

GLOBAL, NATIONAL AND RESOURCE-BASED STRATEGIES: AN EXAMINATION OF STRATEGIC CHOICE AND PERFORMANCE IN THE VEHICLE COMPONENTS INDUSTRY

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For an industry facing both internationalization and impending maturity, available strategic prescriptions suggest four options which are at variance with each other. To assess the validity of competing strategic prescriptions, the outcomes of these four options are examined empirically by means of a longitudinal study of the vehicle components industry. Rather than going for strategies based on market domination, large British vehicle component companies would generally have performed better had they concentrated on resource-based priorities; market domination has generally only proved feasible in national markets, and the outcomes of such strategies have proved little short of disastrous. Explanations are explored through a case study of one British national market leader and through international comparisons from Germany, the U.S.A. and Japan, which highlight the importance of manufacturing policies as primary sources of sustainable competitive advantage.

INTRODUCTION AND LITERATURE REVIEW

Faced with the prospect of industry maturity and increasing international competition, large nationally based companies face strategic choices. Should they attempt to dominate their markets, and if so, should these markets be defined nationally or internationally, perhaps even globally? Or should they eschew any attempt at market domination and seek to achieve good performance by other means? This article elucidates expected outcomes according to competing theoretical arguments, whose validity will then be examined in the light of performance evidence, drawn from one industry.

Market domination is frequently advocated, because of possible experience benefits and also price advantages from greater market power

(Levitt, 1965; Boston Consulting Group, 1975; Hedley, 1977; Schaeffler, Buzzell, and Heany, 1974; Haspeslaugh, 1982). Advocates of structural analysis equally stress market power (notably in the case of vehicle components, Porter, 1983:275), but warn against simplistic analysis (Porter, 1980, 1987:52). Scale advantages differ markedly in different industries so that low share players, sensitive to context, need not necessarily lose out (see also Woo and Cooper, 1982; Woo, 1984). Strong market positions depend on coherent, sensitive and sometimes creative policies throughout the value chain, designed to achieve either lower costs or differentiation (Porter, 1985). Similar concepts are applied to the context of maturity, though exploiting end game opportunities requires analysis of both entry and exit barriers (Porter, 1980; Harrigan, 1980a,b).

Not all researchers, however, accept the strategic pre-eminence of such issues in all situations. Porter's excellent examples of structural issues do not constitute comprehensive

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evidence defining alternative approaches to successful performance. Similarly, Levitt's (1960) classic cases of marketing myopia were based on particular industries, at particular points in industry life-cycles of well over 50 years; but does this necessarily preclude alternative routes to high performance at other times? Successful performances have proved sustainable in some mature industries without recourse to any changes in market positioning (Hall, 1980), and 'dematurity' in a technological sense has provided major strategic opportunities in the car industry for example (Jones, 1981; Altshuler *et al.*, 1984; Chew, 1984).

Ghemawat (1986, 1991) argues, again without comprehensive empirical evidence, that technology-based strategies (*per se*) may not always produce sustainable competitive advantages; but basic manufacturing developments often appear to constitute formidable sources of sustained competitive advantage (Skinner, 1978; Hayes and Abernathy, 1980; Abernathy, Clarke, and Kantrow, 1981; Wheelwright, 1981; Garvin, 1983; Hayes, Wheelwright, and Clarke, 1988). Advocates of structural analysis see technological and manufacturing factors merely as part of an armory designed primarily to shore up a defensible market position, in terms of the possession of some market power; but this secondary role is not borne out in such manufacturing studies. In industrial markets, any attempt at gaining market power at the expense of customers risks serious counter measures, as well as damaging cooperative relationships essential to long term competitiveness (Bailey and Farmer, 1981). Suppliers to Japanese companies appear to have sustained competitive benefits from accepting dependent roles, whilst prioritizing basic manufacturing and technological improvements (Anderson, 1981; Shimokawa, 1982a,b; Carr, 1985, 1990; Nishiguchi, 1989; Lamming, 1989; Carr and Truesdale, 1992).

Advocates of market-based priorities also need to provide more guidance on market boundaries, given the resource implications of any requirement for market dominance on a more global basis. Empirical research data bases such as PIMS (Buzzell and Gale, 1987) rely on participants' geographical definitions, but these assumptions are not made explicit and thus cannot be independently checked for validity or even consistency: usually market shares seem to

be defined in domestic terms even in more international industries. Such market boundaries are difficult to resolve and may be controversial. In the case of washing machines, another mature industry, Baden-Fuller and Stopford (1988, 1991) argue that U.K. manufacturers have performed better as a result of pursuing national strategies, rather than defining the market as at least European, as might have been expected from cursory inspection of the issue of internationalization.

Porter (Porter, 1980; Hout, Porter, and Rudden, 1982; Porter, 1986) suggests a more global strategy would be required where there are important interdependencies between competitive positions in different countries, and where structural characteristics are, on balance, favorable to a more global approach. Prahalad and Doz's (1987) research on multinationals provides a similar checklist of balancing considerations. A more global approach would be encouraged by the presence of multinational customers or multinational competitors, the intensity of capital or technology, pressure for cost reduction, universal versus heterogeneous customer needs, and sometimes access to raw materials and energy; pressures for local responsiveness, on the other hand, depend on differences in customer needs, differences in distribution channels, the need to adapt products bearing in mind the availability of local substitutes, market structure, and demands by national governments such as those requiring local content. Other factors favorable to a more global approach might include global branding, and other more general strategic opportunities conferred by a multimarket presence (Ohmae, 1985, 1990). Such a rich variety of issues calls for refined analysis and could lead to different geographical definitions for different segments of the market.

Any process of global rationalization also raises the question, addressed in Porter (1990), of which countries are likely to win out in any particular industry. Being a national market leader in the wrong country could prove singularly inappropriate. Porter's framework not only identifies traditional economic factors such as comparative advantage, but places considerable emphasis on national demand characteristics (the presence of innovative buyers), supporting infrastructure (the fate of closely related sectors being highly interdependent), and the benefits

arising from vigorous domestic rivalry. Companies achieving over-bearing domestic market leadership, such as national champions, are viewed as likely to become complacent and, ultimately, uncompetitive. A case in point would be the decline of Rover in contrast to the success of Japanese car companies, who are numerous and compete vigorously in their domestic market.

Porter's (1990) warning on the dangers inherent in the possession of domestic market power, however, runs counter to Porter's (1980) central pre-occupation with the acquisition of greater monopoly power—a theoretical paradox noted in Grant (1991). Nor is this contradiction between Porter's two books fully resolved by defining the locus of competition as global rather than national. If domestic market power entails the danger of complacency, so does global market power: and if such dangers are so important, does the issue of monopoly power really merit such a central place in strategic analysis? Since relatively few companies can hope to achieve dominant global market positions, would most companies not be better off downplaying market power altogether and seeking other routes to better performance?

While global rationalization might seem to favor strategies aimed at global market dominance, appropriate strategic choices should also reflect companies' resources. Collis' study (1991a, b) of global competition in the bearings industry suggests that resource-based issues merit greater emphasis. His analysis demonstrates, for example, that RHP's strategy based on achieving first U.K. market domination and, secondly, in attempting to achieve some degree of more international market domination in more focused market segments, was singularly inappropriate—a conclusion fully supported by Carr (1990:86–119); a less ambitious strategy more attuned to RHP's limited resource base would almost certainly have proved more successful.

Conglomerates such as Hanson, criticized by Porter (1987), have sustained impressive performances in mature industries (Goold and Campbell, 1987a, b), and form a subgroup of companies pursuing a more resource-based approach. Their 'Financial Control' (FC) style of management explicitly downgrades market share targets, with international operations often being divested, and frees business units to find

other routes to good financial performance—a graphic case study being provided by Roberts (1990). Many U.K. industrial companies are now controlled by such conglomerates and can potentially be identified as adopting an 'FC style'. Advocates of manufacturing excellence, however, decry such financially orientated 'short-termism' (Hayes and Abernathy, 1980) and would suggest other more positive resource-based alternatives.

Literature-based arguments can thus be found in support of each of the four following possible strategic options open to major companies, faced with impending industry maturity and increasing international competition:

- 1A. they can try to dominate domestic markets;
- 1B. they can try to dominate European or even global markets;
- 2A. they can eschew any attempt at dominating markets and seek to improve performance by the adoption of a 'Financial Control' style;
- 2B. they can eschew any attempt at dominating markets and seek to improve performance in some other way (e.g., through greater emphasis on manufacturing or technological issues, based on closer and more collaborative relationships with customers).

The resource implications of Options 1A, 1B, and 2A are so substantial, that companies need to know which of the above choices are likely to be more fruitful. Should market power (so emphasized in recent economics-grounded approaches to strategic analysis) be of overriding importance in *sustaining* good performance, the best performance outcomes should follow from either Option 1A or 1B, depending on an analysis of the process of internationalization; but other approaches in the literature suggest alternative possible, sustainable routes to good performance outcomes, categorized in Options 2A and 2B. This article seeks, primarily, to examine the *outcomes* of such choices, in order to reflect on literature-based arguments—an emphasis shared by similar studies (e.g., Baden-Fuller and Stopford, 1991:494); but some explanation of findings will also be provided.

METHODOLOGY

The question addressed involves so many highlighted variables, as to be so far unanswerable in any general study pertaining to all industries. Even the PIMS data base, arguably one of the most comprehensive general industry data bases available, cannot discriminate between the first three options; and it contains no data on Japanese manufacturers who have played such an important role in international competition. At the other extreme, the call for richer longitudinal studies (Pettigrew, Whipp and Rosenfeld, 1986) has been constrained by the practical difficulty of achieving such depth in more than one company (Pettigrew, 1985); competitive situations, however, may involve many players and call for international research.

The necessary compromise is to examine industry cases. Influential strategic prescriptions have often been supported by analyses of strategic situations, amounting to little more than 'pen-pictures' (e.g., Levitt, 1965; Porter, 1980; Hout, Porter and Rudden, 1982). Such 'pen-pictures' do not always survive the test of time: Hout *et al.*'s (1982) portrayal of Caterpillar's domination over Komatsu in the construction equipment industry is not borne out by subsequent events (Rukstad, 1991). Baden-Fuller and Stopford (1991) have tried to rectify the lack of rich industry studies; but even this study of 'Globalization Frustrated' in the mature domestic appliance industry lacks any research outside Europe.

This article examines another mature industry, vehicle components where internationalization has been well documented (Carr, 1985, 1990; Nishiguchi, 1989; Lamming, 1989; Boston Consulting Group/PRS, 1991), and will be further discussed. The sector's complexity allows examination of many rivals pursuing different strategies, in a variety of situations, whilst affording opportunities for international comparisons on a highly comparable, component by component basis.

Large British companies are of interest because they have performed poorly in so many international markets (Carr, 1990), in spite of enjoying domestic markets amongst the most highly concentrated in the developed world (Davies *et al.*, 1991:1). Large British vehicle component companies have been particularly affected both by internationalization, and by impending industry maturity. Since the early 1970s, their customer

industry's output has grown modestly on a worldwide basis, and national output has fallen from a peak of 2 million cars in 1973 to 1.3 million in 1991 despite some recent recovery.

This investigation is based on a longitudinal study of the vehicle components industry. The author worked for GKN, one of Britain's largest vehicle component companies, between 1974 and 1980. This afforded access to GKN Forgings and GKN Hardy Spicer, discussed later in this article. Since 1980, the industry has been studied continuously. To gain an adequate international perspective, 30 manufacturers in Britain were 'matched' with 25 in Germany, the U.S.A. and Japan on the basis of six specific components with field research in all four countries (carried out between 1980 and 1983) as detailed in Table 1. Product sectors were chosen to cover a range of characteristics expected to influence competition (e.g., high versus low technology), further methodological details being provided in Carr (1990:49-59). Access both to top level management and to the shop floor was achieved in all companies, and several U.K. companies allowed repeated visits. During the last three years, further field research has involved U.S., German and Japanese customers based in Europe, another 46 vehicle component companies in Britain and Germany, and another 6 suppliers serving U.K.-based Japanese customers; these studies have separate aims but were useful in clarifying the corporate management styles of a

Table 1. Number of companies accessed in early field research

	Britain	Germany	U.S.A.	Japan
Automotive forgings	11	1	1	3
Automotive ball and roller bearings	7	2	2	3
Automotive instrumentation	2	-	-	2
Automotive exhaust systems	8	-	1	1
Automotive spark plugs	1	-	1	1
Automotive brake linings	1	2	-	2
Other automotive components	-	2	-	1
Vehicle customers	1	1	-	5

number of companies not visited during earlier field research, and for more recent developments. Secondary sources have been scanned continuously (including every copy of the *Financial Times* since October 1980) and comprehensively. Carr (1990) provides a more comprehensive analysis of competition, since no article can cover all aspects with equal thoroughness.

As in Baden-Fuller and Stopford (1991), one important performance measure has been return on capital employed (ROCE), averaged over several years; but this has not been used in international comparisons since German and Japanese companies have sustained strategies yielding ROCEs far lower than would be acceptable in Britain or the U.S.A. (Carr, 1990:108). Likewise, their technique of examining 'standardized prices' at a single point in time has not been used, since international price differentials can be shown to have changed signs more than once since 1978, in line with relative inflation-adjusted exchange rates (Carr, 1985, 1990). Instead, use has been made of productivity measures, and other measures to gauge quality and flexibility, these being considered as key purchasing criteria by customers. Incorporating such measures allows supply-side issues to be more adequately addressed. In comparing U.K. company performances, sales growth figures have been included as an additional check on 'harvesting'. Baden-Fuller and Stopford (1991) dismiss exits as 'too crude a measure'; but these are important indicators of poor longer term competitive performance, and have been examined paying attention to whether or not exits were likely to have been successful (Harrigan, 1980a, b).

To achieve greater depth, meaningful international comparisons and a higher degree of explanation, this article again follows Baden-Fuller and Stopford (1991) in complementing examination of the industry as a whole, with a more focused analysis of one fairly representative market segment, automotive forgings. This product segment is particularly advanced in terms of the product life cycle: the domestic market (in tonnage terms) has declined by two thirds since 1965 (NAFDS statistics). Product characteristics though have been less favorable to internationalization in this segment, as has been evident in the absence of multinationals and in the relatively low level of international trade. This is therefore one segment where market power might result from national as opposed to global market leadership.

Access in this segment was good. Employed as a development engineer with GKN Forgings between 1974 and 1978, the author had access to all sites and to long serving staff who, in turn, had detailed historical knowledge and access to performance records. This company has held a little under 50% of the domestic market, representing a very dominant position. Subsequently, field research was carried out in ten other U.K. forging companies, three in Japan, one in the U.S.A. and one in West Germany, as indicated in Table 1. The article will, however, return to the more general industry situation, again drawing on international comparisons, before reaching conclusions.

INTERNATIONALIZATION IN THE VEHICLE COMPONENTS INDUSTRY

Internationalization is taken to imply an industry situation where participant firms' competitive positions are substantially affected by other participants' operations in other countries—to an extent that these other participants need to be individually taken into account. Taken together, a rich variety of factors, consistent with those noted in Prahalad and Doz (1987), appear to have been responsible for increasing internationalization of competition.

Historically, access to raw materials encouraged earlier internationalization in a few product areas, such as rubber-based tires and asbestos-based brake and clutch linings. Government protectionism and content restrictions also sometimes prompted early international moves, particularly by U.S. companies; they remain important factors, particularly in moves by Japanese suppliers, first to the U.S.A. and now to Europe.

Internationalization of the supplier industry has also mirrored that in the upstream assembly industry (Altshuler *et al.*, 1984; Womack, Jones, and Roos, 1990), as customers have increased international procurement. Globalization of automotive component sourcing by all major automotive manufacturers is detailed in Bertodo (1991:41): by 1990 local sourcing accounted for 20 percent; national sourcing for 43 percent (compared with 53% in 1980); regional sourcing for 25 percent and global sourcing for 12 percent (these latter categories having together accounted for only 26% in 1980). Ford's purchasing staff

interviewed were critical of suppliers, bound by national perceptions, who could not mirror their own integrated European operations. To provide multinational car customers with local support in terms of security of supply and logistical benefits such as just-in-time, many component companies have thus also had to become multinational. For example, GKN Hardy Spicer followed Ford to the U.S.A. with constant velocity joints. Given pressure to reduce costs, becoming internationally based offers advantages in terms of scale benefits, tooling and capital equipment, and technology.

International rivalry among suppliers has been further spurred not only by over-capacity, notably in areas such as bearings, forgings and tires, but more especially by multinational customers reducing supplier numbers on an international basis. During the 1980s, every mass-producer reduced its supplier numbers from a range of 2,000 to 2,500 at the beginning of the decade to between 1,000 to 1,500 by the end (Lamming, 1989:22). This is a continuing trend: Ford Europe, for example, expects to reduce its number of supplier companies from about 900 in 1992 to 650 in the next few years. This implies further international rationalization of the supplier base, raising product market positioning issues; but it also increases the importance of attaining international standards of best practice in respect to manufacturing issues such as quality and responsiveness, regarded by customers as critical when deciding which suppliers to retain (Womack *et al.*, 1990). Ford's quality standards are set on an international basis, and failure to meet Q101, or now Q1, can lead to forced exits and even closures.

The effects of internationalization are evident in trade statistics (discussed in the next section), and also in cross-border operations (including acquisitions, joint-ventures, as well as greenfield sites). Such activities reflect integrated international competitive strategies; few multinationals in this industry now allow autonomy to national subsidiaries.

U.K. PERFORMANCE FINDINGS

U.K. supplier companies' collective performances

Figure 1 demonstrates the long term declining profitability of U.K. supplier companies: more

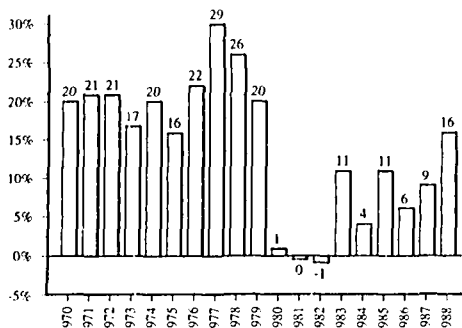


Figure 1. Average return on capital employed by U.K. vehicle component companies

recent figures are less comprehensively available but are generally even lower, reflecting recession.

Overall profitability has not correlated with trends in the domestic components market, which fell in line with the virtual halving of U.K. car production between 1973 and 1979. Figure 1 shows that suppliers' average return on capital employed (ROCE) remained stable around 18%, never falling below 14.5% even during the first oil crisis. During the next few years U.K. car production remained stable at one million cars, yet profits plunged and remained low.

Imports of parts and accessories by 1988 were almost six times higher, in constant prices, than in 1970 (SMMT/Customs & Excise statistics). The import/export ratio rose from 0.24 in 1970 to 0.49 in 1980, to 0.97 in 1985, and to 1.30 in 1988. The steep decline in ROCE in the early 1980s was, nevertheless, traceable mainly to declining margins as a result of uncompetitiveness, rather than falling utilization in terms of sales/capital employed ratios. U.K. parts prices, which had been internationally competitive in 1978 (Price Commission, 1979), became seriously uncompetitive after 1979 following a rise of some 40% in the inflation-adjusted exchange rate. Backed up by the threat of international procurement, customers succeeded in freezing component prices over the next four years (Bessant *et al.*, 1984:61), thereby squeezing margins. For example, when Britain's largest engine reconditioner held out on price, its business was switched to another supplier and its plant was forced to close. The wholesale price

index rose 46% over the period, but suppliers were unable to pass on their own increased costs. Terms of trade improved after 1985, restoring the competitiveness of U.K. parts prices (House of Commons, Trade and Industry Committee, 1987), reducing pressure on margins.

U.K. car production rose from 1m to 1.4m in 1989 yet any resultant de-maturity in the domestic market has been associated with meagre overall profitability, compared with the earlier period of dramatic market decline. The stage of maturity appears to be an unreliable predictor of overall profitability.

Performance differences by type of company

Performance outcomes for 74 larger U.K.-based vehicle component companies, affording continuous accounts data, were analyzed in terms of average ROCEs achieved between 1984 and 1988. Because of space constraints, Table 2 first details results for the top ten performers and then focuses (for comparison) on the largest 15 companies, which in practice achieved strong domestic market positions. (Data for two, better performing large companies are included in the top section of the table and are therefore not repeated in the bottom section). Size data in terms of sales turnover is included to facilitate examination of any size performance relationships, and relative sales growth data as a check against 'harvesting'.

To help relate this data to strategic choices identified earlier, national players are distinguished from companies achieving more global or at least regional (i.e., European) market positions, and subsidiaries of foreign multinationals (FMNCs) are separately identified. Twelve companies were classified following visits; others involved external sources and company accounts for data on overseas plants and export ratios. Secondly, companies were classified in terms of Gould and Campbell's (1987a, b) management styles. External sources were used for some well documented companies; many were classified following visits but confidentiality arrangements preclude their separate identification.

Global market strategies

In spite of internationalization, only one British-owned company analyzed in Table 2 has achieved

a leading position in terms of global market share: GKN Hardy Spicer in constant velocity joints. Its profitability has been excellent though at the expense of static sales growth, which implies some 'harvesting' as this world market segment is still growing. Such success attests to benefits hypothesized from pro-active international market positioning, overseas plants having been established in Germany and the U.S.A. Notwithstanding Ghemawat's (1986) reservations, technological patents were critical in establishing this strategy. However, competition may now intensify following their expiry: NTN's constant velocity plant visited in Japan was modern and progressing rapidly and more recent discussions suggest it is now challenging GKN's position more forcibly, particularly in the U.S.A.

Likewise supported by patents and substantial overseas production, Pilkington is the only other British owned company to have approached global domination, having achieved the No. 2 position in world automotive glass. Pilkington faces strong competition from U.S. and French rivals, and is now being strongly challenged by Asahi Glass of Japan. Figures for its Triplex automotive glass subsidiary were incomplete, but were below those of other U.K. suppliers when averaged for the years where figures were available: some major development projects, such as '10/20' automotive glass, have proven commercially unsuccessful.

Alfred Teves, TRW United Carr and Eaton, all subsidiaries of German or U.S. multinationals with significant world market positions, rank among the most profitable companies in Table 2. However, Cummins and Champion Spark Plugs, both U.S.-based, global market leaders in engines and spark plugs respectively, have performed less well in recent years, having come under direct pressure from Japanese rivals.

These strategies appear globally integrated, exploiting know-how synergies and the ability to offer services in more than one country. The level of investments implied are huge: for example, each of GKN's constant velocity joints factories cost of the order of \$100m even in 1979/80. Global market domination can be highly successful, but its attainment is rare, particularly for component companies not based in the

Table 2. Best performers of 74 vehicle component companies 1984 to 1988

ROCE rank	Mgt style**	Company	Average ROCE 1984-83 %	Sales growth '84-88 % pa	Size rank '84*	Products	Type of player***
1	FC	BMAC	75	12	73	elec lgt accessories	national (small)
2	SP	Hardy Spicer	40	0	12	CV joints	global
3	SP/FC	Alfred Teves	39	16	29	brakes	regional/global/ FMNC
4	SP/FC	TRW Untd	38	17	36	sub-assemblies	regional/global/ FMNC
5	FC	Motaproducts	34	24	41	accessories	national (small)
6	SP/FC	Eaton	33	4	10	axles, transmission	global/regional/ FMNC
7		Albion Pressed Metal	31	21	48	metal pressings	regional/global (just acquired by Jap FMNC)
8		Concentric Pressed Prods	30	19	46	pressings & fabrications	
9		Clearplast Vacumet	28	36	54	plastic parts	small national
10	FC	International Radiators	28	2	17	radiators AM	small national

Performance of largest companies (other than above)

38	SP	Lucas	11	7	1	electrical	regional/global
41	SP	Chloride	10	-4	2	batteries	regional/global
18	SP	Unipart	20	1	3		national/exporter
55	SP/FC	Automotive Products	6	6	4	brakes	national/regional
63	SP	Cummins Engine	-4	11	5	diesel engines	global, FMNC
39	FC/SP	BBA	11	55	6	brake linings	national/regional
59	SP	Dana	10	10	7	truck parts/ distribution	global, FMNC
35	SP/FC	Armstrong	11	4	8	strg wheels, silencers	national/regional
57		Quinton Hazell	6	-17	9		national
53	SP	GKN Sankey	7	20	11	wheels, misc	national
44	SP	Jonas Woodhead	9	-4	13		national/export
67	SP/FC	TRW Cam Gears	-13	6	14	strg columns	regional/global/ FMNC
27	SP	GKN Axles	16	8	15	axles	national

Average UK's non-global big players: 11% ROCE 7.6% sales growth

Average 74 companies: 10.5% ROCE 12.1% sales growth

*1 largest, 74 smallest, average 37.5.

**FC denotes Financial Control style; SP denotes Strategic Planning style; FMNC denotes foreign multinational company. NB More recently many large companies are moving more towards either a Strategic Control style (e.g. GKN) or even a Financial Control style.

***Based on examination of overseas manufacturing plants and export ratio.

U.S.A., Japan or Germany, which appear to be the most favored countries.

Strategies based on national market leadership

While global strategies were rare, many large British companies nevertheless historically invested heavily in acquisitions to achieve positions of national market dominance, thereby diverting resources from more basic manufacturing improvements. Table 2 demonstrates that (within this category) Lucas, Chloride, Automotive Products, BBA, and Armstrong, have sustained low profitability even relative to other U.K. based suppliers; their growth performances, with the exception of BBA, were also unimpressive. Turner and Newall's Associated Engineering subsidiary could not be included in Table 2, because public data discontinued at the point of take-over; but earlier profitability was poor relative to the sector.

To examine how these larger, nationally dominant U.K.-based companies have performed over a longer period, companies were split into size categories, based on sales levels in 1975. The largest size classification was then dominated by such companies, but has performed poorly relative to the sector over 20 years as demonstrated in Table 3.

Table 4 details many former U.K. market leaders forced into unprofitable exits: case study accounts being provided in Carr (1990:86-186) for RHP in automotive rolling bearings, Lucas/Smiths in automotive instrumentation, GKN Forgings in forgings and TI Cheswick in exhaust

systems. In addition, between 1989 and May 1991, German vehicle companies acquired Camford Engineering, Jonas Woodhead and Birmid Qualcast, again all former domestic product market leaders. Strategies relying on national market leadership positions have proved remarkably unsuccessful, both in terms of profitability and in terms of sustaining strong long term competitive positions.

Strategies not based on market leadership

Three of the 10 most profitable suppliers identified in Table 2—BMAC, Motaproducts and BTR's subsidiary International Radiators—are part of conglomerates which can be reliably classified as adopting Financial Control styles. Before its disposal by Hanson, Delanair averaged the highest rate of return of all U.K. vehicle component companies between 1984 and 1986, and would have been similarly classified. BMAC and Motaproducts do not enjoy market dominance even in the U.K. International Radiators and Delanair have little overseas presence, but have stronger domestic market niche positions. However, short term profit objectives unambiguously take precedent over any market share considerations. Option 2A has proven a feasible route to high and fairly sustained levels of profitability.

Others in Table 2's list of the ten most highly profitable companies lack substantial overseas positions and don't appear large enough to dominate domestic product markets. Companies choosing Option 2B, as opposed to Option 2A,

Table 3. Profitability and sales growth performances by size classification

Size groups: (descending order)	1	2	3	4	5	AV	Sample No
ROCE 1984-88	11.1	10.1	12.4	9.5	9.2	10.5	74
ROCE 1979-83	1.7	8.0	4.0	6.7	5.8	5.3	52
ROCE 1975-79	16.6	20.8	24.8	19.0	20.7	20.4	81
ROCE 1970-74	12.7	26.5	19.6	21.4	5.1	17.1	24
Growth 1984-88	7.1	9.1	9.7	19.5	15.5	12.1	74
Growth 1979-83	-0.0	-3.9	-2.7	6.2	3.4	0.8	52
Growth 1975-79	15.9	7.6	23.8	22.1	25.4	25.4	81
Growth 1970-74	3.4	0.1	2.6	-0.7	-3.2	0.4	24

Source: ICC

Table 4. The fate of past national champions—the UK supplier industry—main areas of demise

Company	Product areas of former national leadership	Comments
Lucas	Electrical products	Divested to Magnetti Morelli of Italy, following prolonged period of low profits.
Smiths	Instrumentation	Divested via major joint venture with Lucas in early '80s—this subsequently failed commercially
GKN	Fasteners	ROCE ranking 1975–78, 80th out of 81 companies, subsequently divested.
	Forgings	Virtually divested after very poor profits in 1970s and early 1980s via joint venture with BSC.
	'Off Road' Wheels	GKN Sankey's ROCE averaged 1% over the last 15 years.
Chloride	Batteries	Major investments commercially unsuccessful and divested to an Indonesian company, but its joint venture with the Japanese remains.
Dunlop	Tyres	European tyres divested to Sumitomo of Japan in early 1980s, following financial crisis.
	Wheels	Divested to BTR following same crisis.
Wilmot Breedon	Wheels	Britain's other major national player in car wheels—closed this plant in early 1980's.
Associated Engineering Automotive Products	Engine Parts	Company absorbed by T & N in late 1980s.
	Clutches	Company absorbed by BBA in late 1980s.
Pilkington (Triplex)	Glass	Triplex not divested by Pilkington, but not highly profitable.
Armstrong	Shock Absorbers	Divested in May 1989 after poor profitability. Company absorbed by Carclo in 1989.
TI (Cheswick)	Silencers	Divested to Alvin of USA in 1989, after ROCE in one year fell back to minus 663%.
Anonymous RHP	Engine Reconditioning	Britain's No. 1 player closed in late 80s.
	Rolling Bearings	Profit decline and major retrenchment activities in 1980s. Acquired by Japan's NSK in 1990.
Delanair	Air conditioners	Extremely profitable niche player. Divested by Hanson, to Valeo of France.
IMI Radiators	Radiators	Poor profitability and, like Unipart's Llenelli Radiators divested in 1989/90 to Japanese.

could not be reliably distinguished. However, a separate group of companies have also been identified, serving U.K.-based Japanese car assemblers, conforming to this option (Carr and Truesdale, 1992). The longer term competitive prospects of such companies cannot be discounted in view of the loyalty of a customer base set to exceed 700,000 U.K. transplant cars by 1996 (DRI/McGraw-Hill, 1991): VW is now stepping up purchases from such suppliers in view of their 'sharply increased competitiveness' (*Financial Times*, 3 July 1992:19). Overall, concentrating on supply side priorities can prove more attractive than any attempt at dominating markets.

WHY HAVE BRITISH NATIONAL MARKET LEADERS PERFORMED BADLY?

The explanatory framework, developed in Table 5, highlights the effects of internationalization and of broad country factors as suggested by Porter's (1990) 'diamond' framework, but also the impact of companies' more specific strategic choices. Such a complex framework is needed, not only because of the broad range of factors involved, but also to take account of earlier successes. Full elaboration of all these issues requires a substantial book (Carr, 1990). Issues

Table 5. Shifting sources of competitive advantage affecting UK national champions

	1930—late 1960 UK	1970s UK/Europe	1980s Europe	1990s Global
Locus of competition				
UK factor endowments	Low wage costs, but sharply increased cost of capital after '60s and short termism due to combination of continuing wage <i>pressure</i> and financial de-regulation. Early skills base superseded due to developing German and Japanese production/technology skills.			
Demand	Strong, fast growing car producers/innovative buyers	UK car output declines. Japanese car assemblers most demanding on quality, cost & JIT.	Japanese assemblers also most demanding on need to handle product variety and fast introductions. Benefits as MNCs increase UK production.	
Infrastructure	Strong support from assemblers and supporting industries	Car assemblers and supporting industries in declining positions. Position further weakened by distant relationships between supplier and assembly sectors	UK increasingly dependent on MNC car firms and overseas infrastructure	
Pressures of vigorous competition	Still strong prior to domestic consolidation	Domestic champions cushioned by fairly monopolistic domestic positions	Hit hard by international competition	International rivals likely to absorb most remaining major sectors.
Economics of scope & scale	Large and focused enough to gain some scope/scale advantages from spreading home market.	Larger companies' economies of scope (e.g. domestic market power) eroded against focus and specialization.	Domestic market power evaporates in face of international procurement	First tier suppliers exploiting global positions to gain economies of specialization.
Operational and technological advantages	R & D excellent Good quality and fairly good productivity	Complacent on quality productivity on delivery flexibility/JIT	UK still complacent on handling product variety and fast introductions. Germans & Japanese able to devote more R & D to <i>key areas</i> such as electronics. UK suppliers responding in manufacturing issues but unable to bridge gap.	

of labor productivity and skills, and customer-supplier relationships are detailed elsewhere (Carr, 1992; Carr and Truesdale, 1992) and the effect of Britain's capital market (the short-termism debate) is brought out in Carr, Tompkins, and Bayliss (1991). To highlight the effect of strategic choices, paying attention to supply side issues, this explanatory framework will next be illustrated by focusing on one product sector, automotive forgings, more comprehensive discussion being provided in Carr (1990:119-150).

The case of automotive forgings

GKN Forgings (now part of United Engineering) became the dominant domestic market leader in forgings as a result of amalgamations, which gave it approximately half of a fragmented market. There were over 60 other British automotive forging companies. The company was commercially successful until well into the 1960s, supported by country based advantages identified in Porter's (1990) 'diamond': modest wage and capital costs; a strong, fast-growing, innovative U.K. customer base, disposed to outsourcing; competitive infrastructure, e.g., local engineering and steel into which GKN had backward-integrated; still vigorous domestic rivalry, until domestic consolidation and customer moves away from multisourcing began to take effect. Strategic choices were also adapted to this early situation:

1. appreciable economies of scope through ability to negotiate better margins with customers, assisted by full product line, and through advantages in steel procurement which represented almost 50% of costs
2. economies of scope through heavy R&D—this lead was still being maintained over German, U.S. and even Japanese forges visited between 1982 and 1983
3. several GKN Forgings plants were re-equipped and re-laid out to meet the demand in the 1950s for volume automotive work: Garrington's plant was one of the largest automotive forgings plants in the world; it was highly focused and contained some of the most modern mass production equipment, a boast reportedly attested to by visiting executives from all over the world, particularly the

Japanese; at this time GKN Forgings is likely to have enjoyed economies of specialization

4. 'hands on' management style of chief executives such as Lord Brookes, paying close attention to production issues, and resulting in good reputation for quality (then well ahead of Japanese) and relatively good productivity, assisted by a tough industrial relations approach and by heavy piecework incentives.

By the early 1970s, all four supporting conditions had become undermined and the company's competitive strategy had become dangerously dependent on market power and economies of scope. Under less conducive investment conditions, the company failed to maintain its international lead in terms of a modern, specialized plant. The style of the next generation of senior executives was less 'hands on', with greater attention being placed instead on financial and other management control systems, and on handling immediate industrial relations problems. As quality and productivity slipped behind, car customers increasingly utilized international procurement (particularly in higher volume, higher technology forging market segments) to remove any element of monopolistic pricing. A strategy of international dominance was ruled out when even one major overseas plant proved economically unjustifiable. In fact, *no* automotive forging company, in any country, has yet embarked on a global or even regional strategy due to a combination of low margins and high plant costs: only one substantial new forge has been built in Western Europe since World War II. There also proved to be negligible scope for reasserting market power by offering customers 'package' deals, involving other GKN automotive products. As opportunities for exerting market power waned, GKN Forgings paid dearly for slipping behind on basic manufacturing issues. Profitability remained very low (both absolutely and relative to other U.K. automotive forgers) throughout the 1970s, and degenerated further in the early 1980s as the market declined and international competition increased.

From the late 1950s, major Japanese and German forgers pursued different priorities. Industrial consolidation was rarely feasible, reducing opportunities for exploiting market power or economies of scope. Forging companies remained

smaller and commanded much lower domestic market shares than GKN Forgings in the U.K. Cheap capital encouraged specialization, especially in Japan, where plants visited were notably modern. They benefited from rapidly growing, highly demanding customers, increasingly competitive, related supplier industries such as steel which accounted for almost half their costs; whilst vigorous domestic rivalry precluded complacency. Both countries built up strong team skills in production areas, facilitating long term improvement programs such as 'built-in' quality rather than ex-post controls then adopted in Britain and the U.S.A. In Japan these same teams, with direct help from customers such as Toyota, assiduously improved productivity, yields, and flexibility, seeking to achieve 'just-in-time'. U.K. and U.S. forgers visited had ignored such initiatives, relying more heavily upon narrower skills bases in staff areas such as research and development. GKN Forgings led all three Japanese automotive forges visited in advanced technical developments, but such advances were infrequent and difficult to implement on any extensive basis.

Consequently by 1983, productivity in three Japanese automotive forges visited averaged 86 tons/man-year, even adjusting for outsourcing and on-site contract labor. Comparable figures for five U.K. companies visited averaged 24 tons/man-year, the highest figure being only 34 tons. In one very old West German automotive forge, productivity was 28 tons/man-year. Productivity at the U.S. automotive forge visited was 86 tons/man-year, assisted by extremely long order runs. Exercising substantial market power, this company had felt able to turn away shorter orders, though this had sacrificed flexibility increasingly demanded by customers seeking just-in-time delivery. Average U.S. hammer change-over times had remained static at 2.6 hours, whilst those on comparable Japanese had fallen from about 40 minutes four years earlier, to some 17 minutes. U.K. forges had similarly made little progress by 1983 on either change-over times or on factory-through times, both prerequisites in achieving manufacturing flexibility.

That scale advantages were limited is underlined by the superior performance of Japanese forging companies who were smaller than GKN Forgings both in terms of plant size and the number of plants operated; yet, for organizational

and internal political reasons by no means uncommon (Grinyer and Spender, 1979; Johnson, 1987), GKN Forgings found it difficult to shift from a success recipe founded on size. Investments in volume orientated presses continued. When rationalization became unavoidable in 1980, the company's more flexible and relatively better performing small plant was closed, to help prop up utilization of larger plants.

GKN Forgings' formal planning documents were sophisticated in terms of markets, competition, financial and advanced technical developments; but operational performance parameters were treated more superficially. Inadequate projected results were sometimes boosted by projecting blanket productivity improvements, with capital budget provisions just being slightly increased to add credence. By contrast, Japanese business planning activities were crude in market and financial terms, but operational performance targets were highly detailed and closely monitored. One company's 'business plan' comprised a single, large engineering drawing, divided into over 40 boxes. Two boxes in the top left corner contained small pie charts indicating present and projected domestic market share positions; but remaining boxes were given over to operational parameters (such as yield rates, productivity, reject rates), with targets for specific production areas. No information was provided on financial matters and there was little supporting information on advanced technological developments, markets or competition. This Japanese company, like many others visited, expressed little interest in issues such as market positioning or market power; close, long-term customer relationships and the infeasibility of acquisitions rendered such considerations rare.

GKN Forgings' profitability remained poor and it has since been virtually divested by means of a joint venture company, United Engineering, set up between GKN and British Steel. Its commercial outlook appears unpromising, though United Engineering's chief executive recognizes 'its future now depends on its competitiveness on a European, rather than a national scale' (*Financial Times*, 17 December 1991:26). The U.S. forge was closed down in 1987.

To interpret these findings, the absence of any strategies based on global or even regional market domination, suggests Option 1B is not

yet feasible in this segment. GKN Forgings dominated its national market (Option 1A), to an extent unmatched by any other forging company in any other advanced country; but this has ultimately proved fruitless. Whilst the U.S. forger did not exercise such *overall* domestic market leadership, it nevertheless dominated the business of its major customer in a manner providing substantial market power over many years. Its closure likewise attests to the limitations of such approaches.

Other British automotive forgers visited are reliably classifiable as having pursued Type 2 choices. Most British forges visited were highly financially orientated, particularly compared to those in Japan, suggesting Option 2A though the dividing line between Options 2A and 2B proved difficult to determine reliably. Financial and sales performances of these companies were on average much better than GKN Forgings, but many may be forced to exit at some point.

Japanese and German forgers visited were classified as having pursued Option 2B. Though fairly large, the German forge was by no means a domestic market leader; nor did it adopt a 'Financial Control' style. Profitability within a 5-year horizon was considered important, but not an over-riding objective; as a long-established family firm, the company adopted a fairly long term view and required modest returns. This company was revisited in 1990 and was still flourishing. Japanese forgers were able to take longer term views and placed even less stress on financial targets. The structure of the Japanese automotive industry and its supplier networks (see Cusumano, 1989; Nishiguchi, 1989) appeared to have discouraged attempts at total market domination. Similarly, any attempt at improving negotiating power at the expense of customers (as suggested by Porter, 1980, 1983) risked jeopardizing long-term collaborative relationships, perceived as highly important. Consequently, less emphasis was placed on financial and market positioning issues, and their almost obsessive operational concerns were spurred by vigorous domestic rivalry. Ultimately, as would be suggested by Porter (1990), Japanese automotive forgers have benefited. Operational advantages have proved more sustainable than those associated with market power. Their productivity lead, for example, is unlikely to have been eroded; even the German forge

revisited in 1990 had only increased productivity to 30,000 tons/man-year. Option 2B is soundly based.

Sources of sustainable competitive advantage in the vehicle components industry more generally

While Table 6 demonstrates operational advantages *sustained* by Japanese suppliers for a wider range of products, most former U.K. market leaders (like GKN Forgings) gained only transitory benefits from scale and market power. Large companies created by amalgamations gained initially from better margins as smaller domestic rivals were eliminated. Product line offerings and production facilities could be rationalized, some products offering greater scale advantages particularly while markets were still growing. Yet greater investment in acquisitions led to much lower organic investment than in German companies (SAC Enterprises, 1991) and diverted managers from manufacturing issues. Waning market power, as international competition intensified, was insufficient to sustain comfortable profit margins.

That scale economies were limited for most components is suggested by the absence of correlation between size and performance in Tables 2 and 3. Regression analysis of ROCE against Log (Sales) between 1970 and 1988, carried out on the entire performance data base, equally found no such correlation—a conclusion corroborated by Boston Consulting Group/PRS (1991).

For products offering greater scale economies, on the other hand, global rationalization has proceeded more rapidly, favoring foreign companies pursuing global strategies. Examples include: SKF and Timken in automotive rolling bearings, Cummins in engines, Champion, Bridgestone and Michelin in tires, Bosch and Nippon Denso in automotive electronics. Following a shake-out the top four tire companies now hold 70% of the world market (Slade and Fordham, 1990, 2.2, updated). Similarly NGK's deputy managing director predicts the future of spark plugs lies only with Champion, Bosch and NGK: 'others will fade out or subcontract to the big players' (*Financial Times*, 19 September, 1990:9).

As Table 5 indicates, German and Japanese suppliers have increased R&D spending in such product areas: Asahi Glass's R&D/sales ratio,

Table 6. Supplier plants performance comparisons 1983-1990

	Japan	U.S.A.	Europe	Germany	U.K.
Productivity index 1982/3 (1)	308	312	n.a.	159	100
No of machines/worker 1987/89 (2)	7.4	2.5	2.7	n.a.	n.a.
Die change times mins 1987/89 (2)	7.9	114.3	123.7	n.a.	n.a.
Productivity index 1990 (3)	317	254	n.a.	203	100

Notes:

- (1) Unweighted averages of productivity indices, based on both physical and value measures, for several types of vehicle components, as detailed in Carr (1992a)
 (2) Source: Nishiguchi (1989: 324-337), based on visits to 18 suppliers in Japan, 10 in the U.S.A. and 18 in Europe.
 (3) Productivity indices based a study of one type of component in a number of plants throughout the world, as further detailed in Carr (1992).

for example, has doubled. Japanese suppliers now have the largest shares of patents in the U.S.A.; while Bosch of West Germany alone accounted for half of those obtained by European suppliers (Lanning, 1989). Many Japanese suppliers are also now internationalizing their operations, seeking benefits from 'insider' operations across the 'triad' of Europe, the U.S.A. and Japan (Ohmae, 1985, 1990). Some 400 have followed Japanese vehicle assemblers by establishing operations in the U.S.A. and several have begun establishing European operations (Table 3 contains some examples). A small group of companies pursuing Option 1B may well increasingly dominate this type of 'first tier', higher technology supply business. Against such competition, however, British national market leaders have performed poorly: a detailed case study of Lucas/Smiths' demise in the higher technology area of automotive instrumentation being provided in Carr (1990:150-168). Lucas is now reported (*Sunday Times*, 19 July 1992: 3, 14) to be considering disposing of its brake activities (another area of domestic market leadership) to Bosch, after performing disappointingly in advanced brake systems.

CONCLUSION

This article has examined the prescription that companies anticipating the onset of industry maturity should aim to gain market domination, by studying empirically the outcomes of four types of strategic choices by major U.K.-based vehicle component companies.

Despite evidence of internationalization, Option 1B of global market leadership is rarely attainable, particularly for companies not based in most favored nations (confirming Porter's, 1990, concerns). Many large British companies, in practice, defined their markets nationally, and achieved domestic market leadership positions (Option 1A); but outcomes have generally proved little short of disastrous, both commercially and in terms of competitive positions.

Other 'resource-based' options, placing less emphasis on market power, have been associated with more favorable outcomes, supporting Collis' (1991a) call for a change of emphasis in approaches to strategic analysis. Suppliers pursuing a 'Financial Control' style approach (Option 2A) sustained the highest rates of profitability, though their longer term competitive prospects are open to question. Remaining British suppliers, pursuing Option 2B, sustained more modest levels of profitability, though still doing better than national market leaders; but a number, serving Japanese transplant operations, enjoy promising prospects.

Reviewing the world-wide position, the most successful competitive performances, in Japan, have most frequently reflected type 2B options. Vigorous domestic rivalry generally precluded domestic market domination, while operational priorities have paid off. Building on such firm foundations, several are now shifting to type 1B global strategies, particularly on products allowing greater scale economies. Some large U.S. suppliers also opted for Option 1B; but most, having settled for national market leadership (Option 1A), now face savaging competition

from Japanese suppliers, and are faring little better than British counterparts.

Industries differ. Yet British national market leaders have performed equally dismally in other sectors subject to internationalization, often in spite of government support: Norton Villiers Triumph in motorcycles; Austin Rover in cars; ICL in computers. In these industries, domestic leaders in other countries have encountered similar difficulties (Bull and Olivette in computers, in France and Italy, for example); while Japanese companies opting for other routes to competitive advantage still appear to be flourishing. Baden-Fuller and Stopford's (1991) findings in domestic appliances sound a warning that global strategies may not always result in better performances than nationally based strategies, even in the context of apparent internationalization; but by neither distinguishing resource-based options, nor taking into account U.S. or Japanese perspectives, their findings might offer misleading comfort to companies over-relying on national market positions.

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