

ON THE DYNAMICS AND COEXISTENCE OF MULTIPLE SUBSIDIARY ROLES: AN INVESTIGATION OF MULTINATIONAL OPERATIONS IN THE UK

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ABSTRACT

Based on the results of an entirely new survey of the largest multinational manufacturing subsidiaries in the UK, the paper investigates and traces dynamic evolutionary processes occurring at subsidiary level, in particular since the mid-1980s.

The paper discerns a multiplicity of motivations for investment in the host country, where elements of market-, knowledge-, and efficiency-seeking are evident. The coexistence of a variety of subsidiary roles or strategies is also a clear outcome of this survey. After the deepening and widening of European integration in the mid-1980s the former mainly local market-focused operations evolved in three major paths. Firstly, rationalisation (efficiency-seeking) occurred, as commonly expected. Secondly (and in the UK more than in most EU countries) some subsidiaries acquired product mandate responsibilities. Finally, and despite the opportunities due to the fluidity implied in economic integration, many firms chose to keep supplying mainly the host country market, as over time they developed considerable levels of local responsiveness. The implications of these paths for the host country are also investigated. It is argued that the key dimension to understand how promising are these evolutionary processes is functional or value-added scope, which will receive particular attention through the discussion of decision-making autonomy and technological aspects of the subsidiaries' operations. Overall, and despite the existence of several high value-added subsidiaries, decision-making autonomy in the UK subsidiaries is mainly stagnating. In terms of technological sources used by subsidiaries, host country inputs are often used together with the MNE group's core technology, and the technological activities carried out by UK subsidiaries are increasing in scope and sophistication over time.

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INTRODUCTION AND THEORETICAL BACKGROUND

One of the persistent aims of analysing MNEs has been to indicate the nature and value of their impact on host countries (Dunning, 1994; Ozawa, 1992). A prevalent mode of articulation has then been to suggest that MNEs transfer to host countries their existing competitive attributes (notably the technology and expertise to produce established goods) in order to improve the efficiency of their use through combination with local standardised (cost-effective) inputs (Vernon, 1966; Kojima, 1978). By allowing a more effective use of the existing competitive attributes of both the MNE and the host country such behaviour enhances static efficiency through improved resource allocation. As a means of propounding the virtues of MNEs, however, the static nature of this line of argument represents a hostage to fortune. Thus critics can point to an implicit vulnerability to ‘footlose’ exit. MNEs allow their mature and standardised technologies (in particular) to be activated in a certain country due to the cost characteristics of its qualitatively-homogeneous inputs. Successful local development (moving to a dynamic scenario) then changes, it is argued, the host country’s input characteristics (higher prices for qualitatively improved assets) and impels the cost-obsessed MNE operations to migrate to a new, now lower cost, country. This hollows out part of the development process to which the MNE initially contributed (Pearce, 2001; Pearce and Tavares, 1998).

It is a central aim of this paper to use data on the activity of MNEs’ subsidiaries in the UK to illustrate the practical limitations of the characterisation of the MNE that provides the basis for the ‘footlose’ critique. The ‘footlose perspective’ endorses only one role for overseas operations in MNEs, that designated (Behrman, 1984; Dunning, 1993) as *efficiency-seeking*. It also adopts an extreme view of institutional centralisation, with a massively hierarchical organisational structure allocating centrally-generated sources of competitiveness (e.g. technology) for use in the most cost-effective locations (through the activity of highly

dependent subsidiaries). The presumed inability of subsidiaries to generate any form of locally-derived individuality means that they have no distinctive roots (embeddedness) in their host country, so that short term migration is fully viable.

The argument here, in the vein of extensive recent work on the strategic nature of the MNE and its subsidiaries (White and Poynter, 1984; D'Cruz, 1986; Hood and Young, 1988; Young, Hood and Dunlop, 1989; Pearce, 1999, 2001; Taggart, 1996; 1999; Dunning, 1993) suggests at least two alternatives to efficiency-seeking that can be activated through subsidiaries. Both allow for certain types of localised individualisation (in line with a wider theme of dispersed responsiveness, learning and creativity in the modern MNE [Pearce, 1999; Håkanson, 1990; Håkanson and Nobel, 1998; Yamin, 1999]) and argue that from such differentiated motivation and capability processes of developmental evolution can emerge at the subsidiary level (Birkinshaw and Hood, 1997, 1998; Taggart, 1999; Luostarinen and Marschan-Piekkari, 2001). This can mitigate the danger of short-term departure and provide potentials for the longer-term involvement of subsidiaries within host country development processes. These alternatives can either sharpen the competitiveness of MNEs' existing goods in host country supply through responsive *market-seeking* behaviour, or widen the MNEs' product range and technological scope through *knowledge-seeking* activity. These subsidiaries now have the potential to escape from immutable dependence on inward transfer of group technology and instead may contribute to strands of the MNEs' competence creation. Achieving this from unique host country knowledge attributes embeds them, in a mutually dependent and sustainable fashion, in the technology component of local evolutionary processes.

The analysis here, therefore, encompasses three facets of the MNE's strategy (*efficiency-seeking, market-seeking, knowledge-seeking*) as manifested through three types of subsidiary.

Thus *autarkic* (local market-oriented) subsidiaries supply significant parts of the parent MNE's product range to its host country (here the UK) national market. Though clearly

dependent on antecedent group-level capabilities (products and the mature technologies underpinning them) autarkic subsidiaries activate a real degree of localised autonomy in creative marketing and associated product adaptation. In effect this can become manifest as a wider form of UK-based learning process that can begin to inculcate forward-looking individualised creative scopes.

Next *rationalised* subsidiaries remain producers of established goods, but supply a smaller subset of the group's existing range to extensive (regional or global) export markets. Here the main objective is cost-effective production. This can be secured by fuller realisation of economies of scale, an improved match between local input availability and the factor needs of current MNE technology and lower X-inefficiency engendered by entry into a more competitive environment. In an extreme form rationalised subsidiary behaviour can then, indeed, provide the basis for 'footlose' behaviour, since it neither needs nor can afford any functional competences (e.g. marketing, R & D, individualising managerial drive) beyond optimised productivity in manufacturing of mature goods. The pure rationalised subsidiary also manifests the extreme of external dependency, both with regard to its dominant operative capability (inward transfer of group technology, and so forth) and its survival and /or evolution (subject to group-level decision-making).

Finally *product mandates* (here *latu sensu*, meaning subsidiaries that have a significant autonomy and creative scope) use local technology and creative inputs to develop new goods that are aimed at large facets of their MNE group's global markets. To do this the product mandate is allowed to exercise extensive autonomy, based on its ability to leverage for group-level competitiveness unique creative assets of its host country. The innate dynamism of a successful product mandate provides it with a certain degree of influence on the overall development of its MNE's scope and competences. Equally its interdependence with the generation and activation of the technologies central to host country development implies

escape from ‘footlose’ forces and instead secures a symbiotic embeddedness within such local factor evolution.

The next sections of the paper will be organised as follows. After a preliminary characterisation of the survey that generated the empirical data underlying this analysis, as well as some key indicators (Tables 1 to 4), evidence is presented (Table 5) on the relevance of distinct possible motivations for investment in the UK. Reflecting earlier discussion, these encompass both aspects of the group’s wider competitive environment and strategic needs, and elements of the ways that UK input characteristics can help to secure these objectives.

The data presented in Table 6 track the relative prevalence of autarkic, rationalised, and product mandate subsidiaries in foreign MNE operations in the UK over a period spanning about twenty years.

The technological sources activated by a subsidiary have been perceived as central both to the role it plays in the MNE and the nature of its interaction with the local economy. Table 8 documents evidence on this aspect.

The range of activities carried out in subsidiaries is a factor that is absolutely crucial in both discriminating between types at a point in time and determining the nature of role change over time. The discussion of the data included in Table 9 reviews evidence on the likely presence of six activities in UK subsidiaries and their growth/decline over the period under analysis.

PRELIMINARY EVIDENCE ABOUT SAMPLE OF UK-BASED SUBSIDIARIES

This section is based on the results of a questionnaire survey (undertaken in 1999) of the largest multinational subsidiaries in the UK. Only manufacturing firms were object of this survey. A total of 328 firms were contacted, and 61 replies received (19% response rate). This analysis uses data on 58 of these subsidiaries (as 3 responses were not complete or were invalid, i.e. wrongly classified as MNEs or manufacturing operations).

This section aims to provide a brief characterisation of some indicators relating to this sample of subsidiaries. As the time dimension is crucial to understand and allow for evolutionary processes at the subsidiary level, the maturity and relative longevity (*vis-à-vis* other European operations) of subsidiaries is firstly reviewed. The size of the subsidiary and degree of multinationality of parent are also relevant dimensions to account for in understanding the nature of the subsidiaries included in this particular sample.

Maturity and longevity of subsidiaries

Table 1. Date of establishment of subsidiaries in sample

Period	Percentage of subsidiaries established
Before 1960	28.6%
1960 - 1972	17.8%
1973 - 1985	26.8%
1986 - 1992	21.4%
1992 - 1998	5.4%
Total	100.0%
Oldest	1863
Newest	1996

The UK has a long tradition as a host country, as can be perceived by the date of establishment of the subsidiaries constituting this particular sample (which includes subsidiaries established from 1863 to 1996). A considerable proportion of these subsidiaries has, therefore, a reasonable degree of maturity, which is fundamental to allow for the subsidiary development processes implied in this analysis.

The accession of the UK to the EC (now EU) in 1973 attracted considerable investment by MNEs, especially intra-EU FDI, and an important amount of Japanese investment mainly since the late 1970s.

In terms of relative longevity, most UK subsidiaries (72 per cent) are older than their ‘sister’ subsidiaries in Europe. In a significant proportion of cases the UK represented the object of an

early approach by US MNEs, who used the UK as a ‘gateway’ to Europe, the same happening with Japanese and other Asian investors. Among other motivations (to be reviewed subsequently), the large and stable domestic market (hence making it less risky to invest), and the use of the English language accounted for the choice of the UK as a priority host country.

Table 2. Relative age subsidiary (*vis-à-vis* other EU subsidiaries)

Relative age	Percentage of subsidiaries
Newly established	10%
Average age	18%
Older than most subsidiaries	72%
Total	100%

Size

Regarding size (here proxied by employment level in the subsidiary) UK subsidiaries tend to be quite large manufacturing operations.

Table 4. Employment in subsidiaries

	Number of employees
Mean	893.38
Median	511.0
Minimum	18
Maximum	10000

Degree of multinationality

According to the MNEs’ degree of multinationality, here measured by the number of countries in which the group has operations, investors in the UK sample are usually global firms with operations in many countries.

Table 3. Degree of multinationality of parent*

	Number of countries
Mean	40.82
Median	20.0
Minimum	3
Maximum	200

* Here measured by number of countries in which the parent MNE has operations.

MOTIVATIONS UNDERLYING INVESTMENT IN THE UK

When analysing subsidiary strategy and its evolution, the preliminary issue to address should be the underlying motivation(s) explaining why the subsidiary was set up in the first instance.

In this section the motivations for investment in the UK will be investigated. In Table 5 ten distinct motivations were considered. These motivations can be related to Dunning's (1993) and Behrman's (1984) typologies of motives for international production and to the three main strategic approaches (efficiency-seeking, market-seeking, and knowledge seeking) alluded to earlier.

Data are segregated by home country of the MNE and by industrial sector, in order to allow an analysis highlighting sectoral and home-country related specificities.

Overall, local market competitiveness (an element of market-seeking) is the main general factor justifying the establishment of subsidiaries in the UK. All home country groups apart from Asian MNEs selected this as their main motivation for investment. Chemicals & plastics and other manufacturing (including sectors such as food & beverages) are quite local market-oriented. However, even for industries such as automobiles, typically rationalised and export-oriented, the local market is quite relevant. The second most important reason mentioned by respondents referred to the qualification/skills of the workforce in the MNE's sector of activity. This aspect embodies an element of knowledge-seeking. US firms, as well as subsidiaries in the electrical & electronics sector and in the pharmaceuticals & healthcare industry, selected this motivation as the main reason underlying their investment.

The third main motivation was low input costs. This rationale, efficiency-seeking *stricto sensu*, was particularly emphasised by EU MNEs, and in sectoral terms by metal products and pharmaceutical firms.

The importance of the EU as a target market (enlarged market-seeking hypothesis) is not so paramount as a reason for the set up of many subsidiaries, being less influential than the local

market as an explanatory factor for investment in the country. Again, non-EU firms are the most European-oriented, whereas EU subsidiaries tend to focus more on the local market (Hood and Young, 1988; Slewaegen, 1988; Pearce and Papanastassiou, 1997; Tavares and Pearce, 2000). The EU market is quite relevant for the pharmaceutical industry, one of the UK's leading sectors, and also for the electrical & electronics sector (where Japanese firms are considerably represented).

Table 5: Importance of motivations for investment in the UK, by home country and industry

	<i>Motivation¹ (average response²)</i>									
	A	B	C (1)	C (2)	D	E	F	G	H	I
<i>By home country</i>										
EU	1.56	2.88	1.57	1.73	2.50	2.33	1.63	1.38	1.63	2.69
Other Europe	1.60	2.80	1.70	1.50	2.10	2.00	1.10	1.40	1.44	1.89
USA	1.52	2.91	2.14	2.20	2.36	2.73	2.23	1.77	1.73	2.05
Japan & SE Asia	1.29	2.29	2.86	2.29	2.29	2.14	1.71	1.14	1.86	2.14
TOTAL	1.52	2.80	2.00	1.94	2.35	2.41	1.78	1.51	1.67	2.23
<i>By industry</i>										
Automobiles & auto components	1.75	3.00	1.25	1.25	2.50	2.25	1.25	2.00	2.00	2.50
Chemicals & plastics	1.54	2.85	1.62	1.69	2.15	2.08	1.77	1.38	1.15	1.75
Electrical & electronics	1.14	2.57	2.71	2.43	2.57	3.17	2.29	1.43	2.14	2.43
Machinery, engineering & instruments	1.31	2.54	2.36	2.25	2.33	2.58	1.50	1.58	1.64	2.10
Metal products	2.33	2.67	2.50	2.00	3.00	2.33	2.33	2.00	2.33	3.33
Pharmaceuticals & healthcare	1.33	2.67	2.33	2.67	3.00	3.00	3.00	2.67	2.33	2.67
Other manufacturing	1.69	3.15	1.77	1.67	2.08	2.15	1.54	1.08	1.54	2.23
TOTAL	1.52	2.80	2.00	1.94	2.35	2.41	1.78	1.51	1.67	2.23

Motivations to establish a subsidiary in the UK:

A - availability of natural resources

B - as best way to competitively access the UK market

C - to improve our competitiveness in relevant markets outside the UK

C(1) - Ireland

C(2) - Other EU

D - comparative low input costs

E - level of qualification/distinctiveness of skills of the UK workforce in our particular sector of activity

F - availability of local scientific inputs

G - the existence of a local cluster of firms working on similar or complementary activity

H - the incentives we were given by the UK authorities to set up this subsidiary in the UK

I - to defend market share against competitors

Notes:

1. Respondents were asked to evaluate each motivation as (1) the only motivation, (2) a major motivation, (3) a minor (supplementary) motivation, (4) not a motivation

2. The average response (AR) was calculated by allocating 'only motivation' a value of 4, 'major motivation' a value of 3, 'minor/supplementary motivation' a value of 2 and finally 'not a motivation' a coefficient of 1.

For investors in the pharmaceutical industry, the existence of local scientific inputs is of great significance. This aspect embodies an important knowledge-seeking rationale, e.g. meaning that foreign MNEs aim at least partially to ‘tap into’ local sources of expertise in that sector (Cantwell, 1991, 1995; Pearce, 1992, 1999).

Clustering is overall quite unimportant, except in the pharmaceutical industry. Also for US firms it is somewhat more important than for the other home country groups.

Incentives assume a secondary importance overall, although for Asian investors it was more emphasised.

SUBSIDIARY ROLES/STRATEGIES

The roles or strategies characterising the activities of the subsidiaries analysed in the UK constitutes the core issue underlying this investigation, not only in a static account but also, and more fundamentally, in terms of their evolution and dynamics. Only by having a thorough understanding of the real nature of the operations performed by these subsidiaries can policy-making be informed to reflect and address the real needs and development potentials of the host country. This part uses as a conceptual instrument the above mentioned tripartite typology of subsidiary roles/strategies. Respondents were asked to situate their activities according to the relative importance of these three roles/strategies.

Three moments in time were considered in the survey, aiming to capture dynamics in subsidiary activity and eventual subsidiary development processes. The year 1986 is a benchmark concerning EU integration as it was found that 1973 (year of UK accession) was too remote to ask the respondents. It coincides with the period in which adjustments towards the Single Market started to be seriously implemented, with the concomitant emphasis on free trade intra-EU. Furthermore, it is the year of accession of other peripheral EU economies (Portugal and Spain). ‘Now’ refers to mid-1999, and ‘10 years’ time’ corresponds to 2009.

Projections for the next 10 years should be interpreted with caution, as they reflect expectations of the respondents, whose accuracy can be subject to doubts. Nevertheless, they point to some interesting trends.

Table 6: Importance of distinct subsidiary roles/strategies, by home country and industry

	<i>Roles of subsidiaries¹ (average response²)</i>								
	A			B			C		
	Before 1986	Now	10 years' time	Before 1986	Now	10 years' time	Before 1986	Now	10 years' time
<i>By home country</i>									
EU	2.07	2.00	1.87	1.47	1.82	1.88	2.64	2.44	2.53
Other Europe	2.80	2.30	2.20	1.20	1.50	1.50	2.20	2.40	2.70
USA	2.32	1.80	1.55	2.05	2.33	2.39	2.42	2.70	2.80
Japan & SE Asia	2.25	2.29	2.14	2.00	2.57	2.29	2.25	2.14	2.57
TOTAL	2.29	2.02	1.85	1.76	2.07	2.07	2.45	2.49	2.67
<i>By industry</i>									
Automobiles & auto components	1.75	1.75	2.00	2.25	2.75	3.00	2.00	1.50	1.50
Chemicals & plastics	2.45	1.83	1.67	1.55	1.85	2.00	2.45	2.54	2.67
Electrical & electronics	2.40	2.33	2.17	2.67	3.14	2.71	1.80	1.83	2.17
Machinery, engineering & instruments	1.88	1.75	1.58	1.78	2.00	1.92	3.25	2.92	3.08
Metal products	1.00	1.00	1.00	2.00	2.00	2.00	4.00	4.00	4.00
Pharmaceuticals	2.67	2.33	1.67	2.00	2.33	2.67	2.33	2.33	2.00
Other manufacturing	2.60	2.36	2.14	1.18	1.60	1.60	2.20	2.57	2.93
TOTAL	2.29	2.02	1.85	1.76	2.07	2.07	2.45	2.49	2.67

Roles (or strategies) of subsidiaries:

A - Autarkic subsidiary - the UK subsidiary produces some of the parent's already existing product lines (or related product lines) for the UK market

B - Rationalised subsidiary - the UK subsidiary produces a certain set of component parts or existing final products for a multi-country or global market

C - Product mandate - the UK subsidiary has autonomy and creative resources to *develop*, produce and market a restricted product range (totally innovative products) for multi-country (regional or global) markets

Notes:

1. Respondents were asked to evaluate each role/strategy as (1) our only role/strategy, (2) our main role/strategy, (3) a secondary role/strategy and (4) not a part of our role/strategy.

2. The average response (AR) was calculated by allocating 'only role' a value of 4, 'main role' a value of 3, 'secondary role' a value of 2 and finally 'not apart of our role' a coefficient of 1.

* na: not available (there are just two firms in this category).

A decrease in the importance of autarkic operations is perceptible. Yet, autarkic subsidiaries are a frequent role given the relevance of the local market. For the mainly mature US and

European subsidiaries, in particular, the presumption is of origins in autarkically oriented entry.

Other Europe and Japanese subsidiaries have (in 1999) somehow more elements of local market 'responsiveness'. The subsidiaries with less focus in the local market 'now' are US firms. The smaller relative importance of this role for EU firms somehow contrasts with previous studies alluded to before. In sectoral terms, electrical & electronics, pharmaceuticals & healthcare, and other manufacturing (explain composition residual category) are the most local market oriented.

Rationalised subsidiaries increased their importance from 1986 until now (at the expense of autarkic operations, it may be hypothesised, meaning a refocusing of their target markets). It is expected that this importance will stagnate in the near future. Japanese/Asian firms are the most rationalised, followed by their US counterparts. Non-European firms are thus more involved in rationalisation processes. European (EU and non-EU), more into local market supply and mandating. Electrical & electronics, automobiles & auto components, and pharmaceuticals & healthcare are the sectors where the rationalised aspect is more pronounced.

Concerning product mandates, it is mentioned by respondents as their most important role. Overall, its relevance has increased very slightly from before 1986 until now, and it is expected to increase in the next decade. Firms in metal products assume this as their only role, and firms in the machinery, chemical, metal products and other manufacturing sector emphasise this role strongly as well.

Hence, it remains that the UK subsidiaries tend to admit that elements of all roles continue to coexist. On the one hand, the local market is still important, and on the other hand, rationalised operations (like in most other EU countries) are gaining relevance (as the EU market is more relevant in quantitative and in strategic terms).

In the case of the UK, though, the mandating phenomenon has a particular singularity not replicated in most other EU countries (Tavares, 2001; Tavares and Pearce, 2000).

This means that the MNEs investing in the UK aimed at both exploring the considerable local market and at coopting creative capabilities that the UK had to offer in their sector of activity (reiterating impressions already discussed in the context of motivations for investment in the UK).

From this discussion of roles based on the scope typology, the particular scope aspects will be investigated in more detail. It is thus argued that the key dimension that differentiates qualitatively and fundamentally the strategies and potentials of a MNE subsidiary is functional scope.

FUNCTIONAL SCOPE

It was chosen to evaluate functional scope with reference to two fundamental indicators or proxies:

- * Decision-making autonomy of the subsidiary
- * Technology used by/available in the subsidiary.

Decision-making autonomy

A specific part of the survey aimed at evaluating the extent of decision-making autonomy of these subsidiaries. Table 7 shows the respective results according to four criteria, notably market area, product range, broad strategic direction and technology used, for the three periods mentioned above (before 1986, now, and in 10 years' time). Again, results for the next decade should be interpreted with caution.

Table 7. Degree of decision-making autonomy (mean values for firms in sample)

	MKB F	MK TD	MK 10Y	RNG BF	RNG TD	RNG 10Y	STR BF	STR TD	STR 10Y	TECH BF	TECH TD	TECH 10Y
<i>By home country</i>												
EU	2.57	2.24	2.06	2.79	2.59	2.31	2.57	2.24	2.13	2.43	2.47	2.44
Other Europe	2.67	3.00	3.00	3.33	3.00	2.80	1.83	2.40	2.40	1.67	2.40	2.40
USA	2.52	2.71	2.54	2.70	3.00	2.83	2.30	2.38	2.46	2.70	2.71	2.67
Japan & SE Asia	2.25	2.14	2.57	2.25	2.29	2.86	2.25	2.29	3.00	2.25	2.71	3.14
TOTAL	2.53	2.55	2.49	2.77	2.79	2.68	2.32	2.33	2.42	2.45	2.59	2.61
<i>By industry</i>												
Automobiles & auto components	2.00	1.75	1.50	2.25	2.00	1.75	2.25	1.75	1.50	2.25	2.25	2.00
Chemicals & plastics	2.73	2.46	2.50	2.91	2.92	2.83	2.18	2.31	2.33	2.64	2.69	2.83
Electrical & electronics	1.67	1.57	1.86	1.83	1.57	2.14	1.50	1.71	2.43	1.83	1.86	2.29
Machinery, engineering & instruments	3.44	2.92	2.85	3.11	2.85	2.69	3.11	2.62	2.69	3.00	2.92	2.85
Metal products	3.33	3.33	3.33	3.33	3.33	3.33	3.00	3.00	3.00	3.00	3.00	3.00
Pharmaceuticals	2.00	2.33	2.00	2.00	2.67	2.33	2.33	2.00	2.00	2.00	2.00	2.33
Other manufacturing	2.18	2.87	2.67	3.09	3.33	3.00	2.09	2.47	2.47	2.18	2.67	2.53
TOTAL	2.53	2.55	2.49	2.77	2.79	2.68	2.32	2.33	2.42	2.45	2.59	2.61

In order to calculate the respective means, the following values apply:

- 1) Decisions taken mainly by parent/regional HQ *without* consulting with/seeking advice from the UK subsidiary
- 2) Decisions taken mainly by parent/regional HQ *after* consulting with/seeking advice from the UK subsidiary
- 3) Decisions taken mainly by the UK subsidiary *after* consulting with/seeking advice from parent/regional HQ
- 4) Decisions taken mainly by the UK subsidiary *without* consulting with/seeking advice from parent/regional HQ

Most frequently, decisions are taken by the parent after consulting the subsidiary.

The overall trend in the UK points mainly to an expectation of stagnation and even decline in decision-making autonomy concerning markets supplied and product range. The scenario regarding evolution on decision-making autonomy on strategy and on technology is not so pessimistic. This fact can be linked with the important role of product mandating activities in the UK.

Since before 1986 until ‘now’, a very timid increase (virtually negligible) in the categories markets supplied, product range and strategy is observable. The evolution of decision-making autonomy in the area of technology, as already hinted, constitutes a distinct case. A more notorious increase occurred during the same period (yet not particularly striking).

In the period between ‘now’ and ‘10 years’ time’, this evolution was translated in a decline in the categories markets supplied and product range, an increase autonomy in deciding about strategy, and a very small increase in the technology criterion.

The situation also differed across home countries of the subsidiaries. US investors’ decision-making autonomy tended to increase until ‘now’ and decline after, except in what concerns strategy. Japanese & SE Asian subsidiaries had overall the lowest decision-making autonomy for all home countries groups, except in the technological aspect. Nevertheless, Japanese & SE Asian investors seem more promising in the future, as they anticipate to conquer higher levels of autonomy in the next decade. EU investors responded that in general the ability to decide about market areas supplied declined, the same being valid for product range until now. A considerable decline in decision-making autonomy in setting the subsidiary’s strategy was noted, as well as a stagnation regarding the technological factor. Finally, other European investors are the group which reports highest decision-making autonomy on the markets supplied and product range categories. In what concerns strategy and technology, this home country group experienced a very impressive increase from before 1986 until now, followed by an expected stagnation in the next 10 years.

Technology

Technological sources used by subsidiary

Table 8. Sources of technology used by subsidiary

Sources of technology	Average response
Technology of existing group products	1.75
Core group technology from which subsidiary develops products	1.79
Technology in established host country goods (e.g. cases of takeover/JV)	2.14
Established host country technological base	2.26
Subsidiary’s own R & D	2.12

1=our only source; 2=a secondary source; 3= not a source.

The two most pervasive sources of technology utilised by EU-based subsidiaries are ‘technology of existing group products’ and ‘core group technology from which the subsidiary develops products’. The near equality of these is indicative of the current presence of the process in which subsidiaries are moving away from technologically dependent supply of existing goods (autarkic and rationalised subsidiary types) towards product development (product mandates). However the strength of the second of these group technologies does suggest that product development does not escape entirely from interaction with group-level knowledge generation. In fact a key component of subsidiary product creation is major new technologies available for localised activation throughout the group. Ultimately the distinctiveness of a particular subsidiary’s use of new group technology will depend on the quality of complementary local creative inputs (other technologies, market perceptions, among other aspects) it can activate.

Three local technology inputs were evaluated as part of the subsidiary’s ability to both compete directly in external markets and to assert product individuality within their group. Marginally the most important of these was ‘subsidiary’s own R & D’. Though part of the function of this may be to apply locally the new group technology referred to earlier, the capability of such an R & D unit is also likely to bring more distinctively local knowledge dimensions that can individualise the subsidiary’s developmental effort (Papanastassiou and Pearce, 1999). Another local source that can provide strong intra-group product differentiation is ‘technology in established host country goods (e.g. cases of takeover/joint venture)’. This proved to be of almost equal relevance to in-house R & D. Although the better local goods may be adopted unchanged it is also likely that often their competitiveness may be sharpened by combining their distinctive core technology with existing MNE capabilities. Thus subsidiaries adopting established local technology in this way may add an extra dimension to their own local competitiveness as well as extend the group’s product scope. Finally a more

generalised and less systematic approach to the ‘established host country technological base’ proved to be the least accessed of the sources of knowledge inputs.

Technological activities carried out by subsidiary

Table 9. Activities carried out by the subsidiary (percentage of respondents)

	Before 1986	Now	10 years time
Customer and technical services	89%	91%	88%
Adaptation of products to host country/regional market	74%	81%	73%
Adaptation of manufacturing technology or processes (e.g. to take advantage of local factor conditions)	72%	75%	71%
Development of new and improved products for host country/EU markets	70%	81%	84%
Development of new and improved products for world markets	47%	42%	52%
Generation of new technology for parent (basic and applied research)	19%	32%	36%
None of the above	5.5%	0%	0%

Whatever the subsidiary’s degree of involvement with essential product characteristics (whether they are involved with adaptation or development) there is a substantial and sustained inclusion of the ability to supply routine ‘customer and technical services’. Thus however much the subsidiary is or is not involved with defining the characteristics of the product that it supplies it will usually be involved in communicating with customers and users about those characteristics.

The presence of ‘adaptation of products to host country/regional market’ rises from 74% in 1986 to 81% in 1999, but is expected to fall back to 73% 10 years after. In fact the decline of autarkic operations and the rise of rationalised subsidiaries from 1986 until 1999 would have been expected to lessen the need for locally-responsive product adaptation. One interpretation could be that UK subsidiaries hold on to (and even newly implement) this capability, during periods when their group are rationalising supply networks, in order to assert an in-house

competence supportive of later product mandate status. The decline of this activity after 1999 could then represent its supersession by a more complete product development capability.

‘Adaptation of manufacturing technology or processes’ retains presence in just over 70% of UK-based subsidiaries. The rise from 72% (1986) to 75% (1999) can be explained by the greater need for cost-efficiency in production implied by the rise of rationalised operations, but might have been expected to be larger on that basis. Persistence of local market-oriented operations makes this activity not an urgency for a relevant number of subsidiaries.

‘Development of new and improved products for host country/EU markets’ is expected to rise to second most prevalent activity in the next 10 years (84%), but with the strongest increase from 1986 (70%) to 1999 (81%). Interestingly this rise of product mandate-type activity occurs during a period when the reported growth of the PM role appears modest (Table 6), whilst the further rise of this activity is expected to be relatively small (81% to 84%) during the period when formal product mandate status is most strongly expected to grow. This may again represent the scope for subsidiaries to somewhat pre-emptively generate product mandate capabilities prior to (and as a basis for) receiving formal approval of this mode of strategic positioning.

‘Development of new and improved products for world markets’ is quite extensively prevalent (endnote saying that it is not the case in other EU host countries), albeit clearly well below comparable Europe-targeted product development. This indicator initially fell from 47% in 1986 to 42% in 1999. This may reflect a Euro-centric emphasis during this period, with rationalisation of production (the rise of rationalised subsidiaries) and concomitant familiarity with European markets influencing new developmental ambitions towards these markets. The anticipated rise from 42% (1999) to 52% (2009) may suggest that when subsidiaries expect to get the intra-group approval of product mandate status, and when they are confident in (and

familiar with) their creative competences, they next begin to target extra-European markets for product development.

Lastly the aim of technology generation away from immediate product development programmes ('generation of new technology for parent: basic and applied research') is, predictably, the least prevalent activity. Nevertheless in 10 years' time it is expected to be present in over one third of the subsidiaries surveyed. The most substantial rise is from 1986 (19%) to 1999 (32%). This may have served both to gain the subsidiaries a major foothold in local technological capability and to demonstrate this to group-level decision-makers. Once again this may be part of the subsidiary-level programmes for demonstration of its possession of (or ability to access) competences to support emergence into their own product mandate status.

In a general evaluation (also required in the survey), subsidiaries in the UK perceive the level of *technological sophistication* of their activities higher than most of their 'sister' subsidiaries. They also have the perception that their *level of skills* is superior to the average of the group's EU operations.

Important issues can then be addressed in terms of the evolution processes observable, with increasing access to wider European markets perceived as a crucial exogenous influence.

This context can firstly be expected to provoke rationalisation processes in the European strategy of MNEs, with rationalised subsidiaries probably replacing former autarkic approaches in UK operations. Does this change then, however, lead to a footlose 'dead end' or can evolution proceed to product mandates? Pure rationalised subsidiaries, it was argued, should not permit this. In practice, however, impurities in intra-group competition (e.g. the survival and exercise of localised individualism and ambition from autarkic roles) and the increasing desire to benefit strategically from host country technological progress, may facilitate emergence into the functionally enriched product mandate strategy.

CONCLUSIONS

The survey results reported here (for subsidiaries' operations in the UK) or indicative of support for our theme of a potentially dynamic, technology-based, interface between the ways in which MNE groups seek to apply and regenerate sources of competitiveness and the changes that occur during host countries development processes. The strong prevalence of 'autarkic' (local market-based)) subsidiaries as a motivation for entry to a country suggests an early generation of awareness of not only the market needs, but also to supply potentials, of the local environment. In the UK case the process of increased market integration in Europe, initiated in 1973 and deepened from 1986 onwards, does seem to have offered the opportunity for MNE subsidiaries to assert a position in wider supply networks based on attributes of the local environment. The initial manifestation of this in cost-based, rationalised subsidiaries does, then, open up the possibility of an increasingly dependent and vulnerable status. Instead our evidence in fact points to an emergence, during the period of strong rationalised subsidiary growth, of technology-based subsidiary-level individualisation processes that are akin to the innate needs of that role but essential to the ability to eventually claim product mandate status. In line with this the strongest (albeit inevitably speculative) prediction for subsidiary evolution in the UK over the next decade is that of a decisive assertion of product mandate positioning and activation of locally-originated creative competences.

Although based on one host country over a specific time period these results support the importance of, and contributes to, two complementary areas of literature. It is, firstly, indicated that the relevant mode of analysis in evaluating MNEs' operations in host countries is to move beyond the conditions (resource transfers) of initiating FDI and to address the context of their development within processes of local environmental changes. Secondly, the issues of how subsidiaries are able to assert their own evolution (reflecting host-country development) are suggested as being crucial, loosening of the influences of hierarchy (even

whilst rationalised subsidiary roles are paramount) is discerned as vital, with subsidiaries allowed to broaden functional competences beyond those immediately needed. Understanding the organisation of heterarchy (Hedlund, 1986) now becomes a decisive issue, with subsidiaries allowed to speculatively develop the more significant of local potentials whilst precluded from an over-indulgent pursuit of autonomous scope and activities.

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