanics of TQM. Crucial early stages will comprise establishment of the appropriate organization structure; collecting information, including quality costs; teamwork; quality systems; and training.

• The launch of quality improvement requires a balanced approach, through systems, teams and tools.

• A new implementation framework allows the integration of TQM into the strategy of an organization through an understanding of the core business processes and involvement of people. This leads through process analysis, self-assessment and benchmarking to identifying opportunities for improvement, including people development.

• The process opportunities should be prioritized into

continuous improvement and re-engineering/redesign. Performance-based measurement determines progress, and feeds back to the strategic framework.

Change curves and stages

• A useful device in thinking about any implementation programme is the change curve which represents a journey on which employees need to be taken if change is to lead to actions and be successful. The stages that can be expected on such a wellmanaged journey are: unaware, awareness, comprehension, conviction and action. Use of the curve leads to the planning of stages of involvement and engagement for executives, middle management and employees.

• There can be many reasons why people resist change and these need to be identified and thought about if that resistance is to be overcome. A complementary change curve can be helpful in overcoming resistance to change.

• The essence of achieving successful change during the implementation of approaches such as TQM, Lean Six Sigma, Continuous Improvement involves: establishing a need to change; creating a clear and compelling vision; going for true performance results and creating early wins; communicating well; building a strong, committed, guiding coalition; redesigning the processes, systems and structures.

Use of consultants to support change and implementation

• Used wisely consultants can provide specialist skills, offer sound advice, suggest practical solutions and inject new life into a business without costing the earth or upsetting staff – the best strategy is to combine internal and external resources in client/consultant teams.

• The brief for potential consultancies should always be carefully defined and include a short description of the organization, the problem or situation, an outline of what the consultancy is expected to achieve, the starting date and expected duration of the work, some idea of how the consultancy is expected to proceed and who might be involved.

• The professional and ethical standards that guide the consultant chosen should complement the client organization’s values and philosophy and the ethos driving the consultant’s approach should be to ensure sustained improvement as they transfer their knowledge to the client.

Sustained improvement

• Managers need to understand and pursue never-ending improvement. This should cover planning and operating processes, providing inputs, evaluating outputs, examining performance, and modifying processes and their inputs.

• There are three basic principles of continuous improvement: focusing on the customer, understanding the process and seeing that all employees are committed to quality.

• In the model for TQM the customer-supplier chains form the core, which is surrounded by the hard management necessities of planning, processes and people. These are complementary and share the same needs – for top level commitment, the right culture and good communications.

Part VI Discussion questions

1. You have just joined a company as the Quality Executive. The method of quality control is based on the use of inspectors who return about 15 per cent of all goods inspected for modification, rework or repair. The monthly cost accounts suggest that the scrap rate of raw materials is equivalent to about 10 per cent of the company's turnover and that the total cost of employing the inspectors is equal to about 15 per cent of the direct labour costs. Outline your plan of action to address the situation over the first 12 months.

2. You have recently been appointed as Transport Manager of the haulage division of an expanding company and have been alarmed to find that maintenance costs seem to be higher than you would have expected in an efficient organization. Outline some of the measures that you would take to bring the situation under control.

3. TQM has been referred to as 'a rain dance to make people feel good without impacting on bottom line results'. It was also described as 'flawed logic that confuses ends with means, processes with outcomes'. The arguments on whether to focus on budget control through financial management or quality improvement through process management clearly will continue in the future. Discuss the problems associated with taking a financial management approach which has been the traditional method used by many organizations.

5. Describe the key stages in integrating total quality

management into the strategy of an organization. Illustrate your answer by reference to one of the following types of organization: a large national automotive manufacturer, an international petrochemical company, a national military service or a large bank.

6. What are the critical elements of integrating total quality management or business improvement into the strategy of an organization? Illustrate your approach with reference to an organization with which you are familiar, or which you have heard about and studied.

7. You are the new Quality Director of part of a large electrical component manufacturing assembly and service company. Some members of the top management team have had some brief exposure to Six Sigma and Lean, and you have been appointed to consider plans for implementation. Set down your arguments and plans for the process which you might initiate to deal with this situation. Your plans should include reference to any training needs, outside help and additional internal appointments required, with timescales.

8. You have been appointed as an external personal advisor to the Chief Executive of ONE of the following: National Outminster Bank or Portstown Royal Infirmary or University of Leedford. The members of the top management have had some brief exposure to ‘Business Excellence’ and you have been appointed to help the Chief Executive lay down plans for its implementation. Choose any of the above organizations and set down plans for the process which you would initiate to help the Chief Executive achieve this. Your plans should be as fully developed as possible and include reference to any training needs, further outside help and any internal appointments required, with a realistic timescale.