International Integration and Coordination in the Global Factory

Peter J. Buckley

Abstract:

- The new institutional form known as “the global factory” is the key to understanding changes in the configuration of the world economy.
- The evolution of the global factory requires managers to act as orchestrators or co-ordinators across the system of globally inter-connected firms. Managerial styles need to accommodate these changes.
- Integration and coordination in the global factory are critical success factors. Control of information is central to these roles. Location and control are still key variables but extra degrees of freedom in location of activities and non-ownership forms of control are increasing in importance.

Keywords: Global factory · International management · Multinational enterprise · Global strategy · Internalisation theory
Introduction

The new institutional form known as “the global factory” is the key to understanding the changes in, and configuration of, the global economy. This paper examines globalisation and the growth of the global factory as a response to changing external circumstances and managerial innovations. It pays particular attention to the need to coordinate activities across the global factory and examines the changes in management style that are required to ensure success in a competitive global economy.

Technological changes, including the rise of e-commerce, have made global operations cheaper and more manageable. Managers in companies with global operations have learned to “fine slice” their activities and to locate each “stage” of activity in its optimal location and to control the whole supply chain, even when not owning all of it. These technological and managerial drivers have been augmented by political changes towards far more openness in previously closed economies. Even local factors can be seen to support global development. For instance, biases in the local capital market in China discriminate against whole swathes of local activity in the domestic private sector and make foreign ownership more likely than the growth of smaller indigenous firms (Huang 2003).

The nature of the global factory varies over time and space. There have been three major step changes in the geographical separation of previously connected activities (Enderwick 2010). See Table 1. These are: (1) trade; the geographical separation of production and consumption, (2) foreign direct investment through the MNE; the geographical separation of (internalised) stages of value adding activities, (3) offshoring; the geographical separation of specific tasks through the global factory. The last separation may be reconnected through internalised or contract relations (captive or non captive offshore facilities). Differences in industrial systems across countries have been frequently noted (Whitley 1999). Particular differences can be noted in the degree of vertical integration

Table 1: Three historic geographical separations of activities

<table>
<thead>
<tr>
<th>Unbundling</th>
<th>Resulting from</th>
<th>Policy focus</th>
<th>Policy responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade—geographical separation of production and consumption (trade)</td>
<td>Falling costs of trading (mostly completed goods (affected most sectors equally)</td>
<td>Industrial sectors, broad labour groups eg skilled/unskilled</td>
<td>Focus on education and skill upgrading. Move to an “information society”. Sectoral protectionism</td>
</tr>
<tr>
<td>Production—geographical separation of stages of value-added (foreign direct investment)</td>
<td>Falling costs of managing productive resources and coordination (differential impact on sectors)</td>
<td>Industrial sectors, stages of value adding e.g. R&amp;D, assembly</td>
<td>Focus on the attractiveness of the business environment, incentives etc. Business strategies with ‘limited’ separation eg Maquiladora twin plants, Asian offshoring from Japan</td>
</tr>
<tr>
<td>Tasks—geographical separation of specific tasks (offshoring)</td>
<td>Falling costs of trading ideas (subject to nature of task and task interconnections)</td>
<td>Labour market flexibility, manifested as falling wages or rising unemployment</td>
<td>Problem of understanding comparative competitiveness by task. Compounded by the problem of high trade costs with some tasks</td>
</tr>
</tbody>
</table>

Developed from Enderwick (2010)
(or internalisation of the value chain) as between Japanese and U.S. industry, Taiwan and South Korea, the rest of Italy versus the Emilia-Romagna region, and the British and U.S. textile industries in the first half of the nineteenth century. In all these examples, the first half of the pairing is much less vertically integrated (McLaren 2000).

The progress—and the differential speed of progress across different geographical areas and types of market (Buckley and Ghauri 2004)—of globalisation has co-evolved with faster and cheaper transportation and has led to far higher degrees of interspatial specialisation. This nexus of innovation and globalisation (Bhide 2008) is driven by the actions of multinational enterprises. This article analyses the integration and responsiveness of MNEs as embodied in the global factory structure and examines the role of “place” and “distance” in their strategies.

The Global Factory—The Model

The model analyses a representative MNE that exploits an internationally transferable intangible public good, such as knowledge (Buckley and Casson 1976). It is assumed that this knowledge is embodied in a unique product (or product variety) which is monopolised by the firm usually protected by a brand. Whilst the product has competitors, alternative products are imperfect substitutes (Chamberlin 1933). The firm therefore faces a downward-sloping demand schedule in each market. The firm defends its intellectual property by internalising the exploitation of this intangible asset. This means that the firm owns its own production facilities—it does not license or subcontract production—and it controls its own marketing—it does not franchise to independent distributors. The firm can, in principle, produce and sell in any part of the world. Any given market may be sourced by local production, or by imports, or a combination of the two. Any production plant may serve just the local market, or export markets too; in the limiting case it may become an ‘export platform’ which produces only for export.

If markets were fully integrated then MNEs would be obliged to charge the same price for the same product in every country, because if they did not then arbitragers would buy up their product in the cheaper markets and export it to the more expensive ones. Some counties have introduced competition policies to encourage arbitrage of this kind (e.g. internet retailing of motor car imports). In practice, though, many MNEs retain effective control over the pricing of their products—especially when products are branded, patented, or otherwise unique. It is assumed in this model that whilst the firm’s internal market is fully integrated, its home and foreign markets remain sufficiently distinct that it can set a different mark-up on the common internal price in each market.

By contrast, the firm has no power to impose discriminatory process on customers in a given country. It can set different prices in different countries, but must charge the same price to all customers in the same country. This contrasting treatment is designed, not to simplify the model, but rather to reflect reality. In a typical industry there are normally more customers for the product than suppliers of production sites, and customers are more reluctant to enter into long-term contracts than suppliers. To achieve the same degree of control over a customer that it has over its production site a firm would nor-
mally need to integrate forward through acquisition of its customer’s business, which is often completely impractical, and usually uneconomic.

The competitive advantage of interconnected firms (Lavie 2006) arises from the ability of the focal firm to extract rents from assets that it does not necessarily own. Such assets may be quasi-internalised. This ideas can be traced to Penrose’s (1959) point that it is not the resources themselves, but the services that they provide, that generate value for the firm (Lavie 2006, p. 241). Forsgren et al. (2005) refer to the “embedded multinational” to reflect the close interconnection between firm and environment.

The dynamics of the global factory are a response to the modern global economy. Shocks are the norm. Failure is the norm. Only companies that can build resilience into their systems and their management systems will be able to survive more than one economic cycle. The global factory is rarely in equilibrium—it is constantly responding to exogenous shocks through a series of feedback loops (Buckley and Casson 1998).

Although complex in detail, the key analytical decisions in the global factory are very simple—control and location. The manager of the global factory has to ask two very straightforward questions of each activity in the global network. Where should this activity be located? How should this activity be controlled?

The first question of the optimum location for each activity is of course complicated by managing the interrelationships between activities. The relocation of one piece of the global network will have profound effects on many others as the links in Fig. 1 illustrate but the principles of least cost location are paramount.

The second question concerns the means of control. Should the activity be managed by the market via a contract and price relationship or should it be internalised and controlled

![Fig. 1: The global factory—a stylised representation](image-url)
by management? There are of course important mixed methods such as joint ventures which have elements of market relationships and elements of management fiat.

It is of course essential to realise that these decisions are taken in a volatile, risky and dynamic situation, that the decision making process is information intensive and the environment and competitive pressures are constantly changing. These decisions have to be revisited on a continuing basis. However the principles should never be overwhelmed by detail. The need for flexibility, for judicious collection and use of information and for a knowledge management strategy are complements to the key decisions of location and control.

Management is a social technology and so it is subject not only to technological advancement in such issues as communications advances but it is also subject to changes in social conditions. This gives rise to differences in management techniques over time and over space, to psychic distance and to cultural differences and attitudes.

On one level, the goal of MNEs and global factories is to create the flat world beloved of Thomas Friedman (Friedman 2005). The external world in which global factories operate is decidedly spiky. It is riven with differences in taxes, tariffs, governmental regulations, market imperfections and profound cultural differences across countries and classes. Within the global factory however, the goal is to create a flat world by means of a frictionless operating system.

William Egelhoff (2007) identified four tasks where “hierarchical structures with a corporate HQ are superior to network structures in providing the necessary coordination” (p. 2).

1. Accountability to shareholders.
2. Designing and implementing tight synchronisation among subsidiaries.
3. Identifying and implementing economies of scale and scope.
4. Identifying and addressing issues involving significant innovation.

The global factory structure achieves these objectives by combining central control with network systems.

The Focal Firm

There is, of course, a major problem in discussing the “strategy” of the global factory. Primarily what is understood by this is the strategy of the focal firm—the brand owner, the orchestrator. Consequently, a currently unresolved issue is the extent to which other firms in the system (suppliers, subcontractors, service providers) have independent strategies or simply derive strategies from the actions of the focal firm and take these as environmental given.

Clearly, focal firms provide opportunities for small and medium enterprises (SMEs). They represent sources of demand, possibly financing, knowledge and managerial resources. The ‘interstices’ (Penrose 1959) between large companies have long been seen as areas where small firms can thrive but planning strategies within SMEs that fit into those of global factories is now a much more important strategic posture for SMEs given the control of the world economy exercised by key focal firms.
At the level of the *system*, it makes sense to talk about the strategy of the global factory in the same way that it makes sense to talk about the strategy of a unitary firm even though different managers, affiliates, divisions, business functions and units have separate strategies. The difference arises in that the level of coordination/control is not exercised by fiat but by a mixture of fiat and contractual control of quasi-internalisation (Blois 1972). Quasi-internalisation itself has developed from being a purely vertical exercise of dominance to encompassing horizontal coordination too.

**The Transition from Vertically Integrated MNE to Global Factory**

The role of time in the appearance of global factory structures is important. Many of today’s global factories evolved from vertically integrated MNEs. This transition has not been simple or uniform across firms. The combination of offshoring and outsourcing was pioneered by electronics companies (Moxon 1974). In today’s terms relatively large slices of activity were relocated in a small number of favoured locations (Singapore, Taiwan and ‘nearshoring’ Mexico). The slices of activity relocated were (unskilled) labour intensive, with high value: weight ratios, standardised manufacturing processes and with low US (or European) tariffs on re-imports.

From this largely cost-based beginning, management learning and changes in the environment allowed MNEs to differentiate activities more finely and choose locations for activities other than basic production. Cost ceased to be the only determining factory in offshoring and more fine-grained comparisons were made between buying in goods and services and producing in house. At first, excessive internalisation was eradicated by purchasing (particularly services) from the external market but then proactive outsourcing meant that market pressures were placed on activities that had not previously been considered for outsourcing. “Core functions” such as HRM, design and logistics were outsourced to rising numbers of specialist providers who achieved both economies of scale by catering to a large variety of clients and customisation to individual MNE’s needs.

Basic offshoring thus led to fine slicing and outsourcing as the strategies of MNEs reacted to an increasingly responsive environment of providers.

In this context, it is useful to examine system, society and dominance effects (Smith and Meiksins 1995) in the emergence of the global factory (see also Kipping and Wright 2010). System effects cover the broad economic mode of production—in this case global capitalism—with its central institutions of competitive markets, the profit motive, shareholder returns and a widening division of labour. This package of evolving institutions, norms and rules of the game sets the broad framework within which global factories can evolve—and create and reinforce these institutions. Societal effects centre on the differentiated nature of institutions and behaviour between countries and regions. Global factories have evolved and will continue to evolve differently according to their country of domicile, ownership and management of the focal firms. These elements—legal home, fiscal home and the culture of management are not necessarily the same and lead to some fascinating hypotheses about the way in which ‘nationality’ can be defined and the way it influences the strategy of the firm. Finally at given times, certain ‘best practices’ will be seen as optimal. Copying of these best practices induces a uniformity across global
factories. These best practices can be identified with countries of origin (American multi-divisional structures, Japanese just-in-time systems) or by leading industries (electronics, biotechnology, software engineering) at given times.

Global factories are therefore amalgams of features of global capitalism, influences from their nationality and administrative heritage and the diffusion of knowledge on best practices.

**The Analysis of Integration—Vertical Integration**

The reasons for integration of activities within the (multinational) firm along the value chain and therefore the placing of the boundaries of the firm have been a key focus of analysis (Buckley and Casson 1976). The analysis of (vertical) integration is a complex one because it is difficult to treat the forces leading to vertical integration as separate and separable elements as they are interrelated in several dimensions. For this reason, industry studies are vital (Casson 1986).

Three key, but interrelated, explanations of vertical integration are market failure, bargaining issues and dynamic aspects including entry deterrence (Casson 1986). A simple listing of these issues might take the following form:

1. Market failures leading to internalisation
   - Disequilibrium pricing in Walrasian markets
   - Internal Transfer pricing benefits
   - Monopolistic price distortion and its substitution by internal markets
   - Fixed costs and indivisibilities
   - Imperfect information

2. Bargaining Problems
   - Multilateral bargaining and collusion

3. Dynamic aspects and entry deterrence
   - Competition and entry into downstream activities
   - Changes in division of labour over the industry life-cycle

4. Government policies

(derived from Casson 1986)

Classification of these issues is arbitrary. Market failures often (always?) have an information aspect, as do bargaining problems. Bargaining, market power and Government policies all have legitimacy, power and institutional aspects. The time factor is crucial throughout.

The result of this review is that the analysis relies on principles that are well established, but the application of the principles is situation and time specific. The global factory as an integrated and quasi integrated entity is likely to differ in time and place according to the special circumstances surrounding these general principles of integration. Careful applied analysis is required to determine its exact structure and the effects of that structure. This
is a moving target. The dynamics of the industry, changing external markets including consumer demand and the managerial technologies available will determine the extent of the global factory at a particular point in time.

**Coordination—Horizontal Integration**

Horizontal integration is best dealt with as “coordination”. Integration does not equal coordination. Classically, coordination is defined “as effecting a Pareto-improvement in the allocation of resources such that someone is made better off, and no-one worse off than they would otherwise be” (Buckley and Casson 1988, p. 32). Despite the fact that coordination sounds as it is always a good thing, there are exceptions. These are: (1) Externalities; (2) Coordination under duress; (3) Empty threats and disappointments; (4) Autonomy of preferences.

The first issue refers to people outside the bargain, who may suffer. In the case of the global factory, these may be other organisations that are not part of the network who may lose by being frozen out. Second, where excessive bargaining power or other forms of coercion are used, the beneficial effects of coordination may not appear. Third, expectations may be erroneous on the part of some parties to the bargain or information may be distorted. Finally, the objectives of the parties may change after the bargain by involvement in the global factory. These new objectives may not be satisfied (see Buckley and Casson 1988 for a fuller exposition in the context of joint ventures).

The externality problem extends to the impact of the global factory beyond the parties involved in being coordinated within the system (suppliers, subcontractors and so on). Those firms and agencies that are not part of a global factory may find themselves excluded from the ability to trade. They may thus be coerced into joining another such network. The control of information within global factories may result in distorted, even coercive, bargains with weaker parties. Entry into global factory system may mean that (new) preferences are not realised.

The presumption that coordination leads to higher welfare for all concerned thus needs to be challenged. However, when examining the myriad of arrangements that lead to the existence and expansion of global factories, coordination of activities in this way leads to many Pareto—improvements which increase world welfare. The analytical challenge is to examine the balance between these beneficial coordinating acts and the negative fallout for those excluded and the negative impact of coercive and damaging arrangements.

“The concept of the firm… does not depend on the ramifications of stock ownership or on the mere existence of the power to control, although extensive stock ownership may, and probably should, be on important consideration in any attempt to apply it. On the other hand, long term contracts, leases, and patent licence agreements may give an equally effective control” (Penrose 1959, pp. 20–21). The true nature of the firm is not a legal entity but as a planning unit (Blois 1972). The global factory is a system under which effective managerial planning extends across the whole network.

Unfortunately, the extent to this planning system is not evident in either published accounts, which follow legal definitions, or macro-data, which aggregate by artificial industry categories. An important future task is to ensure that data follow reality so that
the extent and power of global factories across the international economy can be adequately demonstrated. The quasi-integration of activities within global factories as exemplified by the unitary planning system is often more powerful than the legal or accounting rules that define “the firm”.

Integration Versus Responsiveness

The conflicting power relationships and the mixed allegiances of individuals to their nation and their employer provide much of the background to the political economy of the global factory. Hymer (1970) examined the integration—responsiveness trade off (“an organisation structure to balance the need to coordinate and integrate operations with the need to adapt to a patchwork quilt of languages, laws and customs” p. 48). However, Hymer saw this entirely in terms of nationality. Thus the national subsidiary of an MNE was managed by local nationals and the hierarchy was primarily a national one with the US as hegemon. Hymer’s analysis (1970) led to a geographical analysis based on uneven development at the national level (Hymer 1971). The spatial division of labour (Hymer 1971) within the corporation was mirrored by nation states. The cross-cutting of national frontiers and hierarchies by multinational firms was not a feature of Hymer’s analysis but the spatial distribution that is the result of global factories cross-cuts national frontiers and national groups and classes.

Local Versus Global Factors—“Place”

The true enemy of single nation global factories (even single region ones) is comparative advantage. Global factories are global because of differences in location give rise to national comparative advantages. The creation of ersatz global factories in single countries is often doomed to failure because no single country can replicate the cost and dynamic advantages of global competitors. The location of different stages of the global factory is determined by the advantages of different host countries. These can be augmented “artificially” by education, agglomeration advantages (giving rise to clustering) and investment in research, development and entrepreneurship. Host country policies designed to produce improvements in their dynamic comparative advantage can act as a magnet for economic activity. The attempt to design policies to attract all the stages of the global factory is futile. The issue of control of the governance of global factories is a more subtle issue. There are barriers to entry to markets, to locations, to new functions (R&D, marketing) and to new products (innovation, product improvement). These barriers often are of different natures, for instance the barriers to diversification (of products) differ from the barriers to internationalisation.

This leads to Porter’s (1998) “globalisation paradox”. Easier movement of goods, people and capital has increased the importance of local advantages and where these are hard to copy this has promoted the geographic concentration of economic activity in “clusters”. Global factories are increasingly well informed, because of their information system, about the existence of clusters and increasingly base their investment location
decisions on this intelligence (Enright 1998, 2000). This can be reinforced by the argument that many firms—and global factories—are influenced by their home environment (Sorge 2005). This is also true of emerging country global factories who respond to market imperfections in their home economy. For instance, Chinese outward direct investors have access to capital at favourable rates and this influences their internationalisation strategies (Buckley et al. 2007).

In the network structure embodied in the global factory, it is important not to conflate nodes with country. The importance of cities as nodes is increasingly being recognised with cities competing to attract particularly the high value components of the global factory.

**Distance and the Global Factory**

Distance still matters Ghemewat (2001) suggests four dimensions of distance—cultural, administrative, geographic and economic (CAGE). Different industries (and indeed firms) will be affected in different ways by these distance factors.

Distance can be resolved into physical distance—as represented by transport costs in conventional economic analysis—and by psychic distance.

The concept of psychic distance as an impediment to trade (and to FDI) was first developed by Beckerman (1956) to explain intra-European trade patterns (Dunning and Lundan (2008, p. 771). See also Linnemann (1966) and Weidersheim-Paul (1972)). It was subsequently developed by Hallén and Weidersheim Paul (1979) to apply to buyer seller relations. Vahlne and Weidersheim-Paul (1977) used it to explain the incremental geographical distribution of the foreign subsidiaries of Swedish firms. Note the contrast between incrementalism in the sequencing of foreign market entry and the parallel incrementalism of deepening involvement in a single foreign market (a typical sequence might be export → foreign agent → sales subsidiary → production subsidiary). (Johanson and Weidershein-Paul (1975) Johanson and Vahlne (1977)).

Psychic distance plays a prominent role in the internalisation theory of the multinational enterprise (Buckley and Casson 1976). It is referred to as “social distance” and complements geographical distance as a barrier to internalisation or a component of the costs of internalisation. It increases communication costs in internal markets and has a linguistic component. It is thus fully integrated into the theory and is not an alternative to it, nor is psychic distance a negligible factor in the strategy of the firm, in its internalisation and foreign direct investment decisions, or in its innovation policies. In phenomena that require explanation (Buckley and Casson 1976, p.31), source country factors are given importance. “MNEs exhibit certain characteristics which are attributable to their nationality e.g. the relatively high multinationality of British, Dutch and Swiss firms, and the low multinationality of even the most research-intensive Japanese firms”.

Psychic distance affects (positively) the costs of internalising a market. “It can be argued that the additional communication costs make the internalisation decision dependent on the distances between the regions linked by the market, and on dissimilarities between them in language and social and economic environment” (Buckley and Casson 1976, p.42). “This cost is greater, the greater the geographical distance between the
regions linked by the market, and the greater the ‘social distance’ i.e., the dissimilarities in language and the social and business environment” (Buckley and Casson 1976, p. 44). Region specific influences on the incentive to internalise are therefore the “geographical and “social” distance between the regions involved” (Buckley and Casson 1976, p. 45). “The fact that communications costs increase with geographical and social distance tends to discourage the location of internally co-ordinated activities in very distance countries and regions” (Buckley and Casson 1976, p. 56).

These issues are factors in suggesting that the location strategy of an MNE will differ from that of an equivalent group of independent firms. Ignoring the first reason—international transfer pricing, the remaining reasons “are all situations where the existence of the MNE will restrict the scope of foreign operations: high communications costs attributable to social and linguistic barriers, political costs due to host country attitudes to foreign investment, and administrative costs due to unfamiliarity with internal market operations” (Buckley and Casson 1976, p. 109). The global factory extends the control of multinational firms by extending its influence beyond internalised facilities through heavily loaded contracts for outsourced materials and inputs. This enables some aspects of barriers arising from psychic distance to be overcome whilst still retaining control.

The Role of Headquarters

All of the decisions above have a technical, a managerial and a political dimension. Strategies of “fine-slicing” the production chain have combined with technological change, notably the development of the internet and other communications technologies to allow control at a distance (and without ownership) to become more feasible even for elements of the chain requiring fine control. The opening up of China and India creates access to cheap, well disciplined labour and the development of logistics practice reduces costs. Products with standard manufacturing interfaces and services with standard processes are ideal for outsourcing. A lack of interaction of the offshored facility with other functions enables a clean interface to be created and a “fine-slicing” cut to be made. Products which should not be outsourced include those where protection of intellectual property is crucial, those with extreme logistics requirements, with high technology content or performance requirements and those where consumers are highly sensitive to the location of production (Boston Consulting Group 2004). Issues of corporate responsibility, compliance and adherence to quality standards (especially in view of the “lead paint in toys” 2007 issue in China) should be added to this list.

Casson (1999, p. 84–85) describes the personal computing (PC) industry as an example of the activities of market-making firms. It can be seen as an early example of the operation of the global factory. “Some of the most successful firms buy in almost all their key components, and do little more themselves than assemble and warehouse the product. In a few cases they merely badge an almost fully assembled product and configure it for its destination by adding pre-loaded software and operating manuals in the appropriate language. An important competitive advantage of the well-established firms lies in the brand, which assures the customers of component quality and after-sales service. But the relative ease of entry shows that brands alone are not enough. Effective management
of the distribution channel is the really crucial factor. Distribution of PCs is an information-intensive activity. Tele-sales departments handle large volumes of credit card sales, which are converted promptly into requisitions of particular specifications of product. Inventories have to be kept low, not only because of high interest charges but also because of the continual risk of technological obsolescence. These firms are simply an unusually pure form of the market making intermediator. The fact that they outsource all their major technological requirements indicates that technology is not the key to their success. Their success resides in the fact that they recognise the logistical imperatives of mass distribution and possess organisational procedures that are well adapted to the information processing needs of the distribution channel.”

Success in the global factory structure depends on coordinating activities across both ownership and non-ownership ties. The totality of exchange ties, both internal and external, need to be managed. One of the key success factors is the cohesiveness of network ties. Ghoshal and Bartlett (1983) refer to both ‘density’ and ‘cohesion’ of networks as being crucial to the performance of modern networked “interorganisational” MNEs. This suggests four testable hypotheses:

The performance of networked global factories is dependent upon (1) the density and (2) the cohesiveness of (a) the internal networks and (b) the external networks of global factories.

To operationalise these hypotheses, credible measures of density and coherence are required.

The position of the MNEs headquarters in the global factory is important to its power. It is a plausible (fifth) hypothesis that power is a function of centrality. The more physical and knowledge links that the headquarters possesses in the global factory the more it might be argued to have power over the global network. However, the nature of the links are also important. Links that are heavily “weighted” with information (see Fig. 1) are more likely to confer power than simple physical flows of goods and services.

The Embedded Subsidiary

Forsgren et al. (2005) pose the dilemma of how far the top management of network type MNEs can manage foreign subsidiaries that are embedded in external (and internal) networks and that are given substantial autonomy. The key issue here is that subsidiaries “each and every one embedded in a unique network of business relationships” (page VI) have to be coordinated in a coherent fashion.

There is no one-size-fits-all solution to this important issue. However, there are principles of operation. As in ‘hub and spoke marketing structures’ (Buckley and Ghauri 2004) centralisation of critical activities with information bearing and the associated high returns and decentralisation of activities subsuming an important local element lead to a “glocal” solution. This trade-off has an important informational element. Headquarters needs to have a good understanding of the important sources of information and its collation. It also needs to trust its subsidiary managers to take ‘local’ decisions and to pass ‘global’ decisions upwards, to regional HQs or Head Office (Buckley and Carter 1996,
The training and acculturation of executives is a vital component in tackling this problem.

### Conclusion

The pioneer of the “Uppsala School”, Sune Carlson made the following remark in 1951. “Before we made the study, I always thought of a chief executive as the conductor of an orchestra, standing aloof on his platform. Now I am in some respects inclined to see him as the puppet in a puppet show with hundreds of people pulling the strings and forcing him to act in one way or another” (Carlson 1951, p. 51 quoted in Forsgren et al. 2005, p. ix).

The organisation of the global factory has made Chief Executive Officers (CEOs) of focal firms conductors again. The metaphor of CEOs as orchestrators has never been more true than in the network (or embedded multinational) that is the global factory. Interestingly, Carlson never conceived of the CEO as General or Field-Marshall issuing orders. This would have been the analogy seized on in hierarchical firms. Managerial styles in global factories have to be ‘orchestration’ or ‘conducting’ rather than ‘command and control’ because of the severance of the planning and information unit from the legal and financial unit of the firm. Quasi-internalisation through information, technological and managerial links is often as important as ownership. Integration and coordination are now effected by subtle means.

The long run existence of firms, MNEs and global factories depends on their control of factors (assets, advantages) that are non-imitable by outsiders. The ultimate non-imitable resource in a global factory is the ability to manage an international distributed network of activates—and to hold it together over a long period. This requires not only a skilled management team but the ability to extend that management team and to retain key skills over a long time period. The global factory needs to overcome “the Penrose effect”—the cost of extending the existing management team to undertake the new tasks brought about by extension, growth and diversification (Buckley and Casson 2007). This requires learning, costs of training and acculturation to be absorbed. It also requires a multinational outlook and the creation of multinational management teams.

### Endnote

1 Other accounts of psychic distance include O’Grady and Lane (1996) on the psychic distance paradox and Dow and Karunaratna (2006).

### References


