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***Multidivisional versus Metanational Governance of the
Multinational Enterprise***

by

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Abstract

The effective and efficient management of diversified business firms that supply multiple products and operate in multiple, dynamic markets, especially large multinational enterprises (MNEs), builds upon a number of specific governance principles. These governance principles allow aligning environmental characteristics, strategy and organization. Given the rising need to ‘learn from the world’, Doz et al. (2001) in their influential Harvard Business School Press book entitled ‘From Global to Metanational’, have proposed a new set of governance principles described under the ‘metanational’ umbrella concept. This paper revisits the metanational, using a comparative institutional perspective; here we contrast multidivisional and metanational governance principles. A comparative institutional analysis suggests that the metanational’s application potential in terms of actually improving the effectiveness and efficiency of MNE governance may be subject to more qualification than suggested by Doz et al. (2001). Senior MNE management must therefore reflect carefully before substituting metanational governance principles for the more conventional, multidivisional ones with established contributions to managerial effectiveness and efficiency.

Keywords: comparative institutional analysis, internalization theory, multidivisional governance, multinational enterprise, global strategy.

Introduction

In *Strategy and Structure*, Alfred Chandler (1998, first edition 1962) provides a monumental and unparalleled description of the challenges faced by large, multi-product firms operating in dynamic environments when attempting to align properly environmental characteristics, strategy and organization. Chandler reports that in the early 1920s, a few large firms pursuing strategies of product diversification, namely General Motors (GM) and DuPont, simultaneously - but independently of each other - crafted a new approach to their internal governance, i.e., the ways in which rights and responsibilities are shared among the various corporate participants, with the view to achieve a more effective and efficient alignment of their organization with environmental and strategy characteristics. This new line of governance has become known as the multidivisional approach to organization. During the early 1920s, each company reorganized from conventional functional or unitary governance to multidivisional governance: GM's transformation was brought on by the American auto market collapse and a related inventory crisis. DuPont's change was brought on by its dire financial state during the first two quarters of 1920, whereby, during these six months of severe postwar recession, only the explosives business had remained profitable. Though Standard Oil and Sears followed shortly thereafter, only a handful of companies had adopted multidivisional governance principles by the end of the 1930s (Chandler, 1998). After World War II, however, most large and diversified American and European companies adopted these principles (Whittington & Mayer, 2000). Even though imitation effects (especially within industries) may have played a role in early adoption, it

was largely the recognition of the improved effectiveness and efficiency properties of this new governance form that led to its widespread diffusion in the longer run.

In the 1960s, Harvard's Multinational Enterprise Project, studying the international expansion of US-based companies, defined a multinational enterprise (MNE), as a firm with an equity stake of at least 25% in production facilities in at least six countries. A presence in at least six countries reflected of course substantial geographic diversification and therefore high environmental complexity. The Harvard project signaled the rapid growth of MNEs in developed economies, and their expansion globally, a phenomenon best described by Vernon's (1966) influential product life cycle theory with innovations developed in the US home-base, being systematically diffused internationally. Importantly, this expansion towards multiple geographic markets was accompanied by the development of novel organizational approaches, all of them of the multidivisional type (creation of an international division, product divisions, geographic divisions or a mix thereof, etc.), see inter alia, Fouraker and Stopford (1968), Stopford and Wells (1972) and Franko (1976). Franko's insightful analysis of continental European MNEs found an evolutionary pattern of organizational forms different from the one prevailing in the United States and the United Kingdom, and a comparatively higher use of personal relationships in internal organization as opposed to more formal coordination mechanisms, but the end result was also a multidivisional approach. By the late 1980s, MNEs (defined in this paper simply as firms with operations in more than one country) had established a key role for themselves in the world economy, with most of the largest ones espousing multidivisional governance principles:

“Collectively, [MNEs] account for over 40 percent of the world’s manufacturing output and almost a quarter of world trade. About 85 percent of the world’s vehicles, 70 percent of the computers, 35 percent of the toothpaste and 65 percent of soft drinks are produced and marketed by [MNEs].” (Ghoshal and Westney, 1993, p.21)

In the 1980s, a series of new MNE governance models began to appear. Several researchers suggested a shift from either a global or multi-domestic governance approach to a combination of both (Ghoshal and Westney, 1993). A global approach typically revolved around product divisions, whereas a multidomestic approach typically entailed the presence of geographic divisions and/or a portfolio of relatively independent national units. In the academic and practitioner literature, various new models were articulated, including the ‘transnational’ (Bartlett, 1986), the multi-focus firm (Prahalad & Doz, 1987), the heterarchy (Hedlund, 1986) and the horizontal organization (White & Poynter, 1990). These studies, which focused more on process issues, and advocated the infusion of network and voluntary execution elements in MNE organization as substitutes for hierarchical elements, were critical of conventional multidivisional governance, especially when structured around product divisions, in terms of its strong emphasis on formalized, top-down decision making and its alleged, limited dispersion of strategic entrepreneurial capabilities throughout the company (the best known critical study being Bartlett and Ghoshal’s 1989 analysis of the ‘transnational’). But in spite of their critical tone, almost universally, all these studies accepted explicitly or implicitly five general governance principles, which can be considered the conventional multidivisional governance principles, aimed at aligning environmental characteristics, strategy and organization in large, diversified companies supplying multiple product lines and serving multiple, dynamic markets.

The *first principle* prescribes a particular *specialization in decision-making by corporate headquarters (CHQ) and the divisions*. CHQ make fundamental decisions on the firm's boundaries, broadly determine resource allocation among divisions and set up a monitoring apparatus, but they self-impose restraint on their direct intervention in business matters in divisions (whether product divisions, geographic divisions or a combination thereof), irrespective of the studied firm's nationality and administrative heritage, at least as compared to the level of intervention prevalent in conventional, functionally organized companies. In practice, CHQ intervention in divisions (or for that matter, in smaller subunits such as national subsidiaries or specialized affiliates), may stretch selectively beyond determining divisional product/market scope, resource allocation and monitoring, for example when required by a crisis situation or to effect strategic integration among divisions, when these have overlapping but conflicting interests that cannot be resolved in a decentralized fashion (e.g., through agreed upon transfer prices or joint decision-making by the divisions themselves). Here, it should be remembered that multidivisional governance itself was in several instances first introduced as a response to a crisis situation. Firm-level crises are often associated with reduced barriers to change, i.e., lower resistance to change by powerful stakeholders (e.g., functional groups inside the organization), and with senior management's willingness to rise to the challenge and to take the risk of implementing a new set of governance principles. Crisis situations facing the entire firm typically lead to more centralization of power. In contrast, a favorable external environment (e.g., fast industry growth) combined with substantial slack resources in the divisions, may foster participative decentralization and increased divisional decision-making autonomy.

The *second principle* prescribes *selectivity in inter-divisional interactions*. CHQ and divisional management accept that the effective unbundling of the firm into specific divisions places at least some limits on how much divisions should communicate/interact among each other, and with CHQ, though rich opportunities may obviously arise and should be pursued selectively, for intra-firm coordination, as well as for sharing of organization-wide knowledge and best practices, thereby achieving common learning trajectories and economies of scope across divisions.

The *third principle* prescribes the use of *standardized, quantitative monitoring and incentive systems*. CHQ adopt at least some standardized, quantitative measurement tools (largely based on accounting data) to evaluate divisional performance in a quasi-arm's length matter, sometimes complemented selectively with adjustment mechanisms to address differences in divisions' environmental context and strategic trajectories, as well as with a substantial arsenal of formal rules and socialization mechanisms, especially in cases of related diversification.

The *fourth principle*, which is important in rapidly changing environments, prescribes *specific roles for CHQ and the divisions in general innovation strategy*. Here, CHQ set at least some boundaries on what constitutes acceptable innovation content (thereby defining the firm's critical capabilities and the evolution thereof), followed by substantial divisional autonomy to innovate within these boundaries. This principle represents the functional application of the first principle above (specialization of CHQ and the divisions) to the area of innovation. Adhering to this principle is critical in dynamic environments, as it guarantees that innovation content be created by those actors best positioned to understand changes in relevant technologies and markets, but subject to the

constraints of maintaining intra-divisional coherence, especially in terms of ability to link innovation activities with production, and with more downstream activities such as marketing. Such divisional specialization in entire, innovation-driven value chains reduces coordination costs in terms of figuring out which innovations ultimately make commercial sense. It also puts skilled experts with deep knowledge of innovation-driven value chains in charge of all the functional activities involved thereby increasing the probability of value creation.

Finally, the *fifth principle*, again relevant particularly in dynamic environments, prescribes a particular *management of the tension* that may arise between *incremental* and *disruptive innovation*. Here, CHQ and divisional management accept that the bulk of the innovation efforts in the firm should reflect incremental innovation (in line with the firm's dominant logic) and should be concentrated inside the divisions. Valuable 'autonomous initiatives' reflecting more disruptive innovation, outside the scope of preset innovation boundaries, may arise in the divisions, especially on the basis of market or technological opportunities identified by individuals operating on the 'front-line' and in the 'periphery', but in order to bring such initiatives to fruition, a 'divisional home', whether in an established unit or new unit must be found for the innovation, or a spin-off must be organized to bring it to the market. In select cases, autonomous projects with large resource requirements that do not fit into any divisional portfolio and are associated with high risk may be pursued by CHQ themselves. Here, CHQ embark on a process that will change what is viewed in the firm as acceptable innovation and prepare the stage themselves for an altered dominant logic of the corporation.

We shall discuss some of the antecedents and implications of the above principles in the next section, but it is important to emphasize that respecting the *dynamic selectivity* embedded in them is critical to the relative effectiveness and efficiency of internal governance vis-à-vis the market (i.e., de-internalization). We use the term *dynamic selectivity* to make the simple point that any corporation is characterized by needs for specialization and subsequent integration routines, which impose restrictions on the content, volume and timing of interactions among corporate participants, but such selectivity in interactions is itself subject to adaptation in function of the level of environmental turbulence and the firm-level strategic trajectory.

Obviously, there is more to governance than the principles outlined above: in particular, mechanisms such as the socialization of employees, the use of procedural justice elements, the increased adoption of modern information and communications technology (ICT) and other management innovations may allow increased interactions among divisions and between divisions and CHQ without loss of effectiveness and efficiency, but this precisely reflects *dynamic selectivity* and does not invalidate the above governance principles, such as the prescription of comparatively lower inter-divisional interactions than intra-divisional ones, and self-imposed limits to CHQ intervention in the day-to-day operations of divisions, see Hill (1985), Shanley (1996), Casadesus-Masanell and Spulber (2000), and Eisenmann and Bower (2000) for some of the more enlightening and amusing discussions of multidivisional governance.

Without, in our view, ever credibly challenging the validity of the above five principles, the ‘new models’ on MNE governance arising in the 1980s and 1990s did lead

to considerable debate regarding the (changing) nature of MNEs. Doz and Prahalad (1993) speculated:

“It is therefore not even clear that the search for a stable organizational theory of the [MNE] is warranted. Perhaps researchers ought to satisfy themselves with addressing an evolving agenda of managerial issues created by changes in conditions for the success of [MNEs] and by the evolving technologies for their management.” (Doz and Prahalad, 1993, p.50)

One such changing condition, faced by all MNEs is the requirement for continuous innovation, especially in the context of ‘triad power’, with large MNEs from North-America, the European Union and Asia attempting to penetrate each other’s home region markets and driving the commodification of products previously considered innovative and unique (Ohmae, 1985; Rugman, 2005). The resulting, systematic process of creative destruction, somewhat similar to the one described by Schumpeter (1934) is both a powerful and threatening force. In the more general strategic management context, Christensen (1997) found compelling evidence of the extreme hazards resulting from ignoring emerging innovations. Christensen discusses the managerial dilemma of adopting and/or fostering nascent and potentially promising innovations inside the firm, given the often observed disinterest on the part of existing customers, and high priority resource allocation processes that encourage senior managers to abandon novel business ideas (Christensen, 1997).

Irrespective of the particular innovation route chosen, MNEs do need to engage in new initiatives in order to sustain competitive advantage against large, especially triad-based rivals from North-America, the European Union or Asia. Most MNEs, even if they occupy a dominant position in their home region, are actually much smaller players in host triad markets, see Rugman and Verbeke (2004, 2005a, 2007) and Rugman (2005) for an in-

depth analysis. This implies that their overall market position is usually contestable, even in the short run. MNEs must therefore continuously obtain new resources and recombine them with current ones (McGrath, MacMillan & Venkataraman, 1995). Here, the key managerial challenge is the choice of a governance approach to facilitate this continuous sequence of knowledge development/ acquisition, absorption, diffusion and exploitation in an effective and efficient fashion (Rugman and Verbeke, 2002).

Given the above context, Doz et al. (2001) have proposed a new conceptual model, namely the metanational approach, as the optimal governance alternative for MNEs facing opportunities of accessing new knowledge cropping up around the world, and seeking to transform these opportunities into economically viable operations. The purpose of this paper is to assess the metanational approach to governance, using a comparative institutional perspective. The remainder of the paper proceeds as follows. In the next section, we briefly examine modern, comparative institutional thinking, with a focus on transaction cost/ internalization (TCI) theory and we compare the key principles characterizing multidivisional and metanational governance. In the third section, we use TCI theory as the basis of a critical analysis of the proposed metanational governance approach. Section four concludes.

Transaction Cost/ Internalization (TCI) theory: multidivisional versus metanational governance

The application of comparative institutional thinking to the MNE has been articulated most clearly in TCI theory, see Buckley and Casson (1976), Hennart (1982) and Rugman (1981). TCI theory is an evolving theoretical framework used mainly to determine

the most effective and efficient governance form for a set of specific transactions conducted by the MNE, within a broader economic and institutional context. Here, appropriate internal governance, in the form of comparatively lower costs of negotiating, monitoring and enforcing terms and conditions of exchange relative to market contracting, building upon Coase (1937), is a significant source of value. Though grounded in transaction cost economics (TCE) reasoning, TCI thinking has been developed in parallel with - but largely independently of - more mainstream TCE thinking, as articulated by Williamson (1985, 1996). Both strands of comparative institutional analysis largely build upon similar parameters to determine MNE governance choices, even though Williamson espouses a particularly narrow view of (proprietary) knowledge management and innovation, building upon the asset specificity concept, and he neglects the impact of geography on governance choices.

MNEs operate in an economic environment characterized by uncertainty and complexity. Here, foreign locations are attractive relative to the home country for the deployment of specific economic activities, but these locations also lead to challenges of managing 'distance' (cultural, administrative, geographic and economic), see Ghemawat (2001). Given this environmental context, international business decisions are driven by three key factors: *bounded rationality economizing*, *bounded reliability economizing* (with opportunism as one possible expression of bounded reliability), and the need to *create a favorable organizational context*, i.e. an internal environment and an interface with the external environment, *for knowledge management and innovation in its entirety*, i.e., for the full process of knowledge development/acquisition, absorption, diffusion and exploitation. We briefly discuss these three concepts in Appendix 1, in the context of the MNE.

Multidivisional governance is generally considered the standard, i.e. the comparatively more effective and efficient governance approach for large, diversified MNEs, meaning the governance form that to the best of our knowledge, and subject to proper implementation, better allows economizing on bounded rationality and bounded reliability, and creating value from knowledge management, at least as compared to conventional, functional governance. As noted above, it replaced the less satisfying functional governance approach, characterized by centralized decision-making and functionally departmentalized operations such as R&D, production and marketing. Williamson (1971) submits the following statement from IBM's executive office in 1956 concerning its transformation:

“...the new alignment of the various areas is based on products. Each of the product divisions will, within the framework of policy established by the Board of Directors and general management, operate almost as an individual company with its own manufacturing, sales and service functions. Each of these divisions is equipped with special skills and product knowledge to concentrate on developing the full potential of a specific market. Further strength is given the organization with the creation of the corporate staff, which, being separate from the operating organization responsible for developing, producing, selling and servicing goods, can closely examine the special areas of the business and assist the operating executives in solving problems in these areas. (*I.B.M. Business Machines*, 28 Dec 1956)” (Williamson, 1971, p.382-383).

Functional governance had several advantages for firms with limited product ranges. Senior managers could dictate the operations of functional areas, easily relocate skills amongst subunits, diagnose and repair problems within specific functional areas. Unfortunately, managers struggled to coordinate functional subunit interactions. For example, functional subunit managers were prone to hiring duplicate experts to solve external market problems. In addition, Chandler (1998, p. 382-383) states: “...the administrative load on the senior executives increased to such an extent that they were

unable to handle their entrepreneurial responsibility efficiently.” Problems of bounded rationality reduced the effectiveness and efficiency of unitary governance.

With multidivisional governance, those bounded rationality problems facing senior executives were reduced, since quasi-autonomous operating divisions took the place of inter-reliant, functional areas. Senior executives at CHQ focused comparatively more on setting strategic direction in terms of broad product/market scope boundaries, allocating resources among divisions, and monitoring divisional performance. Multidivisional governance also (unintentionally) allowed economizing on bounded reliability, as it mitigated the earlier problems associated with subgoal pursuit by functional managers in unitary governance through standardized controls and incentives. It also reduced unproductive and costly communication among actors responsible for very different products and markets (costs that obviously depended on the relatedness / interdependencies among divisions). Finally, multidivisional governance greatly facilitated adjustment to changes in the external environment, as it became possible to shed and add divisions without upsetting the entire organization.

Williamson (1971) described the key improvements of multidivisional governance as follows:

- “The responsibility for operating decisions is assigned to [essentially self contained] operating divisions or ‘quasi firms’.
- The elite staff attached to the general office performs both advisory and auditing functions. Both have the effect of securing greater control over operating-division behavior.
- The general office is principally concerned with strategic decisions involving planning, appraisal and control, including the allocation of resources among the [competing] operating divisions.
- The separation of the general office from the operations provides general office executives with the psychological commitment to be concerned with the overall

performance of the organization rather than become absorbed in the affairs of the functional parts.

- The resulting structure displays both rationality and synergy: the whole is greater [more efficient] than the sum of the parts.” (Williamson, 1971, p. 353-354)

In contrast, the foundation of the metanational approach is that environmental changes occurring outside the firm are now forcing MNEs in most industries and countries to revisit fundamentally the multidivisional governance principles. Doz et al. (2001) depict an emergent, global knowledge economy within which firms must access increasingly scattered knowledge to build or sustain competitive advantage. Corporations that tap into “knowledge that languishes underexploited” will be “tomorrow’s winners” (Doz. et al., 2001, p.1). Unfortunately, according to these authors, in practice most MNEs overlook or fail to consider abundant pockets of valuable technologies and limit their knowledge seeking efforts to a few Silicon Valley-type ‘hot spots’.

Metanational governance is substantially different from that of the multidivisional firm. Rather than building upon the fundamental distinction between CHQ and divisions, with several possible variations on the theme, metanational governance is designed around three distinct, but connected activity levels: *sensing*, *mobilizing* and *operations*. *Sensing* means proactively searching for emerging knowledge that will build or sustain the firm. Through *sensing*, the MNE identifies and accesses innovative technologies early on, in order to stay ahead of competitors. *Sensors* are typically set up by CHQ, based on novel insights from the CEO or other top managers (see e.g., Doz et al., p.146 and following). *Sensors* are ‘loose and flexible networks’ with flat structures, preferably manned with local insiders and external alliance parties with privileged access to local knowledge (e.g., about

lead customers), rather than expatriates. They can even take the form of a venture capital fund, attracting entrepreneurs in search of funding (Doz. et al., 2001, p. 157).

To achieve *mobilizing*, Doz et al. (2001, p. 8) prescribe setting up *magnets*, which “translate new knowledge into innovative products or specific market opportunities.” *Magnets* can either be permanent or temporary, and can be structured virtually and/or physically (e.g., located at a lead customer site). CHQ senior management is charged with staffing *magnets* with entrepreneurial people who are comfortable in uncertain and changing environments. Given their role of moving and recombining knowledge, they are really idea brokers. CHQ must also provide capital to fund new venture projects and create an effective culture, incentives and reward structure to motivate *magnet* employees.

Finally, the *operations* level of the metanational is reminiscent of the divisions in a traditional multidivisional company. This level is supposed to bring innovative solutions to market more effectively and efficiently than competitors. Here, the main role of CHQ is to ensure that radical innovations are transferred effectively from *magnets* to *operations* centers.

From a comparative institutional perspective, the question is whether metanational governance is better than conventional multidivisional governance - or alternatively, market-based governance - at economizing on bounded rationality and bounded reliability, and at creating an appropriate organizational context for knowledge management and innovation *in its entirety*. The comparison with (external) market governance is important. It implies simply that even if metanational governance allows reaping benefits beyond the reach of multidivisional governance, problems of internal, managerial coordination and control may still dictate de-internalization, and thereby the use of the (external) price

mechanism, as the main governance tool. Below, we apply TCI theory as a conceptual lens for a comparative evaluation of multidivisional and metanational governance.

Table 1 compares multidivisional and metanational governance, in terms of adherence to the five key principles outlined above, or absence thereof: *specialization in decision-making; selectivity in interdivisional interactions; incentive systems; general innovation strategy; managing the tension between incremental and disruptive innovation.* Table 1 mentions only divisions as subunits, but in MNEs the concept of subunit might actually refer to any affiliate operating as a quasi-autonomous profit-unit (especially national subsidiaries and small product-based affiliates).

Table 1 (about here)

Critical analysis of metanational governance

Table 1 shows that metanational governance is quite distinct from multidivisional governance at various levels. As we note below, CHQ executives as well as managers active in *magnets, sensors* and *operating divisions* face comparatively strong challenges of bounded rationality economizing, bounded reliability economizing and the creation of an appropriate organizational context for innovation *in its entirety*.

Specialization in decision-making

In contrast to the case of multidivisional governance, with CHQ limiting their involvement in day-to-day divisional operations, the CHQ in the metanational are actively involved in setting up *sensing* units and “managing by walking about the world” (Doz et al., 2001, p. 141). A sensing unit needs to “have a direct reporting line to the top management team... [and] be nurtured and directed by those who set the company’s long-term goals” (Doz et al., 2001, p. 165). Similarly, CHQ must go through great efforts to select and structure magnets (Doz et al. 2001, p. 180). In the metanational, substantial decision-making authority is transferred from conventional divisions ànd CHQ to *magnets*:

“Magnet teams will be the powerhouses of tomorrow’s metanational organizations. Many such teams will operate simultaneously, each one charged with mobilizing knowledge scattered around the world to create innovative products, services or processes. Together, this clutch of magnet teams will form a new suborganization...[in the firm]” Doz et al. (2001, p. 187)

Thus, *sensor* and *magnet* employees are likely to command sufficient valuable information to change significantly the strategic direction of the MNE for better or for worse. This does not necessarily imply the danger of purposeful deceit, but *sensor* and *magnet* employees can be expected to exhibit systematic allegiance to the projects for which they have been made responsible, rather than to the more conventional, induced projects arising at the *operations* level. In addition, given that *magnet* and *sensor* employees have the flexibility and autonomy to pursue activities not subject to traditional success/failure criteria (see below), they may be prone to describing rather positively the (often non-quantifiable) opportunities they have identified as well as their past accomplishments, in order to secure funding and to sustain the activities they command.

The outcome is a new bounded reliability challenge, without necessarily equivalent benefits to the MNE. Here, *sensor* and *magnet* employees may exploit to their own benefit the bounded rationality constraints faced by CHQ (with comparatively little insight on the projects pursued by the *sensors* and *magnets*), and the related participative decentralization they enjoy themselves, as the company comes to rely more heavily on them for its future growth (see Freeland, 1996 for an analysis of the participative decentralization phenomenon).

CHQ may need to engage in rather heavy-handed intervention so as to link the outputs of *sensors/magnets* with the operations level. According to Doz et al. (2001, p. 110) the initial separation between *sensors/magnets* and the *operations* level is necessary because “the rules of the game for an efficient operating network are fundamentally different from those required to access, mobilize and innovate using new knowledge that is dispersed around the globe.” Operations divisions simply are not up to this challenge (Doz et al., 2001, p. 162). It then becomes the task of CHQ to “create a receptive environment for these bottom-up entrepreneurial insights”, by engaging in activities such as “facilitating chance encounters” among individuals who would not normally meet each other in a conventional divisionalized setting, by setting “challenging but fuzzy goals”, and by “creating a corporate knowledge map” (Doz et al., 2001, p. 172-173). The problem with such coordination mechanisms is that they do not constitute a valid substitute for the necessary, permanent R&D-production-marketing linkages found in a typical division under multidivisional governance, as a precondition for effective, internal knowledge management and innovation *in its entirety*. Creating such linkages ex post (after the actual innovation activity has taken place, and without prior *operations*’ level buy-in) is likely to

require continuous, extensive CHQ intervention rather than restrained, selective intervention at the *operations* level.

Selectivity in inter-divisional interactions

The two additional levels of organization, *sensors* and *magnets*, report both to each other and to the CHQ. Once valuable innovations have been identified and made concrete, *sensors and magnets* must also engage in extensive interaction with the operating affiliates charged with producing and selling their new products and services. One positive interpretation of this approach is that the metanational, like an octopus, can extend its reach in multiple directions and attach itself to multiple things. But it is unclear how effective and efficient such an organization could be. It involves new business units (some of which may not even be completely internalized) that are explicitly meant to disrupt routinized communication flows and value creation processes. It thrives on an unproven ability to absorb and exploit tacit knowledge created in a variety of peripheral places in the world. And, it relies on the free and willing participation of conventional *operations* level managers, a group largely focused on specific performance metrics based on proven products, in bringing completely new ideas to market. For example, even in the rather simple case (technologically speaking) of the record company PolyGram, the transfer of knowledge to operations occurs because the *magnets'* staff “visit local subsidiaries, train local staff, participate in the preparation of local sales and marketing plans, and create concert tours....” (Doz et al., 2001, p.75), i.e., are heavily involved at the *operations* level. But the use of transfer prices for such knowledge sharing and exchange among units is flatly rejected:

“Generally, it will not be possible to measure the direct profitability of a site. Any profit measure would depend on the artifice of transfer prices between sites within the metanational operations network. In most cases, these transfer prices would be highly arbitrary, as externally verifiable market values for a site’s contribution will be impossible to find.” (Doz et al., 2001, p. 204)

Rather, Doz et al. (2001, p. 204) propose as substitutes for transfer prices that exchange of knowledge should occur voluntarily and freely, and individual sites would thereby benefit from building a reputation for ‘reliability’ and ‘willingness to contribute as a partner in the operations network’. In other words, no clear criteria are established to guide selectivity in interunit interactions, thereby making severe bounded reliability problems likely.

Incentive systems for subunits

A subject of great interest is the design of an appropriate incentive system for organizational units, whether divisions or smaller subunits. With multidivisional governance, each division is monitored and rewarded at least partly based on quantifiable output measures (e.g., based on profit margins), which are applied consistently, but with the possibility of selective adaptation to the external environment and strategic trajectory of specific divisions. Doz et al. (2001, p. 193) reject this approach: the metanational “should link a significant proportion of total staff incentives to the overall performance of the company...as opposed to narrowly defined geographical or business-unit performance”. It is true that the MNE under multidivisional governance is more than an internal market, whence the possibility of adapting incentives to the environmental context and strategic trajectory faced by specific units, but only to the extent that the resulting, added challenges of managerial control do not make de-internalization (and the use of the external price-mechanism) a more attractive option.

In contrast, in the metanational, CHQ executives are likely to face great difficulties monitoring and equitably rewarding *sensor* and *magnet* operations. According to the metanational governance principles, *sensor* and *magnet* employees are expected to act as entrepreneurs funded with venture capital and rewarded as ‘explorers’, motivating them to search the world for new knowledge, whereas individuals at the *operations* level should get so-called ‘farmer’s rewards and punishments’, thus leading to two very different incentive systems whereby “each type of activity requires its own performance measurement and incentive system” (Doz et al. 2001, p. 99). For example, the performance assessment for a sensing unit should be based on the “ratio of learning per investment”, and may include parameters such as the “number of innovations to which it contributes”, but this is rather vague (Doz et al., 2001, p. 166), especially in light of Doz et al.’s (2001, p. 192) strong view noted above that metanationals must operate under a system of “zero transfer prices for knowledge...so that cash or profit credits do not change hands when knowledge is shared.” (Doz et al., 2001, p 192).

But corporate venturing approaches in large organizations are often hard to sustain. According to Siegel et al. (1988), corporate venture capitalists must be given substantial autonomy and guaranteed access to capital in order to generate both strategic benefits and acceptable returns on investment. In addition, entrepreneurially minded employees, originally hired to explore and eventually exploit new technologies, may self-select out of the corporate environment for a variety of reasons, especially the likely bureaucratic load of rules and procedures, once the innovation process reaches the production stage and the *operations* level. Internal organizational problems may rise because *sensor* performance is hard to monitor directly by observing behavior or through output measures. Incentives and

reward structures may need to resemble a venture capital model, but this is difficult to implement due to their asymmetry with what prevails in the rest of the firm (Siegel et al., 1988).

At the *magnet* level, each *magnet* unit also consists of entrepreneurially-minded individuals, who are financed (sustained) by internal venture-style funds. *Magnet* life spans and jobs may be temporary and decisions to liquidate/move a *magnet* can be made unilaterally by CHQ. Internal monitoring and reward challenges may thus increase for the same reasons as above regarding the *sensor* level. Doz et al. (2001, p. 61-62) acknowledge themselves, in the context of the firm STMicroelectronics, with its magnet units set up as a separate organization: “This organization was not subject to the tyranny of P&L accounts, and it was effectively ring-fenced from the other measurement tools and mechanisms that ST used to manage the efficiency of its operations”.

At the *operations* level, each division is monitored and rewarded based on quantifiable outputs (e.g., profit margins as with multidivisional governance). The complication is the *operations* level’s loss of autonomy: CHQ determine which ‘outputs’ from the *sensor* and *magnet* levels must be taken on board by specific units at the *operations* level. This means divisional performance **results directly** from CHQ decisions, rather than from divisional choices. The absence of selectivity/restraint in CHQ interventions, makes subsequent objective assessment of the *operations* level performance particularly challenging.

Bounded reliability problems may increase because of a (perceived) lack of procedural justice and related internal dissonance. These challenges are compounded by the bounded rationality problems facing CHQ when making resource allocation decisions

solely based on market and product information developed by *sensors* and *magnets*, without being able to understand fully the complexities associated with new markets (Hitt et al., 1990) or even the complexities of introducing a radical innovation into a large-scale production process (see below).

General innovation strategy

As noted above, establishing - and allocating resources to - new business units that must not meet the performance criteria expected of pre-existing units, may lead to widespread animosity among present *operations* level managers. Indeed, *magnets* “sidestep the usual approval process designed for investments in operations, not innovation... A separate pool of internal funds (such as a venture fund) needs to be set aside to finance them” (Doz et al., 2001, p. 191). At the most general level, CHQ must be cognizant of the potential for over-innovation resulting from metanational governance, in accordance with Tallman and Li’s (1996) view that: “...excess product diversification may harm performance.” In TCI theory terms: the extreme geographical diversification of knowledge management may reduce the effectiveness and efficiency of internal organization vis-à-vis the use of the price mechanism in the external market. Here, the problem is not so much the actual location of *sensors* and *magnets* in places previously unexplored by the MNE, but the fact that learning must occur from locations and markets “beyond the reach of its operating network” (Doz et al., 2001, p. 90). The significance of this is the explicit divorce of innovative activity from the operating divisions. For the *sensing* activity, the authors make the following comment: “Extending the operating network to perform the sensing role would be like trying to use a power generation turbine to do the job of a thermostat.” (Doz et al., 2001, p. 91). In case of strong resistance from the

operations level to this approach, CHQ may then be forced to push emerging technology business units entirely outside the main organization (as minority investments) or to de-internalize them altogether in order to satisfy minimum procedural justice requirements in resource allocation. Irrespective of such resistance, an important driver of selectivity in innovation is lacking, namely extensive coordination routines from the outset supporting individuals engaged in R&D and individuals working in production and marketing to explore continuously the feasibility of implementing and commercializing novel ideas, instrumental to effective and efficient knowledge management and innovation *in its entirety*.

The need for innovation, especially through R&D, as a condition for MNE growth is well established (Buckley and Casson, 1976, 2007), but according to Penrose, a firm's growth is also dependent on its unused productive resources, especially in terms of slack embodied in the top management team (Penrose, 1959). If the innovation process proposed by Doz et al. (2001) indeed requires enormous commitments of energy and time from CHQ managers to bring new solutions to the market, because of an unfavorable internal context for effective and efficient innovation *in its entirety*, then this context will itself restrict the MNE's growth potential, see Verbeke and Yuan (2007) for a related, in-depth analysis.

Management of incremental versus disruptive innovation

The metanational model is designed to scour the planet for emerging, disruptive innovations. Instead of relying on incremental product and service improvements, which would reduce uncertainty, metanational *sensors* gain knowledge about existing and coming needs from lead customers and niche markets that may have global appeal. Behaving like

venture-capital-seeking startups, *magnets* then devise solutions and accompanying business plans to generate project funding from CHQ. Projects emerge from all over the world, in markets unfamiliar to senior managers at CHQs or at the *operations* level, thus creating severe bounded rationality problems. *Magnet* managers can frame opportunity assessments in function of their own priorities, and thus benefit from CHQ senior management's comparative ignorance. Given the priority granted to *magnet* projects in the metanational, whereby these projects are not viewed by CHQ as 'autonomous' in a Burgelmanian sense (Burgelman, 1983), with 'autonomous' projects typically subject to funding caps in contrast to 'induced' projects, but constitute the essence of the MNE's innovation approach, severe bounded reliability problems are likely to arise. Indeed, these projects actually **are** 'autonomous', i.e., not consistent with the MNE's dominant logic in a technological or organizational sense, but only consistent with the metanational CHQ's cognitive perspective on what constitutes valuable innovation. A sole focus on such projects will, when imposed upon the *operations level*, distract the company from important customers and acceptable investment returns, thus fostering problems of bounded reliability. Here, open-ended promises of profitability and growth made by *magnets* are given more weight than the experienced voices of managers at the *operations level*.

In contrast, the multidivisional MNE can also tap into multiple locations for new innovations through its use of existing divisions, and therefore without incurring the organizational problems associated with metanational governance. One possibility within multidivisional governance is attaching importance to Birkinshaw-type autonomous initiatives, with radical innovations arising at the grass roots in the conventional divisions and smaller subunits, and resource allocation routines being designed in such a way as to

avoid the corporate immune system from kicking in (Birkinshaw, 2000; Rugman and Verbeke 2001, 2003). Best practices to facilitate autonomous projects potentially carrying radical innovations, include seed money allocated for such projects, formal requests for proposals, allowing incubator practices, and developing internal subunit networks (Birkinshaw and Hood, 2001). Importantly, the above best practices to foster autonomous projects recognize that the innovation process should be managed *in its entirety* from the outset through dedicated routines in existing subunits even if, e.g., setting up incubators implies sheltering radical innovation activities in their early stages from operational concerns.

According to Christensen (1997) it is true, historically, that large companies have suffered from a detrimental inability to see past current customer demands. He also claims that developing emerging platforms and technologies and catering to lead customers is problematic in the real world, given the short-term profit expectations of many senior managers and shareholders. But the metanational may not be the solution. Bhidé (2000) asserts that non-incremental innovation should be left in the willing and capable hands of small, growing companies. Both authors suggest that large companies should mitigate risk by ‘cherry picking’, i.e., the act of acquiring small firms with demonstrated, strong product-market potential. An alternative to cherry picking consists of taking multiple minority investment positions in innovative companies through corporate venture capital programs (Campbell et al., 2003). In fact, Doz et al. (2001, p. 157) acknowledge the use of venture capital funds as one route to accessing new knowledge. But what Doz et al. (2001) do not recognize is that, except in a crisis situation, disruptions to well-functioning, operational divisions should be kept to a minimum.

The few cases noted by Doz et al. (2001) where operating divisions wholeheartedly accepted the breakthrough innovations coming from *sensing* and *magnet* operations, include STMicroelectronics, whereby innovative system chips had already proven their commercial viability as a result of contracting with a few major customers, meaning there actually was a proven market. Another successful example of innovation arising from *sensors* and *magnets* and being accepted by operating divisions, is the case of the record company PolyGram, whereby the former units identified innovative content, in terms of new (foreign) artists with a unique repertoire. Here, acceptance by the operating divisions was easy to achieve, because no fundamental technical changes were needed in the production process (Doz et al., 2001, p. 72). However, such cases with ex ante proven market potential and relatively simple technological adaptation requirements imposed on the production apparatus are hardly representative of radical innovation.

Discussion and Conclusion

The metanational approach to MNE governance provides a new set of principles substituting for the conventional multidivisional governance principles to align environmental characteristics, strategy and organization in firms with high product and geographic diversification, operating in dynamic settings. The question is whether this new set of governance principles is likely to improve the effectiveness and efficiency of the MNEs adopting them.

Our analysis does not establish the supremacy of the metanational governance principles over the more conventional principles characterizing multidivisional governance. Of course, the possibility should not be ruled out. Surely, with the increasingly common

phenomenon of offshoring (which usually entails far less complexity than dispersing geographically the entire R&D function), it is clear that many MNEs now do learn from the world, but this usually occurs within the scope of the MNE operating divisions' mandate to increase value chain effectiveness and efficiency. Doz et al. (2001, p. 95) explicitly dismiss this approach as largely irrelevant to metanational functioning where the focus is on new sources of knowledge as a precondition for radical innovation: "if global sourcing structures create some metanational advantage, it will be by coincidence and good fortune". On the other hand, the authors do advocate the use of networks of outsiders on a grand scale, throughout the world to gain access to local innovations, but they do not discuss in depth the problems of bounded reliability to monitor these multiple strategic alliances, except for the honest observation that it might be dangerous to become too reliant on outsiders for innovation (Doz et al. 2001, p. 203).

Doz et al.'s (2001) dismissive perspective on global sourcing may be valid for conventional offshoring focused solely on cost reduction, but it is inconsistent with the essence of the offshoring story painted by Lewin and Peeters (2006) and Lewin et al. (2007). These authors predict a further increase in offshoring, driven on the one hand by the commoditization of many operational processes, but also, increasingly, not by mere cost considerations but by a need for talent that remains unsatisfied at home, especially the need for highly skilled human resources capable of product and process innovation. Offshoring may thus include sophisticated knowledge management and innovation activities but the success of the intended 'reverse knowledge transfer' to the home country and the MNE network depends crucially upon the management of the innovation process *in its entirety*, which fits well with multidivisional governance principles.

Empirical evidence should, and will, be the ultimate judge of the metanational's validity. However, empirical testing hinges on identifying and tracking the success of companies adhering fully to metanational governance principles; no such firms exist today, suggesting a predictive failure for now. Perhaps Doz and his co-authors, as INSEAD international business educators and gurus, will succeed in influencing a sufficient number of MNE CEOs to engage in this type of transformation, just as Alfred Chandler undoubtedly stimulated multidivisional governance adoption through influencing his Harvard Business School colleagues and the School's alumni. Highly entrepreneurial founders of well-funded, globally aspiring startups may also follow suit. While the payoffs are unclear, our paper suggests that a number of problems associated with adopting metanational governance principles are not.

Paradoxically, working with *sensors* and *magnets* might work best in relatively simple organizations, with hands-on, authoritarian founders/top managers, low diversification levels and traditional functional structures. Here, CHQ executives may actually still command the product/market knowledge as well as the substantial slack capacity required to perform the wide array of CHQ activities (including direct supervision of *sensors* and *magnets*) necessary to make the metanational work. If successful, such metanational CHQ executives, just like their counterparts in the companies adhering to multidivisional governance principles, can then be expected to introduce mechanisms geared towards reducing problems of bounded rationality and bounded reliability, and to create an appropriate context for innovation *in its entirety*. This may entail, inter alia, finding stable homes for *sensor and magnet* units, thereby de facto making them the core of new *operating* divisions, as a complement to the existing functional organization. If

successful, such changes would paradoxically create incentives towards moving from functional toward multidivisional governance, and - in the case of excessive problems of internal coordination and control - toward de-internalization.

An alternative is of course simply to outsource completely the *operations* level, which is viewed by Doz et al. as a set of activities exploiting pre-existing firm-specific advantages and reaping the rewards of ‘farming’. In that case, the *dynamic selectivity* pursued by CHQ managers may entail replacing the conventional divisions in a multidivisional approach to governance by *sensors* and *magnets*, and specializing the firm in the activities pursued by the latter. The MNE would ‘sell’ the fruits of its innovation activities to strategic partners or even to external market participants anywhere in the world, with the latter actors performing the actual production activities. The key question would be which economic activities should still be kept inside the firm, a challenge especially for MNEs from advanced, knowledge-based economies such as the United States, the European Union and Japan

In any case, the fine-tuning of the metanational approach to governance is likely to be firm-, industry- and circumstance-specific. It is unlikely that the one approach suggested by Doz et al. (2001) will work for all companies. As one example, Bill Gates, Microsoft’s Chairman and Chief Software Architect, recently stated, “We found it easier to do research in multiple locations than to do product development in multiple locations.” (Ricciuti, 2004). In other words, no firm escapes from the requirement to assess the innovation process *in its entirety*: the number and the location of the pools an MNE will fish in will largely depends on the specific value chain activity considered.

As for the world's largest and most diversified MNEs, multidivisional governance principles are likely to remain compelling. As noted by CEO Jeff Immelt on the issue of selective CHQ intervention: "When You run General Electric...there are seven to 12 times a year when you have to say, 'You're doing it my way'. If you do it 18 times, the good people will leave. If you do it three times, the company falls apart" (Nocera, 2007, p.14).

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APPENDIX 1: THREE FOUNDATIONS OF TRANSACTION COST/ INTERNALIZATION

THEORY (TCI) APPLIED TO THE MNE

Bounded rationality reflects the *scarcity of the human mind*: "...human behavior is intendedly rational, but only *limitedly* so" (Simon, 1957, p. xxiv). Given a complex and uncertain environment, economic actors are unable to know, process and act on all current and future information. Hence, they are unable to produce comprehensive contingent claims contracts (Arrow, 1974). Economizing on bounded rationality is widely accepted as critical to both value capture and value creation in the MNE, especially when exploiting the MNE's firm-specific advantages, i.e., its proprietary knowledge, which typically exhibits public goods characteristics (Rugman, 1981; Rugman and Verbeke, 2005b). Economizing on bounded rationality is also important when contemplating alternative governance mechanisms for knowledge management; here, the ease of linking the knowledge exploration process with subsequent production and marketing activities, i.e., the challenge of effective and efficient innovation *in its entirety*, is a key consideration.

Bounded reliability reflects the *scarcity of making good on open-ended promises*: good faith contractual representations do not always result in the realization of the promised outcomes or performance milestones due to a variety of factors. Safeguards or enforcement mechanisms (Argyres and Liebeskind, 1999) to heighten detection of - and provide punishment for - renegeing are symptomatic.

Importantly, the concept of opportunism, which is a key element in Williamsonian TCE, and has been criticized as an inappropriate foundation of management theory (Ghoshal and Moran, 1996), is only one expression of bounded reliability, as assumed implicitly in much of modern TCI theory and visible in numerous modern cases on MNE management. Opportunism implies ex-ante false commitments and/or ex-post malevolent renegeing on commitments. In a Williamsonian world, safeguards need to be established to reduce the probability of opportunistic behavior, and to punish it when it occurs. This is important both when dealing with outside contracting parties in a situation of small numbers bargaining and asset specificity, so as to mitigate the risks of cheating, and to reduce shirking inside the MNE. However, precisely inside the MNE, with managers often committed to spend a substantial portion of their career within a single company (or at least within a single industry), with their professional mobility dependent on their reputation, and with their professional pride to do what is in their mind the best job possible, more common expressions of bounded reliability may prevail, especially *benevolent preference reversal over time*.

Benevolent preference reversal may result from both recurrent, unintentional over-commitment and recurrent 'local' prioritization, with the word 'local' referring to the main activities, dispersed in geographic space, for which specific individuals and groups are made responsible. These problems cannot be simply reduced to opportunism issues. Commitments requested by CHQ and intentions expressed to CHQ to achieve a particular outcome/performance level, do not always result in the realization of the promised

outcome/ performance milestones due to a variety of factors, including the misalignment of incentives. Absent opportunism, the bounded reliability problem is not that reality turns out differently from prior expectations (which is a mere bounded rationality issue), but that individuals recurrently experience (benevolent) preference reversal over time, a well-known phenomenon in psychology (Steel and König, 2006). For example, at the level of a division, the divisional manager may typically promise the execution of specific investment projects in accordance with CHQ preferences, and commit to specific performance requirements. However, a combination of factors such as a substantial distance in time from any sanction in case of non-achievement, a substantial distance in space from the headquarters' monitoring apparatus, and the relative proximity and intrinsic satisfaction derived from focusing on autonomous, locally driven investment opportunities with immediate local rewards such as an improvement of relationships with local stakeholders, etc. drive preference reversal. This occurs especially if ultimate performance cannot be appraised objectively and in full (a bounded rationality problem), as is the case when substantial reciprocal interdependencies exist among various subunits in the organization so that an individual (or unit's) performance cannot be measured accurately.

Apart from describing behavioral reality more correctly and fully than the opportunism concept, there are two additional advantages of adopting the bounded reliability concept: first, opportunism is a concept reflecting abundance (in terms of propensity to cheat and shirk), in contrast to bounded rationality. Bounded reliability, as is the case with bounded rationality, reflects scarcity, in this case scarcity of making good on open-ended promises. Second, for decades there has been a debate between economists and institutional theory scholars on the drivers of change: in economics the main driver is increased efficiency; in institutional theory it is increased legitimacy. A number of empirical articles in business have attempted to 'test' these two alternative explanations for changes in managerial settings. By building upon the bounded reliability concept, the need for alternative explanations may in many cases be reduced. For example, historically the relatively slow diffusion of multidivisional governance, in spite of its proven efficiency impacts (not taking into account the causal ambiguity problems associated with such a managerial innovation and the related risk perceptions, nor the possibility of technology-driven rigidities), has been caused in part by the presence of powerful functional groups, in favor of the status quo inside large diversified firms. From an institutional theory perspective, powerful stakeholders considered such a change in governance as illegitimate. From a TCI perspective, governance change would have increased bounded reliability problems, as the stakeholders resisting change would have become 'unreliable' (reneging on their employment contract expectations by simply exiting the company or by sabotaging the new system's implementation, etc.) thereby reducing the effectiveness and efficiency of the firm's functioning. However, when a crisis situation unfolded, and a search process was undertaken by the stakeholders concerned to find a solution, the new governance form's legitimacy increased and the danger of reduced reliability of groups previously opposed to the new form faded away. In general terms: expected increases in legitimacy of a particular course of action, such as the choice of a governance form or pattern of behavior, can often reasonably be interpreted as the equivalent of reduced bounded reliability challenges originating from stakeholders able to affect the firm's functioning.

Favorable organizational context for effective and efficient knowledge management in its entirety. When penetrating foreign markets, firms must *first* deploy existing, non-location bound (or internationally transferable) knowledge in those foreign locations (Buckley and Casson, 1976; Rugman, 1981). *Second*, in order to be successful there, they must also engage in investments, permitting the combination of non-location bound knowledge from the home country with new, location-bound knowledge in specific host countries or complementary non-location bound knowledge required to operate profitably abroad. Since both the initial and the recombined knowledge bundles typically have public goods characteristics, the MNE faces a probability of serious loss, if these bundles are unintentionally absorbed by external actors, or improperly combined inside the MNE, in host markets. *Third*, a more recent phenomenon is the need for selectivity (and resulting corporate coherence) in the face of easy access to multiple technologies in multiple foreign locations, meant to create reverse knowledge transfers. Here, the MNE acts as a knowledge network, with several home and host country operations involved as actors in knowledge creation and diffusion activities (Rugman and Verbeke, 2001).

Cantwell's (1995) incisive analysis of MNE technological diversification strategies has demonstrated that three stages of international knowledge recombination must be distinguished. The *first stage*, covering the post World War I era up to 1970, had MNE foreign subsidiaries engaged primarily in the *adaptation* of home country knowledge to host country requirements. Technological diversification (albeit largely incremental) thus went hand in hand with geographic diversification. The *second stage*, which lasted until the mid-eighties, was an era of increased technological interrelatedness, also at the international level. MNE knowledge *accumulation from international sources* increased, partly driven by a reduction in transport and communication costs, and in many cases by the changing nature of the technological knowledge itself, which permitted its easier diffusion across sectors and national borders. In the *third stage*, which is still ongoing now, new capability creation requires the use of *internal networks*, with a strong need for selectivity in the choice of interconnected locations (e.g., 'higher order' regions), that contribute to *new knowledge combinations from various sources*, see also Cantwell and Piscitello (1999) and Cantwell and Iammarino (2000). The modern MNE that strategically integrates complementary knowledge sources from different geographic locations (Cantwell, 1989) and harnesses multiple technologies (Cantwell et al., 2004) is thus one that requires even more than before a focus on *dynamic selectivity in governance*. Even in the context of 'asset seeking' international diversification (Cantwell et al., 2004), whereby the strong need to manage tacit knowledge and the high potential benefits of learning-by-doing may act as stimuli for internalization, it is important to note that bounded rationality and bounded reliability challenges, though mitigated through internalization as compared to the use of market mechanisms (such as technology licensing), are not eliminated completely (Coase, 1937). Senior managers must monitor and mitigate the effects of bounded rationality and bounded reliability inside the firm, sometimes making extensive use of price-like mechanisms, Hennart (1991; Rugman and Verbeke (2003). Importantly, most of the innovation activity described above in large MNEs occurs within global product divisions or regional divisions, see, e.g., Rugman (2005)

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Table 1: Multidivisional versus metanational governance

Governance principle	Multidivisional governance	Metanational governance
Specialization in decision-making (CHQ versus divisions)	<p>Strong:</p> <ul style="list-style-type: none"> - CHQ set product/market scope boundaries, make key resource allocation decisions and focus on overall organizational performance. - CHQ limit their intervention in divisions, except in crisis situations and for large scale, resource intensive projects. - Divisions have substantial autonomy within the boundaries of the product/market scope determined by CHQ and the resources allocated to them. 	<p>Weak:</p> <ul style="list-style-type: none"> - <i>Sensors</i> and <i>magnets</i> benefit from participative decentralization, but with continuous CHQ involvement. - <i>Sensors</i> and <i>magnets</i> have a 'direct line' with corporate headquarters. - The output of <i>sensors</i> and <i>magnets</i> leads to continuous CHQ intervention at the <i>operations</i> level, so as to enforce the obligatory absorption of 'valuable' innovations.
Selectivity in interdivisional interactions	<p>Strong:</p> <ul style="list-style-type: none"> - Comparatively limited interdivisional communication and exchange. - Use of an internal price mechanism where possible in exchange between divisions. 	<p>Weak:</p> <ul style="list-style-type: none"> - <i>Sensors</i> and <i>magnets</i> interact extensively, and impose their preferences on the <i>operations</i> level. - Price mechanism is avoided where possible, to stimulate 'knowledge sharing, melding and leveraging'.
Incentive systems for subunits	<p>Standardized:</p> <ul style="list-style-type: none"> - CHQ monitor and reward divisions largely on the basis of (quasi-) standardized, quantifiable outputs. 	<p>Variable:</p> <ul style="list-style-type: none"> - CHQ monitor and reward <i>sensors</i> and <i>magnets</i> according to venture capital approach. - CHQ monitor and reward the <i>operations</i> level as with multidivisional governance.
General innovation strategy	<p>Sequential and separate roles for CHQ and divisions:</p> <ul style="list-style-type: none"> - CHQ provide guidelines on what constitutes acceptable areas of innovation. - Quasi-autonomous divisions act on innovation opportunities within their mandate and bear responsibility for the results. 	<p>Simultaneity and non-separation of CHQ and subunit actions:</p> <ul style="list-style-type: none"> - CHQ review and select ideas based on business plans presented by multiple <i>sensors</i> and <i>magnets</i>. - CHQ impose the commercialization of innovations coming from <i>sensors</i> and <i>magnets</i> on the <i>operations</i> level.
Management of incremental versus disruptive innovation	<p>Focus on incremental innovation:</p> <ul style="list-style-type: none"> - Divisions reduce uncertainty by focusing on incremental innovations that fit current customer demand. - R&D, marketing and sales are geared towards products that fit preset profit margin requirements. - Intra-divisional innovation emphasis reduces complexity. - Separate routines are set up for 'induced' and 'autonomous' innovation projects. 	<p>Focus on emerging, disruptive innovation:</p> <ul style="list-style-type: none"> - <i>Sensors</i> and <i>magnets</i> embrace uncertainty by focusing on disruptive innovations. - <i>Sensors</i> and <i>magnets</i> are unconstrained in their quest for innovation by short-term profitability requirements. - <i>Sensors</i> and <i>magnets</i> are unconstrained by complexity-reduction in term of innovation alignment with the <i>operations</i> level - <i>Sensor</i> and <i>magnet</i> innovations are inherently 'autonomous'.