



HAL
open science

Managing Evolving Global Operations Networks

Alona Mykhaylenko, Brian Vejrum Wæhrens, John Johansen

► **To cite this version:**

Alona Mykhaylenko, Brian Vejrum Wæhrens, John Johansen. Managing Evolving Global Operations Networks. IFIP International Conference on Advances in Production Management Systems (APMS), Sep 2015, Tokyo, Japan. pp.524-531, 10.1007/978-3-319-22756-6_64 . hal-01417605

HAL Id: hal-01417605

<https://hal.science/hal-01417605v1>

Submitted on 15 Dec 2016

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

Managing Evolving Global Operations Networks

Alona Mykhaylenko, Brian Vejrum Wæhrens, and John Johansen

Centre for Industrial Production, Aalborg University, Aalborg, Denmark
amy@business.aau.dk

Abstract. For many globally dispersed organisations, the home base (HB) is a historic locus of integrative and coordinating efforts that safeguard overall performance. However, the dynamism of global operations networks is increasingly pulling the centre of gravity away from the HB and dispersing it across the network, challenging the HB's ability to sustain its centrality over time. To counteract this tendency, this paper addresses the gap in the literature regarding the development of the network management capability of the HB within the context of its network. Data was collected through a retrospective longitudinal case study of an intra-organisational operations network of one OEM and its three foreign subsidiaries. The findings suggest a row of strategic roles and corresponding managerial capabilities, which the HB needs to develop depending on the changing subsidiaries' competencies and HB-subsidiary relationships.

Keywords: Network management. Capabilities. Global operations

1 Introduction

It is well recognised that the basis for the sustainable performance of the global operations networks is found in the integration and coordination mechanisms that are available to the organisation [1]. For many companies, the home base (HB) is historically the locus of such managerial "centrality". It takes the lead with regard to setting and maintaining standards, as it embeds historical knowledge and capabilities, which are the basis of operations excellence. However, concerns have been raised about the increasing dispersion and dynamism of global operations networks pulling the centre of gravity away from the HB, thereby calling into question the HB's capability to sustain such centrality over time [2, 3]. Such tendencies can potentially endanger both the performance of the HB and the sustainable competitiveness of global organisations as a whole, especially those which maintain rooted operations. This makes it particularly important to address the issue of how an HB can continuously sustain and develop its network management capabilities. The existing research has overlooked the fact that global operations networks are dynamic entities of which the HB is a part; thus, its managerial capability may be influenced by the network and the changes that occur within it, and should be studied in its context. Therefore, this paper aims to understand how the network management capability of the HB firm is impacted by the process of its network evolution. To do so, we choose to focus on the internal operations network of a global company; the lead entity is located at the HB, which

performs both local operations and global corporate functions, while the wholly owned foreign subsidiaries are regarded as network members.

2 Theoretical Background

Managing a global network is challenging due to the high costs and capability demands of coordinating dispersed activities over distances [4], changing roles of the network members [5], increasing tendencies to offshore high-value functions, changing boundary decisions [6]. Such changeability draws attention away from how organisations should structure and manage operations networks and towards how they can continuously sustain the existing managerial capabilities and develop new ones.

Recognizing the importance of the network management capability researchers disagree about its content. Some describe it as the traditional coordinating and controlling, others refer to more indirect forms of influence [7], while third ones [8] suggest that it will depend on the type of network and the HB properties. In line with such thinking, some authors tried to classify network types and suggest the activities for their management. Of particular interest is the work by Harland et al. [9], offering a taxonomy of supply networks, based on the network dynamism and the focal firm influence. They also suggest managerial activities required for each network type.

Therefore scholars strived to define network management capabilities precisely, omitting the fact that, first, many organisations are not born but rather develop into networks, and their managerial capabilities evolve accordingly [10]. Second, as the HB is a part of its network - its managerial capability may be influenced by changes in the network. Therefore the managerial capability of the HB needs to be understood in the context of its network's evolution. Regarding the latter, the evolving roles of the network members have been addressed before. One of the well-known works describes strategic roles of subsidiaries [5], whose development process can be summarized in 3 stages: (1) value-addition (subsidiary exploits and depends on parent's knowledge, striving to add value with efficient and effective production); (2) competence center (subsidiary gains more autonomy and complex tasks, introduces minor process and product improvements); (3) center of excellence (subsidiary gains global responsibility, becomes knowledge source for other network members). However the question of how network members impact each other in the process of their co-evolution has largely been understudied [11]. As an exception Mugurusi and Boer [12] outline general tendency in the evolution of the HB-subsidiary relationships: they tend to get tighter due to learning and mutual adjustment. And to our knowledge, the impact of the network evolution on the managerial capabilities of the HB has not been addressed. To cover this gap we approach network management as a multiplicity of activities aimed at influencing the network members to achieve a common goal [7]. HB capacity to produce such activities is referred to as a managerial capability, which generally implies a set of resources and knowledge of their usage [19]. To capture such activities in the process of network evolution, the latter is defined as temporal sequence of events that create and alter the global network configuration [13] over time.

3 Methodology

An in-depth retrospective case study strategy was chosen for this work because it allows us to study the longitudinal change process and focus on understanding the dynamics present within single settings [14]. The case studies are often criticised for providing little basis for scientific generalization, as they are situation specific. Others consider this to be strength because, as the findings are unstable over time, the context gains particular importance, making a case study particularly beneficial [15].

The main selection criteria were company's long offshoring history and active altering of global operations. The case company originated in 1976 in Denmark and became one of the leading industrial goods companies. It has production facilities in Denmark, the United States (US), Slovakia and China; it employs 1,600 people worldwide; 80% of its products are customised solutions. The study tracked the company's offshoring history between 1999 and 2014. The data were collected through semi-structured interviews, archival documents and on-site observations to enable the triangulation of the findings. In total, 28 interviews lasting 1.5 hours each were conducted with managerial and operational staff at the Danish HB and affiliates in China and Slovakia. To capture important network configuration changes in retrospect, an event-sampling approach was employed. Subsequent data analysis was focused on the state of the network configuration during key events, corresponding roles played by the HB and the enabling and challenging factors. Initially, the process "story" was written up based on the interviews at the HB and was then presented to the key informants to verify the overall accuracy. It was then enriched after the investigation at the subsidiaries, followed by a workshop with the management.

4 Case Description

The first offshore facility was established in 1999 in the US. In 2005, a new facility was opened in China and in 2007 in Slovakia - each serving its own market. Driven by customer requests for better prices, larger volumes and faster delivery, a low range of standard products was "replicated" from the HB to the subsidiaries by the HB staff with product-specific production expertise. They were temporary relocated to the sites, addressing the HB production with any arising issues. Achievement of quality targets was closely overseen by Danish expatriates.

Around 2009 the appearance of global customers and the lack of production capacity at the HB made the HB team up with the subsidiaries and coordinate such joint projects. Moreover, due to the increase in sites' product modification capabilities and localization of supplier bases, consultation requests towards the HB became more complex. The HB became less capable of suggesting quick solutions and started involving other sites. With no connections existing among the latter the HB was mediating such communication. Rapid growth of production volumes in 2011 significantly increased the load on the HB operations staff. Having their own local operations to attend to, they became slower and less effective in responding and making decisions - a bottleneck in global operations. To relieve the load and promote alignment, the HB

staff started disseminating a variety of corporate procedures, thereby reducing their own involvement in certain activities. They also started facilitating direct communication among the sites by establishing regular official global meetings and introducing global communication rules. Also HB management started promoting a “global thinking” culture and introduced better communication systems and the partial automation of certain procedures. HB also started standardization of main production processes.

Around 2013 the HB picked up an active tendency of delegating global responsibility for some products to the subsidiaries due to the lack of production capacity at the HB, as well as to encourage development of their competencies and utilize cheaper R&D resources. The HB was supposed to maintain involvement in “higher-level” decisions. Previously formalised communication and coordination were supposed to enable the subsidiaries to operate in accordance with corporate demands, without the HB interventions. However, frequent deviations from standards in subsidiaries’ operations currently pose concerns about the sustainability of alignment in the organisation. Moreover, some delegated responsibilities are performed less effectively by the subsidiaries than by the HB staff. And the HB management currently has little leverage to improve the situation. Previously, when any problems occurred, the HB domestic operations were there to intervene with support and control. However, currently they have limited capability, resources and motivation to help due to the reduction in the number of common operations with the subsidiaries. Moreover the sites started facing resistance from the HB in the approval and support of their improvement suggestions.

5 Discussion

Change in the HB Influence in the Network. A highlight of the transition process in the early stages was the HB prominent in promoting and directing performance of its subsidiaries. However, later the situation changed as the sites became more capable and autonomous. Comparing the case company situation to the network taxonomy offered by Harland et al. [9], finding itself in the “dynamic” part of the classification the HB also has gradually moved from the high- to the low-influence quadrant. Harland et al. explain such influence by the volumes produced at the HB relative to other players in the network and perceived indirect network value of the HB (HB’s image in the network relating to its innovation drive). These correspond to the situation experienced by the case company. However, perceived network value of the HB was also determined by the contribution, which the HB was able or willing to make into the value-creating activities of the sites. As Lavie [16] explains it, a party with lower capability level may experience a need for learning from the more capable partner, thus being in a more dependent position. Therefore competence levels of the subsidiaries can be added to the taxonomy as an important determinant of the HB influence.

The character of managerial activities of the HB in different quadrants also supported predictions of Harland’s et al. [9] framework: when the HB had high influence over the network these activities were related to direct network managing, while shifting to the “coping with the network” mode, when the influence decreased. However, the framework does not explain why and how the focal firm can move towards the

influence reduction, and the possible existence of intermediate states, which would require yet another set of capabilities from the HB. Moreover, it overlooks the importance and potential influence of relationships in the network on the HB capabilities. To approach this gap we will consider the evolution of the subsidiaries' competencies and subsidiary-HB relationships. We will approach the former using the subsidiary strategic roles framework by Ferdows [5], and the latter – using the model by Snehota and Hakansson [17], distinguishing between three core dimensions of business relationships: resource ties, activity links and actor bonds.

Evolution of the Network and HB Managerial Capabilities.

Stage 1. Value Addition. The subsidiaries started at the lowest competence levels and worked towards improving their internal performance [5]. In such situation they engaged in no knowledge creation of their own and had to rely heavily on knowledge inflows, resources and guidance from the parent [18]. Therefore the main competencies required from the HB here were functional expertise, ability to transfer it to the subsidiary, and careful quality control [19, 20]. At this stage relationships emerged between the subsidiary and the HB as a result of emergence of resource ties (material as flow of components and immaterial as inflow of knowledge) and actor bonds between the HB operations and a new offshore production operation, which emerged as a result of cross-business sharing and transfer of resources and homogeneity of operations [12]. Therefore the role of the HB here may be described as an “implementer”.

Stage 2. Competence Center. Due to the development of subsidiaries' competencies (and under certain environmental pressure) their focus changed towards creating synergy in the operations network, and learning. Hence the subsidiaries needed the HB help in providing connections with other network actors, making them “fit in” the global network and facilitate joint knowledge development [5], [12]. To accomplish this, the HB used its reputation and connections within the network and initially more global outset – the so-called positional and relational capabilities [21]. Coordination capabilities were also required to align globally dispersed activities [22]. As for the HB-subsidary relationships, they developed through activity links resulting from the need to coordinate tasks across the network [12], and the need for joint knowledge development. Therefore existing resource and actor bonds were expanded by activity links, while the HB role here may be described as a “networking agent”. Here the HB also enjoyed the highest influence level as it provides the network actors with the mutual access [9]. However, the greater the interdependence is, the more intensive the activity links become, which complicates working across distances [23], requiring more managerial intervention [22]. This caused scarcity and inefficiency of the HB human resources, required to maintain activity links. To relief the load the HB started encouraging actor bonds among the subsidiaries, creating trust and partnership necessary for real-time interaction and joint knowledge creation (partnering capability) [12], [19]. Creation of shared systems and processes, supported by IT capabilities, indicates the strengthening of the resource and actor bonds, facilitating the activity links. Therefore, while creating direct links among the subsidiaries, the HB reduced those with itself that also reduced the HB influence in the network.

Stage 3. Center of Excellence. As the subsidiaries assumed global responsibility for some products, the HB preserved high-level decision rights and occasional interventions – a function close to an “orchestrating” role described by Möller et al. [19]. Having no leverage of actual involvement into operations it instead requires strong communication and persuasive skills, thorough understanding of subsidiaries’ operations and their business networks [24]. Also as the subsidiaries became capable of generating knowledge [18], the HB had to facilitate knowledge outflows from these sites [25], as well as to mobilize them for a common action when needed [19]. However the case company lacks such capabilities at the moment. Previously they were ensured by involvement of the HB domestic operations into the sites’ operations through activity, resource and actor bonds. However, as the products under the subsidiaries’ global responsibility are not produced at the HB, the HB-subsidary activity links vanished. This caused gradual fading of all other links, challenging the HB knowledgeability about the network and effectiveness of its strategic role.

The empirical results, supported by the literature, allowed us distilling the strategic roles of the HB (corresponding to the evolution of the subsidiaries’ strategic roles) and managerial capabilities necessary to fulfill these roles (Table 1).

Table 1. Co-evolution of the subsidiaries and managerial capabilities of the HB

Subsidiaries’ strategic roles	HB strategic role	Managerial capabilities of the HB
Stage 1. Value-addition	Implementer	Product-specific production expertise; Ability to transfer production expertise to the sites; quality control
Stage 2. Competence center	Networking agent	Positional, relational and coordination capabilities; facilitation of joint knowledge development IT capability; Partnering capability.
Stage 3. Center of excellence	Orchestrator	Communication and persuasive skills; Knowledgeability about operations and networks of the subsidiaries; Motivating and mobilizing network members; Facilitation of knowledge sharing.

Evolution of the HB-Subsidiary Relationships. According to the literature, the HB-subsidary relationships are important for the subsidiaries’ performance and tend to get tighter with time [12]. However, we observed a process of gradual “distancing” of the HB from the subsidiaries as a result of activity links becoming a burden for the HB. This indicates that the important aspect in maintaining the managerial capability at the HB lies in having a certain “critical mass”, in terms of both the number of people and their capabilities, rather than the general notion of the organisation’s size, as well as the challenge of the domestic resources utilization to balance the local and global needs. Previous research showed that globalisation is less challenging for larger companies than for their smaller counterparts, lacking resources for operational and corporate support of their global operations. However, as the findings showed, the companies that are considered large may face similar problems. Moreover, we can suggest that the intensity of the activity links and resource scarcity at the HB may be another mediator of the HB-subsidary relationship (apart from earlier suggested con-

gruence between the “system properties” of the nodes and the environmental dynamism [12]), promoting their dissolution, rather than tightening.

Network Types and HB Managerial Activities. As Harland et al. [9] predicted, HB managerial activities will depend on its influence in the network. However, as our case showed, such activities are also dictated by the HB-subsidary relationships: for example, weakening of the latter revealed the need for activities meant to keep the HB knowledgeable about the subsidiaries’ operations. Therefore we suggest expanding the networks taxonomy by including a dimension of the HB-subsidary relationships.

6 Conclusion

This work addresses a gap in the literature on the change of the network management capability of the HB within the context of its network. In particular, we investigated how the evolution of subsidiaries’ competencies and HB-subsidary relationships impact the ability of the HB to manage its global network. We distilled the strategic roles and managerial capabilities, which the HB needs to adopt with the change in relationships and roles of its subsidiaries. These can be of a particular importance for practitioners, who strive to develop their subsidiaries, while preserving the HB as an influential actor. We also shed a light on the factors promoting the disintegration of the HB-subsidary relationships (rather than their tightening, as the extant literature emphasises). Based on the latter we also made suggestions to improve the existing supply networks classification. The results also indicated the importance of the HB size and domestic operations for its ability to perform its managerial roles effectively. The main limitations of the study include the use of only one company, rendering highly suggestive results. They are expected to be generalisable to most industrial goods companies, but will benefit from the replication across various industries.

7 References

1. Kotabe, M., Mudambi, R.: Global sourcing and value creation: opportunities and challenges. *Journal of International Management*. 15 (2), 121-125 (2009)
2. Ciabuschi, F., Dellestrand, H., Holm, U.: The role of headquarters in the contemporary MNC. *Journal of International Management*. 18 (3), 213-223 (2012)
3. Feldmann, A., Olhager, J., Fleet, D., Shi, Y.: Linking networks and plant roles: the impact of changing a plant role. *International Journal of Production Research*. 51 (19), 5696-5710 (2013)
4. Contractor, F. J., Kumar, V., Kundu, S. K., Pedersen, T.: Reconceptualizing the firm in a world of outsourcing and offshoring: The organizational and geographical relocation of high-value company functions. *Journal of Management Studies*. 47(8), 1417-1433 (2010)
5. Ferdows, K.: Made in the world: The global spread of production. *Production and Operations Management*. 6 (2), 102-109 (1997)
6. Slepniov, D., Waehrens, B. V., Jørgensen, C.: Global operations networks in motion: Managing configurations and capabilities. *Operations Management Research*. 3 (3-4), 107-116 (2010)

7. Knight, L., Harland, C.: Managing Supply Networks: Organizational Roles in Network Management. *European Management Journal*. 23 (3), 281-292 (2005)
8. Järvensivu, T., Möller, K.: Metatheory of network management: A contingency perspective. *Industrial Marketing Management*. 38 (6), 654-661 (2009)
9. Harland, C. M., Lamming, R. C., Zheng, J., Johnsen, T. E.: A taxonomy of supply networks. *Journal of Supply Chain Management*. 37 (3), 21-27 (2001)
10. Ferdows, K.: Managing evolving global production networks. In: Galvan, R. (eds) *Strategy innovation and Change: Challenges for Management*, pp. 149-162. Oxford, Oxford (2008)
11. Cheng, Y., Farooq, S., Johansen, J.: International manufacturing network: past, present, and future. *International Journal of Operations & Production Management*. 35 (3), 392-429 (2015)
12. Mugurusi, G., de Boer, L.: What follows after the decision to offshore production? A systematic review of the literature. *Strategic Outsourcing: An International Journal*. 6 (3), 213-257 (2013)
13. Srari, J. S., Gregory, M.: A supply network configuration perspective on international supply chain development. *International Journal of Operations & Production Management*. 28(5), 386-411 (2008)
14. Eisenhardt, K. M.: Building theories from case study research. *Academy of management review*. 14(4), 532-550 (1989)
15. Dubois, A., Gadde, L. E.: Systematic combining: an abductive approach to case research. *Journal of business research*. 55(7), 553-560 (2002)
16. Lavie, D.: The competitive advantage of interconnected firms: An extension of the resource-based view. *Academy of management review*. 31(3), 638-658 (2006)
17. Snehota, I., Hakansson, H. (Eds.): *Developing relationships in business networks*. Londres, Routledge (1995)
18. Gupta, A.K., Govindarajan, V.: Knowledge flows and the structure of control within multinational corporations. *Academy of management review*. 16 (4), 768-792 (1991)
19. Möller, K., Svahn, S., Rajala, A., Tuominen, M.: *Network management as a set of dynamic capabilities*. Helsinki: Helsinki School of Economics (2002)
20. Youngdahl, W.E., Ramaswamy, K., Dash, K.C.: Service offshoring: the evolution of offshore operations. *International Journal of Operations & Production Management*. 30(8), 798-820 (2010)
21. Hall, R.: A framework linking intangible resources and capabilities to sustainable competitive advantage. *Strategic Management Journal*. 14(8), 607-618 (1993)
22. Anderson, E. G., Davis-Blake, A., Erzurumlu, S., Joglekar, N., Parker, G.: The effects of outsourcing, offshoring, and distributed product development organization on coordinating the NPD process. In: C. Loch, S. Kavadias (eds.) *Handbook on new product development management*, Elsevier (2007)
23. Kumar, K., van Fenema, P. C., Von Glinow, M. A.: Offshoring and the global distribution of work: Implications for task interdependence theory and practice. *Journal of International Business Studies*. 40(4), 642-667 (2009)
24. Vahlne, J. E., Schweizer, R., Johanson, J.: Overcoming the liability of outsidership—the challenge of HQ of the global firm. *Journal of International Management*. 18(3), 224-232 (2012)
25. Ambos, T.C., Ambos, B., Schlegelmilch, B.B.: Learning from foreign subsidiaries: An empirical investigation of headquarters' benefits from reverse knowledge transfers. *International Business Review*. 15(3), 294-312 (2006)