


International Comparisons



Summary

- Global competition increased significantly in the 1980s and has accelerated ever since.
- Over the past 30 years, the manufacturing output of countries such as the UK and US has declined in comparison to others such as Germany, Japan and France.
- Emerging nations in East and Southeast Asia are prospering from the development of their manufacturing industry.
- A nation's prosperity depends on its comparative productivity with other countries. Emerging nations are successfully challenging Western economies and, for the first time in its history, the US may see a fall in living standards over the next 20 years.
- Asian automobile companies are significantly more productive than those in the more established manufacturing nations of North America and Europe.
- Successive UK governments have seen overseas competition as necessary for developing a strong domestic manufacturing base, but the UK manufacturing industry has been slow to respond.
- High-volume UK industries such as motorcycles, automobiles, trucks and shipbuilding have been lost to emerging nations.
- Many North American and European countries have failed to recognize the size of the competitive challenge they face and the impact of increasing world manufacturing capacity. There is still too little research and development investment. Senior managers lack operations experience and do not involve operations managers in strategic discussions.
- Operations managers must become less obsessed with meeting short-term performance targets and start thinking strategically. Managers striving to overcome competitors work and think differently to those simply meeting operational targets.
- Operations managers must take the initiative, change their role and think and act more strategically.



High levels of industrial competition created a stark new reality in the 1980s. Manufacturing companies in most industrial nations struggled to survive by restructuring and downsizing their activities. This signalled an economic change that continued into the 1990s and has even increased pace into the new millennium.

Despite this new challenge, most Western companies still believe operations should focus on short-term issues and leave strategy to the marketing and finance functions. However, this book argues that an operations strategy is essential for companies to compete in domestic and world markets. Without one, it will not be able to survive, let alone grow its market share.

This chapter compares the performance of nations and businesses over the past 30 years. It shows that newer ones are outperforming those with strong industrial traditions by using different operations management approaches. This has further increased the level of competition and the need to use operations as a strategic force both within businesses and between nations.

Manufacturing output

Performance trends in a nation's wealth-creating sectors reflect the overall prosperity of the country. For most countries, manufacturing is the most significant wealth-creating activity and its level of output gives a clear insight into a country's general wellbeing.

Comparative figures on balance of payments of goods over the past 47 years reveal the mixed fortunes of major industrial nations. Some countries of manufacturing repute have lost ground, while others (for example Germany and Ireland) have maintained sound growth throughout (see *Exhibit 1.1*).

Country	1960	1970	1980	1990	2000	2002	2007
Germany	n/a	17,995	11,010	90,741	96	213,235	326,719
China	n/a	n/a	4,249	9,165	34,474	44,167	217,746
Ireland	n/a	n/a	n/a	4,827	43,279	56,257	36,314
Korea	n/a	n/a	-4,613	-2,461	16,954	14,777	29,409
Indonesia	n/a	n/a	7	5	25	24	30
Japan	n/a	n/a	0	0	0	0	0
Canada	0	0	0	0	0	0	0
Italy	n/a	n/a	n/a	0	0	0	0
US	0	0	0	0	0	0	-1
Australia	-225	441	1,187	452	-7,828	-9,601	-20,327
France	n/a	n/a	n/a	n/a	-5,684	12,641	-60,498
India	-943	-408	-7,600	-7,808	-16,496	-9,556	-61,504
UK	-808	-36	2,658	-37,414	-65,952	-95,410	-175,298

NOTE: Indonesia 1980 is 1981 and 2007 is 2006; Japan 1980 is 1985; Germany 1970 is 1971; China 1980 is 1982 and 2007 is 2006.
SOURCE: OECD, Main Economic Indicators, April 2008

EXHIBIT 1.1 Comparative balance of payments on goods for selected countries, 1960–2007 (\$millions)

Of equal concern to these nations is how well they fare within the increasingly competitive markets they serve. *Exhibit 1.2* shows percentage share of world trade in manufactured goods for selected countries from 1980 to 1996. The yearly performances of these different countries vary noticeably. The US's strong export position after losing ground in the 1980s strengthened in the 1990s to reach a period high in 1996. Germany and Japan, while declining in the period, were still major performers in terms of world trade. The UK was the world's number one manufacturing nation at the start of the 1900s but now only contributes to 5 per cent of world trade. Meanwhile, several European countries have steadily improved and set an important benchmark as the major economic blocs of North America, Asia Pacific and Europe took shape in the 1990s and strengthened into the 21st century.

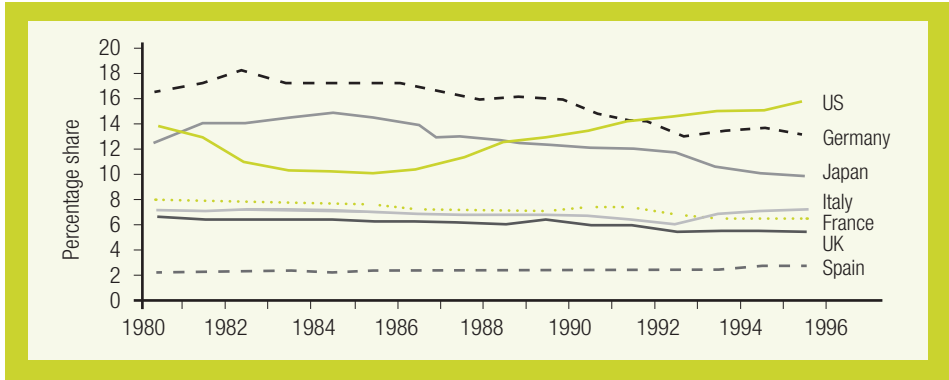


EXHIBIT 1.2 Percentage share of world trade in manufactured goods for selected countries, 1980–96

SOURCE: OECD and UK Department of Trade and Industry for relevant years

Several emerging nations are effectively competing in export markets and improving their trade balances. As a result, the world competitive position of the US and Europe has worsened. This is shown in *Exhibits 1.3, 1.4* and *1.5*. The export–import trade ratios in *Exhibit 1.3* show the relative trading performances of main manufacturing nations, while *Exhibit 1.4* provides the same export–import ratio for North America and the European Union. *Exhibit 1.5* shows the trade balance for electronic products, an increasingly important manufacturing sector.

Country	Aerospace		Electronic industry		Office machinery and computers		Pharmaceutical		Total		
	1984	1995	1984	1995	1984	1995	1984	1995	1972	1984	1995
Japan	0.10	0.26	10.55	3.07	5.61	1.97	0.27	0.40	2.82	2.78	1.74
Italy	1.09	0.99	1.19	0.64	0.74	0.81	0.97	0.97	1.31	1.24	1.30
Germany	1.05	1.08	1.45	0.93	0.87	0.59	1.74	1.51	1.53	1.42	1.28
France	2.21	2.35	1.12	0.97	0.69	0.68	1.93	1.25	1.10	1.11	1.08
Canada	0.65	1.34	0.47	0.47	0.40	0.59	0.34	0.30	n/a	1.01	1.01
UK	1.43	1.53	0.73	0.87	0.73	0.97	2.14	1.74	1.09	0.81	0.90
US	2.98	3.20	0.52	0.65	1.83	0.59	1.70	1.12	0.84	0.63	0.73
Australia	0.11	0.38	0.07	0.17	0.04	0.27	0.34	0.46	n/a	0.54	0.51

SOURCE: OECD, Main Science and Technology Indicators, 1974, 1984 and 1998

EXHIBIT 1.3 Export–import ratio for selected sectors (1984 and 1995) and total manufacturing (1972, 1984 and 1995)

Region	Total manufacturing	
	1990	1995
European Union	1.10	1.25
North America	0.71	0.69

SOURCE: OECD, Main Science and Technology Indicators, 1998

EXHIBIT 1.4 Total manufacturing export–import ratio by region

Country	1985	1993	1998
	\$bn		
Japan	37.1	75.2	58.9
Singapore	1.1	11.4	22.5
Korea	2.0	11.3	17.1
Malaysia	0.7	9.0	16.9
Hong Kong	1.3	2.1	(0.5)
France	(1.5)	(4.1)	(3.9)
UK	(3.0)	(6.0)	(4.4)
Germany	(0.7)	(7.1)	(4.4)
Australia	(2.6)	(4.6)	(7.7)
Italy	(2.1)	(4.3)	(9.4)
Canada	(6.7)	(7.5)	(11.4)
Total Europe	(10.7)	(32.2)	(27.0)
US	(14.5)	(29.1)	(50.4)

NOTES

1 Electronic equipment includes electronic data processing, office equipment, controls and instruments, medical, industrial, military, communications, consumer and telecommunications. Components comprise active, passive and other.

2 These trade balances are calculated by subtracting the value of imports from the value of exports. Figures in brackets indicate an unfavourable balance.

SOURCE: *Yearbook of World Electronics Data*, 1988 and 1993, Vols 1 and 2 (Elsevier Advanced Technology, Oxford) and 1999, Vols 1 and 2 (Reed Electronics Research, Sutton)

EXHIBIT 1.5 Trade balance for electronic equipment and components for selected countries by value (\$bn) for 1985, 1993 and 1998

The growing prosperity of emerging nations is built on the development of wealth-creating sectors such as manufacturing. Successive UK governments ignored this and acted on the often-painful premise that exposure to overseas competition is necessary for developing a strong domestic manufacturing base. Of deeper concern, however, was

manufacturing industry's slow response to this exposure. Many UK firms complained about 'unfair' external competition and focused on domestic rather than overseas competitors. They adopted inadequate reactive strategies without appreciating the consequences of these decisions. Excess capacity tended to be filled by chasing sales, increasing variety and reducing order sizes. All this gave overseas higher volume competitors a substantial advantage and UK industries such as motorcycles, automobiles, trucks and shipbuilding have been lost. The same is true in the US and *Exhibit 1.6* shows how their car plants have had to close while Japanese companies are setting them up just down the road.

Many businesses recognized too late that competition had increased and markets had subsequently changed. They spent most of the past 25–30 years trying to catch up with their competitors and are still struggling to compete. While nations such as the US, the UK and others with long manufacturing traditions have suffered from this surge in competition, countries such as Japan and Singapore move from strength to strength. Of deep concern are the facts underlying these trends, especially that of comparative productivity between nations.

Implants			Closures		
Firm	Location	Capacity (000s cars)	Firm	Location	Capacity (000s cars)
Honda	Marysville	360	General Motors	Leeds	250
	East Liberty	150		Norwood	250
	Alliston	100		Detroit	212
		Pontiac		100	
NUMMI	Fremont	100	Chrysler	Kenosha	300
Toyota	Georgetown	240	General Motors	Framington	200
	Cambridge	50		Lakewood	200
Nissan	Smyrna	480			Pontiac
Mazda	Flat Rock	240	Chrysler	Detroit	21
Total implant capacity		1,720	Total closure capacity		1,817

NOTE: NUMMI – New United Motor Manufacturing Inc., a joint venture between General Motors and Toyota.

EXHIBIT 1.6 The challenge of world competition: the North American auto lesson in the 1990s

Productivity: national comparisons

A nation's prosperity depends on its comparative productivity. The past three decades of increasing competition have brought this sharply into focus. Although not a precise measure, it allows performance of individual countries to be compared and ranked against each other. There are two important dimensions of a productivity slowdown for any nation. The first is the rate of the slowdown itself; the second is the cumulative effect of the slowdown on the comparative level of productivity between a country and its competitors.

When a nation's growth rate lags substantially behind that of other industrialized countries for a protracted period, its standard of living declines and companies find themselves at a serious competitive disadvantage. As this condition continues, recovery becomes increasingly difficult. For the first time in its history, the next US generation may fail to enjoy an improvement in living standards and may even experience a decline.

Productivity measures the relationship between outputs (in the form of goods and services produced) and inputs (in the form of labour, capital, material and other resources). Two types of productivity measurement are commonly used: labour productivity and total factor or multifactor productivity. Labour productivity measures output in terms of hours worked or paid for. Total factor or multifactor productivity not only includes the labour input but also all or some of the plant, equipment, energy and material input. However, a change in productivity must not be attributed to a single input. All inputs are interrelated and combine to create change. For example, production methods, capital investment, process technology, labour force, managerial performance, capacity utilization, material input/usage rates, capacity scale and product mix are all potential contributors to productivity improvements. Furthermore, the relative importance of these will vary from nation to nation, industrial sector to industrial sector, company to company, plant to plant and time period to time period.

Although it may be difficult to gain a consensus on the quantitative dimensions of productivity measurement, the qualitative conclusions on the differing levels and trends within nations are clearly shown in *Exhibits 1.7* and *1.8*. There is significant growth in countries such as Korea, Taiwan and Sweden over the past 40 years, but the comparative slowdown in the US signals that its lead is shrinking, living standards are levelling off and its competitive position is declining.

Country	1960	1970	1980	1990	1995	2000	2006
Korea	n/a	6	29	88	131	192	287
Sweden	28	53	74	95	122	177	247
Taiwan	n/a	13	45	91	113	149	199
US	53	62	94	98	115	147	198
France	23	46	71	99	114	144	175
Netherlands	20	39	70	99	120	139	167
Germany	29	52	77	99	111	132	165
Japan	14	38	64	95	109	131	161
UK	30	43	54	89	107	117	152
Belgium	18	33	65	97	109	126	148
Canada	41	59	75	95	108	134	139
Italy	20	37	44	93	114	116	111

SOURCE: Monthly Labor Review, Bureau of Labor Statistics, US Department of Labor, www.bls.gov, Feb 2007

EXHIBIT 1.7 Trends in manufacturing output per hour for selected countries, 1960–2006 (1992 = 100)

Country	Annual growth in output per hour (% per year)				
	1970–80	1980–90	1990–2000	2000–6	1970–2006
Korea	2	6	4	16	8
Sweden	2	2	3	14	6
Taiwan	3	5	2	8	5
US	3	0	2	9	4
France	3	3	2	5	4
Japan	3	3	1	5	3
Germany	3	2	1	6	3
UK	1	4	2	6	3

NOTE: Analysis is based on figures in Exhibit 1.7.

EXHIBIT 1.8 Annual percentage growth in output per hour 1970–2006

Productivity: plant-level comparisons

In the 1990s, competition significantly increased in most North American, Asia Pacific and European markets as strong 'domestic' companies were challenged by global companies. This trend has continued and relative performance against market needs will determine which companies gain ground and market share.

The automotive industry is one example of the fierce fighting taking place. This sector is core to many industrial economies due to the combined size of its manufacturing, assembly and supply chain activities. *Exhibit 1.6* showed how Japan is winning market share in the US automotive industry. Regional and global overcapacity means competition will remain high and productivity will continue to be key to an organization's success. To succeed in the future, auto companies must increase efficiency to compete against new rivals and fresh benchmarks. *Exhibit 1.9* illustrates the current productivity differences between organizations. For some, the gap is enormous and clearly shows the challenge from Japan and Korea. Furthermore, *Exhibit 1.10* shows that these differences are related to companies rather than locations by presenting the data given in *Exhibit 1.9* by location for both the parent company and manufacturing plant. The best and worst productivity figures again highlight the marked contrasts provided by Asia Pacific and the more established manufacturing nations of North America and Europe.

Auto maker and location			Vehicles (000s) produced	Vehicles per employee	
			1998	1997	1998
Canada	Toyota	Cambridge	172	n/a	83
	GM	Oshawa	459	57	57
Czech Republic	Skoda	Mlada Boleslav	288	31	35
France	Renault	Douai	385	61	68
	PSA	Aulnay	262	52	58
	PSA	Sochaux	237	26	31
Germany	GM	Eisenach	175	77	76
	Ford	Saarlouis	290	59	59
	VW	Emden	330	28	37
Italy	Fiat	Melfi	383	70	73
	Fiat	Mirafiori	416	54	61
Japan	Mitsubishi	Mizushima	521	147	163
	Nissan	Kyushu	430	99	119
	Honda	Suzuka	568	123	116
	Honda	Sayama	485	112	114
	Mitsubishi	Okazaki	173	111	113
	Toyota	Takaota	450	122	103
Korea	Daewoo	Changwon	248	165	165
	Hyundai	Ulsan #2	157	62	65
Spain	VW	Navarra	311	70	76
	SEAT	Martorell	499	69	69
	Renault	Valladolid	214	59	64
UK	Nissan	Sunderland	289	98	105
	Toyota	Burnaston	172	58	72
	Honda	Swindon	112	62	64
	Ford	Dagenham	250	62	61
	Rover	Longbridge	282	34	31

cont'd

Auto maker and location			Vehicles (000s) produced	Vehicles per employee	
			1998	1997	1998
US	Toyota/GM	NUMMI	362	87	87
	Honda	East Liberty	239	85	87
	Honda	Marysville	456	82	88
	Ford	Atlanta	257	75	84
	Toyota	Georgetown	475	78	83
	Ford	Chicago	255	69	81
	Ford	Wayne	227	79	72
	Nissan	Smyrna	309	72	56
	GM	Doraville	257	n/a	51

NOTE: GM's Oshawa figures are for two car plants.

SOURCE: *Motor Business Europe* (Q4, 1999), *Motor Business International* (Q4, 1999) and *Motor Business Japan* (Q4, 1999). The Economist Intelligence Unit (UK) 1999

EXHIBIT 1.9 Productivity in some of the world's auto plants, 1997 and 1998

Regional location		Vehicles per employee (1998)	
Parent company	Manufacturing plant	Best	Worst
European	Europe	76	31
Japanese	Japan	163	103
	Europe	105	64
	North America	88	56
North American	Europe	76	59
	North America	84	51
Korean	Korea	165	65

EXHIBIT 1.10 Best and worst productivity levels by auto maker and regional location (1998)

Why has this happened?

The reasons for this are many and varied, and are discussed below. Some are unsubstantiated opinions whereas others are supported by fact. Some are more relevant to certain nations, sectors and companies and others less so. However, learning from past failures is a step towards determining how to build a more successful competitive future.

Failure to recognize the size of the competitive challenge

Consciously or otherwise, industries and societies have failed to recognize the size of the competitive challenge, the impact it has had and will have on our very way of life and the subsequent need to change. The significant loss of smokestack industries since the 1950s in major industrial nations is the most vivid example. They misunderstood the size of the competitive challenge. And the challenge will continue. In the shadow of Japan, there are now many other competitors eager to take a larger share in world manufacturing output. *Exhibit 1.11* provides one such example.

Country	1985	1990	1995	2001	2005	2005 (1990 = 100)
China	n/a	645	1,242	2,929	2,548	395
Taiwan	381	737	1,266	1,825	2,736	371
South Korea	248	669	695	897	2,320	347
Netherlands	50	106	95	413	338	319
US	3,668	2,660	3,520	3,185	4,099	154
Italy	1,535	2,889	2,537	4,163	3,912	135
Germany	4,401	6,872	5,579	7,560	7,882	115
Spain	350	800	506	932	904	113
Japan	7,399	8,629	6,992	10,481	9,381	109
Denmark	58	67	61	62	67	100
Belgium	130	224	189	245	209	93
France	695	920	601	861	730	79
UK	1,010	1,179	753	846	577	49

NOTE: Up to 1990, the data for Germany includes the former DDR.

SOURCE: CECIMO *Statistical Overview of the Machine Tool Industry 1985–2005* (2006)

EXHIBIT 1.11 Production of machine tools without parts and accessories for selected countries (millions)

Failure to appreciate the impact of increasing manufacturing capacity

World manufacturing capacity up to the mid-1960s was, by and large, less than demand; in this period companies sold all they could make. With the rebuilding of some industrial nations and the emergence of others, output in both traditional and new industrial nations began to outstrip total demand. At first, the more traditional sectors (such as shipbuilding and steel) were caught in the bind of overcapacity. Since then, this has spread into other sectors such as automobiles and semiconductors. The most significant and consistent outcome has been the impact on competition. Overcapacity has

contributed to the competitive nature of markets. The results have added to the dynamic nature of current markets both in terms of the form that competition takes and the timescales of change experienced.

Lack of research and development investment

The pressure to market more and better products has heightened in recent years because of increasing competition and shorter product life cycles. Companies must meet this need by investing in research and development (R&D). *Exhibit 1.12* shows the clear commitment of major manufacturing nations. By 1989, Japan headed the list for the first time (the detail is not included in *Exhibit 1.12* but was 2.98 per cent compared with the US at 2.88 per cent for 1989) and it continues to do so. The Korean figures also show a real commitment to technical development on which Korea is building an increasingly competitive economy. *Exhibit 1.13* shows the outcome of this approach in the international trade balance for highly intensive R&D-based industries. Both Korea and Japan export significantly more electronics products than they import. By contrast, the US has a huge deficit in electronics, office machinery and computers.

Country	1981	1985	1992	1995	1997	2002	2005
Japan	2.32	2.77	2.95	2.98	2.83	3.17	3.33
Korea	n/a	n/a	2.08	2.68	2.79	2.53	2.78
US	2.45	2.93	2.74	2.61	2.64	2.66	2.62
Germany	2.45	2.72	2.48	2.30	2.39	2.49	2.48
France	2.01	2.25	2.42	2.34	2.26	2.23	2.13
Canada	1.23	1.44	1.55	1.62	1.64	2.04	1.98
UK	2.42	2.31	2.13	2.02	1.94	1.83	1.78
Total EU	n/a	n/a	1.92	1.84	1.84	1.76	1.73
Australia	n/a	1.27	1.59	1.62	1.68	1.69	n/a
Italy	1.01	1.13	1.20	1.01	1.05	1.13	1.10

NOTE: 1995 figure for Australia is for 1994; 1997 figures for Australia, Japan, South Korea, UK and Total EU are for 1996 respectively.
SOURCE: OECD, Main Science and Technology Indicators for relevant years

EXHIBIT 1.12 Gross domestic expenditure on R&D as a percentage of gross domestic product (GDP)

Country	Aerospace	Electronic industry	Office machinery and computers	Pharmaceutical	Instruments	Total
Korea	(1,188)	34,222	10,710	(1,488)	(1,284)	40,972
Japan	(5,117)	39,370	(3,264)	(4,987)	14,941	40,943
Ireland	(2,408)	1,564	6,015	18,031	6,204	29,406
Switzerland	(272)	(2,131)	(3,930)	13,713	13,964	21,344
Germany	20	(3,564)	(8,599)	7,580	19,661	15,098
France	13,261	(2,737)	(10,680)	4,282	(910)	3,216
UK	5,460	(319)	(9,688)	5,405	(801)	57
Italy	498	(7,791)	(7,240)	(1,099)	(1,519)	(17,151)
Canada	2,799	(5,809)	(8,378)	(4,767)	(5,237)	(21,392)
Australia	(2,454)	(6,600)	(5,706)	(3,213)	(3,056)	(21,029)
US	38,635	(53,476)	(53,651)	(14,879)	3,477	(79,894)

EXHIBIT 1.13 International trade balance for highly intensive R&D industries in 2005 (\$ millions)

Top management's lack of operations experience

Top management's lack of operations experience has further ramifications for a business. Since operations accounts for some 60–70 per cent of assets, expenditure and people, operations managers must be more involved in strategic decisions and senior executives must fully appreciate their arguments. Once a company has made large investments, rarely does it invest a second time to correct any mistakes. There is no such lack of experience in Japan and Germany, where a full and perceptive insight into operations is a prerequisite for top management.

However, the consequences of this knowledge gap do not stop here. As Wickham Skinner observes:

To many executives, manufacturing and the production function is a necessary nuisance – it soaks up capital in facilities and inventories, it resists changes in products and schedules, its quality is never as good as it should be, and its people are unsophisticated, tedious, detail-oriented and unexciting. This makes for an unreceptive climate for major innovations in factory technology and contributes to the blind spot syndrome.¹

And this brings with it many important consequences. One is that senior executives do not perceive the strategic potential of operations. Typically it is seen in its traditional productivity-efficiency mode with the added need to respond to the strategic overtures of marketing and finance. The result is that operations concentrates its effort and attention on the short term, while adopting its classic, reactive posture towards the long-term strategic issues of the business.

Operations managers' obsession with short-term performance

The emphasis within the operations manager's role has, in turn, been directed towards short-term issues and tasks. The overriding pressures to meet day-to-day targets and the highly quantifiable nature of the role and the output measures have reinforced the tendency of operations executives to concern themselves with this feature to the exclusion of the important long term. The skills of operations managers are high on short-term tasks such as scheduling, maintaining efficiency levels, controls and resolving labour problems.

Skinner rightly observed this 20 years ago when he commented:

Most factories were not managed very differently in the 1970s than in the 1940s and 1950s. Manufacturing management was dominated by engineering and a technical point of view. This may have been adequate when production management issues centred largely on efficiency and productivity and the answers came from industrial engineering and process engineering. But the problems of operations managers in the 1970s had moved far beyond mere physical efficiency.²

This trend has continued in line with the fast-changing nature of markets. By the turn of the century, the operations job had changed from one that concerned maintaining the steady state operations by sound day-to-day husbandry to one that is now multidimensional. It is increasingly concerned with managing greater complexity in product range, product mix, volume changes, process flexibility, inventory, cost and financial controls and employee awareness because of the more intensive level of domestic and international competition.

This is the nature of the new task in the new millennium. No longer are the key issues solely confined to operational control and fine-tuning the system. The need is for broad, business-oriented operations managers, but companies have produced too few of them. The use of specialists as the way to control our businesses has increasingly led to a reduction in the breadth of a line manager's responsibilities, which has narrowed the experience base. Furthermore, many operations managers, outgunned by the specialist argument, have found themselves unable to cope with the variety of demands placed on them. The response by many has been to revert increasingly to their strengths. This has, therefore, reinforced their short-term role and their inherently reactive stance to corporate strategic resolution.

Operations executives do not, on the whole, explain the important, conceptual aspects of operations to others in the organization. Seldom do they evaluate and expose the implications for operations of corporate decisions so that alternatives can be considered and more soundly based decisions can be reached. This is partly because of a lack of developed language to help explain the corporate operations issues involved. Lacking in the strategic dimension, therefore, operations has often been forced into piecemeal change, achieving what it can as and when it has been able. The result has been a series of intermittent responses lacking corporate coordination.

Operations strategy

In the past two decades, countries such as Japan, Germany and Italy, as well as emerging industrial nations such as South Korea and Taiwan, have gained competitive advantage through operations, with India and China next in line. The Japanese, in particular, have

**OPERATIONS
MANAGERS
MUST BECOME
STRATEGIC**

**FUNCTIONS
IMPLEMENT
STRATEGY**

*Corporate
strategy provides
**opportunities
and options***

gone for existing markets and provided better goods with few, if any, inherent benefits derived from material and energy resources. The earlier examples serve to illustrate this.

One of the keys to this achievement through operations has been the integration of these functional perspectives into corporate strategy debate, and it is appropriate now to explain what this embodies and how it differs from the conventional approaches to the management of operations. In broad terms, there are two important roles that operations can offer as part of the strategic strengths of a company.

The first is to provide operations processes that give the business a distinct advantage in the marketplace. In this way, operations will provide a market edge through unique technological developments in its process and operations that competitors are unable to match. This is quite rare and examples are hard to find. One such is Pilkington's float-glass process.³

The second is to provide coordinated operations support for the essential ways in which products win orders in the marketplace that is better than such support provided by the operations functions of its competitors. Operations must choose its process and design its infrastructure (for example controls, procedures, systems and structures) that are consistent with the existing way(s) by which products win orders, while being able to reflect future developments in line with changing business needs. Most companies share access to the same processes, and thus technology is not inherently different. Similarly, the systems, structures and other elements of infrastructure are equally universal. What is different is the degree to which operations matches process and infrastructure to those criteria that win orders. In this way, operations constitutes a coordinated response to the business needs that embraces all those aspects of a company for which operations is responsible.

To do this effectively, operations needs to be involved throughout the whole of the corporate strategy debate to explain, in business terms, the implications of corporate marketing proposals and, as a result, be able to influence strategy decisions for the good of the business as a whole. Too often in the past, operations has been too late in this procedure. Corporate executives have tended to assume that competitive strategies are more to do with, and often in fact are one and the same as, marketing initiatives. Implicit, if not explicit, in this view are two important assumptions. The first is that operations' role is to respond to these changes rather than to make inputs into them. The second is that operations has the capability to respond flexibly and positively to these changing demands. The result has been operations' inability to influence decisions, which has led to a posture that appears to be a function that is forever complaining about the unrealistic demands placed upon it.

The need for an operations strategy to be developed and shared by the business is not only to do with the critical nature of operations within corporate strategy but also a realization that many of the decisions are structural in nature. This means that they are hard to change. If the business does not fully appreciate the issues and consequences, it can be locked into a number of operations decisions that will take years to change. These can range from process investments on the one hand to human resource management practices and controls on the other. Decisions not in line with the needs of the business can contribute significantly to a lack of corporate success. To change them is costly and time-consuming. But even more significant, they will come too late. The development of a corporate policy consisting of a coordinated set of main function inputs will mean that a business would be able to go in one consistent, coherent direction based on a well-argued,

well-understood and well-formed strategy. This is achieved, in part, by moving away from argument, disagreement, misunderstanding and short-term, parochial moves based on interfunctional perspectives to the resolution of these differences at the corporate level. Currently, marketing-led strategies leave the aftermath to be resolved by operations, which, without adequate appropriate guidance or discussion and agreement at the corporate level, resolves the issues as best it can largely from its unilateral view of what is best for the business as a whole.

In the majority of cases, operations is simply not geared to a business's corporate objectives. The result is an operations system, good in itself, but not designed to meet market needs. Operations left in the wake of business decisions is often at best a neutral force, and even sometimes inadvertently pulls in the opposite direction. Seen as being concerned solely with efficiency, the question of operations' strategic contribution is seldom part of the corporate consciousness.

What does all this mean for operations managers? One clear consequence is the need to change from a reactive to a proactive stance. The long-term inflexible nature of operations means that the key issues, and there are many of them, involved in process choice and infrastructure development need to be reflected in business decisions, with the business being made aware of the implications for operations of proposed corporate changes. When this is achieved, the strategy decisions that are then taken reflect what is best for the business as a whole. So, operations management's attention must increasingly be towards strategy. This does not mean that day-to-day operations are unimportant, but time must also be spent developing and implementing strategy. Top management have, by and large, perceived improvements as coming from corporate activities such as acquisitions, mergers and new product or market development. However, strategies must also be developed and implemented at a functional level. In successful businesses, operations develop the capability to support current and future market requirements within a well-chosen, well-argued and well-understood business strategy.

Reflections

There is a growing and consistent awareness that the emphasis in successfully managed operations function is increasingly towards issues of strategy. Early evidence was provided in the Advisory Council for Applied Research and Development's 1983 booklet entitled *New Opportunities in Manufacturing: The Managements of Technology*. This specifically recommended that 'companies in manufacturing should review the balance of their senior management (team) and ensure that the role of a suitably qualified board member includes responsibility for manufacturing strategy'.⁴ In the 21st century, this board-level contribution is even more crucial to the continued success and growth of companies.

Top management needs to pay a great deal more than lip service to the task of ensuring that operations' input into the strategic debate is comprehensive and that the agreed corporate decisions fully reflect the complex issues involved. Much determination will need to be exercised to ensure that the more superficial approaches to incorporating the wide-ranging aspects of operations into business decisions are avoided. The rewards for this are substantial.

Operations executives must begin to think and act in a more strategic manner. In an environment traditionally geared to meeting output targets, the pressure on operations has been to manage reactively and to be operationally efficient rather than strategically effective. It has been more concerned with doing things right (efficiency) than doing the right things (effectiveness). Over the years, this has been seen as the appropriate operations task and contribution. Furthermore, it has given rise to the related assumption that any other posture would imply negative attitudes, with operations appearing to be putting obstacles in the way of achieving key business objectives. At times, this puts operations in the vicious circle of business demands on operations, operations' best response, a recriminating business appraisal of that response, new business demands for improved operations performance and so on. The purpose of this book is to help to avoid the all-too-common corporate approach to operations by providing a set of concepts and approaches that together create a platform from which operations can make a positive contribution to developing powerful competitive strategies. But, operations executives must first accept that they need to manage their own activities strategically and this is almost as much a change in management attitude as it is an analytical process.

The purpose of thinking and managing strategically is not just to improve operational performance or to defend market share. It is to gain competitive advantage and it implies an attempt to mobilize operations' capability to help to gain this competitive edge. Kenichi Ohmae, a leading Japanese consultant with McKinsey,⁵ suggests that when managers are striving to achieve or maintain a position of relative superiority over competitors, their minds work very differently from when the objective is to make operational improvements against, often arbitrarily set, internal objectives.

This chapter has highlighted operations' tendency to emphasize operational efficiency more than competitive advantage. The danger for the business is that operations gets so used to absorbing and responding to demands that reacting becomes the norm. Each crisis is viewed as a temporary situation that often militates against recognizing the need to review strategies fundamentally. By the time this need becomes obvious, the business is often at a serious competitive disadvantage.

The aims of this book are to help operations reverse its reactive tendencies and change its short-term perspective; that is, to explain operations from a strategic perspective by identifying the managerial and corporate issues that need to be addressed to establish competitive advantage.

There is much evidence that in many traditional manufacturing nations the capability exists to turn domestic manufacturing around and to challenge and beat overseas competition in both home and world markets. There are already examples of that turnaround in competitive performance, but the key ingredients include tough, professional management, combining strategic analysis of key issues with the intuitive, creative flair that for so long has been directed primarily towards solving operational problems.

It is imperative that operations managers take the initiative. For some organizations or functions within a business, the status quo even suits them. In those same organizations, operations is played off against a forever changing set of objectives and targets, and it hurts. If operations waits for other corporate initiatives, they will not come soon enough. The lack of empathy and understanding by top management towards operations often means that, when difficulties arise, the preferred course of action is to get rid of the

problem by selling off the business or buying in from outside. The causes of the problem are seldom addressed. Companies should realize that there are no long-term profits to be made in easy manufacturing tasks – anyone can provide these. It is in the difficult areas where profits are to be made. Furthermore, selling off inherent infrastructure can lead to an inability to compete effectively in future markets. The critical task facing operations managers is to explain the essential nature of operations in business terms, and this must embrace both process technology and infrastructure development.

Discussion questions

- 1 Comment on the comparative balance of payments on goods (1960–2007) for selected countries shown in Exhibit 1.1. Why do these differences exist? What is the impact of these trends on the economies of the countries involved?
- 2 Comment on the varying trends in manufacturing output per hour for selected countries shown in Exhibit 1.7. What are the causes of these variations? What is the impact of these trends on the economies of the countries involved?
- 3 Comment on the level of production of machine tools without parts and accessories for selected countries shown in Exhibit 1.11. Why do these differences exist? What is the impact of these trends on the economies of the countries involved?
- 4 What has been the policy of the UK government to the UK manufacturing industry over the past 30 years? Why do you think it has taken this stance? What do you believe has been the impact of this?
- 5 What would be the long-term impact of the trends shown in Exhibits 1.1, 1.7 and 1.11? How can these trends be reversed?

Notes and references

- 1 Skinner, W. (1983) 'Operations technology: blind spot in strategic management', Harvard Business School working paper 83–5, p. 11.
- 2 Skinner, 'Operations technology', p. 6. These views are also confirmed by Skinner in his book *Operations Management, Strategic Context and Managerial Analysis* (2000) Basingstoke: Macmillan Business.
- 3 The development of the float-glass process in the 1950s by Pilkington, a UK glass manufacturer, was a remarkable step forward in the technology of float-glass making. The costly grinding and polishing operations in the conventional manufacture of glass were eliminated and the result was plate glass production at a fraction of the cost.
- 4 Advisory Council for Applied Research and Development (1983) *New Opportunities in Manufacturing: The Management of Technology*, London: HMSO Cabinet Office, October, p. 48.
- 5 Ohmae, K. (1982) *The Mind of the Strategist*, New York: McGraw-Hill, pp. 36–7.