RESEARCH ARTICLE

Portfolio Optimization in a Multinational Enterprise with a Multidimensional Organizational Design

Joel Bigley

1Assistant Professor of School of Business

Abstract
Customers of multinational enterprises (MNE’s) 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 product portfolios across geographic markets? How can these portfolios exploit both relatedness and diversification to exploit synergies? Synergies exist in terms of resources needed in these products due to relatedness between them. Economies of scale can be exploited to reduce costs of needed resources. In this 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 twenty-six propositions to guide portfolio theory. Absent these measures, risk of revenue loss is enhanced significantly.

Keywords: global markets, portfolio optimization, product relatedness, product diversity, standardization, synergy

1 | DIMENSIONAL DESIGNS IN MULTINATIONAL ORGANIZATIONS

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 (MNE’s) have taken this a step further with multi-dimensional organizational designs in the hopes of increasing local market penetration and profits. While the official organizational chart may not indicate this structure, functionally it is how many MNE’s actually work. Some employees report to one boss, but they are expected to network to be successful in the company. Other employees report to multiple bosses and are still expected to achieve objectives. It follows that when product managers are uncomfortable with the challenges associated with a matrix design, the situation is amplified and more complex in a multidimensional context.

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Corresponding Author: Joel Bigley
Assistant Professor of School of Business
Email: jbigley@calbaptist.edu
Consideration needs to be given to the inadequacies of a matrix design so that similar risks of failure are not experienced in a multi-dimensional approach (1, 2). 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 (3–5). On the other hand, business units are not completely self-contained as they depend, to some extent, on external resources for achieving their objectives (6–8). 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 (4). While mental anchoring on the M-form can render an MNE obsolete, or make a transition difficult, an effective multidimensional structure can enhance an MNE’s growth synergy by exploiting capability and preserve product managers’ status, power, autonomy, and self-interest. With this in mind, and considering that most MNE’s are actually multidimensional, how then can an MNE manage and exploit its portfolio of products and services? Soon, we will get to this.

People can say that they are matrixed. The transition in reality has occurred from matrixed to networked already. 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 (MDD).

These organizational design changes have also been market driven. Customers have multiple channels in which to purchase the same product from the same company. Companies are giving consumers multiple ways to buy from them. Companies are also offering vertically integrated solutions (ex. a full kitchen) or bundles of product from warehouse stores (ex. pallets of tile for kitchen and bathrooms). Either way, complexity has increased as products are more technical and multiple items must integrate or be regressive 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 warrantees and the ability to service the product sold.

Generational expectations have also changed. Younger employees expect that the boundaries in the organizational design and functional silos are easily penetrated. Consistent with the networking idea, new employee’s 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 like sales and customer 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 (COE’s) 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 an MDD.

A definition of a multidimensional organization is required for us to proceed. According to (4) 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 MDD has a number of opportunities for competitive advantage. With the sharing of products and services across multiple customers, new clients can be acquired and funded by the success of others. 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 MDDis discussed that was deployed as an organizational design to meet scaling needs in an MNE. They difference between the matrix structure and an 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 meaningful 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 profit and loss statement (P&L) is dominant, the P&L’s 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&L’s.

A final difference for this discussion, between the structures relates to the influence of management information systems (MIS) in an 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. It has been known for some time that in many matrix organizations the emphasis is on authority and power (3, 9, 10). 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 (4).

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 portfolio optimization within the MDD. This structure enables scaling using product managers who span geographic locations and support functions needed to service clients in an MNE. Only a few studies have been accomplished that explore the implementation of these designs to exploit synergies across physical locations along multiple dimensions (4). Some firms are organized along the lines of key accounts, professional services, support functions, or facility management (4).

Managers are responsible for profits, market position, and customer retention, but they control very few resources. Often, resources are controlled by facility managers who are responsible for the bottom line. This creates tension between sales, as they develop new market opportunities, and facility managers, who are accountable for the efficient utilization of resources (2, 9, 10). 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 (2, 9, 10). 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.
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 of realizing growth opportunity. The most successful form of an MNE is the M-form, named by (11), in which activities are organized into separate business units (12, 13). 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 (4).

The MDD is illustrated in the figure 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, possibly external to the company. Selling products at additional locations is horizontal 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’s products and services across business units that have an unmet need regardless of where they are. Figure 1

A business unit in an 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 (14).

To be specific, a critical success driver for portfolio optimization in an MDD is an integrated management information system (MIS) (15), assuming that it keeps current with firm adaptations to market dynamics and corporate advantage life-cycles (16). An MIS is a lateral integration mechanism (17) (Holbrook, 2006) because it makes critical information accessible.
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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 (18). 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 to be effective 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) (19), 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 (19). 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 (19) and by listening to them for the purpose of discovering and optimizing service opportunities (20). Economic gain is created by pursuing unique location-specific market strategies, by integrating product and service offerings for maximizing customer profitability (21, 22), 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 (23). 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 to facilitate the exploitation of network-based knowledge resources (9, 24). Collaborative knowledge employees are increasingly valuable due to their collective influence on profitability opportunities in a multidimensional firm (25, 26), and especially in a firm with a structure that requires collaborative arrangements (27, 28). The case company desires that knowledge employees are attracted to their firm, as they see that it is an opportunity to increase their personal market potential within the industry network (24, 29, 30). Managing the chaos found in these networks is the current opportunity for competitive advantage in an MNE.
The case company has more than a dozen profit and loss business units (P&L’s) and, for purposes of this article, this is the lowest strategic planning unit and the focus of this single case study. The company has a global supply chain that includes more than a dozen locations in as many regions. The balance of the P&L’s come from multiple business units in some of the locations. While there is local entrepreneurial responsibility, the company has a structured sales and account management staff representing their clients. These are identified as being associated with clients described as C# in the figure below. The # digit is a proxy for any integer being used in the diagram next to a capitalized letter. For example, C1 is client one just as L2 is location two. Similarly, Prod# is generically used for a particular product. Prod 3 is product three. A service is a set of activities for which revenue is gained that may not include a physical or digital delivery. Some of the global clients are regionally isolated. Local circumstances contribute to differences between each location and this is part of what the MDD is intended to resolve. There are some geographically driven legal differences that influence security procedures, but otherwise the workflows are very similar. The scope and volume of value adding activities provided is, however, variable. The structure itself varies depending on the tasks. These locations are linked through the budgeting process and the influence of support functions, like information technology (IT), for example. Each location (L#) employs a variety of workflow systems with the goal of consolidation into one ERP system. Performance targets are generally agreed to locally; however, in some cases they are moved based on assumptions made by corporate and for purposes of applying stretch goals. As discussed, there are opportunities at the intersection of the lines in the figure. Figure 2

The decision was made to focus on growth, and so the company’s manager, the author, has deployed and stressed the benefit of a multidimensional organizational structure to jointly bear the operative responsibilities of the sub-divisions, arguing that it provides for flexibility and responsiveness to client needs in all locations over all functions. The intent was that this structure was built upon, or scaled, as it is extended to other sub-divisions and divisions. The culture at the company has been one of strategic and operational autonomy. While corporate will influence budgets by stretching them, interventions are rare and executives at this level are reluctant to become directly involved as they have been decoupled from operative activities. This has allowed the company to move to a structure with four dimensions including support functions (S#), client relations (C#), products or services (Prod#/Serv #), and locations (L#) as described in the figure above. The company corporate center grants autonomy to the sub-divisions who are given global entrepreneurial responsibility for their markets. The company business managers unanimously stressed the importance and benefit of deploying the MDD arguing that it provided for functional support, sales support, product or service support, and local market responsiveness. Furthermore, they emphasized organizational agility and eliminated capacity constraints through a strong culture of collaborative decentralization. While corporate center control was increasing, there remained a strong belief that the company be given substantial strategic and operational autonomy. Consequently, corporate center interventions were rare as these executives were cautious not to assume operative responsibilities.

The prior organizational design did not connect directly to the product or the market. Furthermore, opportunities for cross-selling of services emerged as an urgent strategy. The need for system integration...
became a requirement from clients so that they could track their orders end-to-end. The daily struggle for resources and conflict about revenue recognition between business units made it clear that a monodirectional organizational design (i.e. top down M-form) was in conflict with the need for growth in local and global markets. If the market changes, the organizational design needs to anticipate this. An agile design ensures performance through entrepreneurship. A matching financial reporting construct needs to encourage appropriate behaviors of collaboration and growth. The company needed to evolve from the M-form to a multidimensional organizational design that is more relevant to growth synergy realization. This was accomplished while measuring business unit efficacy in servicing internal and external customers. The M-form has been the theory in use (Schoen, 1991) for some time, and it has become apparent that managing within a single dimension is inadequate due to the required levels of on-demand collaboration. An open minded approach needed to be taken for adjustment to dynamic markets. More importantly, the firm needed to be positioned for the exploitation of growth synergies.

For the first time in its 100 year history, the division, which contributes a significant portion of the overall corporate profits, was not growing. In fact, year-on-year profits were approximately half in the year of the research than what they were the previous year. This caused anxiety within the leadership and the corporate center. Continuous and intense competition was endangering profitability and the outlook was not optimistic as its primary products reached their highest points in their respective life-cycles. Other issues exacerbated the problem. Some orders were taken with pricing that was outside of contracted guidelines. The time to complete orders was reduced dramatically, pushing up overtime costs. A shift in administrative tasks from the in-house client staff to the company helped the client to reduce their costs while shifting the burden to the company. Overall revenue per product for the primary business line had fallen by about 40% over the last 12 months, due to the reduction in product variants. The count, and cost, of implanted personnel (staff located in the client’s facility but paid for by the company) had not changed in line with revenue trends. Services that were offered for free with older more profitable pricing were continued despite the declining revenue trend. Payment terms were extended to clients to meet short term goals that influenced the P&L in the form of discounts. Unexpectedly, additional rebates were exploited by clients. Clients also decided to cancel extra features that enhanced the company’s profitability. This reduced product differentiation in the marketplace and encouraged commoditization of existing and new products. The client’s process of supplying fit-for-use parts improved reducing overage opportunities previously enjoyed. Finally, with the reduction in the number of variations of each product, the ability to redundantly exploit product configurations and operational activities was reduced. All of the corporations businesses were operating in highly competitive markets with a small set of competitors vying for work from a small set of customers. The resultant captive vendor environment enabled the clients to exact discounts with impunity as they played one vendor off the other, or just dictated prices. Vendors that had one-off work at low volumes did not have the financial resources to invest in new technologies as product life cycles came and went. This narrowed the field and accelerated consolidation in the industry. The surviving vendors had to achieve high volumes in order to sustain financial profits. In some cases sole supplier contracts were awarded to vendors, like the case company, but with substantial pricing compression. This was further promoted by a sales effort to capture bulk orders with limited margin. Otherwise, client culture was to have a number of vendors so as to not have all their eggs in one basket. Clients were forced, however, to move towards a sole supplier to achieve ongoing technology investments, as the vendors were disappearing from the starved vendor pool.

Within the MDD, each client (C#) had a representative responsible for performance from a P&L perspective. The overall revenue and profit margin per client was made available, and was scrutinized. Additionally, these metrics were available by service and location. Some of the company’s markets were becoming saturated. The only reprieve would come from new product formats; however, these opportunities were limited due to reduced product life-
cycles and fragmented user adoption, which in turn limited the opportunity for profitability. Regardless, these opportunities required substantial research and development (R&D) effort and capital investment. Clients became dependent on the company’s capital resources, leveraging them for new revenue opportunities; however, there was uncertainty around growth potential and some product configurations declined after volatile launches. While staying on the leading edge of new developments and with the encouraging prospect and hope associated with new formats, the company overcommitted resources to the maturing of these products. Some were cancelled by clients or adopted slowly by consumers. In general, product fragmentation in the marketplace led to a lack of consensus in the industry, confusing early adopters. Fore casted potential revenue loss based on client intentions added to corporate anxieties. A dyadic conflict existed between representing potential revenues to appease the corporate and the reality of historical format successes that should have been expressed more conservatively.

Clients complained about a lack of coordination between businesses and across products contributing to service dissatisfaction. Other vendors, and the clients themselves, had a more integrated approach than the case company. To make matters worse, there were price wars between corporate business units out of desperation to capture revenue and meet financial goals. To clients it was just as difficult to take their work to three disparate vendors as it was to work with three silos within the MNE’s supply chain. This fragmentation exacerbated recent initiatives to promote the benefits of bundling or purchasing end-to-end services. The one global supply chain initiatives of competitors enabled them to gain competitive advantage from a more integrated, cross-unit approach. The inability to capture large projects, the unwillingness of clients to allow the company to consume a large percentage of their budgeted spend, and not using the full potential of the sales force kept the company from realizing potential profitable growth.

Markets that the company supplied quickly became saturated with product and thus, profitable growth was at risk. Vertical growth opportunities were limited by decisions that clients made about their product offerings. The company then decided to pursue one-off bulk work and expand its client base in other sectors. This was, however, unfamiliar territory and it was difficult to win new work without endangering profitability. An analysis of market needs against the company’s capabilities revealed a number of opportunities. Gaining entry into these markets resulted in pricing concessions. This work consumed capacity while producing minimal contribution margin. In fact, the overall financial performance trended poorly as a result. New sector nuances with regard to compliance and culture added complexity, created conflict, and stretched resources. Furthermore, an analysis was done of untapped market segments within the control of existing clients. These were vigorously pursued, as the ability to network using existing contacts was potentially fruitful. Unfortunately, with penetration comes pricing concessions in order to gain entry (Porter, 1985). While this increased revenues, it put stress on profitability and the organization struggled to meet the demands of the complex undulating landscape as described in the figure below.

The business landscape is made up of many life-cycles in play at the company at any given time as illustrated below. The value of each life-cycle curve depends on many variables including complexity, size, and the effort needed to make each product or perform the service. For example, existing work may be of a lower volume, but then with seasonality the volume increases. Overall value can be enhanced with an increase in complexity or from new product launches. Even fees from an ERP deployment can create revenue. A leader would need to successfully navigate the cumulative effect of these undulations. In the case of the company, this landscape was unpredictable for the most part. Multiple industry trends are involved; however, what a vendor experiences within those trends is difficult to predict. Even clients were unable to predict what they required, as they are manipulated by the same mega trends. As a result, forecasting information from the clients was largely inaccurate. Figure 3

Corporate promoted growth challenges even though there was severe pressure from existing markets. Customer requirements were changing. The need for
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FIGURE 3: Cumulative life-cycle landscape. This figure illustrates the cumulative landscape of life-cycles in which the MNE must operate profitably.

new technology and complex systems was emerging. New markets were difficult to penetrate. The cumulative effect of these issues underlined the importance of growth synergies. Growth synergy realization could compensate for weak growth rates by client, by product or service, and by market globally. Additionally, the increased demand for cross-unit solutions was an indicator of growth synergy potential; however, these efforts had traditionally been accompanied by discounting, thereby increasing cost ratios and eroding margins. The realization of profitable synergies could reduce the overall financial discount the corporation was experiencing. Not only did the inadequacy of the cross-selling initiative trigger decisions about focus on growth synergies but it was also the trigger for alignment around several critical initiatives.

In summary, the company’s aggressive budget was unrealized in the year before the study, primarily due to market changes, even though the division had been a large contributor to profits over a sustained period of time. This loss, along with other shortfalls in other divisions, altered the corporate mindset to focus on growth synergies. The tension, combined with an entrepreneurial culture, challenged the organization to recalibrate. It was compelled to deal with emerging market trends and the inertia in its traditional structure. Some of the financial issues promoted desperation in the units. To experience profits, the business units used disruptive tactics and client stealing. Internal competition became unhealthy. The opportunity for a more effective method to realize growth synergies became apparent. The leader of the division deployed the MDD to enable the organization to exploit growth opportunities in a dynamic market. Some specific strategies included product synergy realization across locations. Additionally, clients were expecting a one-ness within the company that had not been achieved due to corporate silos. The enterprise was challenged by growth stagnation, price erosion, changing client needs, unprofitable client relationships, a technology vacuum, emerging product types, and the ending of existing product life-cycles. Clients imposed production oriented market share limitations that were difficult to overcome in an environment of survival-oriented competition.

2 QUALITY OF THE RESEARCH

(32) 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. (32), in parallel with (33) 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 (34, 35) or internal logic of the research (36). 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 (37, 38) 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 (34). 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 (39). Openly, the author indicated initial ideas, deducted assumptions, and challenged potential inconsistencies.

Exogenous validity refers to the generalizability of research results critical for robust theory development (40, 41) and depends on the research approach (34). Single case Flifestudy empirical findings are difficult to generalize. (34) 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 (34, 42), single-case studies are recognized to be substantial from an evolutionary perspective (43) (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 (44). 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 (34, 44). A challenge for this replication is the attribute of qualitative research, in that it is bound to the context in which it is conducted (35), including time. Reliability in qualitative studies is best served by presenting sufficient information so that the reader can draw his/her own conclusions (34). 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.

3 | DATA AND ANALYSIS

The purpose of this qualitative phenomenological research study, using (45) 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 (46) that may involve exerting influence, letting go, and redirecting energy and attention (47). 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. (41) 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. (48) 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.
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Each section includes individual textual descriptions as well as composite descriptions concisely oriented and illustrated in a theme map structure. (45) 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.

4 | 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, relationships, 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. Using these methods, the study revealed the following critical findings.
PORTFOLIO RELATEDNESS

Empirical studies typically use operative synergies for describing the impact of relatedness as described by the presence of similar activities and shared resources at various points of the value chain (49). Relatedness may also exist between business units within diversified firms (21, 50–56). Relatedness is sometimes referred to in the context of economies of scope (57, 58). While economies of scope refer to economics around increased production of multiple products, economies of scale are related to cost economics associated with increasing the output of a single product. Scope economies often occur together with scale economies and so are often included in firm expansion discussions (59, 60). Operative resources that may be related are tangible and intangible resources necessary for ongoing operations that may include product knowledge, product components, and production facilities that represent production capacity. By contrast, while operative synergies benefit cost-related profitability, growth synergies substantially benefit profitability, as they occur when unique, rare, and complementary resources are combined strategically. The following propositions summarize the key findings of this section:

5.1 | Proposition 1 (adjacent revenue)

When existing workflows and infrastructure can be used to deliver new products and services to an adjacent, new, or similar market in a different geography, there may be an opportunity for synergistic profitability.

5.2 | Proposition 2 (large orders)

Sharing or redeploying capacity can enable the execution of large overcapacity orders that competitors are unable to execute, which would otherwise be referred to another vendor or split between vendors.

5.3 | Proposition 3 (collaborative strengths)

Operations and sales achieve mutually beneficial profitability goals when they collaborate around their strengths, filling the company’s pipeline with sustained corporate advantage.

5.4 | Proposition 4 (portfolio assignment)

An assigned portfolio enhances accountability for profitability results and focuses growth synergies that are constructive.

5.5 | Proposition 5 (volume accommodation)

Pricing strategies may result in margin erosion that may be more than accommodated for by profits from volume.

5.6 | Proposition 6 (excellence ‘horizontalized’)

Consistent excellence across all locations is foundational to a one initiative as it validates the single vertical supply chain perspective of the client.

RELATED DIVERSIFICATION

Research by (61) suggests that operative synergies are prioritized on corporate agendas. Unfortunately, they are typically explored through the lens of diversification and accumulated through acquisition (62). Related diversification is described by the deliverables that come from operational units with similar characteristics (63, 64). These common attributes define relatedness between business units. Most studies have looked at relatedness and commonality over the business value chain for determining opportunities for operative synergies (64, 65). Rumelt (1974), building on the work of (66), looks at relatedness by assessing MNE’s through the lens of common skills, resources, markets, and purpose. (64) shows in his study how diversifiers that were related substantially outperformed diversifiers that were unrelated, thereby suggesting that operative synergies yield benefits that are greater than other types of cross-business unit synergies. Even so, all types of relatedness may not be synergistic (49). For example, resources that were once related may become unrelated and even dis-synergistic over time. Relatedness attributes may vary over time and become...
neutral or even negative as they may be influenced by exogenous product or service life-cycles, or mega trends, which influence market life-cycles. As examples, market or technology shifting may influence synergistic relationships between business units in an MNE, making resource interdependencies irrelevant (49, 67). Furthermore, relatedness may be an imperfect substitute for synergy. Direct estimates of synergy benefit provide unambiguous relevant data about growth opportunity in an organization (49).

Further to this, relatedness, as described by similarities in production-oriented functions, excludes potential relevant similarities and complementarities in other non-production functions. While often ignored, these may potentially influence growth synergies. These include endogenous and exogenous contributors, including the exploitation of strategic assets that are not adequately covered in the literature as it relates to growth synergy realization.

Research has shown that there is an inverse U-shape to the curve that plots diversification against performance. When diversification is limited, it is not optimal and it limits the opportunity to put available resources to beneficial use (68). Also to be considered, as the level of diversification increases, there is a point of diminishing returns (65). This is where an additional investment in organizational costs does not produce meaningful benefits. An example could be adding customers that do not contribute to profitability. From this point on, diversification destroys rather than produces value. Moderately diversified firms are not limited in this way, but rather create operative synergies from slack resources, thus, increasing their performance. (69) confirm this relationship. Diversification-performance literature suggests that corporate managers should focus on realizing operative synergies within the group of core related businesses (21, 70–76). As corporate leaders pursue related diversification, they should populate their portfolios with common strategic assets and complementary resource bases, such as customer knowledge, product knowledge, and managerial knowledge. Operative synergies should be considered with these resources over multiple points in the value chain. These points may be linked. Regular assessment by corporate leaders should establish the value provided by these linkages, review the rationale behind the portfolio structure, manage interdependencies that result in coordination costs, and monitor business for emerging linkages (65). While the literature describes efficiency synergies, it does not provide much information on joint growth synergies across business units.

To explain further, similarities in the production function are not limited to relatedness as an attribute; scholars have also started to look at the resources that support performance-enhancing diversification. (67) argue that the similarity between valuable resources, like strategic assets, should be considered for the benefit of diversification. These related assets, which are imperfectly tradable, imperfectly substitutable, and imperfectly imitable, when shared between business units create a differentiation advantage in the market (67). The authors list five asset types that contribute to differentiation advantage, including brand loyalty, distributor assets, loyalty and pipeline assets, distributor loyalty and pipeline stock, inputs to the process, technology and systems, and knowledge assets. MNE’s can obtain operative synergies from strategic assets through asset utilization, new asset creation, asset fission, or exploiting assets from diverse businesses, keeping in mind that assets can be used in non-production aspects of a firm (65). According to (49), synergy patterns shift with life-cycles. This is illustrated in the figure below. Figure 4

A typical LOB life-cycle has several stages. Following the first successful orders, the volume capacity increases. Shortly thereafter, the ramp up passes an inflection point where the revenue expectations start to diminish. This is the edge of chaos because, if caught off guard, the firm starts to panic with the drop off in sales of a core revenue stream. At this point decisions are made that are critical to the life-cycle and which may include cost mitigations for optimizing the margin over the life cycle revenue opportunity. Shortly, the opportunity peak is experienced and now the firm has to understand the decline and make decisions to optimize the tail of the curve. The firm may be able to extend the tail by adding value to the product or service, repackaging it for another sector, or by bundling it with something else that has value. Once the opportunity is lost, it is wise to reallocate resources. Due to the nature of life-cycles,
a related resource can become unrelated and even dis-synergistic over time as markets evolve, collide, split, and/or become extinct (77). Furthermore, operative synergistic relationships between businesses can change over time. Consequently, limiting synergistic discussions to resource synergy opportunities leads to less than optimal results.

Resources can be thought of as being complementary if the sum of their individual resource cost is less than their value when linked together (78). Consequently, the benefit from resource interdependency is referred to as super-additive. Complementary resources are interdependent and mutually supportive but not identical. For example, (79) explain that complementary knowledge resources could be exploited across businesses for influencing market expansion and influencing corporate performance. Others have come to the same conclusion (80, 81); however, knowledge resources should not be considered to be purely dyadic between two entities, but may be triadic, or more realistically systemic (82) as described below.

Selective focus is important to the realization of synergistic growth, as it is aligned with the objective to achieve profitable results. Selective focus is achieved by allocating energy strategically to achieve the best results. Available resources can be better utilized through prioritization, plan, and purpose clarity. The effectiveness of these resources can be measured by looking at value creation. The ability to execute through selective focus is augmented by an appropriate strategic method, a scope that is optimized, and an organization that is directionally exploitable and scalable. The strategic method includes aspects that penetrate boundaries. These may include, as an example, a technology that could break through the walls of a siloed organization, thus, making available the revenue that was previously unrealized. Other techniques can be leveraged; for example, existing resource redeployment can achieve improved profitability as these resources are already capable to perform the synergistic task. Additionally, the benefits of a system can be leveraged to encourage a client to pay more, as the ability to track orders may be considered to be a value-add. The directional strategy relates to the MDD and its scalability. For example, and referring to the figure below, the complete directional extension of a line in the MDD results in increased synergy exploitation opportunities. Similar skills and resources can be exploited to maximize profits. The structure can also scale and be leveraged across divisional lines. For example, a synergistic activity at the company can be exploited by another division without incurring proportional additional resource or infrastructure costs. Lastly, the scope needs to be optimized. Out-of-scope strategies drain energy with little return. A focused strategy must include a scope of work that is in alignment with market trends and which is locally available to exploit. Additionally, the part of the opportunity that is profitable should not be burdened with other aspects that are not. These opportunities should be monitored through metrics to ensure transparency and facilitate timely decision making. The guidance of an appropriate strategic method, in an optimized scope, leveraging the directional capability of an MDD will help to ensure that only the most profitable opportunities are selected for focused attention. This relationship between the three key strategic themes on selective focus is illustrated in the figure below.

**Figure 5**

The literature is limited in its discussion about the exploitation of resources in an MNE, especially with regard to primary enablers like culture and alignment, as examples. The purpose of strategy is to create focus that leads to desirable outcomes. The
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FIGURE 5: Strategic complementarity. This figure illustrates the dependent relationship between the strategy method, selective focus, directional strategy, and optimized scope, and includes examples of each.

The author suggests that this selective focus is enacted by linkages between the strategy method, directional strategies, and scope minimization. There are a variety of methods that can be used for fulfilling strategic goals. For example, directional strategy occurs in an MDD both horizontally across locations and vertically across product lines. The optimization of scope restricts the area of concern, thereby avoiding noise and overwhelming analysis. The recognition of strategic complementarity allows for selective focus for growth synergy realization.

In summary, diversification-performance research provides evidence that related and complementary diversification may be superior to unrelated diversification (49, 69, 83). It would be expected that a MUF could gain more from operative synergy than from other types of synergy; however, there is more to this discussion, including limiting aspects such as organizational rigidity and complexity (84). The concept of relatedness typically ignores growth synergies by excluding potentially beneficial complementarities in other value chain functions. Generally, literature excludes information on the sustainable realization of growth synergies in an MNE in favor of diversification-performance.

6.1 | Proposition 7 (aggressive entrepreneurialism)

The addressable market can be exploited by an entrepreneurial culture armed with their own aggressive growth strategy.

6.2 | Proposition 8 (profitability super-additive)

Enhancing the revenue from a client through additional income streams that are synergistic is a profitability super-additive.

6.3 | Proposition 9 (idea-ramping)

Acquiring new business revenue requires collaborative action, starting with sales lead ideation and ending with the achievement of billable volume ramping at optimized margins.

6.4 | Proposition 10 (cross-sector)

Entrepreneurial leadership that owns a product workflow can be incentivized to pursue cross-sector opportunities.

6.5 | Proposition 11 (one-ness support)

One-ness is a complexity mitigation technique, embraced by corporate and business units alike, that accelerates profitable growth because it is suitable platform on which growth can more easily take place.

6.6 | Proposition 12 (one reliability)

Clients expect a singular high reliability performance experience in the value chain that is subject to a mature remediation process when infrequent non-conformities occur.

6.7 | Proposition 13 (one vault)

Clients expect that their assets are available, locatable, and treated in a similarly excellent way regardless of where they are in the end-to-end vendor supply chain.
6.8 | **Proposition 14 (one infrastructure)**

Clients count on the reliability of the vendor supply chain workflows which are dependent on the continuously available capability of each linked functional element.

6.9 | **Proposition 15 (one strategy)**

An end-to-end value chain must be aligned in purpose and destiny in order to realize synergistic growth.

6.10 | **Proposition 16 (enhanced value)**

The creative and timely application of enhanced value may enable new profit producing opportunities to be exploited.

6.11 | **Proposition 17 (tailored UI)**

Customizing the ERP user interface (UI) to a client’s wishes makes it difficult for clients to divorce themselves from the familiar system interface and the valuable business intelligence that has accumulated.

7 | **PRODUCTS AND SERVICES IN AN MDD**

Accountability for workflow and efficiency channels is enabled by creating clarity around the ownership of product and service categories. The MDD leaders were aligned, rather than competitive, within their product categories and in their sales channels. Internal competition was an unnecessary method by which clients could consume company margins. In the case of sales channels, this clarity retarded encroachment, discouraged cannibalization, and enabled accountability for performance through sales force effectiveness (SFE) based measurements. In the case of operative channels, this allowed for alignment between cost (where it was incurred) and revenue (where it was being recognized). A total number of 28 product categories were identified including 87 unique products that represented the company’s portfolio. These were categorized by MDD leaders into three product sectors. An MDD horizontal leader was assigned to each sector with accountability for the sector profitability. Any of these products, or their associated workflows, could be exploited in any adjacent sector. In some cases work in one sector was dependent on work in another sector. Revenue for adjacent sector work was attributed to the horizontal leader that owned the workflow exploited by that sector. Furthermore, scalability was supported as new products and services added to the portfolio were allocated to categories in which they had the most synergistic attributes regarding skills, workflow steps, infrastructure, and other relevant factors. With the product-service category clarification and accountability, accurate metrics could be leveraged for discovery. Additionally, the impact of focused actions could be quantified in the now accurate financial models. The following propositions summarize the key findings of this section:

7.1 | **Proposition 18 (cross-sector)**

Entrepreneurial leadership that owns a product workflow can be incentivized to pursue cross-sector opportunities.

7.2 | **Proposition 19 (portfolio assignment)**

An assigned portfolio enhances accountability for profitability results and focuses growth synergies that are constructive.

7.3 | **Proposition 20 (structured pricing)**

Pricing structures applied after the jump-off point in the life-cycle of a product or service may need to be reviewed to include line items that previously were discounted or given away as loss leaders.

7.4 | **Proposition 21 (dynamic pricing)**

A service and product life-cycle strategy enables maximal contribution to margins when dynamic pricing plans are executed timely.
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7.5 | Proposition 22 (customer satisfaction)
Consistent performance reliability that conforms to evolving client expectations creates opportunities to increase market share.

7.6 | Proposition 23 (prioritized profitability)
When revenue is reported together with cost, LOB analysis is possible leading to prioritized profitability enhancements.

7.7 | Proposition 24 (one-ness scaling)
An MDD intrinsically embraces the idea of one-ness and so is an ideal structure to scale and preserve a single supply chain view to clients.

7.8 | Proposition 25 (MDD scaling)
The MDD creates a competitive advantage that can scale through the addition of LOB’s and locations while preserving talent, process, knowledge, and a penchant for excellence.

7.9 | Proposition 26 (technical prowess)
Technical ability is a penetrator because it inspires confidence in the company’s ability to solve problems the client doesn’t understand or cannot solve.

8 | CONTRIBUTIONS TO THEORY
The primary contribution of this article is new empirical insights about how to optimize a portfolio 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. Twenty six propositions were extracted from the participants instigated by a precipitated event that contribute to theory on the optimization of a portfolio of products and services from an MDD. These outcomes that influence contribution margin growth are described and are useful for sustained corporate advantage.

The author anticipates that this discussion will stimulate further research as portfolio optimization is significantly complex and situational. These observations are also meant to stimulate further thinking. By studying the distinctive features of portfolio optimization in an MDD, the author hopes that interest has been sparked on researching the design and application of further more effective and efficient optimization 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. For example, products within this dimension are different in complexity, volume, capacity consumption, quality rigor, seasonality, and sensitivity to penalty or liability. 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. Geographic locations vary in culture, size, and mix of products used in local markets, further strengthening the idea of a dimension rather than a layer (85). 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. The author proposes a minimalist role of the corporate center with the addition of secondary work structures, or collaboration platforms, that exploit capabilities across business units (20, 86, 87). These lateral integrative mechanisms reduce costs that would otherwise be overhead in a traditional M-form structure.

The M-form has come into question with regard to its relevancy in modern MNE’s for some time (10, 25, 88). Even (89), the economic historian from Harvard who documented the emergence of multidimensional
organizations in the first half of the 20th century, suggests that structure must follow strategy to avoid inefficient results. In the 1970s there was interest in organizing MNE’s along several dimensions in a number of publications that were concerned with the dynamic markets in which MNE’s operated (90–94). The M-form design drives high employee costs, internal battles over resources, the lack of standardization, the lack of collaboration, and the loss of market opportunities contributing to tension about synergy exploitation (4, 95). This tension needs to be resolved, at least partially, through an organization design that involves multiple dimensions without exacerbating issues around resources and market opportunities. Furthermore, the structure needs to drive clarity and accountability which is an inherent weakness in matrix structures due to the disparate interests of multiple bosses (2, 96). Further organizational design evolution is needed for moving MNE’s from a resource-centric industrial economy, focused on exploiting tangible physical resources, to a customer-centric, service-oriented economy that is focused on exploiting intangible knowledge-based resources (49, 67, 97).

REFERENCES


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