Post-Crisis Developments in Multinational Corporations' Global Organisations

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Abstract: This paper investigates multinational corporations' (MNCs') organisational responses to the global financial crisis. Relying on qualitative content analysis of the annual reports of MNCs in the automotive, electronics and machinery industries, and drawing on the results of interviews made with senior local executives, the association between the adverse turn in the business cycle and MNCs' organisational reconfiguration actions is analysed, together with the key drivers of organisational restructuring.

We find that the global crisis has reinforced and intensified ongoing organisational reconfiguration trends and argue that crisis-prompted responses need to be separated from fundamental organisational transformation catalysed by the crisis. Strategic organisational realignment programmes have been driven by long-standing technological and market trends rather than by transient developments.

Keywords: crisis adaptation; organisational realignment, global financial crisis, environment–strategy–structure fit

JEL codes: D22, F23, L22

1. Introduction

Most papers addressing MNCs' strategic reactions to the global financial crisis of 2007–2009 were concerned with actions that belong to the category of financial restructuring. Scholars analysed corporate spending plans to identify the prevalence of reductions in tangible and intangible investment (Banerjee et al., 2015; Borisova and Brown, 2013; Guevara and Bonfour, 2013; Rollins et al., 2014), and actions aimed at the restructuring of corporate debt (Damijan, 2014; De Fiore and Uhlig, 2015). Another stream of research was concerned with firms' labour-shedding behaviour and/or their adoption of alternative cost-cutting strategies (Du Caju et al., 2015; Fabiani et al., 2015). A further prominent research question addressed the association between firm survival and the evolution of firms' R&D budget during the crisis years (Archibugi et al., 2013).

Although it is universally accepted that a changing environment induces responses not only in strategy but it also requires appropriate changes in firms' organisations (cf. the classical thesis on the interrelation of environment, strategy, structure, and performance—Chandler, 1962; Rumelt, 1974) multinational corporations' (MNCs) actions undertaken to reconfigure their global network organisations as a response to the crisis has received relatively little attention (important exceptions include Boyle and McDonnell, 2013; Ecorys, 2009; Knudsen and Foss, 2015; Lee and Makhija, 2009).

This is all the more puzzling, given the recognition that effective orchestration of MNCs' global network organisation is an important factor of competitiveness (De Marchi et al., 2014). Moreover, there are several different, albeit equally well-established strands in the literature, such as the contingency theory (Child, 1972), the evolutionary theory of the firm (Nelson and Winter, 1982, 2009), and the dynamic capabilities view (Augier and Teece, 2009; Eisenhardt and Martin, 2000) that are all concerned with the dynamic fit between organisational structure and the environment. Proponents of these theories maintain that firms actively build,

¹ References are limited here to examples of large bodies of the literature, a detailed review of which is beyond the scope of this paper.

integrate, and reconfigure their (organisational) resources in response to changes in the environment.

Hence, the objective of this paper is to investigate the association between the adverse developments in the business cycle in 2007–2009 and MNCs' organisational realignment actions. We analyse the features and the key drivers of MNCs' organisational restructuring actions to find out whether economic downturn, indeed, prompted organisational reconfiguration actions, implemented to improve the fit of MNCs' structure with the changed environment.

We rely on two qualitative methods of analysis: (a) on a qualitative content analysis of a sample of MNCs' annual reports in the automotive, electronics and machinery industries, and (b) on interviews made with senior local executives.

The paper is organised in 5 sections. Section 2 provides a brief summary of the related literature. Section 3 presents the research method and the sample of the companies that we interviewed. Section 4 reviews the findings. Section 5 provides some concluding remarks and presents the limitations of our research.

2. Conceptual framework—organisational restructuring in turbulent times

Studies focusing on MNCs' organisational responses to the radical contraction of market demand during the global crisis of 2007–2009² originate partly in the strategy, structure, and performance paradigm (Chandler, 1962; Miles et al., 1978; Rumelt, 1974) and partly in the corporate restructuring literature that focuses on changes in firms' structure and processes (i.e. on organisational restructuring, along with financial restructuring and business portfolio restructuring—Bowman and Singh, 1993). This research stream is also associated with the dynamic capabilities literature (Eisenhardt and Martin 2000, Teece et al. 1997) since it involves the reconfiguration of firms' structures and the realignment of resources to meet the requirements of a changing external environment.

As outlined previously, most of the empirical papers on responses to the crisis scrutinised cost-cutting actions. Accordingly, papers investigating crisis-triggered organisational transformation actions were concerned mainly with the occurrence, modes and outcomes of divestment (see review by Sanchez-Riofrío et al., 2015). The implicit assumption of these papers was that at times of crisis, firms would adopt retrenchment strategies and dispose of non-core business segments. A frequent research question of these papers was what makes a subsidiary or a business segment more-than-average exposed to divestment (Brauer and Wiersema, 2012; Decker and Mellewight, 2007; Fisch and Zschoche, 2012; Kolev, 2016; Lee, 2013; Song, 2014).

A number of investigations focusing on firms' acquisition behaviour during the global financial crisis have indirectly reinforced the dominance of retrenchment strategies. Despite some empirical evidence (Wan and Yiu, 2009) that acquisitions during economic downturn have a positive impact on performance, albeit this effect is moderated by the efficiency of post-acquisition organisational restructuring (Barkema and Schijven, 2008), most papers conclude that uncertainty avoidance and reactive strategies have been the norm during the crisis rather than the exception, and that the global crisis negatively affected the likelihood of both diversifying and cross-border acquisitions (Cerrato et al., 2016; Kunc and Bhandari, 2011)—at least in the

3

² Although the Asian crisis of 1998 would present noteworthy analogies and offer opportunities to analyse similarities and differences in firms' reactions, for space limitations, the focus of the literature review is limited to papers concerned with firms' responses to the 2007-2009 global financial crisis.

case of MNCs headquartered in developed economies (see Anderson and Sutherland, 2015 for contrary evidence in emerging economies).

Other crisis-driven organisational changes under scrutiny included corporate breakup transactions, such as equity carve-outs and spinoffs (Eckbo and Thorburn, 2013), and the relocation of some operations offshore. These latter actions were often analysed together with reactions targeting the opposite direction: the insourcing or reshoring of previously outsourced/offshored operations (Boyle and McDonnell, 2013; Drauz, 2014; Kinkel, 2012; Knudsen and Foss, 2015). With respect to MNCs' decisions to outsource or, conversely, increase the vertical integration of activities in response to recessionary shocks, the evidence is mixed. Boyle and McDonnell (2013) posit that increased offshoring/outsourcing is characteristic mainly of MNCs originating from liberal-market economies. Knudsen and Foss (2015) found evidence for both increased and reduced vertical integration. Conversely, drawing on the analysis of a large sample of German manufacturing companies, Kinkel (2012) conjectures that, while relocation activities declined significantly since the emergence of the global economic crisis, the level of backshoring has remained stable. Kinkel also found that far-shore destinations in Asia have become preferred over near-shore locations in Eastern Europe.

While the above-cited papers examined single (or a couple of) organisational initiatives, Fromhold-Eisebith (2015) set up an encompassing model of organisational responses to the crisis. She distinguished between (a) market reorientation, implying the restructuring of distribution channels and resources re-allocation; strengthening the manufacturing facilities that are in regions with promising end markets and, conversely, reducing investment in facilities operating in crisis-hit regions; (b) value chain optimisation, implying the reorganisation of supplier and outsourcing relations; (c) strategic reorganisation, including mergers and acquisitions, sale of corporate branches to others, and strategic alliances with partners and/or competitors; (d) innovation and upgrading-focussed strategy, implying the strengthening of R&Doriented and upgraded corporate branches and the shift of R&D and/or of other high value-adding tasks to these units; (e) relocation of production including site closures and the concentration of mandates in selected low-cost locations and/or the opening of new plants in low-cost locations; and, finally, (f) transformation of the entire production landscape, which includes steps as diverse as exiting selected markets, changing the operational focus, and establishing new enterprises.

In line with Fromhold-Eisebith's (2015) approach, we posit that MNCs' post-crisis organisational restructuring involved a complex set of—often interrelated—actions, comprising a combination of business entries and exits, and reconfiguration of assets and resources. Furthermore, they were manifested also in other organisational dimensions, such as (de)centralisation, and cross-functional process redesign.

In contrast with some critiques of the strategy–structure–performance construct, who question its applicability in high-velocity environments (reviewed by Amitabh and Gupta, 2010; and Aupperle et al., 2014) and cast doubt also on the direction of causality between the components of the construct (Galan–Sanchez-Bueno, 2009; Pertusa-Ortega et al., 2010), we argue that Chandler's logic is applicable in a crisis / post-crisis environment. Note that we do not investigate the 'performance' element in Chandler's construct: our investigations are limited to the existence of a causal association between the crisis (which is the environment component of Chandler's extended thesis — Child, 1972; Rumelt, 1974) and the

transformational changes that reorganised the structures of the surveyed MNCs, as they were perceived by the executives we interviewed.

We argue that although changes in structure cannot be directly associated with changes in the business environment, the key drivers of organisational restructuring actions still suggest that Chandler's environment \rightarrow strategy \rightarrow structure \rightarrow performance construct³ applies also in a turbulent economic environment.

To anticipate a finding of this study, we found that post-crisis changes in firms' organisational structure have been driven by long-standing technological and market trends rather than by transient developments. The recognition of these trends influenced strategy, and triggered fundamental organisational transformation actions.

3. Research method and sample

To answer our research questions we applied two complementary qualitative methods. First we undertook qualitative content analysis (Bowen, 2009; Duriau et al., 2007) of the annual reports of twelve global companies in the automotive, electronics and machinery industries. The period we surveyed spanned eight years, between 2007 and 2014. In line with Duriau et al. (2007) we believe that content analysis is an appropriate method for investigating complex business phenomena including organisational transformations. Annual reports provide not only financial information, but they also list the key organisational developments of the given year, such as acquisitions, divestitures, establishment of new subsidiaries and functional centres, strategic alliances and so forth. They provide an organisation chart and describe the management and control structure. They include details about the company's general strategic orientation and about new turns and new initiatives within functional strategies, including the organisational strategy. They also address questions of strategic risk and uncertainty.

When surveying the annual reports, we checked for the occurrence of organisational actions, such as (a) divestitures and acquisitions; (b) production relocation, offshoring, outsourcing, versus backshoring or insourcing; (c) closure of facilities, versus establishment of new facilities (subsidiaries; research centres; shared services centres; and new regional headquarters); (d) consolidation of the organisational structure and value chain optimisation; (e) disposal (sale) of business segments, versus expansion in new business areas or geographical areas; (f) other fundamental organisational transformation actions. Furthermore, we reviewed the descriptions of new strategic orientations and analysed report sections on opportunities and risks.

Content analysis was complemented with a multiple case study-based exploratory research (Eisenhardt 1989). By applying content analysis in conjunction with interviews we could triangulate the findings to maximise reliability.

An interview guide containing predominantly open-ended questions allowed interviewees to provide rich descriptions of complex, multifaceted processes: to interpret and evaluate the organisational transformation actions during and following the crisis, and assess the main drivers of these actions. They were also asked to evaluate whether the organisational restructuring moves could be associated with the financial and demand shocks of the crisis years.

³ For a comprehensive review of the complex relation between the individual components of the construct see Aupperle et al., 2014.

Interviewed managers were, in most cases (N = 10), CEOs of MNCs' Hungarian subsidiaries, in two cases, Hungary-based divisional leaders were interviewed. The choice of respondents relative to the research question may seem problematic, since mother company executives could in principle provide more authentic information about the drivers of and the strategic considerations behind organisational transformation actions. However, our informants confirmed they had first-hand experience about the reasoning behind organisational transformation actions. They were involved in the decisions on relocation actions. since they participated in across-subsidiary competition for the various production activities and for hosting functional shared services centres: they elaborated arguments for being selected as a host country, and prepared feasibility studies. The reasoning behind location decisions were regarded as transparent. Regarding the fundamental organisational transformation actions, it was self-evident that HQ officers shared all the arguments that supported the new direction in the organisational strategy, in order to ensure local, divisional and functional executives' commitment.

When selecting the sample, we faced another problem that was also related to respondent bias. In line with global developments with respect to the average tenure and turnover of executives (average tenure shows a continuous decline and CEO turnover increases—Schloetzer et al., 2015), in Hungary it was also difficult to find large local subsidiaries with interviewed managers all in the same managerial position already during the crisis years. In our sample, only five managers out of twelve would fulfil this requirement. Neither were all interviewed managers in the same firm seven or eight years prior the interview: only ten out of twelve. Interestingly, the two newcomer CEOs worked previously (during the crisis years) at another firm in our sample. Nevertheless, all interviewed managers confirmed, they had sufficient information about both subsidiary-level and at the MNC-level firm-specific developments during and after the crisis years. Moreover, we believe the quality of the respondents compensates for the occasional lack of their personal experience in the given position.

We applied a purposeful sampling method (Patton, 1990) and selected foreign-owned global companies from the top 500 list of companies based in Hungary. Our aim was to select information-rich cases: companies whose insights draw on a multiplicity of experiences, i.e. companies whose cases promise observations about issues of central importance to our research. Instead of trying to reflect a maximum variation with our case selection, we opted for a more or less homogenous sample consisting of three industries (automotive, electronics and machinery) that accounted for more than 40 % of total Hungarian manufacturing production and nearly 60 % of manufacturing export in 2014.

Actors in these industries have been hit particularly hard during the global crisis. As Ecorys (2009) argued, the exposure to adjustment pressures of each of these industries was above the average, because they are technology-intensive and highly globalised industries. Ecorys (2009) maintained that adjustment pressures are linked to innovation and technological changes—this finding is supported also by the results of our investigations (see section 4.2). Another commonality that accounts for the selection of these industries is that Central Europe is an important production location—at least from a European perspective (Pavlínek, 2015; Sass, 2015).

We contacted twenty global companies and twelve of them accepted participation in our research. Altogether, our sample consists of twelve (American, Danish, German, and Swedish) MNCs operating in the automotive (2), automotive electronics (2), electronics (4), and machinery (4) industries. On average, these companies had been operating in Hungary for more than 20 years at the time of the interview. The importance of the surveyed Hungarian subsidiaries, considered in terms of their contribution to their parent companies' total production and/or total revenues, is heterogeneous: some are listed among the largest production facilities of their mother companies, contributing to 15 to 23 % of total turnover, while others account for a mere 0.5% of total sales. The average number of employees of the interviewed MNCs was 137,242 in 2014 (global employment). The average global turnover was EUR 31.36 billion in 2014. These numbers reflect that our sample consists of large global corporations.

The interviews, 60 to 90 minutes in length, were conducted between September and November 2015. To preserve anonymity, neither corporate names nor main products will be specified.

Table 1 Summary of the surveyed companies

No.	Industry	HQ	intervie	date	No.	Industry	HQ	interviewe	date
		location	wee				location	е	
1	Е	SE	CEO	18/09/	7	M	DE	CEO	30/09/
				15				carved-out	15
								and sold	
								division	
2	M	DK	CEO	22/09/	8	E	USA	divisional	07/10/
				15				leader	15
3	Α	DE	CEO	22/09/	9	Е	USA	CEO	13/10/
				15					15
4	Е	DE	CEO	25/09/	10	M	DE	CEO	14/10/
				15					15
5	Α	USA	CEO	25/09/	11	AE	USA &	CEO	15/10/
				15			DE		15
6	М	USA	divisional	29/09/	12	AE	DE	CEO	09/11/
			leader	15					15

A = automotive; E = electronics; AE = automotive electronics; M = machinery SE = Sweden, DK = Denmark, DE = Germany, CEO = chief executive officer, HQ = headquarters

4. Findings

4.1 Continuous and evolutionary organisational changes: few perceived direct effects of the crisis

The first outcome of the analysis of the surveyed annual reports was that the MNC owners of the companies in the sample implemented a great number of organisational changes before, during, and after the crisis. These changes were not restricted to the divestment and sale of business units, and supply-chain optimisation: they also included targeted acquisitions, other expansionary moves, and actions aiming at the recombination of resources, such as the relocation of activities.

In a number of cases, retrenchment-type changes occurred already before the crisis. Conversely, expansionary organisational actions, including establishment of new subsidiaries (both manufacturing facilities and sales companies) and new regional functional business units (such as service centres, distribution centres, test centres, and development centres), purchase of shares in existing joint ventures were also widespread. Furthermore, over time, the surveyed MNCs have increasingly

relied on strategic partnerships: in addition to acquisitions implemented to access specific technological expertise, they have forged strategic alliances with partners and/or competitors.

Altogether, sample firms were characterised by quasi-continuous recombination of resources and reconfiguration of structure. The actions that shaped the surveyed firms' organisational configuration during and after the global crisis were not consistent: actions would not unambiguously point in a specific direction, e.g. to retrenchment or, conversely, to expansion through proactive investments. As summarised in Table 2, each company in the sample implemented both reactive (defensive), and strategic (offensive) organisational transformation actions. Portfolio moves included both divestments and expansionary acquisitions, rationalisation and concentration of activities, and diversification and entry into new business areas.

Another common development that took place several (four to seven) years after the crisis was the implementation of actions envisaging fundamental organisational transformation, such as changes in the business model; group-wide centralisation; reorganisation of the divisional structure; splitting the company into two.

Table 2

Examples of organisational changes implemented by owners of sample companies over the period between 2007 and 2014

Defensive organisational transformation actions	Companies
Announcing and implementing cost and efficiency programmes;	1, 3, 8, 10, 11, 12
Divestments;	1, 4, 5, 6, 7, 8, 9, 10,
Closing selected facilities;	5, 6, 10, 12
Discontinuation of selected business lines, streamlining product mix;	1, 4, 7, 8, 11,12
Sale of shares in joint ventures;	1, 3, 4, 7, 8, 9,
Simplifying the portfolio: disposing of and selling non-core businesses;	4, 6, 7, 9, 11, 12
Rationalising production and support processes; outsourcing, aligning	1, 2, 3, 5, 9, 10, 11,
capacity to changes in global demand;	12
Relocating selected operations to low-cost countries;	
Merging selected group companies;	1, 2, 4, 5, 8, 9, 10, 12
Reducing costs through the revision of internal processes.	2, 3, 4, 8,
	1, 2, 10, 11, 12
Offensive (strategic) organisational transformation actions	Companies
Acquisitions;	1,3,4,6,7,8,9,10,11,12
 Reshoring (backshoring) previously offshored activities; 	10,11,12
• Establishment of new corporate R&D centres; or local development	1, 2, 3, 7, 9, 10, 12
centres in promising markets that host production facilities;	
 Forging new strategic partnerships; 	1, 2, 3, 7, 9, 12
• Concentrating selected support functions: establishing shared services	1, 2, 3, 6, 10, 11
centres;	
 Establishing new regional HQs in high-growth areas; 	2, 6, 7, 8, 11
• Establishing new plants / companies / sales offices to reinforce global	2, 3, 6, 7, 10, 12
presence;	
 Expanding production facilities in selected promising markets; 	2, 3, 6, 7, 8, 11
• Development of new business areas: implying the creation of new	1, 2, 3, 4, 6, 7, 8, 9,
business divisions and increased reliance on business segments that are	10, 11, 12
less hard hit by the crisis;	10, 11, 12
• Signing new joint venture agreements, or purchasing all shares in existing	3, 7, 12
joint ventures	•
Fundamental organisational transformation actions	Companies

Shifting to a new, service-centric business model;	1, 2, 6, 8,
• Implementation of Principal Company (PC) model with toll manufacturing	, , -, -,
(PC owns the stocks and is the only legal owner in terms of orders and	2
goods; previously independent legal entity manufacturing subsidiaries	_
become toll manufacturers);	
Issuing initial public offering (NASDAQ);	5
	5
Changing the business model from that of a broad conglomerate to that of	
a company more focussed on selected business lines; reducing the weight	6
of the financial services division;	
Establishing global functional units	6
Focusing on cross-segment collaboration	6, 7, 11
• Establishing dedicated independent teams to enter new business areas or	6, 7, 9
implement pilot projects;	
Establishing internal start-ups related to new business areas	7
Splitting the global company into two independent global companies	8
• Standardising processes; harmonising the corporate enterprise resource	10, 11
planning (ERP) system	
Creating a new governance structure (decentralised operation)	11, 12
management; centralised strategic management), redefining role processes	11, 12
and reporting lines	
• •	0 11 10
Establishing a localised structure, decentralising certain functions	8, 11, 12

Source: interview information and corporate annual reports

Incremental organisational changes have been driven by two contradictory forces, both of which can be observed at practically every company interviewed. The first factor that drives changes is the quest of mother companies to simplify the organisational structure, to enhance its coherence, and to improve the efficiency of resource allocation. The second factor is the perceived necessity of establishing an organisational imprint of new corporate initiatives and of newly-decided strategic directions. Driven by the ambition to increase stockholders' value, maximise scale, improve efficiency, and increase returns, global companies come up with new business ideas and initiatives every year. Most of these initiatives have organisational implications as well. Together, these developments account for MNC organisations being in a constant state of flux. The accounts of two informants provide an illustration.

'We launched our excellence programme just before the crisis to harmonise the diverse management models of our business units into one common corporate excellence model. Since then, the programme has been refined and extended each year to include various group-wide 'campaigns' focusing among others on process improvement and process standardisation, the standardisation of product development, excellence in purchasing and supply chain management, quality improvement, and energy efficiency. Most of these campaigns within the excellence programme have had organisational implications: some smaller or larger changes in the organisational structure have been implemented. Examples include the creation of an Excellence Steering Group, a Process Management Board, the establishment of new centres of excellence, and the creation of group-wide energy management jobs'.

'When reviewing our business perspectives and preparing a medium-term roadmap during the crisis years, we have acknowledged that our core business does not offer satisfactory growth prospects. We launched an ambitious initiative aiming to discover new business areas and new technology platforms and launch new products. We created an organisational structure that facilitates experimentation with new businesses and new innovation platforms – keeping in mind that these experimentations may end up either with the sale of the given new segment or with its integration in the corporate architecture. As it often happens, the related organisational transformation did not immediately produce the expected

results. Consequently, we modified it again and experimented with new structures and new governance forms for years before arriving at the present setup'.

The managers interviewed unanimously claimed that few of the *fundamental* organisational changes could be traced back directly to recessionary shocks. They emphasised that differentiation is necessary between MNC-level *strategic* realignment and immediate reactions to economic downturns. Indeed, some immediate reactions envisaged cost reduction and were manifested in relocation moves and/or the closure of facilities in high-cost locations. Conspicuous as they seem in the light of media coverage, these are dwarfed by *strategic* organisational reconfiguration actions. However, few of these latter moves were directly associated with the rapidly aggravating international business environment.

One explanation of the few perceived *direct* effects of the crisis is that fundamental organisational realignment actions were regarded as being the outcome of *organic development*. Rather than being directly associated with the downturn of the business cycle, organisational changes have been explained by owners' long-term strategies.⁴

The following account illustrates the claim that major organisational transformations result from long-considered strategic decisions rather than being driven by transient developments.

'When our owner decided to divest and sell its pneumatics business line, the executives considered two alternative options. Although pneumatics had clear advantages: good performance indicators, the globally known brand name of our owner, and strong relations with other divisions, the size and the market share of this division did not match those of the top global competitors. In pneumatics, we were the third largest in Europe. However, in an era of global consolidation and with escalating price pressures, only the largest can survive. One option would have been to take over one of the key competitors (they are, however, larger by an order of magnitude than this business segment of our owner). Another possibility: to merge this business line with another one within the MNC's organisation and try to achieve, thereby, additional economies of scale. Our owner chose the third option: it restructured the pneumatics segment through relocations and capacity optimisation, divested, and sold it'

As for the few organisational actions that were associated with the crisis, only the *catalysing* effect of environmental turbulences has been acknowledged, as illustrated by the following quotes.

'Crisis has brought out existing organisational and production inefficiencies. You know, when we are riding the expansion wave, we pay less attention to the hidden assets—to the huge savings we can achieve with some creative reorganisation steps'.

'Crisis prompted cost reduction and restructuring actions. Turnaround followed quite rapidly, due partly to beneficial market trends. The company started to grow at an extraordinary speed. Some years later, in 2014, the global HQ launched a comprehensive, multi-year organisational restructuring programme to optimise the functional and the operations procedures and to harmonise and standardise the IT systems. This restructuring was not prompted by the crisis but rather by the subsequent rapid growth

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⁴ Additionally, the managers interviewed ascribed some organisational changes to the emergence of ad hoc opportunities. For example, the bankruptcy (or the financial difficulties) of a competitor or of a company specialised in complementary technologies often provoked a takeover decision.

through acquisitions that necessitated the corporate-wide harmonisation of cultures, IT systems, and processes'.

4.2 Key drivers of major organisational changes: long-standing market and technological trends

An important finding that crystallised from the interviews is that long-standing technological and market trends were the main drivers of actions involving fundamental organisational transformation.

The surveyed MNCs systematically monitor and analyse industry-specific technological and market trends to detect opportunities and threats as early as possible.

According to our informants, key trends that influenced the organisational strategy and the structure were (a) the shifting composition of global demand; (b) the consolidation and concentration of global value chains and the resulting increase in the market power of the survived actors; and (c) industry-specific technological trends. This section reviews them in turn, together with the surveyed firms' organisational responses.

The phenomenon of shifting end-markets from North to South is a thoroughly discussed development (e.g. Cattaneo et al., 2010; Kaplinsky and Farooki, 2011). The global crisis accentuated the 'new market imperative' (Coe and Yeung, 2015, p. 101). Indeed, the new market imperative was mentioned by almost all our informants, as a trigger for strategy transformation that, in turn, had organisational implications. Organisational responses to the new market imperative were manifested in the establishment of new plants, sales offices, distribution and logistics centres and development centres in high-growth regions. One of the most conspicuous organisational moves that reflected a shifting focus towards new growth regions was the establishment of new regional HQs in selected emerging markets. Overall, responses reflected a general effort to increase global presence.

Another recognition that provoked organisational responses was that the competitive landscape has changed considerably. New competitors emerged and, conversely, the number of existing competitors diminished due to mergers and acquisitions. The survived established competitors have, however, leveraged their increasingly global scale. Furthermore, the buyers/customers of the companies in the sample engaged in acquisitions and takeovers themselves. Buyers (e.g. large original equipment manufacturers) consolidated and concentrated their procurement to attain better prices. Similarly, suppliers also became more powerful due to industry concentration and consolidation. Technology development (discussed later) necessitated the integration of new, specialised suppliers in the value chain that, in turn, leveraged their specialised expertise and captured an increasing share of total profit.

Together, these factors exerted pressure on the prices and margins of the surveyed MNCs.

The changing competitive landscape prompted the surveyed global companies to increasingly tailor their solutions to customers' specific needs and localise their businesses. Moreover, to compensate for falling margins, firms transformed their business models from product-based to service-centric, another long-standing trend that was accentuated by the crisis. By 2008, both types of organisational realignment had been pursued for at least five years. However, the global crisis significantly

intensified these processes.⁵ The accounts of several managers interviewed demonstrate the strong association between changes in strategy (increased customer focus, localisation, and service-driven business model transformation) and changes in structure.

'Recognising that some of our customers account for a larger share of our total revenues than some countries in total (!), a network of key account managers has been created. We realised that we can hardly compete on the basis of 'global products' and 'global operations' any more. We created a corporate division responsible for implementing the twin tasks of global products and local business. We increasingly localise support activities as well'.

'In contrast to the previous organisational setup with division-specific global and regional sales teams working together, nowadays customer-specific key account managers coordinate the preparation of individual large projects. Two key account managers work together: the one responsible for the customer in the country where the customer's HQ are located and the one responsible for the customer's subsidiary in the country where the project is going to be implemented. This ensures that our proposal is really tailored to the specifics of the planned project'.

Industry-specific technological trends (such as electromobility and automated driving) and advances in other broad technology areas (Manyika et al., 2013) represent the third, albeit the most important factor that influenced the reconfiguration of sample companies' organisations. Table 3 presents some examples and summarises sample companies' organisational responses to them. Across-sample organisational responses to the recognised trends were heterogeneous in terms of companies' make-or-buy choices. Some companies built up in-house capabilities, while others relied on newly formed strategic partnerships or resorted to external services providers, although hybrid solutions were the most common.

Table 3

Sample companies' organisational responses to technological trends

Examples of	Organisational responses*		
technological trends			
New paradigms in manufacturing, such as ubiquitous computing; cloud-based manufacturing services; big data	 Establishment of dedicated corporate divisions that reflect the newly defined scope of the business; Creation of a new executive position: that of a chief digital officer; Strategic alliances, new partnerships; New work organisation: digital workplaces, virtual teams, new job descriptions; Investments in in-house capabilities to collect, integrate and analyse data; Implementation of the necessary related organisational changes; Increased reliance on new digital support solutions (part of them outsourced). 		
New paradigms in manufacturing, such as robotics, integrated automation solutions; 3D printing; new materials	 Investment by corporate venture capital funds into promising new ventures; Targeted takeovers to extend the value chain coverage; In-sourcing (3D printing in-house of parts that were previously 		

⁵ Note that the two processes are closely interrelated: service-centric business models emphasise local responsiveness, while product-centric models are, rather, associated with global integration (Prahalad and Doz, 1988).

Greater connectivity, Internet of Things (IoT), smart factories; convergence of information technology and manufacturing technology to culminate in the	purchased from external vendors); • Backshoring of selected activities; • Establishment of new centres of excellence and business divisions • Increased reliance on open innovation; • Strategic partnerships, e.g. with software solutions providers whose software will be embedded in production process. • Expansion in new business areas opened up by digital developments: • Establishment of new corporate divisions and centres of excellence; • Intensified acquisition activity;
emergence of cyber-physical production systems (Monostori, 2015)	 Improved supply chain visibility (enhanced supply chain integration) contributes to streamlining and optimising the supply chain; New strategic partnerships, open innovation; Increased cross-divisional collaboration (involving new job descriptions and new executive positions) to bring together 'the physical' and 'the digital'.
Intelligent (smart, connected) products (Porter and Heppelmann, 2014, 2015)	 Strategic partnerships with IT-service providers to jointly develop product-embedded intelligence solutions; Building up additional in-house research capacities; Increased reliance on open innovation; Targeted acquisitions to gain access to complementary technology.
The 'Sustainability imperative' (lowering energy consumption and CO ₂ emissions in the production process)	 Establishment of dedicated green functional departments; Merger and transfer of related activities performed previously in isolated functional departments; Creation of new executive jobs; cross-divisional collaboration for green objectives; Reorganisation of the supply chain; Expansion and diversification of the R&D team; Establishment of new centres of excellence; New technological partnerships, e.g. through participation in research consortia working on green solutions.
Modularisation of product architecture	 Reorganisation of the supply chain: development of stronger ties with selected suppliers; Increased reliance on relocation to low-cost premises; Acquisitions to increase the integration of the solution (the module); Increased reliance on open innovation; Increase of the global footprint. to one or several of the listed actions.

^{*} Individual companies resorted to one or several of the listed actions.

Source: interview information and corporate annual reports

In summary, newly identified emerging technological and market trends have exerted a greater and more obvious influence on organisational changes at the surveyed companies than have transient developments in the business cycle.

5. Conclusion

The purpose of this paper was to explore the real-world phenomena of MNCs' organisational reconfiguration actions during and after the global crisis of 2007 – 2009. We argued that the global crisis reinforced and intensified MNCs' ongoing organisational reconfiguration trends. Global value chain-orchestrating multinational companies are characterised by active portfolio management strategy; they flexibly

adapt to adverse (or to beneficial) changes in the business environment through divestments, reorganisation, expansion, and acquisitions, or by switching value-adding activities between affiliates. They have constantly shifting portfolios of assets; in this sense, real sector companies resemble financial investors. They implement continuous, experimental changes in the organisational design to improve the efficiency of coordination, enhance integration and coherence, facilitate exploration, and bolster exploitation.

Although the global crisis prompted a number of cost-cutting actions, including the occasional closure or sale of facilities, reorganisation, and relocation — actions involving fundamental organisational transformation (i.e. actions that transcended mere cost cutting) cannot be directly associated with the crisis. The strategic organisational realignment programmes that have been implemented with shorter or longer time lags after the crisis, have been driven by long-standing technological and market trends. The recognition of these trends, i.e. of changes in the business environment induced new strategic directions and, in turn, prompted the implementation of fundamental changes in the surveyed MNCs' organisational structure.

This research has a number of limitations. A primary limitation is sample selection bias; large, global MNCs may weather the crisis more easily than family-owned internationalised ventures with a couple of low-cost production facilities. Crisis-driven adjustment and reorganisation steps, as well as reliance on counter-cyclical strategies, may significantly differ across various size categories.

Another limitation is that the interviews concentrated on the experience of executives operating in one peripheral country, making the generalisation of the findings quite problematic (even if the interviewed managers claim they have an overview of the processes of the whole multinational enterprise). Their position is obviously biased by operating in an affiliate of smaller importance. Although this limitation was tried to be controlled for by the systematic analysis of MNC-level documents, caution is required, especially, when interpreting the managers' quotes.

The strong industry-specific character of the drivers of organisational reconfiguration represents a further limitation. Further research is required to explore the factors that influenced the reaction of MNCs to the global crisis in other industries.

Finally, this research has not controlled for home and host country-specific institutional factors that also might have shaped the surveyed MNCs' behaviour.

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