

The internationalization of a multidimensional organization: Scaling for sustainable corporate advantage

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Abstract

Customers of multinational enterprises (MNEs) exist almost everywhere. Cross border B2C e-commerce is expected to double by 2022 according to Forrester Research. How do MNE's efficiently leverage their facilities and their talent in these markets? Talent management efforts are more complex and enhanced given the multi-site context, however, synergies exist between locations in a global supply chain. Economies of scale can be exploited to reduce costs of needed resources. In this empirical case study an MNE utilized a multidimensional organization design to reach customers in many parts of the world. The author presents findings from this case and ultimately extracts propositions which add to theory about talent management in a MNE with a global supply chain. Absent these measures, risk of revenue loss is enhanced significantly.

Keywords: global supply chain; global leadership; talent management; location scaling; internationalization; verticalization; capacity management; synergy

Introduction

The most common form of multidimensional design is a matrix. Other designs with more dimensions are viewed as novel, with very little coverage in the literature. The idea of the matrix organization surfaced in the 1970's and 1980's. Some who have experienced this design have had difficulties due to the ambiguity in roles. Multinational enterprises (MNEs) have taken this a step further with multi-dimensional organizational designs. While the organizational chart may not indicate this, functionally it is how many of them actually work. Workers may report to one boss, but they are expected to network to be successful in the company. Consequently, when business location leaders are uncomfortable with the challenges associated with a matrix design, the situation is amplified and more complex in a multidimensional context (Joensuu-Salo, Sorama, Viljamaa, & Varamäki, 2018; Schwens, Zapkau, Bierwerth, Isidor, Knight, & Kabst, 2017).

Consideration needs to be given to the talent management inadequacies of a matrix design so that similar risks of failure are not experienced in a multi-dimensional approach (Galbraith, 1977, 2009). The matrix design should be thought of as a two-dimensional construct that typically is separated functionally and geographically, for the operation, and non-geographically, for support functions. Other construct variations exist. Some inadequacies with a two dimensional design include unclear responsibilities, a lack of accountability, political battles over resources, a risk-averse behavioral pattern, and loss of market share due to a lack of focus (Galbraith, 1971; "Life in a matrix," 1980; Onkelinx, Manolova, & Edelman, 2016; Strikwerda & Stoelhorst, 2009). On the other hand, business units are not completely self-contained as they depend, to some extent, on external resources for achieving their objectives (Barney, 1991; Bower, 1986; Gupta & Govindarajan, 1986). While the M-form (hierarchical design) still dominates thought processes, the actual tendency

is for firms to move away from the underlying logic of the M-form to realize growth synergies (Strikwerda & Stoelhorst, 2009). While mental anchoring on the M-form can render an MNE obsolete, or make a transition difficult, an effective multidimensional structure can enhance a MNEs growth synergy exploitation capability and preserve location managers' status, power, autonomy, and self-interest. With this in mind, and considering that most MNEs are actually multidimensional, how then can an MNE scale across locations and across borders? In this article, the author will review the functional design of an MNE, then cover the methods used for this empirical case study, and discuss the findings that came from the study. The findings will answer the question posed with regard to how talent can be organized in a multidimensional context for the purpose of realizing overall business growth.

Dimensional Designs

People can say that they are *matrixed*. The transition in reality has occurred from *matrixed* to *networked*. Many large companies have abandoned the former for the latter. These scenarios are different. To succeed in a multidimensional business, company stakeholders (those who contribute to and benefit from an employer) need to know how to help their organization succeed. An employee's boss may be influenced by another leader in the organization with regard to performance reviews and promotions of employees that report to them. Similarly, taking into consideration that employees are the most important asset in a company, companies need to scale quickly to harvest revenue from dynamic markets. This dynamic makes resource sharing critical and is a challenge in a multidimensional design.

These organizational design changes have also been market driven. Customers have multiple channels in which to purchase the same product from the same company in the same geographic location. Companies are giving consumers multiple ways to buy from them. Companies are also offering vertically integrated solutions (a full kitchen) or bundles of product from warehouse stores (pallets of tile for kitchen and bathrooms). Either way, complexity has increased as products are more *technical* and multiple items must integrate or be *regressively compatible* with other parts. Additionally, the customer experience has taken on a new meaning, further adding to the complexity of a purchase. Additional revenue streams and market penetration opportunities come from warranties and the ability to service the product sold.

Generational expectations have also changed. Younger workers expect that the boundaries in the organizational design and functional silos are easily penetrated. Consistent with the networking idea, new workers performance is linked to their ability to get feedback on their work and gain knowledge from colleagues in neighboring departments. If their work is dependent on multiple functions in a company, access is expected. While employees span functional silos, *shared services* do the same thing. Larger companies leverage *economies of scale* by centralizing certain functions and cost sharing. These functional areas must become centers of excellence for the benefit to be realized and allocation formulas need to be fair to understand performance. Examples may include inventory management, research and development, billing, facilities maintenance, human resources, finance, etc. Automation and connectivity are enablers of a multidimensional design.

A definition of a multidimensional organization is required for us to proceed. According to Strikwerda and Stoelhorst(2009) a multidimensional organization has several characteristics.

- Responsibility for the success of the firm is distributed across the functions of the organization.
- Performance information is shared across the organization.
- There is one source of financial information.
- Resources are shared across the functions.

The multidimensional design (MDD) has a number of opportunities for competitive advantage. With the sharing of results, new business locations can be introduced and funded by the success of other locations. This allows the MNE to adapt to changing market conditions. Brand value can be exploited across an expanding portfolio of products. Bricolage can be exploited to combine technologies into new products. And, customer information can be shared to increase revenue per customer and to enable vertical market penetration.

In the context of this article, an MDD is discussed that was deployed as an organizational design to meet scaling needs in an MNE. The difference between the matrix structure and a MDD can be illustrated as per the figure below. In a matrix organization, the node where the two dimensions meet represents the employee who reports to two bosses, potentially with individual objectives or agendas. Reporting structures may be in a conflicted dysfunctional relationship with each other. In the multidimensional model for the case organization, the node is put forward as a profitability enhancing opportunity, or growth synergy opportunity, where representatives who are associated with the lines from each dimension can meet and align the entrepreneurial energy around discovered opportunities. The difference then is that a matrix design has a person at the node, while the MDD has an opportunity at the node.

In this design, managers are stakeholders in the exploitation of discovered opportunities. They own the lines in the structure. The leader in each dimension reports in to the same person, allowing for alignment through a singular agenda. Furthermore, this is reinforced through the organizational design and a reward system based on collaboration. Another difference between the two structures is in the planning and control processes. While the profitability of the client oriented P&L is dominant, the P&Ls for products, the support functions, and for locations are also important as they contribute significantly to profitability. Profitability or cost is, therefore, measured and monitored in each of the four dimensions through dimension-specific P&Ls.

A final difference between the structures relates to the influence of management information systems (MIS) in a MNE. The MIS reports performance in each of the dimensions at all levels of the organization. This eliminates information asymmetries and transfer pricing, as examples, thereby turning the MNE into a truly integrated dyadic relationship between a customer-centric focus and operational synergy realization. In many matrix organizations the emphasis is on authority and power (Galbraith 1971, 1973; Goold & Campbell, 2003; Ruigok, Achtenhagen, Wagner, & Ruegg-Sturm, 2000). The management in multidimensional firms focus on the firm's joint customer-centric goals by leveraging MIS or enterprise resource planning (ERP) supplied business intelligence which point to opportunity rather than the disparate and conflicted agendas of two bosses who may be misaligned and unequally capable (Strikwerda & Stoelhorst, 2009).

The critical result that will emerge from the empirical data in this study is theory about the realization of sustainable growth synergies in a multi-unit firm with a multidimensional organizational structure. Specifically, this study explores vertical scaling along location lines within the MDD. This entails scaling using location managers who span product and service lines as well as the support functions in the MNE. Only a few studies have been accomplished that explore the implementation of these designs to exploit synergies across products and services along multiple dimensions (Strikwerda & Stoelhorst, 2009). Some firms studied were organized along the lines of key accounts, professional services, support functions, or facility management (Strikwerda & Stoelhorst, 2009).

Location managers are responsible for profits, market position, and customer retention, but they control very few resources. Often, support resources are controlled by corporate managers who are responsible for the performance of their cost centers. This creates tension between sales, as they develop new market opportunities, and location

managers, who are accountable for the efficient utilization of resources locally (Galbraith, 2009; Goold& Campbell, 2003; Ruigok et al., 2000). Risk-averse behavior of resource managers must be confronted by market opportunities identified by account managers. Concurrently, market managers cannot be overly optimistic in their judgments about market opportunities (Galbraith, 2009; Goold& Campbell, 2003; Ruigoket al., 2000). It is therefore essential that an MDD simultaneously reports performance on two or more dimensions. Managers need to be held accountable for their dimension as it contributes to overall firm performance and the execution of growth synergies. Unique challenges for implementation are present in a globally integrated enterprise with globally integrated products and services such as in this case study.

The author believes that the organizational design of a firm is a critical factor with regard to the success or failure with regard to the realization of growth opportunity. The most prevalent form of a MNE is the M-form, named by Williamson (1975), in which activities are organized into separate business units (Roberts, 2004; Williamson, 1985). Resources are delegated to managers charged with creating economic value for the firm. These resources are controlled within business structures that are measured for financial performance. The boundaries of the units are reinforced by financial systems. To illustrate, organizational design has been influenced by corporate agendas driven by synergistic savings evident in the form of corporate account management, shared service centers, and matrix organizations. Consequently, most businesses now depend on some resources that are controlled by other units (Strikwerda &Stoelhorst, 2009).

The MDD is illustrated below. To explain how it works in the context of scaling consider the following. A client (C6) could want more of the company’s products or services. A location (L7) could expand its product or service portfolio due to a local market unmet need. An enterprise resource planning (ERP) system (S1) could be used by other divisions to leverage profitability, whereupon they would share the cost of the system, improving profitability at the company. Lastly, a product (Prod 4) could be sold to other clients in a location. Adding products to the location portfolio is vertical scaling. The scalability of the MDD, exogenous to its existing domain, points to profitability as all of these instances exploit existing skills, infrastructure, and resources. This figure illustrates the scalability of the MDD products and services across business units that have an unmet need regardless of where they are.

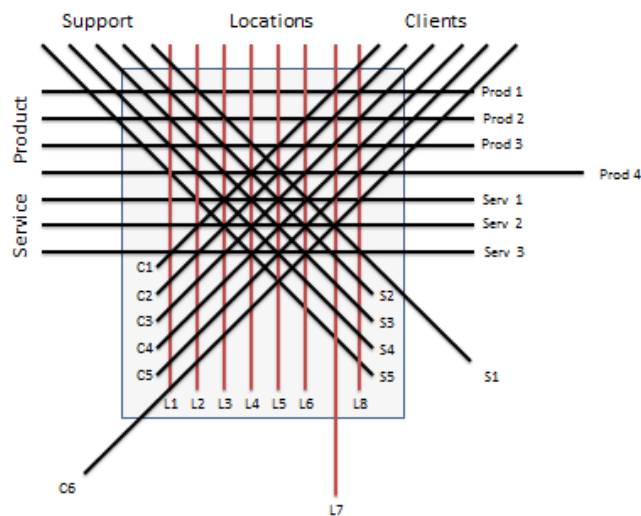


Figure 1. MDD scalability. This figure shows how the MDD lines can scale depending on the need and the dimension.

A business unit in a MNE is given both autonomy and self-interest when it is given the opportunity to identify growth synergy opportunities, when it can define their value-based attributes, when it can determine deployment timelines and the scope of coverage, and when it can determine the task rollout sequence as represented in an operational deployment plan. The author has found that business unit autonomy is augmented in at least three ways. The first is through a suitable culture, as defined in part by its organizational design and its reward system. The second is through administration and control, which includes financial review, secondary structures, and a centralized workflow management system that provides organization-wide data and analysis. The third augmentation area is related to strategy. The strategy must have structure in order for it to be focused and executed. The framework for the strategy provides this. It is also selective in that it is prioritized based on contribution to the desired outcome as measured by business modelling, such as through a pro forma P&L and a business plan where applicable. Strategy also includes the sequence of the execution of tasks, ordered due to environmental conditions and dependency. Outcomes of exploiting self-interest include profitability in the form of social impact, organizational efficacy, team efficacy, and personal leadership efficacy (Lovas&Ghoshal, 2000).

To be specific, a critical success driver in an MDD is an integrated management information system (MIS) (Pankratz, 1991), assuming that it keeps current with firm adaptations to market dynamics and corporate advantage life-cycles (D'Aveni, Dagnino, & Smith, 2010). An MIS is a lateral integration mechanism because it makes critical information and intelligence available to leaders in all of the dimensions of an MDD, thereby enabling action and mitigation. The MNE must evolve from unique local business systems geared to local needs to a networked social construct that drives transparency throughout the MNE across all dimensions (Hirschheim& Klein, 1994). A single set of common data definitions is necessary so that every transaction can be captured with suitable data density. This data can then be exploited along multiple dimensions, including reporting and analytics, across business units in a worldwide value chain. The information it contains is simultaneously available, providing for real-time sharing, change management, workflow adaptation, capacity manipulation, and production tracking. Additionally, for business intelligence it is also necessary that the MIS include customer relationship management(CRM) capability so that account managers can mine the database for order information and leads. This enhances the MNE's ability to maximize market share by exploiting customer spend budgets within applicable product categories across customers. It also fosters cooperation between managers, as performance accountability is shared across dimensions.

The multidimensional structure deployed in the case company, that is being evaluated in this article, includes the client as the primary profit center (diagonal) (Galbraith, 2005), the products and services as the secondary dimension (horizontal), the locations as the third dimension (vertical), and the performance of support services as a fourth and final dimension (diagonal). The MIS makes it possible for all stakeholders to obtain the same information in real-time, eliminating information asymmetries between and across dimensions. Cases are also used across and within all dimensions for monetizing opportunities made visible through business intelligence provided by the MIS or an enterprise resource planning (ERP) and CRM systems. The goal of all efforts is profits through the exploitation of growth synergies.

The dimensions in a multidimensional organizational design are important to the market. Business should be conducted with customers in the way that they prefer so that there is sustainable value in the relationship (Galbraith, 2005). The MDD deployed in this case study included a primary dimension that related to client management (C#). A P&L was provided to each account manager with regard to the client's overall global financial performance. This P&L was support function, location, and product agnostic. It allowed the

managers to understand the profitability of working with all clients as well as each individual client. It also allowed for an understanding of profitability from the client, as it related to product type and the location where the work is done. The customer-centric nature of multidimensional firms is enhanced by treating clients as profit centers (Galbraith, 2005) and by listening to them for the purpose of discovering service opportunities (Wiessmeier, Axel, & Christoph, 2012). Economic gain is created by pursuing unique location-specific market strategies, by integrating product and service offerings for maximizing customer profitability (Amit & Livnat, 1988; Armour & Teece, 1978), and by making the relationship *sticky* through optimized complexity and interdependency.

The case MNE operates in an industry that is networked. Consequently the center of innovation has shifted from the company to the network in which it operates. The network flourishes when it exists in a state of deep collaboration, cross-pollination, and concurrent engineering. This network develops value-based solutions in parallel exceeding time to market requirements (Grossman, 2005). Additionally, growth synergies can be achieved through alumni relationships within the industry-wide network. The exploitation of available market knowledge then becomes more critical than creating personal knowledge. Knowledge can be easily obtained from the network if it is not locally available. Organizational constructs must align with this environmental constraint and facilitates the exploitation of network-based knowledge resources (Drucker, 1992; Goold & Campbell, 2003). Collaborative knowledge workers are increasingly valuable due to their collective influence on profitability opportunities in a multidimensional firm (Bartlett & Ghoshal, 1993; Prahalad & Hamel, 1990), and especially in a firm with a structure that requires collaborative arrangements (Contractor & Ra, 2002; Inkpen, 1997). The case company desires that knowledge workers are attracted to their firm, as they see that it is an opportunity to increase their personal market potential within the industry network (Drucker, 1992; Florida, 2004; Rosen, 2004). Managing the chaos found in these networks is the current opportunity for competitive advantage in an MNE.

Quality of the Research

Creswell (2014) describes validity in qualitative research as being the determination of whether the findings are accurate from the standpoint of the author, the participant, and the readers of an account. In this case, language and meaning are the data. Creswell (2014), in parallel with Lincoln and Guba's (1985) approach, offers qualitative researchers eight possible strategies for checking the accuracy of findings; triangulation, member-checking, rich descriptions, clarification of bias, the use of negative or discrepant information, prolonged time in the field, peer debriefing, and the use of an external auditor. The author selectively used these strategies to ensure data validity with a focus on triangulation, peer debriefing, and member checking.

Endogenous validity refers to the validity of established causal relationships (Yin, 1994; Lamnek, 1995) or internal logic of the research (Punch, 1998). This was achieved by establishing a clear thematic focus that guided the case selection, abstracting and comparing, conducting peer reviews of causal relationships, and by having an open and comprehensive explanation building. A thematic focus was evident in a clear definition of an overarching research theme (cross-unit synergies), a narrowing research focus (operative synergies), and a specific research question (the sustainable realization of growth synergies) along with a compatible case selection in which the constructs of interest could be discovered. Continuous abstracting and comparing (Strauss & Corbin, 1990, 1996) occurred as the author continuously compared data sets to build higher order constructs, preliminary results to emerging data to confirm or refine results, and observed causal patterns within the existing literature. This improved the validity of causal relations (Yin, 1994). Peer reviews of causal

relationships were discussed with research colleagues for the purpose of capturing and testing additional perspectives based on experience in the field. Additionally, it enabled the validation of internal consistency and theoretical relevance of the author's arguments. The final technique for internal validity was through open and comprehensible building of explanations and causal relationships. The results were documented in such a way that the reader could reconstruct the causal relationship (Mayring, 1996). Openly, the author indicated initial ideas, deduced assumptions, and challenged potential inconsistencies.

Exogenous validity refers to the generalizability of research results critical for robust theory development (Sutton & Straw, 1995; Weick, 1995) and depends on the research approach (Yin, 1994). Single case study empirical findings are difficult to generalize. Yin (1994) emphasizes that case studies do not allow for statistical generalization. More specifically, it is difficult to make inferences about a population based on empirical data collected in a sample. While issues of generalizability from case studies is severe (Denzin, 1989; Yin, 1994), single-case studies are recognized to be substantial from an evolutionary perspective (Stake, 1995). Single case studies can also provide new ideas and new thinking paradigms. They can help modify existing theories by exposing gaps and helping to fill them. There are several facts about this study that support the author's conclusions that the findings and propositions will be at least somewhat generalizable. Several of the constructs can be confirmed as being present in existing literature, indicating general theoretical relevance of the research (Eisenhardt, 1989). The findings were confirmed through consultation with participants, who are operationally capable with varied experience in the industry, suggesting the potential transferability of the claims. Finally, the findings were somewhat generalizable due to the continuous comparison of similarities and differences within case items across different levels of analysis.

Reliability refers to the possibility that researchers can replicate the research activity and produce the same findings (Eisenhardt, 1989; Yin, 1994). A challenge for this replication is the attribute of qualitative research, in that it is bound to the context in which it is conducted (Lamnek, 1995), including time. Reliability in qualitative studies is best served by presenting sufficient information so that the reader can draw his/her own conclusions (Yin, 1994). The author attempted to ensure reliability through the explicit disclosure of the research design, including a detailed description of the research process, case selection criteria, interview guide, and methods for collecting and analyzing empirical data.

Data and Analysis

The purpose of this qualitative phenomenological research study, using Moustakas, (1994) modified van Kaam method, was to explore the real-time experiences of stakeholders, or co-researchers, as they lived and influenced events occurring around them. Awareness is a transient experience (Freeman, 2000) that may involve exerting influence, letting go, and redirecting energy and attention (Depraz, Varela, & Vermersch, 2003). It also involves being present physically and mentally in daily life. Stakeholders have to anticipate events, make sense of existing environments, and exert influence over future trends. Weick (1995) suggests that sense-making is a retrospective cognitive process that explains unanticipated events. He also suggests that events in a socially-created world both support and constrain action. Weick, Sutcliffe, and Obstfeld (2005) later suggest that individuals form both assumptions and conscious anticipations of future events. By examining sense-making and the development of mental models through actual lived, shared experiences, this study captures the subjective processes that have been largely ignored in the context of the connection between organizational design and growth in a multi-unit firm. Using the experience of stakeholders, the author presents a conceptualization of how individual participants in this

study made sense of their lived experience. This was an ongoing process for participants as they refined their understanding of lived experiences and established new equilibriums.

Each section includes individual textual descriptions as well as composite descriptions concisely oriented and illustrated in a theme map structure. Moustakas (1994) suggested that the integration of textual and structural descriptions into a composite description, such as a relational table, is a path for understanding the essence of an experience. The composite description is an intuitive and reflective integrative description of the meanings and essences of a phenomenon, of which the entire group of individuals is making sense. The participants create meaning through their awareness of the environment, reflection on their experiences, consultation with others, focused response to an enquiry, and iterative refinement to these enquiries.

Coding

Data collection was facilitated by an interview protocol with specific questions oriented in a sequenced schema. Participants were solicited as volunteers from a pool of leaders based on a willingness to share information about the transformation of the case company division. Each volunteer co-researcher participated in the changes personally. Following each question, the participants' response was determined to be linked to the question asked and was determined to be meaningful prior to continuing. An answer could trigger a clarifying question, or a question formed to solicit a more fulsome answer, if needed. The additional information modified the answer and once again was determined to be fulsome or not. The data was added then to the data sheet and coded. Sub-code themes were also determined and grouped by code and sub-code. The data was surveyed by the author, who, due to personal experience, was able to apply an *analysis for good* (ANOG). Slight modifications were made as needed to reduce the noise in the data and ensure completeness and clarity. This was accomplished by consolidating like data points and simplifying others by stripping out noise and redundancy in the answers. The data was then re-sorted and generalized through categorizing. A pivot-table was used to extract themes in the wording. The curated raw data was then posted in a table. In some cases most of the themes were unique, in which case a table was not used. From this data, dependencies, relationship, and the sequence of events were determined and organized into a theme relationship map. In some cases the data collected appeared as though the participant was confused about the question. In these cases the Author followed up with the participant and then added the newly acquired information to the raw data previously collected.

The raw data was collected from each participant for each data domain and sub-domain in the sequence in which it is presented in this chapter to promote a progression of thought. The data is separated into exogenous and endogenous domains as well with selected focus in both areas. In some cases, like roles, the participants offered information on themselves while commenting on data provided by their peers. Patterns that emerged in the data are presented as textural responses (what happened), structural responses (how did it happen), or composite descriptions (what the group experienced). Data responses that occurred most frequently within the theme category were given more significance and were typically mentioned first. Data was interpreted into theme patterns. These were broken into themes and then concisely into propositions, or findings of the study. Data items that referred to individuals, functions, line of business, locations, systems, or company names were obfuscated, eliminated, or given a pseudonym. The propositions, or findings, were formed and listed numerically. Within each proposition, a two-word summary was formed along with a statement that sums up the finding. For example, a central theme, norm strategy, or trigger may have emerged from the data as a result of coding. This data could then be categorized or filtered through the constructs being discussed that may include the strategic frame,

horizontal strategies, or a narrowed scope as examples. This was the beginning of the theme map, or the outermost layer. The layers could then be elaborated on by breaking the outermost layer into sub-layers until it was reasonable to stop. This theme map was created to better describe the themes in the data and to show relationships and sequences between unique data items.

Verticalization

Vertical Dimension. The role of location leaders is critical to the effective application of a MDD. These leaders influence and control the vertical, or geographic, dimension in the MDD model. Northouse (2013, p. 5) suggests that “Leadership is a process whereby an individual influences a group of individuals to achieve a common goal.” There is variety in each dimension and the vertical dimension is no exception. These leaders and locations are divided into three categories: *storefront*, *semi-storefront*, and *off-load*. *Storefront* basically means that the operational part of a high-cost location (ex. New York, Tokyo, or London) is extracted and a dependency is created for operational services with other locations that have a lower cost. The *storefront* location then, ideally, has only two main functions: outward facing coordination with clients and coordination with other locations within the production network where operational capacity is leveraged. This establishes a presence in high-cost locations where customers typically have offices and a capability to produce within an optimal cost structure. To be clear, the objective of the storefront model is not about cost reduction, but rather about growth and profitability. The idea is to exploit the addressable market in the high-cost location. Absent the deployment of the model, the capacity is limited by what the location team can process. With the deployment of the network production plan, the capacity can be exceeded as the location can tap into the capacity of the network. This influences the profitability of the location because labor is on-demand when needed and so is only a cost when needed. This virtually eliminates *carrying costs*. Additionally, the labor that is used is cheaper, as it is from a low cost center, and so it creates a margin. The location leader, not limited by the capacity of the location team, is now able to aggressively pursue the addressable market. The leader is able to augment his outward facing staff to help with the project management of the increased volume by pulling people from the *back* to fill these needed positions in the *front*. This works well because they are already known, they perform well, they know the product, and the recruiting effort for the high-cost location is eliminated. This model typically allows for a 50% to 70% reduction in total labor cost at the location and allows for lower pricing models with as good or better margins. The location is then able to aggressively pursue clients where pricing is a barrier to entry. The client wants to see the person who runs the operation. In this case, most of the operation is run virtually from the high-cost location. This model invigorates the sales effort.

The execution of the model is challenged by confidence that needs to be built between the off-load location and the sending location. Corporate bias might infer that this is simple and thus, results may be required quickly. It is more of an evolution with a high degree of complexity that must be pursued over time, but at an optimal pace. The *off-load* location needs to understand the client’s unique requirements from each sending location. There are nuances that the off-load site will not understand as they are not on-site and client facing. There are also known and defined nuances, even between clients at the same location, increasing execution complexity. The stakes are high, as failure results in the client redirecting work to another vendor. This is resolved by having key people come from the off-load facility to the high-cost storefront location so that they can know the local team, acquire the culture, feel the *heat* from the client, and create internal and external client relationships. These people typically function well as location representatives back in the off-load site. They are a single point of contact and help with the implementation of requirements. Once

the off-load team has established confidence, then the storefront location becomes dependent and the work can be moved gradually with the associated benefit to profitability. Once the team at the storefront is minimized, it is easier to move them, allowing for real-estate consolidation and reduced facility cost. From there it becomes a capacity scheduling and utilization exercise across all storefront locations. Capability, compatibility, expertise, and collaborative ability come into play.

The *semi-storefront* is a location that will off-load significantly, while retaining the higher-end work. They will also support local markets to perform high-end tasks. For example, if a client wants a special feature on a deliverable, the semi-storefront will have the expertise to complete the task on time. An off-load site is a location where labor is cheaper. Work shifting happens in accordance with the complexity and the associated skill set at the off-load location. This does not relate to work that can be automated, as there is no need to move the work if this is the case. There are some additional constraints that need to be overcome with the off-load model. For example, recruiting speed may be a challenge as the work volume shifts. Space availability, training capacity, capital availability for infrastructure improvement, and the rate of knowledge acquisition or transfer are constraints to be managed.

A use case could be described using the MDD diagram. In the case illustrated in the figure below, storefront location L4 services client C2. This client requires an innovative technical feature on a product. The semi-storefront location L6 has this expertise which is shared by other clients as needed. L6 can provide this feature (Serv 3) to L2. In addition, and to save cost, off-load site L8, which provides a range of services for a variety of clients, can also provide lower skill level services to L1. Meanwhile the off-load site services the needs for all sites without direct interface with the client. This configuration allows for advanced expertise and low skill work on-demand, eliminating training and carrying costs. This is because (a) these skills are pooled and (b) they are flexed through the use of a rightsized fixed staff along with an optimally-sized flex staff.

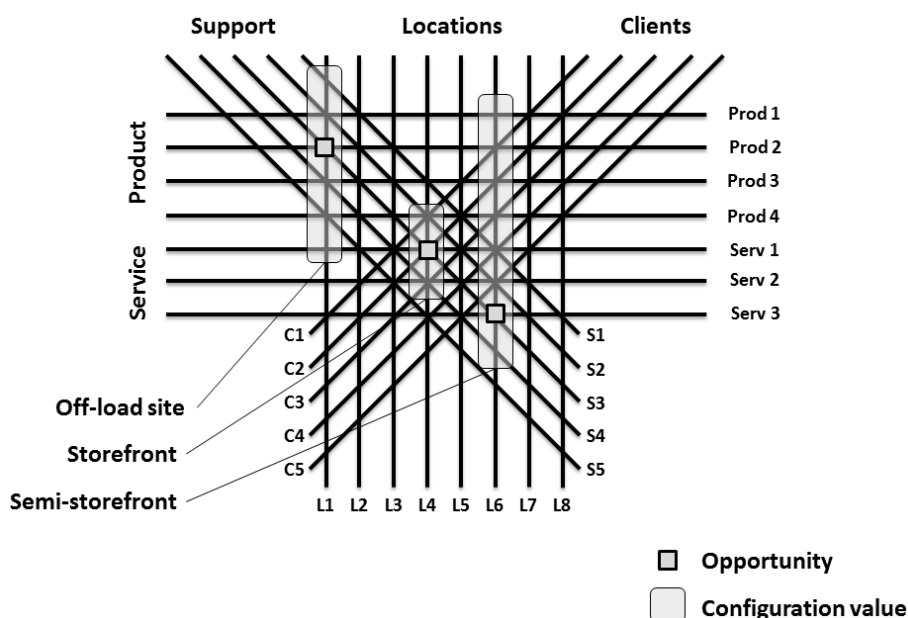


Figure 2. MDD: three embedded models. This figure illustrates the three types of locations in a MDD and how they map within the structure.

The production network in the global supply chain includes these three types of locations. There is some variability in the role descriptions that emerged from the data. This data suggests what is needed for a vertical leader to be successful in each network location

type. The off-load leader is a leader that serves internal clients. There are common characteristics for both the sender and receiver of the work. This location is off-loaded to and may deliver directly to the client from the off-load site even though the client service representatives handle all of the communication with the client. A semi-storefront location would service a client directly but may also off-load some of its work. The storefront model requires a skillful leadership role. This location has outward facing employees who service clients and may not have operational capability to fulfill work, only coordination capability with off-load sites. This leader will need to be able to utilize capacity within the global production network and accomplish orders at the best quality within the time allotted. There were 8 participants that contributed data about these models and their role as leaders as per the participant mapping in the table below.

Participant	Off-load	Storefront	Semi-storefront
1		X	
2		X	
3	X		
4	X		
5			X
6			X
7			X
8			X

Table 1. Participant Mapping by Location Structure

The 10 attribute themes that emerged from the 277 rich data descriptions were consolidated into eight categories from vertical leaders including the following; (a) alignment, (b) performance, (c) collaboration, (d) awareness, (e) leadership, (f) growth, (g) communication, and (h) continuous improvement. The researcher will discuss each of these theme categories separately. The table below includes the raw data from the role attributes of a vertical leader; however, the quantity of occurrences of similar data items reflected in the count column may not be relevant, as one item may be weighted more heavily than another. This data is the result of coding, consolidation, and mapping.

Theme Category	Themes	Count
Alignment	10	17
Awareness	19	37
Collaboration	23	51
Communication	13	22
Continuous improvement	18	26
Execution Leadership	44	94
Growth	23	33
Performance	36	61
Proactive Leadership	75	107
Total	261	448

Table 2. Vertical Leader Theme Categories

Alignment. The first theme to be considered is *alignment*. A vertical leader must make sure that their location is in alignment with other facilities and to the division strategic plan as a whole.

[Vertical leaders] partner with WW [product] leaders to develop strategic plans for specific product lines or services; with timeframes and measurements of improvement. The strategic plans should support the business goals of local facilities and be developed in coordination of each group and in alignment with the strategies/operations of the broader global team. (RV9)

The raw data produced 10 themes through 17 rich data descriptions as displayed in Table 4 below. The theme map is displayed subsequently in the figure below. In order for a location leader to participate in the network of facilities, there has to be standardization. This is a platform enabling work shifting based on collaboration and continuous improvement. This refers to the ability to know what is expected within various products and services, as well as having compatible infrastructure to perform the work so that it can be moved to the optimal location. Standardization makes it possible for location leaders to unify processes and exploit centralization. To ensure the best performance, best practices need to be the standard across all facilities involved. To achieve alignment, the vision and mission of the facility needs to be compatible with the goals of the organization. The compatibility extends to workflows, as well as to exploit synergistic capacity. A barrier to entry, however, is conformance to security standards. As discussed, there are three location configurations: storefront, semi-storefront, and off-load. Each of these configurations is optimized within the overall organization to achieve optimal profitability. This profitability is facilitated by a method for cost and revenue allocation to which all locations subscribe. This allows for performance metrics to be compatible and exploitable for analysis. Furthermore, support functions need to be engaged and helpful or goal achievement is compromised.

Alignment	Count
Off-load methods	4
Align with other facilities	3
Align workflows	2
Cost allocations	2
Capacity sharing	1
Comply with security	1
Conform to standards	1
Goal alignment	1
Strategy alignment	1
Unified metrics	1
Total	17

Table 3. Alignment Themes

The alignment theme map in the figure below indicates the logical sequence and the dependencies of the themes that emerged from the data. It suggests that in order for alignment to begin, there needs to be consensus on the vision, mission, and goals of the organization. These goals include an understanding of the existence of synergies, the ability to centralize or pool resources for capacity management, the enablement that comes from standardization, and the ability and willingness to share. A level of transparency in measurements and conversation allow for the discovery of synergistic opportunity. A location that does not have the capability to perform a task, may benefit by exploiting another location’s capability. This solves capacity issues that occur when order quantity exceeds local capacity or when capacity demand is low. In some cases, alignment allows for centralization of resources. This increases reliability, as focus is increased on continuous work, but can be fragmented with intermittent work. Centralization also promotes standardization through capacity

consolidation; however, capacity sharing is also enabled by standardization. Capacity sharing across facilities is enabled by a method to determine revenue and cost sharing, a unified approach to measurement that can be used for ratio analysis, common policies and methods based on best practices, and common workflows that are similarly secure. Gaining consensus in these areas is not easy; however, it is more difficult to attain if there is a lack of alignment around a common vision.

“[Vertical leaders] work closely with facility leaders worldwide, to establish effective load balancing and off-load methods to eliminate capacity constraints in local offices.” (RV15)

“[I will] contribute and support the technology roadmaps and provide input on strategies with trending market developments.” (RV254)

“[I will] cultivate a manufacturing/supply-chain paradigm to ensure consistent service levels and product offerings for [line of business] services in all worldwide regions.” (RV258)

“[I will] work with other location leaders to drive unification, standardization, centralization, and operational efficiencies across WW locations.” (RV265)

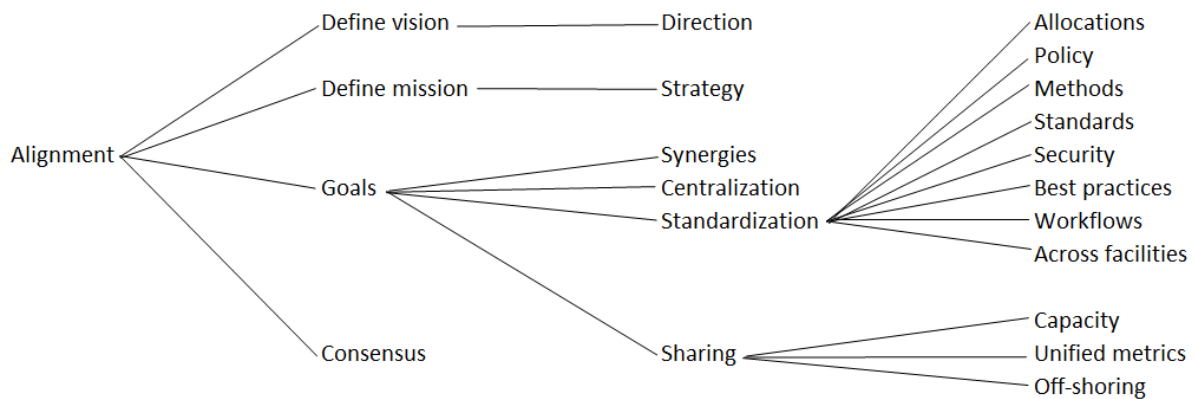


Figure 3. Alignment theme map. This figure maps alignment as a theme category into descriptive sub-groupings.

In summary, the data suggests that alignment is relevant to the success of a multidimensional organization. The achievement of goals is not likely without consensus around a defined vision and mission. Themes that emerged from the data indicated that the ability to share in a network-based production environment is enabled by adopted norms. The norms include financial, technical, security, measurement, and workflow design norms. While having these norms is important, self-interest needs to be considered with an accurate financial allocation to P&Ls. With this consideration, correct behaviors are encouraged. Furthermore, these norms are not applicable to growth synergy unless they are deployed across all locations and are business-favorable best practices.

Proposition 1 (network unity): Capacity is more easily shared when there is consensus on how the production network should function.

Proposition 2 (geographic diversity): Alignment enhances profitability through the exploitation of geographically diverse but synergistic workflows based on best practice.

Proposition 3 (mission-vision): Measurable goals must to be directionally aligned with the firm’s mission and vision.

Performance. The table of emergent data for performance indicates that vertical leaders are driven by efficiency and growth; however, due to financial pressures, the most frequent comment related to the ability to move work where capacity was available. Of course, this is not of interest unless the performance levels are suitable. All locations needed to embrace performance excellence in order for them to be considered for the shifting of work. The result of the shifting also allows locations to accept orders of a size that exceeded their capacity. This practice would then reflect positively on their P&Ls.

“[I] enlist the operational leads in assisting with cost reduction and efficiency improvement.” (RV146)

Vertical leaders see efficiency and cost reduction as an ongoing and critical activity. Before performance can be improved, the existing situation, through operational data, must be understood.

“[I will] develop a relationship with finance to make sure [we] are reviewing and understanding the numbers.” (RV152)

While performance improvements are being achieved, there can be no impact to business continuity or client satisfaction. If quality performance is compromised, then expectations to achieve increased market share are at risk. Operational excellence is supported by an infrastructure and human resource that performs with consistent excellence regardless of the volume or the order cycle-time. While operational metrics are good for trend analysis, work shifting adds a level of complication due to the addition of coordination activities. Cross-training and the awareness of expectations allows for performance parity regardless of where the work is done.

“[I] work closely with facility leaders worldwide, to establish effective load balancing and off-load methods to eliminate capacity constraints in local offices.” (RV187)

On the other hand, rightsizing reduces capacity and can be a constraint. The ability to scale and execute, including the ability to catch non-conformities prior to shipping them, allows for a labor model that is pooled and on-demand. This follows a theme pattern that emerged in the data with regard to continuous improvement. The expectation is that excellence is present in all operations; however, the environment is dynamic in that performance is continuously improving and excellence is a relative existence. Excellence includes improvements in efficiency, measurement systems, quality performance, and synergy-based streamlining. These continuous improvements enhance profitability and allow for market penetration through aggressive pricing strategies. Human resources that can manage this model are subject to career paths that are fulfilling. A total of 36 themes from 55 rich data descriptions were captured from the data as per the table below.

Performance	Count
Work shift for cost	5
Operational excellence	4
P&L accountability	4
Metrics	3
Operational efficiency	3
Consistent service levels	2
Cost measures	2
Efficiency improvement	2
High quality	2
Improve profitability	2
On time delivery	2
Rightsizing	2

Cost reduction	2
Optimize profitability	2
Consolidate redundant functions	2
Increase profitability	2
Performance parity	1
Achieve goals	1
Create budgets	1
Develop metrics	1
Enhanced service	1
Increase efficiency	1
Internal servicing	1
Inventory management	1
Minimize cost	1
Optimize quality	1
Optimize capacity	1
Promote centralization	1
Rate card negotiation	1
Reduce material cost	1
Resource redeployment	1
Resource utilization	1
Shared allocation	1
Space optimization	1
Streamline	1
Work shifting for capacity	1
Total	55

Table 4. Performance Themes

The theme map in the figure below focused on several key patterns that emerged, including profitability, execution, customer service, and improvement trends. These are all critical in a dynamic market. The data indicated that profitability drivers were the ability to allocate cost and revenue, capital investment in infrastructure, cost reductions as a norm, cost measurement capability, suitable rates in rate cards, suitable budgets, increased volume or work, the ability to relocate work, and rightsizing based on volume and complexity trends.

“[I am] responsible for [location] P&L; to improve profitability of all product lines, [while] leveraging global resources.” (RV23)

Success, with regard to profitability, can be seen in P&Ls, the achievement of goals, meeting client expectations, a consistent and robust product, the optimization of location capability and capacity, and minimized material costs. Performance and profitability are also related to the ability of the organization to execute.

“[I will] ensure [location] facility is a [regional] center of operational excellence for the company.” (RV49)

This theme pattern emerged in the data as being driven by; the ability to cross-train for enhanced human resource capability, effective performance monitoring for awareness, risk mitigation, the will to pursue excellence, meaningful operational metrics, the ability to detect errors before they ship, seamless work shifting, a centralization paradigm, and the ability to redeploy resources effortlessly. Location leaders believe that with execution driven by these capabilities, measurable performance comes as it relates to quality, asset security, efficiency,

on-time delivery, measurable excellence, inventory integrity, and location capacity, resource, and space utilization. Vertical co-researchers also suggested that customer satisfaction is a key theme with regard to performance. Customer satisfaction is ensured through the following attributes: consistency in service levels, the conformance of product to industry and customer standards, the tendency for increased market share, and the ability to enhance products to solve customer problems. There are internal and external customers in a supply chain. Excellent performance presents the best opportunity to satisfy both, regardless of where the work is done.

“[I will] implement a manufacturing/supply-chain philosophy to ensure consistent service levels and release dates to customers.”(RV110)

A performance culture should also lead to the ability for workers and leaders to advance. If employees experience success, it should bring them personal success. This could be in the form of a career path through succession planning. With this hope, there is potential for a reduction in churn rate. A reduction in turnover cost positively influences profitability. The last aspect of performance relates to the expectation of continuous improvement in performance. This pattern was supported by themes that included continuous improvement in profitability, efficiency performance, quality and reliability improvement, the ability to synergistically exploit existing workflows, and streamlining.

“[I will] continually analyze cost structure to enable rightsizing costs, staff, and material expenses and to keep costs in line with [an] evolving business model.” (RV313)

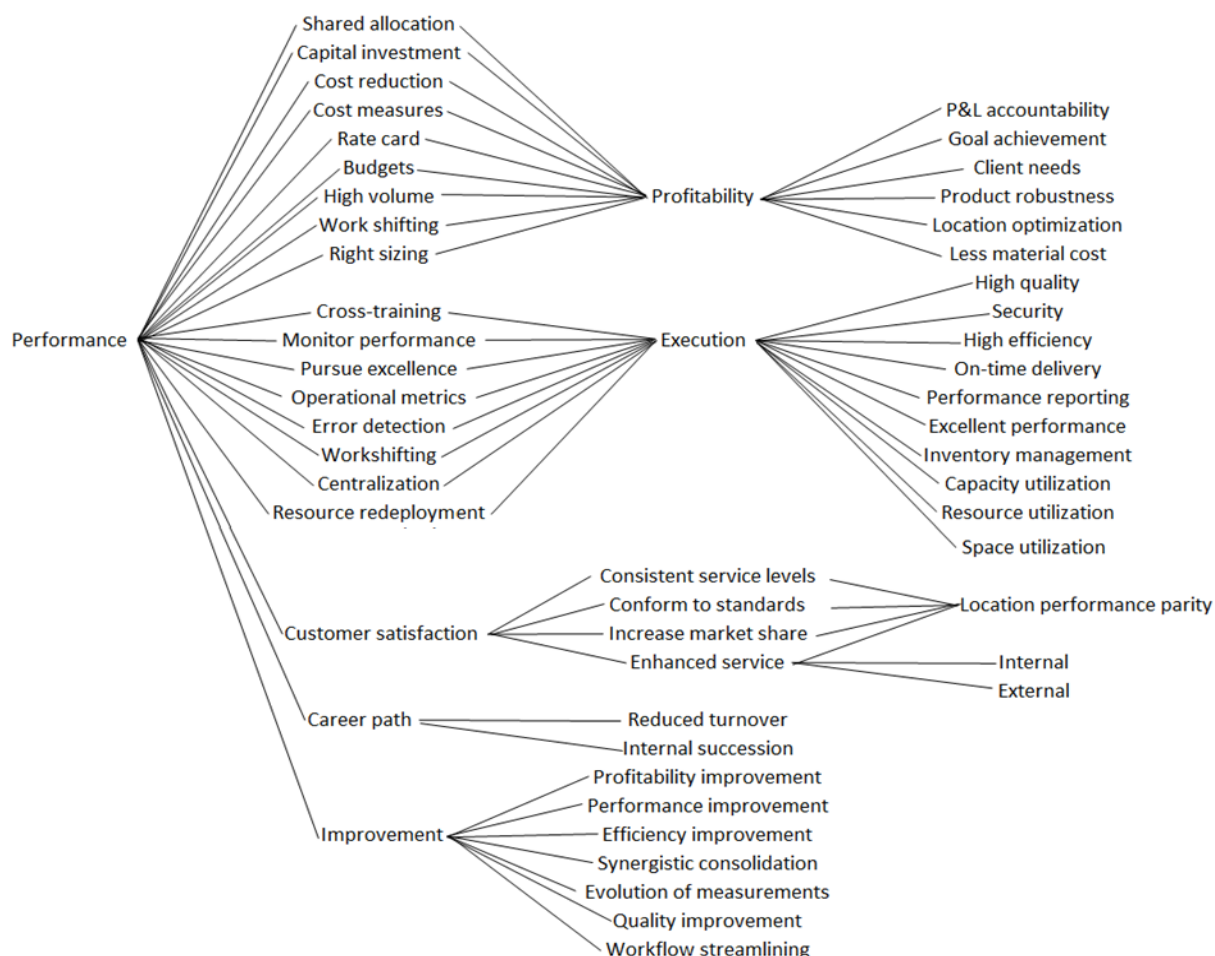


Figure 4. Performance theme map. This figure maps performance as a theme category into descriptive sub-groupings.

In summary, the data suggests that performance is critical to profitability. This is achieved through enablers that are efficiently exploited. Performance leads to customer satisfaction which in turn leads to growth. A dynamic marketplace demands that performance is not static. Rather it must improve at a suitable rate for the firm to be relevant in the marketplace. This relevance presents growth opportunities. The following propositions summarize the key findings of this section:

Proposition 4 (balanced achievement): Profitability leads to growth when achievement effort is optimally balanced with cost performance.

Proposition 5 (workflow execution): Workflow performance excellence can lead to increased market share when execution results are consistent with customer expectations.

Proposition 6 (profitability enablers): Profitability enablers must be effectively executed and timely to achieve desirable outcomes.

Proposition 7 (customer satisfaction): Consistent performance reliability that conforms to evolving client expectations creates opportunities to increase market share.

Proposition 8 (network capacity): Profitability is enabled by network production capacity that is seamlessly guided by a propensity for excellence parity.

Proposition 9 (performance workers): High performance workers want to achieve success in an operation that is measured, monitored, and knowledge rich.

Collaboration. Vertical leaders need to engage with other vertical leaders in the network-based production environment to make sense of the activities around the precipitating event. Leaders need to reach out to each other to make sense of lived experiences through participative sense-making (Fuchs & De Jaegher, 2009). Participants in this study have worked together over a significant period of time. Consequently, meaningful patterns of interaction have evolved. A shared history helped participants to gauge the thoughts and reactions of their colleagues. Collegial interaction helped participants create meaning through self-organized social encounters, combined histories, and expectation alignment. The table below presents the 23 themes that emerged from 51 rich data descriptions and which indicated that collaboration is critical to the success of vertical leaders.

“[I will] work with sales to develop and pursue opportunities for ... servicing in [location] and support worldwide product servicing efforts.” (RV245)

The capacity in the network of locations cannot otherwise be leveraged for local production needs which may exceed local capabilities. When demand is lower than available capacity, these locations can engage in load balancing to avoid carrying costs and to avoid brain drain from their own organization.

“[I will] work closely with facility leaders worldwide, to establish effective load balancing and off-load methods to eliminate capacity constraints in local offices.” (RV15)

Collaboration is also needed to evolve the organization. This relates to the sharing of knowledge that is centered on capabilities. Technical or methods development could benefit other locations. For example, a unique requirement at one location may become a requirement at another. Through information sharing all locations can contribute to technology maturity and system enhancement. Each vertical leader should also reach out to solicit assistance from support functions. Feedback to off-load locations on their performance enables global learning and capability parity in all locations. This enables work shifting to exploit unused capacity and lower the cost of capacity.

Themes	Count
Collaborate	9
Leverage network capacity	6
Load balancing	5
Coordinate ERP deployment	4
Sales collaboration	4
Share capacity	3
Contribute technology	2
Support other divisions	2
Evolve the organization	2
Contribute enhancements	1
Contribute to strategy	1
External servicing	1
Participate with sales	1
Process unity	1
Relationship with Finance	1
Solicit support	1
Support other locations	1
Support planning	1
Support with capacity	1
Support WW efforts	1
Offshore support	1
Work shifting	1
Feedback to off-load hubs	1
Total	51

Table 5. Collaboration Themes

The theme map for collaboration, illustrated in the figure below, indicates that there are five aspects to effective collaboration. Collaboration influences sales efforts, the locations' engagement with support functions, interaction with other locations, opportunities external to the division, and enables the evolution of the organization. Each of these will be discussed briefly. Collaboration and planning with sales will result in profitability. Vertical leaders understand local markets and client expectations.

"[I will] participate in an entrepreneurial role to develop new products and services with sales to meet new customer expectations and demand." (RV288)

They are also able to determine if an order is priced correctly and fulfills the workflow requirements needed to achieve an acceptable deliverable. Pricing is directly related to the number of steps and the effort needed for each workflow step, including material consumption. They are in the best position to influence the profitability of a purchase order. Vertical leaders need to collaborate with support functions. This includes finance so that they can understand the performance of their business unit. They may solicit assistance from any support function to minimize delays in achieving client expectations and to prepare for growth. Vertical leaders can also solicit feedback from support functions so as to mitigate a performance or liability risk. Collaboration with other locations, including offshore locations, is critical in an environment where capacity is shared.

“[I] support the company facilities at the other locations to load balance and workload share [in] support [of] storefront activities coming out of [location], [location], and [location].” (RV294)

This collaboration enables work shifting and the exploitation of the capacity in the network of locations. The overall benefit to the organization is capacity sharing and load balancing. These resources can also be shared external to the division. Lastly, collaboration enables the evolution of the organization. This could appear in the form of system or technology enhancements.

“[I will] partner with appropriate teams to coordinate deployments and enhancements ...” (RV278)

Continuous improvement in the network enables all locations to learn from mistakes made in any location. Standardization on evolving best practices creates parity within the network, enabling capacity sharing. Vertical leaders need to deploy these enhancements according to an appropriate strategy and ensure that these enhancements are being used effectively. If there are issues or deficiencies, they can suggest further enhancements.

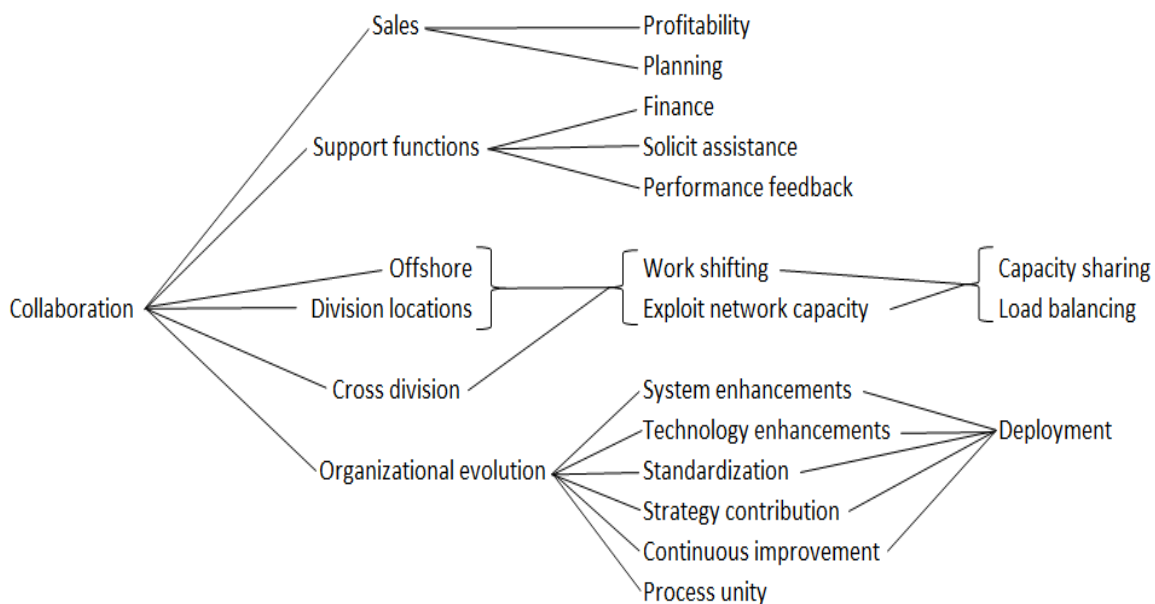


Figure 5. Collaboration theme map. This figure maps collaboration as a theme category into descriptive sub-groupings.

In summary, the data suggests that collaboration enables a networked production environment that can be used by a global supply chain. This is no surprise; however, organizations within the case corporation suffer from a lack of internal collaboration. Without collaboration, organizational inertia will keep the firm from competing in a dynamic marketplace profitably. The patterns that emerged from the data included collaboration with sales, support functions, and all locations including across divisions. Collaboration with sales includes negotiating rates on projects that help ensure profitability. It also includes collaboration on the projects themselves. This related to size, complexity, and order cycle-time. Collaboration is essential for cross-business success, including contributions to the success of other divisions located elsewhere in the supply chain. Aside from collaboration with other organizational entities, it was important to vertical leaders that collaboration enabled the evolution of their organization and the firm in general. The following propositions summarize the key findings of this section:

Proposition 10 (collaborative dependencies): Network-based production is dependent on collaboration internal and external to the MDD.

Proposition 11 (collaborative evolution): Collaborative evolution leverages standardization as a platform for enhancement deployment.

Proposition 12 (multidirectional collaboration): The multi-directional nature of collaboration includes offering assistance and receiving feedback on support, both of which are enabled by environmental awareness and active listening.

Contributions to Theory

The primary contribution of this article is new empirical insights about the effects of verticalization on growth realization in an MNE organized as an MDD. These results are, therefore, relevant to the achievement of sustained profitability and competitive advantage by focusing a multi-unit firm on business unit relatedness and strategic complementarity. Twelve propositions were extracted from the participants instigated by a precipitated event that contribute to theory on the verticalization, or internationalization, of an MDD. These outcomes that influence change efficacy are described and useful for sustained corporate advantage.

The author anticipates that these propositions will stimulate further research as organizational behavior is significantly complex and situational. These observations are also meant to stimulate further thinking. By studying the distinctive features of verticalization in an MDD, the author hopes that interest has been sparked on researching the design and application of further more effective and efficient verticalization techniques.

This research attempts to contribute to organizational theory by exploring an innovative multidimensional organizational design with the advantage of collaborative opportunity exploitation in a dynamic market. In the company case, the design includes dimensions that relate to products and services, geographic locations, support functions, and clients. Each dimension is not *flat*, as a layer might imply, but rather is intrinsically variable. Within the support functions there is variability in team expertise and the nature of the support, as examples. Support could be present in the form of ERP enhancements or module creation, or storage, and the availability of workflow assets. There is variability in the client dimension with regard to size, rate structure, administrative load, *hunter vs. harvest* activity, and the quality of relationships. Furthermore, geographic locations, as studied here, vary in culture, size, and mix of products used in local markets, further strengthening the idea of a dimension rather than a layer (Armstrong & Cole, 2002). This multidimensional organizational design is applied to a multi-unit business that includes a global value chain. The MNE must be competitively agile in its dynamic market while managing through an otherwise complex organizational construct.

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