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Efficiency considerations of matrix structures in multinational corporations

Doctoral dissertation summary

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1. MATRIX STRUCTURES – AN INTRODUCTION

Contemporary multinational corporations are among the most sophisticated organizations in the world. One of the focal determinants of their success is a well-selected, effectively implemented and smoothly functioning organizational structure (Galbraith, 2014). This dissertation builds on the findings of Peter Drucker, a pioneer in organizational research, who claimed that, instead of being a goal in itself, an organization is a means for achieving certain business results. "The best structure will not guarantee results and performance. But the wrong structure is a guarantee of non-performance" (Drucker, 1973, p. 519). Notably, every modification of the formal organizational set-up has an impact on the behaviour of the organization's participants. It affects their productivity and motivation (Stewart, 1999). As pointed out by Drucker, there is no single, perfect type of organizational design. Each structure has its strengths, limitations and specific applications (Drucker, 1999).

According to Mintzberg's classical theory of organizational configurations, direct managerial supervision, whereby an employee reports to and is instructed by one boss, represents one of the primary coordination mechanisms in an organization (Mintzberg, 1979). Based on this principle, until the mid-twentieth century, an overwhelming majority of organizations were structured hierarchically, with clear-cut dependencies between superiors and their subordinates. Traditional hierarchies are built based on a single criterion (dimension), such as (Mullins, 2005): 1) purpose or function in the organization, 2) product or service, 3) geographical location, 4) nature of the work, 5) common time scale, 6) skills of employees, 7) customer target group.

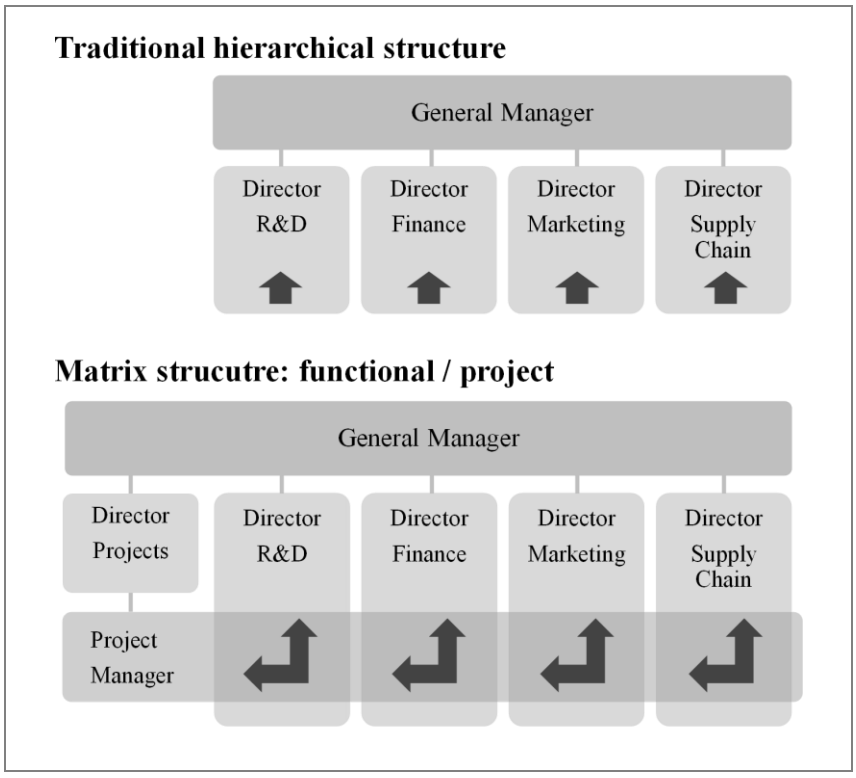
This dissertation elaborates on a more sophisticated, multidimensional type of structure, namely the matrix organization (alternatively termed: matrix structures, matrix management). It can be defined as **"[…] any organization that employs a multiple command system that includes not only a multiple command structure but also related support mechanisms and an associated organizational culture and behaviour patterns"** (Davis and Lawrence, 1977, p. 3).[*] In a basic matrix structure, respective project team members report both to the project manager and immediate superiors in their parent functional departments (Youker, 1977). Thus, a matrix arrangement has two or more overlaying dimensions, making it more complex than a hierarchical configuration.

[*] The terms "matrix management", "matrix organization" and "matrix structure" can be treated as having a common meaning and used interchangeably. It is often, but not always, the same case with the phrase "cross-functional teams".

There is a number of available classifications of matrix structures (see Section 1.4 of the full dissertation). The most popular typology places them between the two extremes of purely functional (hierarchic) and purely project organizations (Galbraith, 1971). Depending on the division of authority between the project leader and the functional superiors of the project team members, it is possible to distinguish three types of matrix structures: (1) Functional matrix, (2) Balanced matrix, (3) Project matrix.

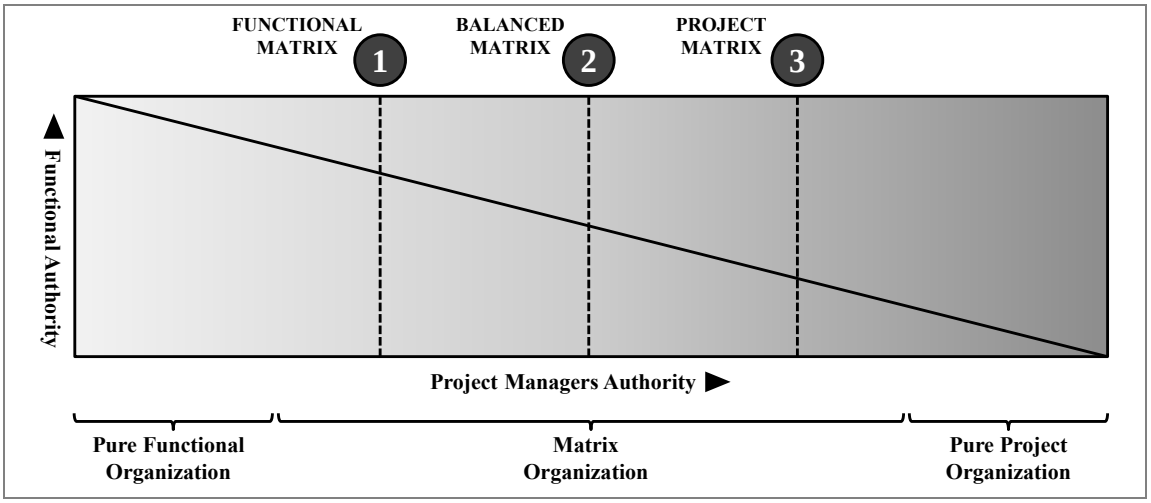
In the management practice of the last decades, an increasing number of managers have recognized oversimplification of the organizational structure as a strategic trap. Drucker presupposed that organizations should be as complex as necessary. Already at the beginning of the 1970s, he implied that a matrix structure "will present greater difficulties than either work-focused or result-focused design. But there are organizational problems where the very complexity of relationships makes [a matrix] the only appropriate design principle" (Drucker, 1973, p. 552). Reversing this logic, matrix arrangements can be presumed an inappropriate solution for certain organizations.

Figure 1. A comparison of reporting systems in hierarchical and matrix structures



Source: Own elaboration based on (Youker, 1977), (Whitford, 2006)

Figure 2. The three matrix types



Source: (Galbraith, 1971)

2. THE EVOLUTION OF THE MATRIX STRUCTURE CONCEPT

The concept of matrix management emerged shortly after World War II (Numerof and Abrams, 2002). The first adopter of a matrix structure is hardly identifiable (Hunt, 1998). While some authors seek its origins in the operations of such organizations as General Chemicals, Philips, or IBM, others point to the extensive US government ventures, such as the Manhattan project (the development of the first nuclear bomb) or their ballistic missile programmes (Fisch, 1961), (Cleland, 1981). One of the first written references to the term "matrix" appearing in the management context may be found in John Mee's article of 1964 where he recognized the Apollo space programme as the initial application of such a structure. In his view, the formation of matrix arrangements was driven by new challenges associated with accelerated changes in the environment, which called for more flexibility in organizations so that they could keep achieving their goals (Mee, 1964), (Ludwig, 1970). Thereby, the first matrix structures were put in place, with project team members superintended by two bosses. The first of them, who nowadays would be called a project manager, focused on attaining the final goal and managing project implementation. The second one concentrated on project technicalities and coordinated the work of highly specialized personnel. The primary advantages of such work organization included supposedly more efficient allocation of human resources and streamlined decision-making. Expensive specialists were assigned to several projects simultaneously, making a matrix in theory more economical than the classical hierarchical structure. Moreover, simplified horizontal communication in the team facilitated rapid problem solving (Mee, 1964).

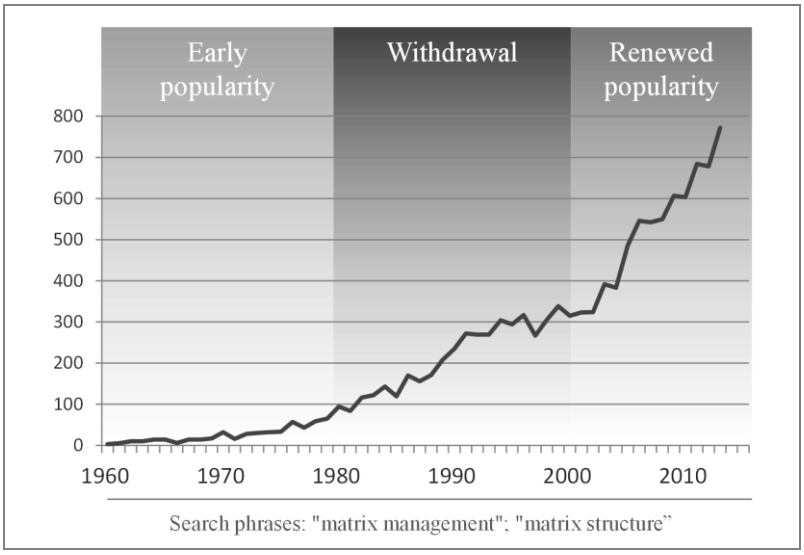
The great success of the Apollo programme encouraged many major organizations to adopt a matrix approach forthwith (Perham, 1970), (Goggin 1974), (Hill 1974), (Bresnen, 1990), (Anderson 1994). As Knight argued in 1976, "matrix or similar structures are springing up wherever one looks, and the sooner we find out how to organize and operate them harmoniously and effectively, the better it will be for people who work in them" (Knight, 1976, p. 130). Matrix management became popular, with all the positive, yet also negative consequences.

Matrix structure implementations were often forced onto organizations, rather than being a response to the real needs. They were imposed on employees accustomed to working within traditional hierarchical environments, with no proper training provided. Newly established "matrices" often turned out to be a highly bureaucratic negation of the concept of matrix management (Anderson 1994), (Gottlieb 2007). The key conceptual benefits of the new structure, such as flexibility and efficiency, became its actual flaws as organizations were immersed in conflicts among people ill-equipped to work in the new set-up.

The failed implementations of matrix structures in the 1970s triggered a dramatic fall in their popularity. "By the mid-1980s, it was hard to find anyone to defend matrix management" (Gottlieb, 2007, p. 8). Many organizations gave up this concept, at least officially (Kramer, 1981). The 1980–2000 literature on matrix structures is predominantly critical.

Looking closer at this situation, some authors claim that organizations did not really abandon matrix structures. Only their name was changed (Anderson, 1994), (Galbraith, 2008). In the 1980s and 1990s, the concepts of "teams" and "project management" drew the attention of theoreticians and practitioners (Gottlieb 2007). The structures so termed were generally those same matrix organizations, albeit called differently. Notably, "project managers" supervising cross-functional teams performed very similar roles to those of matrix team leaders. In order to grasp the academic approach to matrix management in the mentioned period, Gottlieb humorously, yet accurately compared matrix structures to an elephant in the room: "almost everyone, when questioned, agrees that it is here, but there is a collective reluctance to talk about it" (Gottlieb, 2007, p. xiii).

Figure 3. Number of publications on matrix management in 1960–2013



Source: Own elaboration based on (ScienceDirect, 2014), [Search date: 07.02.2014]

Since the beginning of the previous decade, a revival of the matrix management concept could be observed among management theoreticians and practitioners. Hence, many of its elements are once again being officially incorporated into the strategies of modern organizations (Galbraith, 2013), (Hall, 2013). Some authors claim that this corroborates the existence of "something inherently correct in the matrix structure that continually reasserts itself" (Gottlieb, 2007, p. 11). Beyond question, contemporary times are entirely different. The macroeconomic environment has changed, with generations X and Y having entered the labour market, consumer markets evolving faster than ever before, and products having to be developed more quickly and effectively (Vargas, 2013). Ergo, the essential advantages of matrix structures can become even more meaningful. Today's organizational cultures and employees working therein are better adapted to matrix management. The whole world has altered and matrix arrangements with their unique flexibility have anew gained recognition as an effective tool (Derven, 2010).

3. RESEARCH JUSTIFICATION

Matrix structures are notably adequate for complex international business organizations, which are gaining more and more significance in the modern economy (Galbraith and Kazanjian 1986), (Burns and Wholey, 1993), (Galbraith, 2008), (Qiu and Donaldson, 2012), (Galbraith, 2013), (Hall, 2013). They exist in manifold corporations active in the consumer products industry, like Procter & Gamble, Nestlé, Kraft, Coca-Cola, Unilever or Avon (Kesler

and Schuster, 2009), (Derven, 2010). Such organizations operate in numerous geographic markets, often embracing many product categories and addressing various consumer groups. At the operational level, they are forced to simultaneously use many overlapping market definitions, which makes their management extremely complex.

The matrix structures in multinational corporations exist as complex, multidimensional systems of relationships with a multitude of formal and informal reporting lines. Their multidimensionality is reflected in them being usually built based on a few overlapping criteria, such as function, geographic region, level in the organizational structure, product category, brand, customer target group or business-to-business client group (Janićijević and Aleksić, 2007). This dissertation puts forward a number of questions concerning the exact types of matrix arrangements that actually exist in multinational corporations and their functioning.

An organization's ability to pursue its objectives rests upon its efficient performance. In this dissertation, such efficiency is perceived in line with the praxeological concept of efficiency (Kotarbiński, 1973), (Rummler and Brache, 2000).[*] The efficiency so construed largely depends on the design and functioning of the organizational structure (Kaczmarek, 2010). Numerous authors state that matrix management poses a greater challenge to managers than classical hierarchies (Prahalad, 1976), (Numerof and Abrams, 2002), (Atkinson, 2003), (Worren, 2013), (Galbraith, 2013). In order to effectively manage multidimensional matrix structures in the reality portrayed earlier, a new approach and a new set of skills are needed. They have not been properly spelt out yet (Tavis, 2013). In the literature, there is a limited pool of current publications on the functioning of matrix arrangements in global organizations operating in the consumer products industry (Janićijević and Aleksić, 2007).

The field of matrix management, covered by this study, is among the ones which currently offer a wealth of directions for further exploration. Based on the conducted literature review, it appears highly justified to undertake an empirical study in the field of matrix management in large multinational organizations. Firstly, much of the literature on matrix structures dates back to the 1970s and 1980s. With the current rapid changes is the social, economic and technological environment, it is already very likely outdated. During all these developments, large multinational corporations continue utilizing matrix structures in running their complex operations. Secondly, there is much disagreement between the authors with regard to advantages and disadvantages of matrix structures. Thirdly, some considerations which

[*] Some sources distinguish between efficiency and effectiveness, yet in this study both terms are consciously treated as interchangeable (see Section 1.6.9 of the full dissertation).

potentially can have an impact on the efficiency of matrix structures are still largely unexplored in the literature. Bearing in mind the three mentioned aspects, it is safe to conclude that there is an apparent knowledge gap concerning the circumstances and practices that relate to the effectiveness of modern cross-functional organizations.

4. RESEARCH PROBLEM AND QUESTIONS

The research problem of this study involves identifying and assessing the key efficiency considerations of matrix structures in multinational corporations.

The assumed research problem can be expanded with the following research questions:

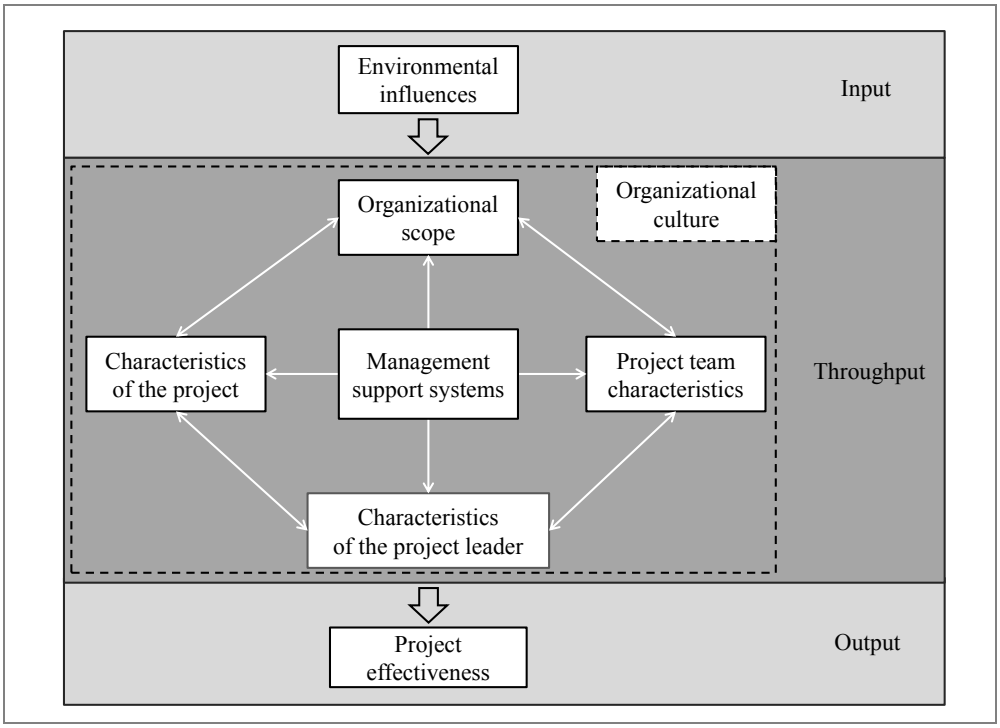
- What kinds of matrix structures are used in multinational corporations?
- How are matrix structures managed in multinational corporations?
- Which characteristics of matrix structures are their advantages and disadvantages in multinational corporations?
- What are the efficiency considerations of matrix structures in multinational corporations?
- Which organizational solutions can contribute to increasing the efficiency of matrix structures in multinational corporations?

5. RESEARCH METHODOLOGY

In order to address the presented research problem and questions, this study employed an interpretive ontological and epistemological framework. The assumed grounded theory methodology determined the use of a qualitative approach. Any research carried out in line with the described framework is aimed at producing new theories or complementing existing ones, rather than validating some previously established hypotheses (Urquhart, Lehmann and Myers, 2010). Therefore, the grounded theory in its classical version precludes formulating hypotheses at the beginning of the research. This principle was followed in the conducted study.

The research proposed and applied a new model for investigating the efficiency considerations of matrix structures in multinational corporations. It is a development of a model originally designed by Ford and Randolph, supplemented with the elements of organizational culture and management support systems (Ford and Randolph, 1992). Furthermore, the new model assumes a systems approach to organizations (Melcher, 1975), (Dubrovsky, 2004).

Figure 4. The final modified model of matrix structures effectiveness



Source: Own elaboration based on (Ford and Randolph, 1992)

The specific chosen research method was an explanatory, instrumental case study. Data was collected through semi-structured interviews, participant observations and documentary analyses. Respondents were recruited based on the purposive sampling technique, representing different functions (marketing, finance etc.), organizational layers (local, regional etc.), role seniority (specialists, managers, directors and above) and nationalities (Babbie, 2006). Through an analysis of the information collected in two large organizations, the research aimed at answering the stated research questions.

6. INVESTIGATED ORGANIZATIONS

The main examined organization was Avon Products Inc., a global corporation operating in the consumer products industry. It started its activities in 1886 in the United States, operating primarily in the cosmetics category. This profile is also maintained today, when the company is present in 62 countries. In 2014, the revenue of Avon reached nearly USD 9 billion, with about 3 billion generated in the region comprising Europe, the Middle East and Africa, which is covered in this research (Avon, 2014). The data for the purpose of the core empirical study was collected in Avon Products Inc. between October 2014 and June 2015.

In order to supplement the analysis with a comparative aspect, a pilot study was carried out in Unilever NV, another global corporation operating in the consumer products industry. It commenced its activities in 1930, expanding to 190 countries ever since. Unilever's product range is one of the broadest in the world, covering such diverse categories as cosmetics, food, and cleaning products. In 2014, the company's revenue was just above USD 64 billion, with nearly 18 billion generated in the region comprising European countries, which was subject to analysis in this study (Unilever, 2015). The data for the purpose of the pilot research was collected in Unilever NV between April and June 2014.

7. STRUCTURE OF THE DISSERTATION

The dissertation consists of three major parts (see Appendix – Detailed Dissertation Contents). Part I describes the lessons from the conducted broad literature review. A wide variety of available definitions and typologies of matrix structures is presented, followed by an analysis of their advantages and disadvantages. Some controversies among the authors are identified. A new model for investigating the effectiveness considerations of matrix organizations is proposed. Each of its elements is discussed in detail, based on the available literature.

Part II of the dissertation presents the theoretical groundwork behind the conducted empirical research. It explains the rationale behind the stated research problem and questions. The assumed ontological, epistemological and methodological framework is characterized and followed with a description of the chosen data collection techniques. The empirical research plan is presented. The part concludes with an analysis of the research environment and a closer look at the investigated organizations.

Part III contains a report on the conducted empirical research. Three identified cases of different matrix structure types are described in detail and compared from a number of perspectives. The real-life effectiveness considerations of matrix organizations are discussed according to the proposed model, in the context of the literature-based expectations. The study also assumes a strong point of view in the discussion about matrix structure advantages and disadvantages. The empirical findings are confronted with the outcomes of the pilot study.

The dissertation ends with a summary which recapitulates the empirical lessons, lists the research constraints and suggests some future research directions triggered by this study.

8. RESEARCH OUTCOMES AND IMPLICATIONS

A. Empirical research conclusions

The conducted research was overall successful in addressing the recognized knowledge gap and providing new insights in the field of matrix management. During the research, large amounts of data on the functioning of an international matrix organization that operates in the consumer products industry were collected. The data included opinions from interviews with matrix structure participants, outcomes of observations and findings from documentary analyses. It was triangulated with the information collected in another large matrix corporation in the course of a pilot study. The gathered knowledge made it possible to verify the key matrix effectiveness considerations suggested by the literature, as well as supplement them with new additional observations. As the existing tools for investigating matrix organizations proved insufficient, a new dedicated model was proposed. The research also covered an analysis of advantages and disadvantages of matrix structures in the context of large multinational corporations, in some instances delivering unprecedented results. It also opened several new intriguing fields for further exploration.

During the research, three distinct matrix structure types (functional, balanced, project) were recognized, investigated and characterized. Their analysis confirmed some facts expected from the literature, but also brought some new to light (more details in Section 3.4.5 of the full dissertation).

A majority of the past academic discussions presumed that one organization may represent a single matrix type exclusively, at best with some "matrix in a matrix" forms. Rather surprisingly, the investigated organization contained a number of such organizational forms, representing different matrix types. Their coexistence in one organization confirmed that there is no single matrix type which would guarantee a high level of effectiveness in all kinds of projects. It has, therefore, to be a custom-tailored solution. The investigated organization actively juggled between the three matrix types, as the tasks differed in terms of their size (resource intensity), complexity (number of subtasks), diversity (variety of subtasks) and dynamic (pace of change). The conducted study proved that matrix organizations not only may shuffle between different matrix types, but also do so in a deliberate manner depending on the profile of the task. This potentially can be a solution to many organizational inefficiencies. It may also be considered a blueprint for other organizations on how they can avoid "growing out" of the once assumed matrix.

The three matrix types were generally organized in line with the literature-based expectations. This applied mainly to the nature and strength of cross-functional relationships and the power distribution between the project and functional managers. In the functional matrix, functional managers retained a solid reporting line to the project members and most of the power at the expense of project managers. In the project matrix, most of the power was held by the project manager, to whom the functional staff reported over a solid line. In the balanced matrix, the power was divided between the project and functional managers, with the latter keeping the solid-line superiority over the team in most cases.

A major lesson from this perspective related to the balanced matrix being actually the most challenging form of matrix, rather than any of the two types at the ends of the matrix continuum. With its ability to tackle many volatile and complex tasks, numerous dotted-line connections and the highest ambiguity around power distribution, it proved to be anything but balanced. It was the most demanding to manage for senior leaders, but also the most demanding and stressful for its participants. All this was much less of an issue in the functional and project matrix forms.

The conducted research adds a few incremental elements to the well-known variety of methods for making a matrix effective and proposes a new model for their review (more details in Section 3.5.10 of the full dissertation). It corroborates that when a matrix is justified, well thought-through, implemented in an evolutionary way and skilfully managed, it may be an effective tool for managing internal and external complexity faced by large multinational corporations.

This study proposed a new model for examining the factors driving matrix structure effectiveness. Interestingly, the few available models seemed to ignore two key aspects of matrix organizations: the management support systems and the organizational culture. For that reason, a new model – a refined Ford-Randolph proposal – was used to conduct the analysis herein (Ford and Randolph, 1992). It adopted a system approach to the matrix organization and covered eight elements: (1) Environmental influences, (2) Organizational scope, (3) Characteristics of the project, (4) Project team characteristics, (5) Characteristics of project leaders, (6) Management support systems, (7) Organizational culture, (8) Project effectiveness.

The analysis of environmental influences, organizational scope and types of conducted projects confirmed that the investigated organization was an example of a well-managed matrix implementation. It was launched as a justified response to a mixture of complex environment, wide organizational scope and a complicated business model. The implementation itself was a

well-planned gradual process which took years and was never actually considered complete. Instead, the organization was constantly evolving, adjusting its structure and processes to the volatile conditions. This allowed the structure to remain relevant in a very complex and changing environment.

The characteristics of the matrix team and leaders followed the key principles indicated by the literature. Interestingly, the roles of the individuals in the matrix teams were defined to a different extent, depending on the matrix type – rather precisely in the functional matrix and more broadly in the balanced and project matrix forms. As expected, to excel at the matrix, both line staff and project leaders had to be very flexible, learn quickly and make use of superb interpersonal, cross-cultural, communication and networking skills, besides the traditional corporate skill set.

The phenomenon of networking, i.e. building informal webs of connections within the organization, proved to be a crucial aspect in the research. Rather neglected in the literature, it played a vital role in the real-life networking, facilitating individual and project success in matrix structures. The webs of relationships developed by specific individuals differed considerably in terms of their breadth, depth or the way they were established and maintained. Some employees built an informal web of connections naturally once they had entered an organization. Many other did it in a conscious way, investing their time and effort. These efforts were supported by the organization, for instance through fostering frequent face-to-face contacts within virtual teams or providing relevant training. The importance of building networks was recognized so much by the organization that at times it was even reflected in individual employees' business objectives.

An element brought to light in the matrix discussion covered by this study are management support systems. Although almost non-existent in the reviewed literature, they played an essential role in ensuring the smooth functioning of the matrix organization. The key management support systems included: double accounting and budgeting systems, dual evaluation and reward systems, extensive communication tools, strategic operating systems and physical space rearrangement. All of them were meaningful, but especially the dual evaluation systems proved key. When the objectives were not aligned among different functions, they were likely to disrupt the decision-making processes in the matrix structure. On the other hand, modern communication technologies (for instance, telepresence or videoconferencing) proved very helpful for the matrix employees, yet in order to be used to the benefit of horizontal interactions, they had to be not only available but also free of frequent technical issues.

The conducted research brought some new, unique conclusions regarding the role of organizational culture in matrix arrangements. It demonstrated that not only may it be significant in ensuring their smooth functioning, even more so than in a traditional hierarchy, but it can also nullify a common flaw of the matrix, namely its increased tendency for conflicts. The fact that the culture may help a matrix not only mitigate, but actually overcome the issue of increased conflicts is a completely new one not mentioned previously in the literature. Described by the employees as friendly, open and supportive, the culture had also a positive impact on their motivation and fostered horizontal and vertical communication among them. Importantly, the investigated organization apparently steered it in this way deliberately. Of course, there were certain elements of the culture which could be controlled by the management and other that were independent, but overall it was certainly a conscious organizational effort.

An exemplification of this conscious organizational approach was the existence of matrix guardians, namely individuals who played a tremendous role in fostering cross-departmental cooperation and mitigating conflicts in the investigated organization (Sy and D'Annunzio, 2005). The senior management, often unofficially, yet consciously, assigned them to guard the matrix. They participated in the key cross-functional meetings and acted as mediators in the toughest alignment discussions. Identified also during the pilot study, matrix guardians were often hidden in the structures without their true role clearly defined, which might explain why this issue has not been much discussed so far.

The conducted study takes a strong position in the discussion about advantages and disadvantages of matrix structures. By and large, it confirms the advantageous character of the matrix management concept as a tool for large multinational corporations facing significant levels of complexity (more details in Section 3.5.10 of the full dissertation). It identified and assessed eight key characteristics of matrix management. Five of them were classified as advantages:

- Managing complexity
- Communication effectiveness
- Output quality
- Employee motivation and job satisfaction
- Level of conflicts

Two characteristics were classified as matrix disadvantages:

- Decision-making effectiveness
- Balance of power

One characteristic proved challenging to assess within the assumed cognitive framework:

- Resource efficiency

Among the five identified advantages of matrix structures, three characteristics were expected to be based on the literature: managing complexity, communication effectiveness and output quality. Collectively, they constituted the core benefits of the matrix structure concept. The impact of matrix management on employee motivation and job satisfaction arouses controversies among the authors, but it was clearly a strength of the matrix in the research carried out. This was largely driven by the unique culture of the investigated organization. A ground-breaking lesson in this study relates to a low level of internal conflicts observed during the research, which stood in contradiction to almost all reviewed sources. With a combination of an appropriate organizational culture and other conflict-mitigating activities, the matrix organization can apparently avoid its supposedly inherent flaw.

Decision-making effectiveness and balance of power, although the literature offers split opinions on them, both turned out to be clear shortcomings of the investigated matrix structure. The decisions made in the organization often took a long time to be made, were sometimes suboptimal and not always delegated to the right level. Such a situation was driven by the occasional internal competitiveness and frequently blurred or misaligned responsibilities, but rarely evolved into open conflicts, primarily thanks to the unique organizational culture. Similar factors caused the challenges with balancing the power in the matrix, which, rather surprisingly, proved not to be the major managerial focus in the organization.

The research outcomes were compared with the lessons from the pilot study conducted in another large multinational corporation. The pilot research provided results very much in line with the core study, with the main exception being a less unique culture of the pilot organization.

To conclude, the conducted research confirmed that when matrix structures in multinational corporations are implemented based on an authentic organizational need and later proficiently managed, they may be a powerful and effective tool for managing their inevitable complexity.

The presented study takes a strong stance in some of the academic discussions regarding matrix management and can potentially open one or more new debates in the aforementioned field.

B. Research constraints

The adopted cognitive approach brought some huge benefits to the study, primarily by ensuring a depth of analysis impossible in other frameworks. Yet, it came with some limitations. They were connected with the cognitive framework as such, the scope of the study and the researcher himself.

The assumed interpretive-symbolic ontological and epistemological framework determined an approach focused on interpreting the investigated phenomena by understanding the perceptions of their participants. This assumption drew the research focus to the "how" and "why" (the factors affecting matrix efficiency), but away from the "what" (the matrix efficiency itself). The connected grounded theory method assumed the discovery of theory from data, meaning that the research could be loosely linked to the existing theories, but began with no strong hypotheses to verify. On the one hand, it offered more flexibility to the researcher in creating new theories, but on the other hand it resulted in the study outcomes being more descriptive than normative. The developed theories are specific to the social and material context of the investigated matrix organization, yet can easily be subject to further normative verification.

Certain limitations in the study related to the assumed case study methodology. In line with its principles, the analysis was narrowed down to three identified cases representing different matrix structure types in the selected organization and to a specific time and place. This made the researcher disregard information on other encountered cases. It also imposed a similar emphasis on all three structure types in the study, whereas in reality some were more often employed than the other.

Bearing in mind that the study assumed a specific scope, the chosen research problem and questions were also a limitation in a sense. Large portions of data collected during the interviews, observations and documentary analyses were left out as not connected with the purpose of the research. This information, although not directly irrelevant for this analysis, sometimes contained interesting insights from other fields. It is also important to mention that the study was conducted in a specific time period and place. It covered the phenomena which occurred solely in the chosen part of the organization and only until a specific point in time. The analysis by default omitted events that took place later or in other parts of the organization.

Some further constraints were connected with the researcher and his role in the investigated organization. On the one hand, given the qualitative character of the research, his personality, skills and experience definitely played a crucial role in it. On the other hand, he was a participant of the investigated organization, which required very strict rigour in eliminating data not collected within the assumed cognitive framework. Together with the use of data triangulation techniques, it helped the researcher to avoid drawing wrong or pre-conceptualized conclusions based on his subjective opinions.

It should be underlined that all the limitations presented above did not come as a surprise. They were closely linked with the chosen methodology and path to solving the research problem. Actually, they were a price the researcher had to pay for the depth of his analysis. They proved to be worth every penny, as the findings presented earlier, in large part, could not have been discovered with any other cognitive framework.

C. Further research directions

An important contribution of this study is that it provides future researchers with a wealth of hypotheses which can serve as starting points for further explorations in various research directions related to matrix management. This includes both the possibility of continuing the research based on the same cognitive assumptions (interpretive paradigm and the grounded theory method) and employing a new, amended framework. These analyses might be conducted either in the same organization or in other matrix structure examples, also from various industries. On the one hand, further investigations could verify the conclusions set forth by this study in other matrix environments. On the other hand, they could focus on deeper understanding of new questions raised herein. These suggestions for future research cover three major areas. Firstly, some relate to the approach and tools used for analysing matrix structures. Secondly, there is a group of themes related to specific elements of matrix organizations. Thirdly, there is an area encompassing their specific advantages and disadvantages.

The first group of recommendations for further research is focused on **exploring matrix organizations from other perspectives that are additional to the one assumed in this study**.

Future research in other organizations could verify the versatility of the new model for analyzing matrix effectiveness considerations proposed in this study. It would also be an opportunity to understand in a more robust way the dependencies between specific elements of the model and their influence on the matrix advantages and disadvantages identified by this research.

Another future direction to explore could determine quantitatively to what extent each of the advantages and disadvantages of matrix structures influences their chances for succeeding. Drawing more general conclusions on this could certainly help the architects of matrix structures in designing them in an optimized way.

A supplementary perspective on matrix organizations could treat them more as evolutionary processes rather than structures. This research provided a substantial number of detailed insights on matrix considerations. A study scheduled for a few years or longer could build on the gathered knowledge and focus on the long-term changes of matrix organizations.

Another potential exploration field is to find a way to describe all the complex matrix organizational dependencies in a clear way. The conducted research confirmed that the (in)famous dotted lines lack one commonly accepted definition. Thus, almost every matrix participant understands the same term differently as those lines are rarely formalized. There certainly is space for the development of a framework for more accurate estimations of the strength of the dotted-line connections and their categorization. On the other hand, future research could also revisit the issue of presenting matrix structures graphically, building on the knowledge gathered herein.

The second group of future research recommendations relates to **gaining a deeper understanding of selected matrix effectiveness considerations.**

One of the future research directions could deepen the knowledge on the aforementioned issue of matrix organizations shuffling between various matrix forms, depending on the task profile. This could potentially include understanding better the criteria and process behind these activities. When properly explored, this theme may provide solutions to many organizational inefficiencies and certainly is an attractive field for further investigation.

Another interesting aspect to explore that is neglected in the literature and brought up by this study is the role that networking plays in a matrix organization. In all empirically investigated cases, it proved key to high performance in a matrix. Understanding all related dependencies in a more robust way could deliver important practical implications for matrix employees and managers.

A crucial issue for further investigation arising out of this dissertation is the impact that organizational culture has on the functioning of matrix arrangements. As the outcomes of this study stand in contrast with many other matrix culture examples, a mixture of qualitative and quantitative methods would be probably best suited for this task. Drawing more general

conclusions seems key. Future analyses could also build on the accomplishments of the investigators of culture in more traditional organizational forms (Hofstede, Neuijen, Daval-Ohayv and Sanders, 1990), (Cameron and Quinn, 1999).

Another research opportunity triggered by this study is getting a more profound understanding of the functioning and impact of the aforementioned matrix guardians. Since they are usually hidden deeply in the matrix structure, frequently with misleading job titles, the available literature has barely mentioned them so far. This mystery, combined with the matrix guardians being a rather unique organizational phenomenon, makes them an even more ambitious, yet compelling subject to explore.

One additional field for exploration lies in analyzing in more detail the dependencies between the characteristics of a specific industry and matrix organizations operating in it. This could involve further research both in the consumer product industry and other sectors as well, to clarify how matrix structures differ among them. In the next step, it could also include conducting a similar examination but in other industries, verifying how matrix structures vary among them.

The last group of further research recommendations relates to **the advantages and disadvantages of matrix organizations which remain controversial or unresolved.**

An issue that definitely deserves a dedicated analysis is the resource efficiency of matrix structures. The available literature, based mostly on qualitative assessments, offers contradictory statements on that matter. The resource efficiency of matrix organizations requires a decent investigation, potentially with the use of quantitative measures which would indicate both significant variables and their impact. This analysis could, for instance, use financial ratios, such as the operating ratio (Nevel and Miklius, 1968). Despite some predictable data availability challenges, it could definitely make a difference in our understanding of the matrix structure concept.

Further research could also cover a more detailed analysis of conflict tendencies in matrix structures. The findings herein stand in contradiction with numerous publications claiming that increased levels of conflict are inherently inscribed in the nature of matrix organizations. They indicate that there might be a cost at which the conflicts are mitigated, for instance less effective decision-making. They also bring to light the discussion about differences between bad and good conflicts in a matrix, called “the healthy frictions” by some employees. There are surely

many other factors which play a role in the matrix conflicts. Gaining a more thorough understanding thereof could definitely take our knowledge on matrix structures to another level.

Lastly, the future researchers might choose to dig deeper into the two key flaws of the matrix organization concept confirmed by this study: low decision-making effectiveness and the (im)balance of power. In the empirical research, the former was primarily affected by the misaligned goals and blurred responsibilities. Controlling the latter did not seem to be the major focus in the investigated organization. Gaining a better understanding of these aspects could hint some methods for neutralizing their negative effect and hence improving matrix efficiency.

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10. APPENDIX - DETAILED DISSERTATION CONTENTS

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