

Introduction

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Operations Management has something of an image problem. Within the 'real world' its centrality to organizational performance is generally accepted at all levels up to and including the boardroom, and yet within business education it seems to languish as something 'not quite strategic' enough to figure prominently at, say, MBA level. One of the intended aims of this reader is to correct this misapprehension.

The nature of operations management is changing. Customer demands for better service, the growing dominance of technology (especially information and communications technology), the view of the individual enterprise as just one component of the total value system, the increasing interconnectedness and globalization of business and economies and the widening range of stakeholders to be satisfied are all factors contributing to the substantial operational challenges facing all organizations today. It is no longer enough for operations managers to be narrowly and internally focused on improvements in functional efficiency, rather they must manage across functions and between organizations to ensure that processes are designed and executed effectively and efficiently so as to deliver value to all stakeholder groups.

At the same time, there is increasing recognition of the strategic value of operations to the enterprise, that excellent operations performance is a core competence to be nurtured and built on in the organization's business strategy. This has major implications for the way that operations is managed. Operations is no longer merely the vehicle by which business strategy is delivered; it becomes a strategic asset in its own right, with the

potential to drive business strategy rather than just follow it. This means the nature of that strategic asset must be fully understood – what is it that confers excellent performance: cutting edge technology; excellent people; superior supply networks; or ...? It also means that the strategic asset should be properly managed – that is, exploited, defended and developed.

As if all this were not enough, operations must address an ever widening scope of stakeholder interests. Where once process metrics might have been confined to product quality and costs, now the inclusion of environmental performance indicators is commonplace in many sectors, and in future perhaps wider social or ethical concerns will extend the operations performance domain still further. Operations systems must therefore meet multiple, probably at least partly conflicting objectives, at both strategic and operational levels. Operations systems are complex!

Operations systems capable of meeting these challenges do not appear, fully formed, out of the ether. They are not natural phenomena that just happen. They must be *designed* in order to deliver the required value elements to all the stakeholder groups, to integrate human, organizational and technical elements, and to reflect a process-based approach that cuts across functional and organizational boundaries.

Furthermore, in this rapidly changing world (something of a cliché, but evidence exists in the form of product obsolescence rates, for example) about which we read so often in management books, operations systems have to be continually *redesigned* in order to create

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and/or maintain a competitive advantage, to offer the best possible service to the various stakeholders or to exploit the latest technological advance. Designing operational systems, whether these be high-tech semiconductor fabrication devices, a national transport infrastructure, an on-line bookseller or a regional health authority is a massively creative undertaking. It requires innumerable informed choices to be made at every stage of a process that ranges from initial conceptualization, maybe the early recognition of a problem or opportunity, through to implementation, review and continuous improvement. Each of these steps requires choices to be made; choices that need to take account of every aspect of future performance.

Today's designers (of products, processes, services, systems or whatever) face daunting complexity. He or she will be exhorted to 'get it right first time' even before the full specification of the 'product'¹ is known. This responsibility extends to vastly more than just the physical appearance of the product (the domain with which the term designer is most readily associated in common parlance); a good designer is required to consider aspects of function, safety, appearance, cost, ease of use, reliability, maintainability, environmental impact ... the list is almost endless. Organizations, business propositions, strategies all have to undergo a process very much akin to design; the phrase 'to plan a strategy' is the more commonly used, but if the extent of the plan is to be anything more significant than a broad (and often superficial) sweep, the process is much better described as design. The viability of a strategy depends crucially on the manner of its implementation; a sound implementation (that is, good operational design) can salvage an otherwise unexceptional strategy, a poor implementation can certainly wreck even the best strategy.

Operations managers are not short of possible frameworks to help them implement strategy. Indeed the entire field is beset with a bewildering array of initiative 'brands', the familiar TLAs (three letter acronyms) from BPR to BEM, from TPM to TQM², and so on. The phrase 'initiative fatigue' has been coined to represent the emerging ennui fuelled by scepticism about

the value of the latest 'fad'. Yet the foundations of these techniques and methodologies are by and large perfectly sound – who can argue with the principles of continuous improvement, lean operations, 'excellence' or TQM? These represent, in effect, the 'motherhood and apple pie' of operations, although Harrington points out that not all the guiding principles and practices of even the best-established 'initiatives' have a sound basis in empirical research (see the chapter in theme 2). The reasons for scepticism are mostly associated with the problems encountered in putting these principles into practice. To be successful, enough attention must be given to selecting or designing a framework or method to suit the organization's situation. There must also be a thorough understanding of what the approach entails, informing a suitably strategic approach to implementation. Finally, there must be consistent and wholehearted commitment to applying the approach over the 'long haul'.

Of all the various design 'elements' available to the operations systems architect, technology is surely one of the most important and dominant. This is especially so with the advent and subsequent establishment of information and communications technology (ICT), but traditional operations management capabilities founded on manufacturing technology should not be forgotten. Whatever the nature of the process technology, CAD/CAM (Computer-aided Design/Computer-aided manufacturing) or ERP (Enterprise Resource Planning), robots or nanotechnology, the same issues surface. First, technology must never be considered in isolation from the other elements of the operations system. And second, the technology must be selected and/or designed to suit its context and to create specifically identifiable value for the organization and its stakeholders. This means explicitly linking process technology decisions to higher-level business objectives. These are hardly radical notions, but investigations of technology implementation failures (see for example the government IT project 'post mortem'³) time and again identify these aspects as root causes.

There are those that would argue with the idea of technology as the dominant operations design element. People make processes

after all, or to quote Seely Brown, 'Processes don't do work, people do'⁴. Arguably this is even more true in today's IT-enabled knowledge-based economy, where routine tasks are automated or outsourced so that human capital is increasingly the critical competitive factor, and where customers themselves make ever more critical input into the service delivery process. Employees *and* customers must be considered as key components of operations systems and, as such, their effective management is of paramount importance.

Our aim in this reader is to expose the issues that need to be considered by the creative operations system designer. We hope that readers will find ideas here that may extend their knowledge of operations systems, or stimulate further learning, and thereby develop an expanded or modified perspective on the principles and practice of operations/process management. Some concepts represented are well established in the mainstream of operations management and we make no apologies for the continuing emphasis; others are relatively new to the operations arena but, we suggest, increasingly emerging as key operational concerns.

To this end the reader has been organized into the following four themes:

- **Operations as strategy:** the strategic significance of operations should be obvious, and yet it isn't; the first selection of readings is aimed at underlining the centrality of operations to strategic decisions.
- **Approaches and techniques:** operations management is characterized to some extent by the myriad methodologies for process improvement that organizations have attempted to apply with varying degrees of success. The contributions here reflect a range of approaches, and seek to identify ways in which the 'management fad' syndrome can be avoided.
- **The role of technology:** many problems associated with the effective deployment of technology are well known but continue to handicap organizations' achievement of their expected returns from technology

investments. Issues associated with the systemic nature of technology, especially the integration of the soft human aspects with the hard technical elements, are discussed here.

- **Human issues:** most processes involve human input – often, especially in service contexts, this is arguably the dominant factor, yet human resource management is often seen as rather tangential to the operations management mainstream. The contributions here seek to highlight some of the reasons why the human factor needs promotion to nearer the top of the operations agenda.

Contributions on each theme are necessarily selective. The aim has been to shine a spotlight on several issues we believe to be significant, to bring some areas out of the shadows but not attempt to be exhaustive or to illuminate the entire arena.

Collectively, the papers present a set of important operations management issues, some no doubt familiar, others less so. The objective of the collection is to inform, to provide food for reflective thought, but most importantly of all perhaps we hope to stimulate those involved in the management of operations to take a new look at what operations could be achieving for their enterprise and how this might be implemented.

NOTES

1. In common with the Open University course with which this reader is associated, (Business Operations: Delivering Value) we use the term product to subsume both goods and services, that is, to describe the system that results from a design activity, whether that output be a tangible item, a service offering or a complex system.

2. BPR = Business Process Re-engineering; BEM = Business Excellence Model; TPM = Total Productive Maintenance; TQM = Total Quality Management.

3. Parliamentary Office of Science and Technology (July 2003) Government IT Projects. Report 200. Primary author: Dr Sarah Pearce.

4. Brown, John Seely, <http://www.nwlink.com/~donclark/leader/leadqot.html>. Created 11 May 1997, updated 1 March, 2000.

