

A market-based approach to total logistics management.

Pathways to Customers: Reducing Complexity in the Logistics Pipeline

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For too long, academics and practising logistics managers have accepted major obstacles to improved logistics performances as “*natural*” barriers which are at best managed and at worst tolerated. These include both internal and external problems; in both arenas, the issues relate to conflict and competition. However, it can be shown that these barriers are not “*natural*”, but artificial, and that their roots lie in organisational and industrial

structures. And further, these barriers can be removed by understanding and invoking the different “*logics*”, or characteristics, of the marketplace, other companies, individual departments and even individual products. These allow natural *pathways* to present themselves for effective logistics management. Artificially imposed constraints can be replaced with simplicity, underpinned by natural laws of behaviour.

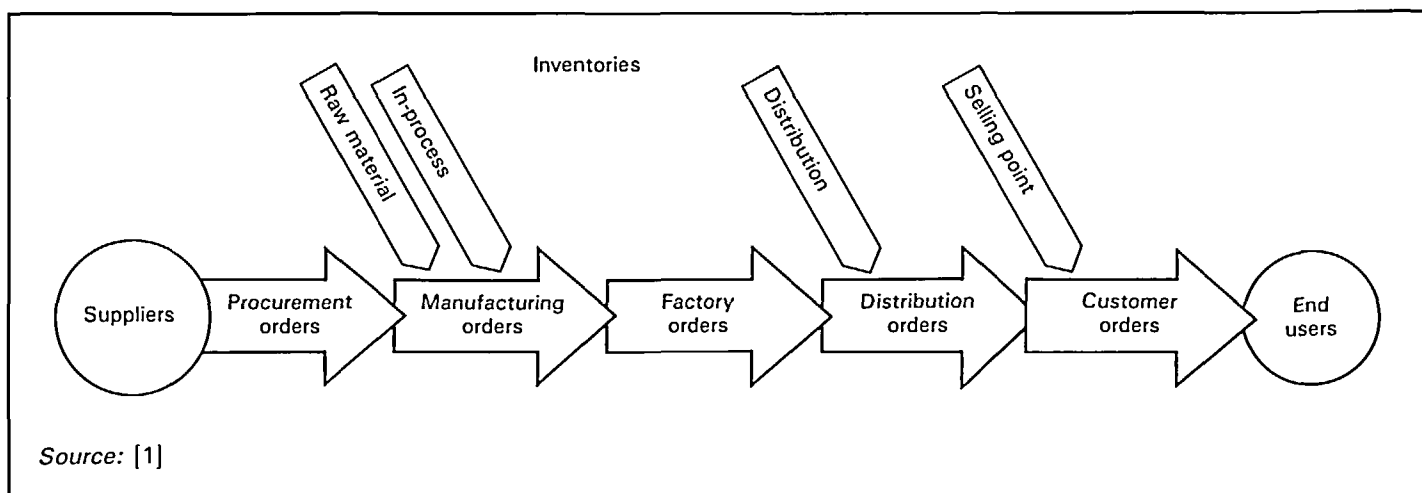
Background

The literature on logistics and the nature of “*flaws*” through the organisation is extensive and robust. In recent years, the major work evolving has been in the area of supply chain management. In his seminal article, Houlihan[1] explained the rise of supply chain management as a phenomenon attached to the increasing uncertainty and complexity of the marketplace and competitive situations. In particular, the need to reduce levels of inventory in a particular system has been the primary force driving companies to adopt supply chain management practice.

Houlihan pointed out that the forerunner of supply chain management was classical materials and manufacturing control, but that supply chain management differed in four major areas:

- The supply chain is seen as a single entity, rather than one merely composed of different but autonomous functions such as purchasing, manufacturing, distribution and sales (Figure 1).
- It is a *strategic* tool and must be incorporated into the wider agenda of the company.
- Inventories are treated as a balancing measure, only as a last resort, to buffer uncertainty in business patterns.
- The focus is on “*integration*”, not “*interface*”.

Figure 1. Supply Chain Management



Other authors have developed this theme. Their major contribution has been to stress that the concept extends beyond the confines of one organisation, to include "independent" (the qualifying inverted commas are ours) organisations involved in the supply and delivery of raw materials and finished goods[2,3]. This focus on both upstream and downstream activities has been noted[4] as the major distinguishing characteristic between supply chains and marketing channels.

The pressure to think about the supply chain has increased from its roots in inventory to the wider impact of greater globalisation and increased competitor activity. This has made customer service a major differentiating competitive weapon[5].

The ability to deliver on the "marketing promise"[6] has become a critical component of many organisations' strategic and operational plans. The ever-flowing, ever-integrated supply chain becomes that conduit.

Or is it? In *practice*, always a thorn in the side of theory, the supply chain is still largely a mythical concept — an admirable goal, perhaps, but one rarely realised. This comes as no surprise to those still grappling with the internal complexities of a firm, let alone the variations which occur when external factors are taken into consideration. The almost cliched example of "how the Japanese do it" has begun to carry less currency as we discover how much of their success is due to vertical integration (which is not supply chain management) and industry structure.

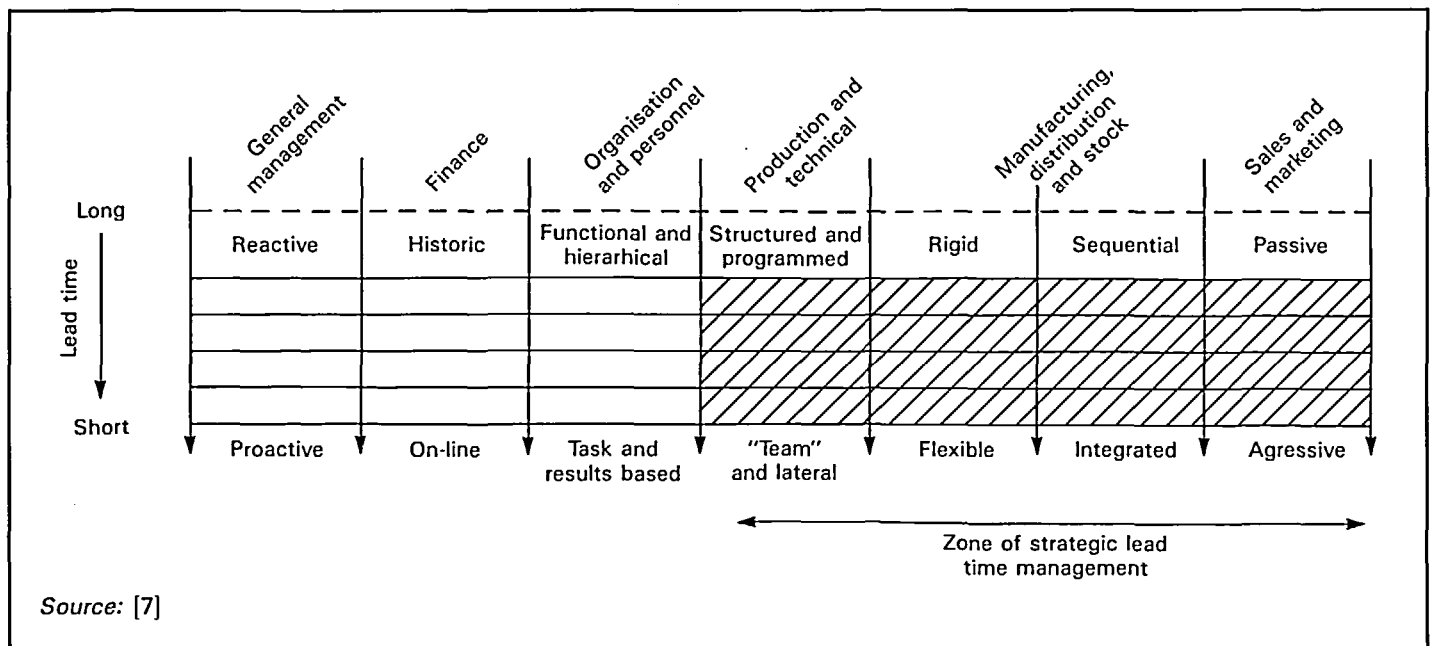
Strategic Lead Time Management

An interesting development from supply chain management has been the idea of "strategic lead time management", as postulated by Christopher and Braithwaite[7]. While many of the same concepts hold true, strategic lead time management focuses on the idea of time as a resource, to which a value can be attached and measured. The management of time is only useful when it is seen strategically and as an integrated part of the firm's entire business. As the authors point out, there is little reason "to spend millions shaving a day off manufacturing inventories. . . while simultaneously maintaining inaccurate forecasting methods and lead times of two weeks to process an order". It is exactly this reasoning which explains why earlier attempts at introducing MRP concepts in the manufacturing stage were largely unsuccessful.

The firm must, instead, look across *all* functions to identify the lead times between them and measure the time that is being spent and the value that is being added to the *whole* system.

The implications of strategic lead time management are twofold. Firstly, it demonstrates that we should not be measuring the individual performance of different members of the "chain", but rather the cumulative effect of time within the chain as a whole. We are therefore seeking to *optimise* the performance of channel members. This echoes the recognition of Goldratt[8] that too often our attention is focused on one trouble spot, and our freeing of a plug there only transfers the problem to another part of the chain. Secondly, it provokes the thought that the performance of individual members of the chain can be viewed in behavioural terms (Figure 2).

Figure 2. Time Concepts in Management



The Emerging Premiss

A brief review of the major themes in supply chain management leads to the following hypotheses:

- (1) Supply chain and strategic lead time management both depend on a shared commitment between all members, intra- and inter-organisation, to make it work. Given the complexities of globalisation and the differing objectives of different organisations and even different departments within the same organisation, the achievement of this goal is unlikely. Therefore, the achievement of effective supply chain or strategic lead time management is also unlikely, so long as it is based on this idea, and it is this idea which occupies most of management's thoughts.
- (2) Given that the stated aim of both supply chain and strategic lead time management is improved customer service, it is unhelpful to, even theoretically, view the supply chain and the marketing channel as separate entities. Even the view of downstream and upstream becomes meaningless *if* we are to conceptualise, let alone practise, a single, uninterrupted flow.
- (3) Given that in practice the results of supply chain management are only a manifestation of behaviour, it is to the behavioural sciences to which we should begin to look for further inspiration. The best-laid plans and systems cannot help us when they are inert: they must begin to act in some way. Everything we deal with in terms of the supply chain, from the systems, to the people, to the actual products themselves, have different behavioural characteristics.

Further, our research and practice have revealed how to identify and group these seemingly different "personalities" into a meaningful and manageable context.

Aligning the Organisation

Central to our work on the behavioural characteristics of organisations, departments, and even products, is the principle of "alignment" or "strategic fit". The model, which we have used in companies for the past two years, is based on the work of Jung[9] (personality types), Adizes[10] (management style) Chorn[11] (culture) and our own empirical research[12]. Essentially, the principle considers the degree of alignment which exists between the four prime forces determining an organisation's success:

- the competitive situation (including customers and competitors);
- strategy (being the plan of how to respond to particular competitive situations);
- culture (being the internal capability to deliver the above strategy);

Table 1. Four "Logics"

Logic	Means	Outputs	Associated phenomena
Production (P)	Action	Results	Objectives, goals, energy
Administration (A)	Control	Order	Systems, measurement, stability
Development (D)	Create	Change	Innovation, creativity, discontinuity
Integration (I)	Integrate	Cohesion	Synergy, teamwork, co-operation

- leadership style (being the single most important shaper of culture).

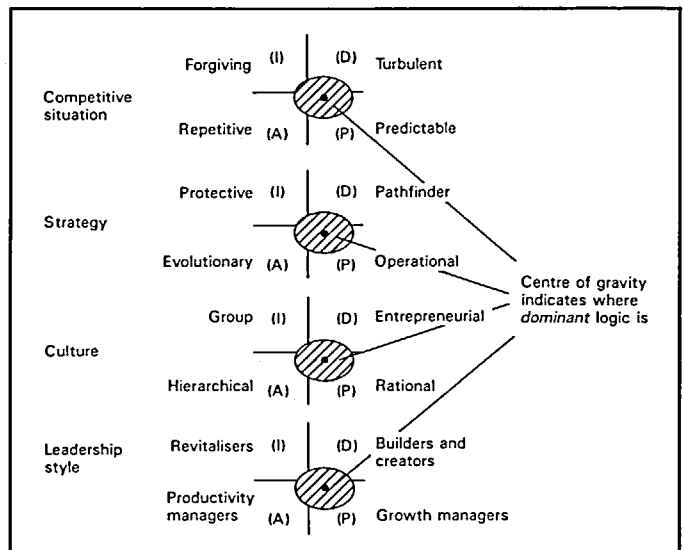
Each of these forces has its own "logic", which may be characterised by an orientation to one of four main activities: production, administration, development or integration (Table 1).

Ideally, organisation performance and effectiveness will be optimised when all four levels of logics are aligned (Figure 3).

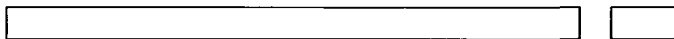
Problems occur, particularly felt by those in a logistics environment, when there is poor alignment and different forces are battling against each other.

Take, for example, the brewing industry. Our work with a major brewer indicated that the dominant logic driving the brewing company was "A", or "Administration". Everything at a brewery is systematised. There are few surprises and little variation: quality and consistency are paramount. But, when we looked at a major customer

Figure 3. Achieving Strategic Fit



group — restaurants — we found that the driving logic was “P”, “a” logic, or a mixture of “Production” and “Administration”. In practice, the degree of misalignment became evident in their respective behaviours. The restaurant wanted frequent deliveries of small, mixed cases; the brewery was geared to weekly deliveries of pallet-size loads. The restaurant wanted 30-day terms; the brewery stipulated payment in 7 days. The restaurant wanted deliveries in off-peak hours; the brewery could not schedule its deliveries into small time-windows, and so on.



Many organisations are still trying to operate within inappropriate structures

In traditional supply chain management terms, we may have urged the restaurant to change its ways and integrate more into the brewery’s system, or vice versa. We may have urged them to seek a shared vision and strategy, necessitating compromise. But either of those options would have required considerable change in behaviour on each other’s part, indeed, a major cultural shift within each organisation. We advised, instead, that they appoint an intermediary to act as an “adapter” or switching mechanism in the system, to interface at one end with the brewery’s systems, but then to reshape the offering to match the restaurant’s lesser systems capabilities. In practice, such an adapter takes the form of a wines and spirits merchant/wholesaler.

A Market-based Structure

How often have we heard it said, and yet how rarely is it actually practised, that structure follows strategy. Many organisations are still trying to operate within inappropriate, unwieldy structures which bear no relation to the needs of the marketplace, the idiosyncrasies of customers, or their own internal capability to deliver.

Restructuring an organisation is no simple business, but we worked with one company which realised that it was the only way to create logical, flowing *pathways* between (and through) itself and on to customers. The business was metal fabrication and the problem seemed to be the difficulty experienced in catering for the varying demands of what, at first glance, seemed to be one customer group.

Individual customers within the group required quite different levels of service and relationship, depending on the type of product they were ordering.

Undifferentiated, no value-added, high-volume products required quick delivery, low prices, and virtually no relationship beyond that of a classic buyer/seller.

Highly differentiated, value-added, custom-engineered products required higher levels of service owing to specific requirements in design quality, etc., and hence a closer relationship between the fabricator and the chief engineer responsible for the project.

In terms of the logics described in Table I, the first customer group was described as “P”, “a”, because there was a strong production-oriented mode, but also a need for systems and an ordering process, hence the administration orientation.

The second group were classified as “D”, “i” because of the predominant need for creativity and solution generation, as well as co-operation and relationship building.

An examination of the internal structure of the company revealed that sales and marketing were not aligned to the newly identified markets. This included not only the systems but the people. The last thing we wanted to offer a “D” customer was an “A”-driven department peopled by analysts and systems-dominated individuals with more concern for consistency than creativity.

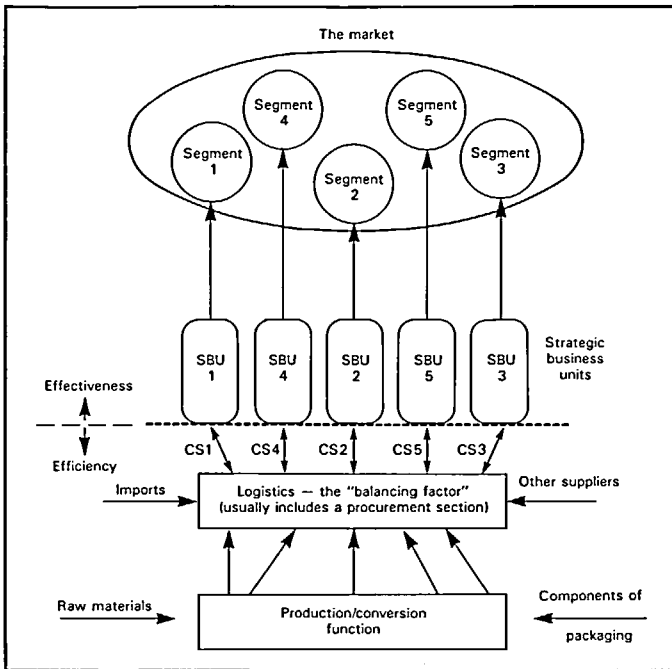
We therefore proposed, and they accepted, a restructure based on two separate business units. Each unit therefore managed its activities and customers in entirely separate ways, with no conflict stemming from the new internal arrangements.

We have since taken the same model and applied it in other organisations. The framework for a manufacturing organisation is shown in Figure 4. The logistics function here acts an “*internal contractor*”, absorbing the differences in suppliers and contracting with each SBU to provide a certain level of service and certain systems. The principle is that alignment must always occur between the organisation and its markets, either directly or through an intermediary.

Surges, Waves and Flows

It was a project with a large retailer which led us to a further refinement in our thinking. Here, we had the example of an organisation trying to cope with the varying demands and complexities presented by an enormous range of merchandise coming from many sources. Just to take two examples, we looked at the different “logics” suggested by refrigerators and women’s clothes. Refrigerators are predictable items, not subject to fads

Figure 4. Market-based Organisation Structure

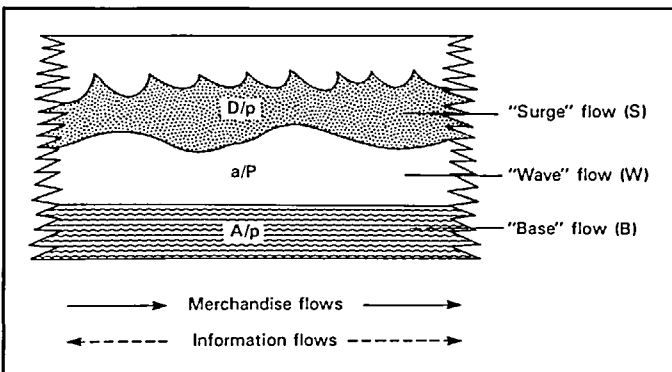


or impulse. People only buy refrigerators every five, ten or even 15 years, and when they do they rarely need them “tomorrow”. The movement through a retailer’s organisation can be described as a “base” flow, fairly constant, fairly predictable, easily managed — an “A” logic.

On the other hand, fashion is a fast-moving industry, faddish and impulse-driven by nature. Yet, even this flow is not unpredictable. It is for the most part seasonal, and although there are striking variations, when they are plotted over time, one sees a “wave” pattern. There may be surges, but they are planned surges: a “P” logic.

Finally, we concluded that unplanned surges must also be allowed for — perhaps as a result of samples coming

Figure 5. Merchandise Logics in the Logistics Pipeline



in, or stock-outs, or by capitalising on a previously unforeseen opportunity in the marketplace. This “D” surge may be the exception, but it still must be allowed for within the structure of the organisation. These three pathways are really layers within a single pathway, the organisation, where each layer moves at a different speed, creating different pressures in a manner not unlike the laminar flow in fluid mechanics (Figure 5).

We therefore created three separate pathways through the organisation (see Figure 6) which allowed the retailer to manage the merchandise from suppliers via separate pathways.

The base, wave, surge model has also found favour in a government department responsible for supplying other government departments. The NSW Government Supply Services Department has more than 100 “customers”, ranging from fire brigades to the Premier’s Office. Different customers need different items: pens, rubber hoses, textbooks, sun-hats, guns, medicines, computers — at different times and supplied to Supply Services by hundreds of different suppliers. Once again, we were able to group the customers into three main logics, and the merchandise into three major pathways: base, wave and surge. The result turned complexity into simplicity (Figure 7).

Implications for Organisational Design

We have demonstrated thus far that working with, rather than against, natural flows requires fundamental changes to organisational structures. It is evident, therefore, that the body of knowledge we know as logistics has implications for, and draws inference from, the discipline

Figure 6. Logistics Interfaces with Stores and Suppliers

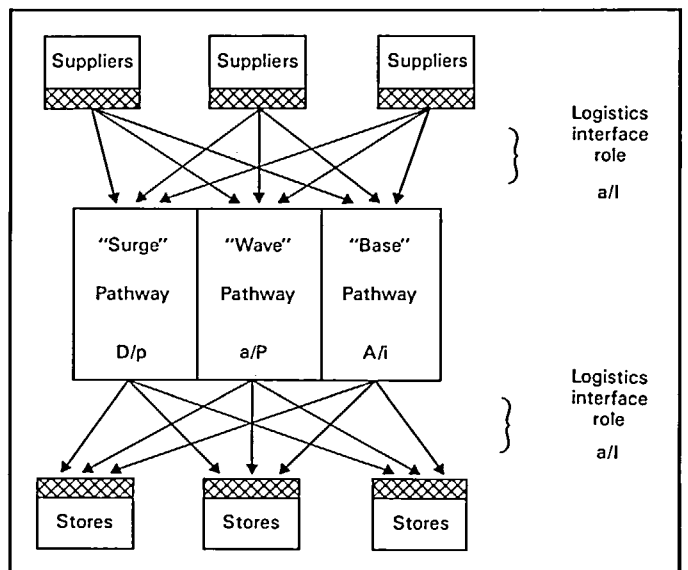
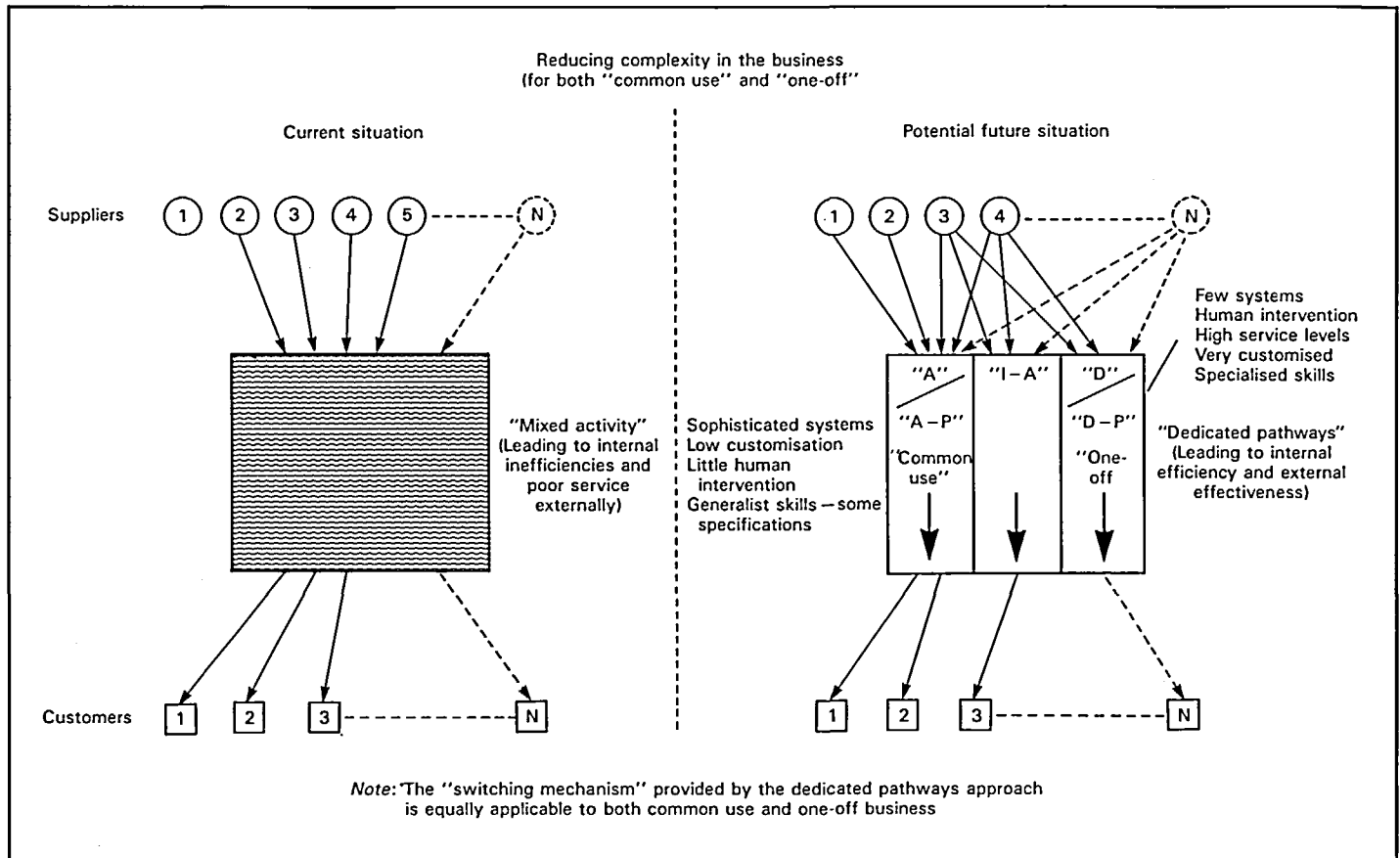


Figure 7. Reducing Complexity in the Business

of organisation design. After all, organisation design is the enabling structure which eventually implements strategy, or not. In the context of logistics, the strategies with which we are concerned are those which are based on the characteristics, or behaviour, of the materials and information flows. What has become evident is that different flows (i.e. strategies) require different enabling structures and designs — in the examples noted above, administrative, production-driven, or developmental. Yet, each of these designs is contradictory and therefore cannot be combined effectively into one homogeneous design. When this is attempted, the different natures cause conflict.

The principles underpinning our design model would be familiar to those with a manufacturing background. What we propose is little different, although extrapolated on a wider scale, from dedicated streams in a factory: focused, purpose-built production capabilities for mass production ("A" logic); a jobbing shop ("P" logic) and a special area for prototype development ("D" logic). Even on a smaller scale, warehouses are sometimes designed to accommodate such variations[13]

By taking these principles much further, we see that the pathways which are created are composed of unique

structures, systems, management principles and styles. These work together in concert, and in harmony, to allow a particular flow-type to move more efficiently and naturally through the organisation.

Conclusion

We have explored some fundamental weaknesses in traditional supply-chain management thinking — primarily those of trying to change the behaviour of ourselves, our suppliers and sometimes even our customers. The failure has always occurred when the members of the chain do not change their behaviour (their systems, and their buying patterns) to allow a smooth flow.

We have argued that it is fruitless to expect members of the chain to change their behaviour, particularly in global and cross-cultural situations — recognising that internal organisation cultures are often part of the problem. Further, we have suggested that existing structures only increase the inherent problems caused by a mismatch of behaviours.

By observing the "natural" behaviour of customers, suppliers and all other members of the chain, organisations

can begin to cluster these seemingly disparate groups into their *natural logics*. Exhorting all to create and maintain a shared vision and strategy is, we believe, an inexcusable form of arrogance. Rather, we suggest that we identify and accept the differing objectives and styles of other channel members and restructure ourselves to allow the flows to emerge and operate efficiently.

This is, fundamentally, a market-based approach to total logistics management. Everything we observe is, in the first and last instance, triggered by the buying patterns of the customer. It has been our experience in practice, demonstrated by the examples cited, that aligning organisations to their markets will be the most powerful means of achieving next-to-perfect customer service.

Beyond logistics and marketing, we have also trodden into the territory of the social sciences and organisation design. The process may appear eclectic, but in fact represents a synthesis of major patterns in these apparently distinct areas.

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