Best Practices in Matrix Organizational Structures

In the following report, Hanover Research reviews the literature related to matrix organizational structures. In our review, we focus on the different types of matrix organizational structures, how they compare with traditional organizational structures, and the advantages, disadvantages, and challenges associated with their adoption. Additionally, this report examines best practices gleaned from the literature and from organizations that have successfully implemented and maintained such structures.

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INTRODUCTION

Though matrix organizational structures have been implemented since the late 1970s, their use is still a matter of some debate. The matrix structure has been unsuccessful in many organizations and, as such, has its detractors. One such critic is Nigel Nicholson of London Business School, who says that the matrix structure is "one of the most difficult and least successful organizational forms"[1] due to its inherent complexity. However, proponents of the matrix structure attribute the relatively high failure rate to mismanagement, inadequate support, or poor implementation rather than the matrix structure itself. Matrix structures have been successfully implemented in many large, globally-oriented companies, and admirers conclude that matrix structures are most appropriate "where there is a finite task involved and where everyone shares a similar sense of purpose."[2]

This report reviews the literature related to matrix structures in the following sections:

- **Section I** defines matrix structures and contrasts them with traditional hierarchical structures. It also details the advantages, disadvantages, and challenges associated with their adoption.

- **Section II** uses information gathered from the literature and real-world examples to provide a list of best practices for the successful implementation of matrix structures.

- **Section III** profiles two prominent companies that have used matrix structures in different ways: Novartis and General Electric.

KEY FINDINGS

- **Matrix structures combine the benefits of traditional functional and product-based structures.** In a matrix structure, reporting channels form a grid, and employees typically report to both a functional manager as well as a product manager.

- **Prior to adoption, an organization should understand the advantages and disadvantages associated with matrix structures, as well as how such a structure would address its specific needs.** Matrix structures have several advantages over traditional structures, such as flexible allocation of resources, increased information flow, and increased employee autonomy. However, in addition to being extremely difficult to implement and sustain, matrix structures can incur greater overhead costs and increase internal competition for limited resources.

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[1] "Matrix Management." *The Economist*, October 23, 2009. http://www.economist.com/node/14299841
[2] Ibid.

- **If an organization decides to adopt a matrix structure, then it should be aware that, to succeed, the transition will require significant investment of both time and effort.** Simply adopting a matrix structure is no guarantee of success, and such fundamental changes to an organization are not made swiftly. Organizations should acknowledge that changing cultural attitudes and norms, increasing levels of emotional intelligence and awareness, and developing effective training for employees and leaders are all critical components in maximizing a matrix structure's potential for success.

- **Organizations also should give thought to how they will navigate the unique challenges associated with successfully adopting a matrix structure,** such as the increased potential for misaligned goals, unclear roles and responsibilities, ambiguous authority, the lack of matrix guardianship, and silo-focused employees.

SECTION I: MATRIX ORGANIZATIONAL STRUCTURES

This section defines matrix organizational structures and contrasts them with more traditional hierarchical structures. It also examines the typical reasons for their adoption and addresses their advantages and disadvantages.

TRADITIONAL ORGANIZATIONAL STRUCTURES

Many organizations still operate within "traditional" hierarchical structures where each employee reports to one person, typically in the same department (e.g., an IT employee reports to the IT department manager). This structure can have a detrimental effect on productivity and the flow of information because each employee is only accountable to one person. It also can result in what is called the "silo mentality." In a traditional "one person, one boss" organizational structure, information is restricted, and co-operation between employees and other departments is stifled.[3] This traditional hierarchical structure becomes progressively more problematic as organizations become more specialized and require employees with specific areas of expertise. To capitalize fully on their increasingly complicated nature, many organizations are currently using more complex structures.

MATRIX ORGANIZATIONAL STRUCTURES

One alternative to a traditional hierarchical structure is a "matrix" structure. In a matrix structure, reporting relationships comprise a grid, and each individual typically reports to two managers: a functional manager and a product manager. Common in industry and business, matrix structures gained popularity in the late 1970s and early 1980s and are found in aerospace, automotive, banking, chemical, communications, computer, defense, electronics, financial, oil and gas, and technology industries.[4] Matrix structures are ideal for companies with diverse markets and products.[5] In particular, by combining the benefits of both functional and product-based structures, they provide large companies with the flexibility to focus on company-wide and product-specific goals simultaneously[6].[7] The matrix also "allows companies to leverage vast resources while staying small and task-oriented…encourages innovation and fast action, and speeds information to those who

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[3] Dancer, J., and Raine, J. "Making the Matrix Work." Pharmafile, December 4, 2010.
  http://www.pharmafile.com/news/making-matrix-work

[4] Sy, T., and Côté, S. "Emotional Intelligence: A Key Ability to Succeed in the Matrix Organization." *The Journal of Management Development,* 23: 5/6, 2004, p. 240.
  http://search.proquest.com/socialsciences/docview/216375261/fulltextPDF?accountid=132487

[5] "Matrix Management," Op. cit.

[6] Johnson, R. "Advantages & Disadvantages of Matrix Organizational Structures in Business Organizations." Small Business Chronicle, Houston Chronicle. http://smallbusiness.chron.com/advantages-disadvantages-matrix-organizational-structures-business-organizations-26350.html

[7] "Chapter 7: Organizational Structure and Change." Saylor, p. 13. http://saylor.org/site/wp-content/uploads/2011/06/BUS208-5.4.pdf

know how to use it."[8] Though they are more common in business settings, matrix structures theoretically can be implemented in other organizations as well.[9]

Rather than clustering employees exclusively in terms of function (i.e., by department), the matrix structure allows employees to form additional groups around products or goals. This enables each employee to contribute his or her expertise to a cross-functional team built around a product, project, or goal. Figure 1.1 depicts a basic matrix structure and illustrates the typical grid-like, dual reporting relationships. Each employee (represented by a circle) reports to both a functional manager (represented by a column) and a product manager (represented by a row). The functional manager is typically responsible for managing workflow, whereas the product manager usually oversees aspects of the product or goal itself. [10] For example, an IT employee with expertise in website development would report to the functional IT manager, who would manage all IT employees, as well as the project manager in charge of launching a new website. This structure gives the organization the flexibly to manage functional and product needs.

Figure 1.1: Typical Matrix Organizational Structure
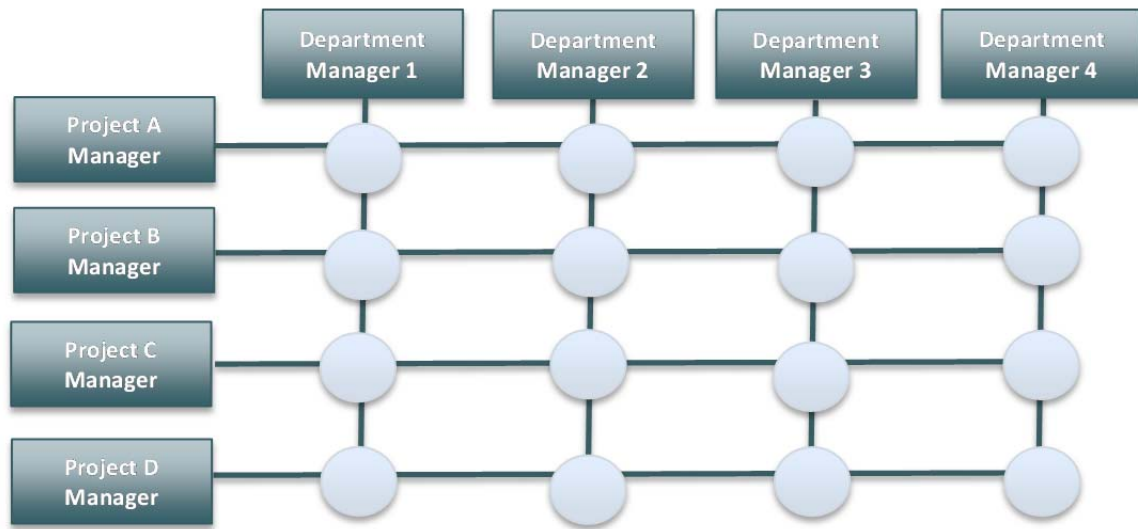
Some experts refer to three different types of matrix structures: functional matrices, balanced matrices, and project matrices. Figure 1.2 illustrates these three forms.

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[8] Sy, T., and D'Annunzio, L. S. "Challenges and Strategies of Matrix Organizations: Top-Level and Mid-Level Managers' Perspectives." *Human Resource Planning,* 28:1, 2005, p. 40.
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&ved=0CEQQFjAB&url=http%3A%2F%2Fthematrixco.com%2Fdownload%2Fi%2Fmark_dl%2Fu%2F4006983785%2F4527114385%2FAT%2520Kearny%2520Matrix%2520Article.pdf&ei=cphAUpGoGdaj4APw0oGoCg&usg=AFQjCNGXP5FdAO8hxIvolckLbVzUAoQu8Q&sig2=i6Jqvr97OVlRFD2u7QLdLw&bvm=bv.52434380,d.dmg

[9] "Making the Matrix Work," Op. cit.

[10] Woods, C. "Matrix Organizational Structure: Advantages, Disadvantages, & Examples." Education Portal.
http://education-portal.com/academy/lesson/matrix-organizational-structure-advantages-disadvantages-examples.html

Figure 1.2: Three Forms of Matrix Organizational Structures

FUNCTIONAL MATRIX	BALANCED MATRIX	PROJECT MATRIX
Employees remain full members of functional teams.	Employees officially belong to two distinct organizing dimensions.	Employees move between functional departments.
Project managers are limited to coordinating the efforts of functional groups.	Project managers are responsible for defining what needs to be accomplished when.	Project leaders have primary control over resources and project direction.
Functional managers are responsible for the design and completion of technical requirements.	Functional managers define personnel staffing and how tasks will be accomplished.	Functional managers serve a support or advisory role, and retain control over much of the team responsible for carrying out plans established by project managers.
Processes and procedures instituted to ensure cross-functional collaboration.	Strives for equalized power and authority between organizing dimensions and equal pursuit of multiple business objectives.	Permanent project management overlay.

Source: Challenges and Strategies of Matrix Organizations[11]

PARTIAL MATRIX STRUCTURES

While matrix structures may be best suited to some organizations, a partial matrix structure might be more appropriate for others.[12] Partial matrix structures are considerably varied in form and might refer to a "temporary interdisciplinary task force for a specific purpose or a semi-team structure developed in only part of the organization around certain functions or projects that need a high level of communication or coordination."[13] Whether to adopt a partial matrix structure, what percentage of the whole organization should restructure into a matrix, and how integrated the partial matrix should be with the whole can be difficult determinations for organizations to make. However, these considerations should be assessed thoroughly prior to adoption. Organizations that choose to adopt partial matrix structures are difficult to identify, since the matrix is usually deeply embedded in a more traditional hierarchical structure.

Kevan Hall, CEO of Global Integration consultants and acclaimed expert on matrix management, suggests partial matrix structures should occupy only one of three sectors of an organization, in what he calls the "matrixed middle." Hall acknowledges that "matrix management is a significant step up in complexity…and matrix managers require a high level of skills and capabilities that can take time to acquire."[14] Due to this complexity, he suggests

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[11] Listed items adapted from "Challenges and Strategies of Matrix Organizations: Top-Level and Mid-Level Managers' Perspectives," Op. cit., p. 40.
[12] Boles, A. "An Evaluative Study of the Matrix Structure in Small Public Service Organizations." 1984, p. 22. http://library3.sage.edu/archive/thesis/MGT/MGT-b764-bol-ane.pdf
[13] Ibid, p. 22.
[14] Hall, K. "Simplifying Your Matrix Organization Structure: Step One." Global Integration, August 8, 2012. http://www.global-integration.com/blog/simplifying-matrix-organization-structure-step/

limiting the matrixed employees to the small percentage who truly will benefit from increased cooperation and collaboration. In so doing, an organization "can constrain the impact of this complexity of the organization as a whole and in particular, keep it simple for operational people."[15]

AD HOC MATRIX STRUCTURES

Another variant of the permanent, organization-wide matrix structure is the "ad hoc" or temporary matrix structure. In some cases, permanent matrix structures may not make sense for an organization, and, in these situations, an ad hoc matrix provides the best of both worlds. Often, these "adhocracies" are created specifically to address a large project or problem. However, though ad hoc matrix structures offer organizations the ability to address problems with a short-term restructure, a permanent matrix structure "creates accountability, coordination, and…continuity for the product as a whole, while enabling staff…to be flexibly assigned where they are needed most."[16]

REASONS FOR ADOPTION

Thomas Sy and Laura Sue D'Annunzio conducted a detailed analysis of matrix structures entitled "Challenges and Strategies of Matrix Organizations: Top-Level and Mid-Level Managers' Perspectives." Their analysis indicates there are four primary reasons organizations tend to adopt matrix structures:

- Matrix structures allow organizations to focus on multiple business goals;
- Matrix structures facilitate the management of information;
- Matrix structures enable companies to establish economies of scale;
- Matrix structures speed response to environmental demands.[17]

ADVANTAGES

Adopting a matrix structure entails several advantages:

- **Flexible, efficient allocation and sharing of resources:** Arguably one of the most compelling reasons for organizations to adopt a matrix structure is because it lends itself to a more flexible and equitable sharing of resources across individuals and projects.[18] Employees are also considered resources, and a matrix structure allows managers the flexibility to place employees where they are most needed.[19]

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[15] Ibid.

[16] "Matrix Management and Structure." ENotes. http://www.enotes.com/topics/matrix-management-and-structure

[17] Listed items taken verbatim from "Challenges and Strategies of Matrix Organizations: Top-Level and Mid-Level Managers' Perspectives," Op. cit., p. 41.

[18] "Matrix Organizational Structure: Advantages, Disadvantages, & Examples," Op. cit.

[19] "Making the Matrix Work," Op. cit.

- **Increased flow of information:** Traditional hierarchical structures tend to have isolated avenues of communication (e.g., IT employees communicate mostly with other IT department members). In a matrix structure, employees are in constant contact with other employees and must communicate routinely with both departmental and project leaders. As a result, the rate of interpersonal communication grows, increasing the information flow among projects and departments. Furthermore, by increasing the flow of information, organizations with matrix structures also benefit from faster, more efficient decision-making because employees are well-informed and better situated to address problems as they arise.[20]

- **Increased autonomy:** The matrix structure encourages a more democratic management style,[21] so employees who enjoy flexibility and desire opportunities for self-management will find that this organizational structure lends itself well to both. Often, employees receive work from two different sources—functional and departmental—and must make decisions about what to prioritize.[22] Though this is an advantage for those employees who enjoy such autonomy, it may be problematic for employees who are less comfortable with decision-making.

DISADVANTAGES

Matrix structures are considered among the most difficult organizational structures to implement and sustain. Organizations can encounter the following problems when implementing a matrix structure:

- **Internal complexity:** Dual accountability can make reporting relationships confusing, particularly in the first stages of implementation.[23] Some detractors even argue that matrix structures "blur responsibilities."[24] This may be especially true when employees receive competing directives from different managers.[25] These complexities can be compounded when "divisional missions are at odds with functional goals, plans, and priorities…when horizontal and vertical priorities diverge, functional and divisional managers may begin to compete for resources and power."[26]

- **Higher overhead costs:** Since matrix structures require roughly twice the number of managers, they require organizations to shoulder twice the management costs. This

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[20] "Matrix Organizational Structure: Advantages, Disadvantages, & Examples," Op. cit.
[21] "Advantages & Disadvantages of Matrix Organizational Structures in Business Organizations," Op. cit.
[22] "Matrix Organizational Structure: Advantages, Disadvantages, & Examples," Op. cit.
[23] Ibid.
[24] Galbraith, J. R., and Quelle, G. "Matrix Is the Ladder to Success: Multi-dimensional Organizational Design (Matrix) Is the Best Way to Restructure a Business. Pro or Con?" The Debate Room, Bloomberg Businessweek. http://www.businessweek.com/debateroom/archives/2009/08/matrix_is_the_ladder_to_success.html
[25] "Advantages & Disadvantages of Matrix Organizational Structures in Business Organizations," Op. cit.
[26] "Disadvantages of a Strong Matrix Organizational Structure," Op. cit.

creates a substantial increase in overhead costs.[27] Smaller organizations should be mindful of this prior to implementing a matrix structure.[28]

- **Resource scarcity:** Though information transfer typically grows with the implementation of a matrix structure, the increased number of persons who must be involved in resource allocation and decision-making can create an environment of intense competition for resources.[29] Furthermore, competition for employees and employee expertise can strain resources and foster competition between managers.[30]

CHALLENGES

Though the advantages and disadvantages associated with adopting a matrix structure are relatively straightforward and tend to be common to most matrix organizations, one study found that perceptions of the challenges associated with matrix structures differ between top-level and mid-level managers. Mid-level managers report unclear roles/responsibilities and silo-focused employees to be the biggest challenges of matrix structures, while top-level managers cite misaligned goals, ambiguous authority, and lack of matrix guardianship to be their biggest challenges. [31] These items constitute neither advantages nor disadvantages, but rather represent scenarios of which organizations seeking to adopt matrix structures should be aware.

MISALIGNED GOALS

Aligning goals among different dimensions (e.g., functions, products, customers, geographic locations, etc.) can be difficult, and top-level managers report misaligned goals as one of the biggest challenges matrix structures present. This may be because top-level management is typically more involved than mid-level management in higher levels of goal setting and the development of business objectives.[32] Within this category, top-level managers specifically cite the following as reasons aligning goals with dimensions is particularly difficult within a matrix structure:

- There are competing or conflicting objectives between matrix dimensions.
- There are inadequate processes in place to align goals and to detect possible misalignment.
- There is a lack of synchronization, coordination, and poor timing of work plans and objectives.
- There is insufficient communication and consultation between matrix dimensions.[33]

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[27] "Matrix Organizational Structure: Advantages, Disadvantages, & Examples," Op. cit.
[28] "Advantages & Disadvantages of Matrix Organizational Structures in Business Organizations," Op. cit.
[29] "Matrix Organizational Structure: Advantages, Disadvantages, & Examples," Op. cit.
[30] "Advantages & Disadvantages of Matrix Organizational Structures in Business Organizations," Op. cit.
[31] "Challenges and Strategies of Matrix Organizations: Top-Level and Mid-Level Managers' Perspectives," Op. cit., p. 42.
[32] Ibid.
[33] Ibid., p. 43.

One strategy that helps to address the issue of misaligned goals within matrix structures is a more concrete, established goal-setting process that reflects both (or all) dimensions of the organization (i.e., both vertical and horizontal axes). The "cascading spreadsheet planning" method calculates goals both horizontally and vertically, with each goal adding up in both directions. Ideally, the goals and objectives of one unit should support and reinforce those of other units.[34] Figure 1.3 below illustrates an example of cascading goals across multiple dimensions.

Figure 1.3: Example of Cascading Goals across Functions, Regions for Employee Training

	NORTH AMERICA	EUROPE	ASIA	TOTAL
Function 1	Graphic Design: $75,000	Structural Architecture: $75,000	Quality Audit: $50,000	$200,000
Function 2	Leadership 101: $75,000	Matrix Management: $50,000	Segment Marketing: $25,000	$150,000
Function 3	CRM Basics: $50,000	Product Branding: $75,000	Segment Marketing: $25,000	$150,000
Total	**$200,000**	**$200,000**	**$100,000**	**$500,000**

Source: Challenges and Strategies of Matrix Organizations

UNCLEAR ROLES AND RESPONSIBILITIES

Lack of clarity in roles and responsibilities is a major challenge cited by mid-level managers, perhaps because more daily managerial tasks fall to mid-level management than to top-level management. Mid-level managers report being particularly concerned with the following:

- Unclear job descriptions and guidelines for roles and responsibilities;
- When ambiguous roles and responsibilities create tension among employees;
- Confusion over who is the boss; and
- Not knowing whom to contact for information.[35]

It is crucial to understand that, as business and organizational demands evolve, so too must employee roles and responsibilities. This potentially may create unease with employees unaccustomed to change. Furthermore, most organizations expend a great deal of effort in delineating functional roles among those in upper management and relatively little energy in doing the same for mid- and lower-level employees. Employees expect clarity from leadership, while leadership simultaneously assume that employees will take initiative in adapting to change. This disconnect between the two can intensify the feeling of ambiguity.

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[34] Ibid, p. 43.
[35] Ibid, p. 43.

To prevent confusion with respect to roles and responsibilities, successful organizations should strive to:

- Establish clear guidelines and descriptions on roles and areas of responsibility;

- Assign accountability for business objectives;

- Create a single point of contact for information or approval for areas of responsibility; and

- Set a plan for communication and information sharing (e.g., monthly town hall meetings, newsletters, quarterly company/unit performance).[36]

One particularly useful tool many organizations can use to pre-empt confusion is the RASIC tool. After tasks and responsibilities have been identified, employees use the RASIC tool to determine their specific role and scope of responsibility relative to each item. Employees designate each item with a letter from the RASIC acronym: R = Responsible, A = Approval, S = Support, I = Inform, and C = Consult.[37] A sample completed RASIC rubric is shown in Figure 1.4.

Figure 1.4: Sample RASIC Rubric

ITEM	EXECUTIVES	DIRECTORS	ANALYSTS	SUPPLIER
Address executive management strategic inquiries	S	S	--	S
Conduct strategy initiative workshops	C	C	C	S
Collect and perform extended data analysis in support of strategy development	C I	C I	C	S I
Provide solutions, strategies, and actions to management executives	I	I	C	S
Capture intellectual capital	C I	C I	--	S I

Source: Adapted from Challenges and Strategies of Matrix Organization

The RASIC tool empowers employees to react to unfamiliar situations and serves to clarify functional responsibilities.

AMBIGUOUS AUTHORITY

Authority in more traditional structures is self-evident; the higher the position in the hierarchy an individual occupies, the more authority and responsibility he or she possesses.[38] However, in matrix structures, authority is less vertically apparent and can take on considerable ambiguity. Further compounding this issue, some employees—particularly those who previously occupied positions of high authority—find the transition to a matrix structure to be commensurate with demotion, which can create resentment.

Due to the dual reporting structure, it is not uncommon in matrix structures for leaders to have responsibility without authority. This places an emphasis on leaders' ability to

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[36] List taken verbatim from Ibid., p. 44.
[37] Ibid., p. 44.
[38] Ibid., p. 44.

negotiate and motivate peers without formal authority. The following situations are commonly cited by mid- and top-level management alike:

- Confusion over who has the final authority;

- Lack of clarity on areas of accountability;

- Leaders unaccustomed to sharing decision-making rights; and

- Delays in decision-making processes. [39]

A critical factor in solving problems related to ambiguous authority is the organizational culture. In organizations with a political culture, the tendency to focus on maintaining power and status can overtake the need to solve problems. Unlike those with a political culture, organizations with a collaborative culture are far better at navigating these ambiguities because they are able to informally negotiate and focus on problem-solving.[40]

Another complication that can arise when organizations transition to matrix structures is that senior leaders can fail to give local or product-level leaders the authority needed to accomplish their specific goals or objectives. Senior leadership may be reluctant to delegate decision-making responsibilities to other functional leaders. Since one of the strengths of matrix organizations lies in decentralized control, the inability of senior leadership to share authority constitutes a significant problem and undermines the entire structure.[41]

Conversely, a successful matrix structure empowers individuals with the most up-to-date, accurate information to make decisions. This often means that local leaders—who frequently have a more comprehensive understanding of the local landscape than senior leadership—are better equipped to make decisions. In the most successful matrix structures, a mere five percent of decisions are made by senior leadership, while nearly 80-90 percent of decisions are made by local leadership.[42]

LACK OF MATRIX GUARDIAN

Another frustration encountered by leadership in matrix organizations is the lack of a matrix guardian. A structure's success is often determined by objective measures like return on investment, market share, and profitability. Matrix structures are no exception; their effectiveness should be measured and evaluated, ideally by an unbiased and influential member of the organization. Commonly cited problems associated with the lack of measurement of matrix success are:

- Lack of consequences and rewards for matrix performance can reduce motivation to attempt to make the matrix work;

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[39] Ibid., p. 45.
[40] Ibid., p. 45.
[41] Ibid., p. 45.
[42] Ibid., p. 45.

- Establishing a monitoring process to detect and identify matrix performance problems due to reluctance to divulge unit-level problems;

- Ensuring the matrix guardian has senior level support and authority to take action; and

- Preserving the objectivity of the matrix guardian and preventing undue political pressure.[43]

For the measurement of effectiveness to yield tangible results, the matrix guardian should be well-respected and occupy a position of influence within the organization. It is crucial that this guardian be objective and exempt from political influence (i.e., "fire proof").[44] When difficult decisions regarding matrix management must be made, the matrix guardian should have the requisite authority to suggest and make those decisions. Typically, the matrix guardian will be responsible for the identification of any areas of weakness in the matrix and will disseminate best practices to the rest of the organization to address those weaknesses. [45]

SILO-FOCUSED EMPLOYEES

Arguably the most common challenge organizations transitioning to matrix structures face is the behavior of its employees. Some researchers even argue that adopting a matrix structure requires nothing short of a "revolutionary shift in employee mindset and behaviors." [46] Behavioral change is a complicated issue, because many employees understand their role within the organization in terms of subunits. Employees spend the majority of their careers creating professional identities, interacting with the same collection of co-workers, and performing the same kinds of tasks. As a result, strong professional identities and allegiances can form within subunits. In the context of a matrix structure, this can result in behavior that benefits the subunit to the detriment of the organization as a whole. Since one of the most crucial components of successful matrix organizations is open communication and high degrees of collaboration between and among units, an "us versus them" mentality is a major liability to the success of a matrix structure.[47]

The following issues related to employee behavior also can arise:

- Personal conflicts between leaders can hinder collaborations between units;

- Withholding resources from others;

- Lack of trust between employees in different units;

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[43] Ibid, p. 45.

[44] Ibid, p. 46.

[45] Ibid, pp. 45-46.

[46] "Emotional Intelligence: A Key Ability to Succeed in the Matrix Organization," Op. cit., p. 442.

[47] "Challenges and Strategies of Matrix Organizations: Top-Level and Mid-Level Managers' Perspectives," Op. cit., pp. 45-46.

- Employees lack the requisite skills to function in the matrix; and
- Insufficient communication between different business units.[48]

To address these concerns, special effort should be made to clarify expectations, provide training (e.g., in communication, negotiation, and emotional intelligence), work cross-functionally, and build interpersonal relationships.[49]

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[48] Ibid, p. 46.
[49] Ibid, pp. 46-47.

SECTION II: BEST PRACTICES

The following section discusses best practices from the literature and organizations with successful matrix structures. In addition, it specifies several key questions organizations should address prior to adopting a matrix structure.

KEY QUESTIONS

Before deciding to implement a matrix structure, strong consideration should be given to the following questions:

- What is the organization's business model, and does it require the complexity of a matrix structure to operate effectively?

- What is the culture of the organization, and can it support the changes in approach indicated by a matrix structure?

- What is the workforce, and does it have the ability and flexibility to change?

- What is the cost, and is there a rationale for entering the upheaval required to adopt matrix working?

- What is the scope, and might there be areas within the business that would benefit more than others from matrix working?[50]

One common pitfall is that decision-makers assume the matrix structure will support itself. Kevan Hall of Global Integration consultants notes that "matrix organization structures reflect the reality of today's external and internal business complexity…but the matrix structure itself solves nothing—it is the way people operate the structure that makes the matrix organization succeed or fail."[51] In other words, the act of restructuring an organization is insufficient to address any concerns that may prompt a move to a matrix structure in the first place.

After deciding to adopt a matrix structure, particular consideration should be given to the following questions:

- How do we operate effectively with responsibility and accountability without authority?

- How do we manage expectations of multiple bosses?

- What is the best way of dealing with ambiguous and shifting reporting lines?

- How can we best influence those separated by distance/time/culture?

- How do we manage communications?

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[50] Listed items taken verbatim from "Making the Matrix Work," Op. cit.
[51] Ibid.

- How do we manage conflict?
- How do we develop routine relationships?
- How do we clarify role specifications/performance objectives?[52]

MAKING THE TRANSITION

Once an organization adopts a matrix structure, successful implementation requires shifting the organization's culture, addressing the important function of emotional intelligence, and providing comprehensive training for both leaders and employees alike.

CULTURE CHANGE

In 1990, after the heyday of transition to matrix structures had passed, Christopher Bartlett and Sumantra Ghoshal published what is considered a foundational treatise on the issue of matrix management in the *Harvard Business Review*: "Matrix Management: Not a Structure, A Frame of Mind." In this article, the authors suggest that the transition to a matrix structure is not so much a matter of restructuring, but of readjusting expectations and ways of thinking within the organization. They acknowledge that building a matrix structure is relatively easy, but building a matrix structure in the minds of managers and employees can be considerably more difficult.[53] Bartlett and Ghoshal also note that many organizations that tried unsuccessfully to implement matrix structures

> ...correctly recognized the need for a multi-dimensional organization to respond to growing external complexity. The problem was that they defined their organizational objectives in purely structural terms. Yet the term *formal structure* describes only the organization's basic anatomy. Companies must also concern themselves with organizational physiology—the systems and relationships that allow the lifeblood of information to flow through the organization. They also need to develop a healthy organizational psychology—the shared norms, values, and beliefs that shape the way individual managers think and act.[54]

The literature discussing the fundamental tenets of transitioning to matrix structures is nearly unanimous on one point: a strong, supportive culture is critical to their successful implementation. The optimal cultural attitude of a matrix organization reflects an egalitarian, relationship-focused, collaborative environment.

In a 2012 *Harvard Business Review* article about effective leadership in matrix organizations, Ruth Malloy writes that leaders tend to be "successful in matrix roles [when] they consistently use the following four competencies: empathy, conflict management,

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[52] "Successfully Operating Matrix Management." Rialto Consulting, p. 9.
http://www.rialtoconsultancy.com/pdfs/reports/Successfully%20Operating%20Matrix%20Management.pdf
[53] Bartlett, C., and Ghoshal, S. "Matrix Management: Not A structure, A Frame of Mind." *Harvard Business Review*, 1990. http://hbr.org/1990/07/matrix-management-not-a-structure-a-frame-of-mind/ar/2
[54] Ibid.

influence, and self-awareness."[55] Key to the development of strong leadership in matrix structures, influence and conflict management skills allow leaders to establish consensus around a common purpose and collaborate with others in decision-making. Empathy allows leaders to understand others' perspectives and gain insight into customers' mindsets. Additionally, leaders with high levels of self-awareness are more capable of remaining patient when navigating the complexities of the matrix structure.[56]

EMOTIONAL INTELLIGENCE

One common thread that emerged when researching successful implementation of matrix structures was the importance of emotional intelligence. Thomas Sy and Stephane Côté, authors of a study entitled "Emotional Intelligence: A Key Ability to Succeed in Matrix Organizations," suggest that emotional intelligence is "the ability to: perceive emotion in others and express one's emotions; use emotions to guide thinking in self and others; understand how emotions operate; and manage and regulate emotions in self and others."[57] Sy and Côté identify four kinds of emotional intelligence:

- **Managing emotion:** This aspect of emotional intelligence refers to the "ability to regulate or change emotions in oneself and in others."[58] This capacity allows individuals to both moderate their own emotions (e.g., hiding anger from a supervisor) and influence others' emotions (e.g., creating team excitement for a project). Both skills are useful in matrix organizations.

- **Understanding emotion:** This form of emotional intelligence describes "knowledge of emotional vocabulary and how emotions combine, progress, and transit [sic] from one to the other."[59] For example, a person with a high level of emotional understanding would comprehend that fellow co-workers might be nervous or apprehensive about impending layoffs.

- **Using emotion:** This component of emotional intelligence refers to "the ability to harness emotions to guide information processing, problem-solving, and creativity."[60] Generally speaking, positive emotions augment creative thinking processes, and negative emotions serve to focus attention. Individuals who effectively use emotion to guide cognitive processes might use frustration to focus on analytic details.

- **Perceiving emotion:** This part of emotional intelligence encompasses the abilities to identify emotions in oneself and in others."[61] Individuals who are adept at

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[55] Malloy, R. "Managing Effectively in a Matrix." Harvard Business Review Blog Network, *Harvard Business Review*, August 10, 2012. http://blogs.hbr.org/2012/08/become-a-stronger-matrix-leade/

[56] Ibid.

[57] "Emotional Intelligence: A Key Ability to Succeed in the Matrix Organization," Op. cit., p. 448.

[58] Ibid, p. 449.

[59] Ibid, p. 449.

[60] Ibid, p. 449.

[61] Ibid, p. 449.

perceiving others' emotions more successfully resolve situations that occur when co-workers are frustrated or anxious, for example.

Furthermore, emotionally intelligent individuals are better able to navigate the particular challenges matrix organizations face than are their less emotionally intelligent peers. In an organizational structure that stresses the importance of open communication and co-operation, understanding the complexities of human emotions is a decided advantage. It is particularly critical that those in leadership roles be emotionally intelligent.[62]

Proponents of emotional intelligence argue that:

> Managers must have an understanding of the mechanisms by which matrix structures succeed. Such an understanding can help managers make decisions about employee selection, placement, and training. Managers armed with this understanding can also better modify the practices that are not producing the expected results. In particular, managers who neglect the interprersonal components of matrix implementation may contribute to failing organizational structures. Employees working within the matrix must also understand why some skills and abilities can help them function more effectively.[63]

Due to the importance of fostering emotional intelligence in leadership and employees alike, some researchers propose that organizations begin fostering interpersonal skills prior to implementation of the matrix structure.[64]

TRAINING

A successful matrix organization relies heavily on cooperation and team work, and these skills are built on a foundation of loyalty and trust among team members. The development of these skills typically requires significant team building and training. Karen Davey-Winter, a matrix team building expert at the Project Management Institute in Washington, D.C., says

> In a matrix environment, allegiance to the project is not created by the structure itself, but rather as a result of the relationships that are developed within the project team. Relationships in all teams are important for success, but on matrix teams, particularly weak matrix teams, where the project manager may have little authority, they are especially important. On such teams, relationship sare more difficult to establish, are more fragile, and can be more easily destroyed. Keeping a diverse group of people together in a matrix team depends on building loyalty and trust.[65]

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[62] Ibid., p. 439.

[63] Ibid., p. 439.

[64] Ibid., p. 443.

[65] Davey-Winter, K. "Team Building and Development in a Matrix Environment." Project Management Institute, Washington, D.C. https://www.pmiwdc.org/article/karen-davey-winter/team-building-and-development-matrix-environment

The training and team-building process is not instantaneous and should be continually reinforced. Trainers who focus on team development have identified four main stages of team development, illustrated in Figure 2.1 below.

Figure 2.1: The Four Stages of Team Development

STAGE	DESCRIPTION
Forming	The team comes together, starts to understand the goals and boundaries, initiates the tasks, but each individual is still working somewhat independently. Managers need to be directive at this stage in order to steer the team toward the goal.
Storming	Ideas and approaches start to be exchanged about how the work can be accomplished, and this can result in conflict. This phase is critical for the growth of the team, and results in individuals learning ways to work together. Managers still need to be directive at this stage, and also accessible to ensure that conflict is resolved and the team is starting to move forward toward the goal.
Norming	The team starts to feel a sense of achievement, rules of operation (either formal or informal) are working, and trust begins to form. Managers start to participate, and need to be available to provide guidance as the team continues to grow together.
Performing	The team is now maturing and often high performing. Work is accomplished, team members know how to work together, and even though conflict takes place it is managed and navigated with skill and can enhance productivity. The team requires very little supervision at this point and can largely make its own decisions.

Source: Team Building and Development in a Matrix Environment

To begin the process of developing cooperative relationships within teams, Davey-Winter recommends that new teams collectively establish agreements about how the group will function as a unit. This provides the team with a set of ground rules they have established for themselves with respect to behavior, boundaries, work flow, and responsibilities. Then, after ground rules have been established, training should address how to manage conflict in a team-based environment. Acknowledging that conflict will occur in even the most highly functioning teams is important, and training helps to provide a roadmap for this eventuality. Additional training components such as the use of personality assessments, ongoing team-building and social events, and formal recognition of accomplishments serve to reinforce the foundational trust required for successful matrix organizations.[66]

BEST PRACTICES

The list below has been compiled from the literature and from strategies used by organizations that successfully implemented matrix structures.

- Matrix structures are best adopted by complex, diverse organizations that have several products, projects, or goals that are unified under a clear organizational objective and require multiple points of expertise to function. In such cases, matrix structures allow for "the project management of multiple simultaneous projects."[67]

- **Successful matrix organizations embrace organizational change.** For a matrix structure to succeed, every level of the organization—from senior leadership to

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[66] Ibid.
[67] "Making the Matrix Work," Op. cit.

front-line employees—must embrace the change. The transition to a matrix structure will affect all members of the organization, and change will be required on every level. Even "organizational leaders must be prepared to change themselves if they want to truly embrace the matrix approach… will need to adopt some new practices, and also make some important sacrifices."[68]

- **Successful matrix organizations encourage cultural change**. Successful implementation requires more than official reorganization into a matrix structure, particularly if employees are not used to communicating cross-functionally. More than rigid lines and who reports to whom, successful implementation requires support on the cultural level. Cultivating a culture of co-operation, communication, openness, tolerance of small mistakes, and a willingness to try new ideas is critical to success and should be given as much—if not more—consideration as official restructuring.[69]

- **Successful matrix organizations embrace ambiguity.** The most successful implementations understand that the strength of the matrix structure is in its ability to grant employees the flexibility and autonomy to contribute co-operatively to the success of a goal or project. Matrix organization management should understand that

  > …teams of individuals will be asked to operate semi-autonomously, bringing together the necessary skills to accomplish their separate tasks and missions, and generally without hierarchical power to support them… it is truly an environment of high accountability, where empowerment must not be diluted.[70]

- **Matrix organizations should redefine authority and encourage flexible styles of management.** After transitioning to a matrix structure, product managers must redefine their understanding of "authority," says Paula Martin, a project management specialist. Traditional notions of authority may be counterproductive in matrix structures, so, rather than relying on traditional "authority," Paula suggests that product managers generate an environment of co-operation by using collaborative techniques and orienting the team toward high performance.[71] Furthermore, leaders "must be prepared to introduce new systems and processes as well as set the right boundaries of accountability and responsibility… [and] they must accept the need to give up a significant amount of control."[72]

- **Successful matrix organizations strive to maintain equality on the vertical and horizontal axes of the matrix.** Establishing—and maintaining—equality on both the functional and project dimensions of a matrix can be achieved in several ways. One strategy is to keep pay levels equal on both sides of the matrix, such that functional and project managers are compensated similarly. Misaligned salaries could create a

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[68] Ibid.
[69] Ibid.
[70] Ibid.
[71] Ibid.
[72] Ibid.

lopsided matrix. Another strategy is to adjust job titles so that they imply equal importance on both dimensions. Organizations also might consider balancing the reporting levels in the chain of command on both dimensions of a matrix.[73]

- **Organizations that switch to matrix structures should focus on extensive training**. Due to their complexity and reliance on team-based cooperation, matrix structures must undertake significant team-development and leadership training to be successful. Karen Davey-Winter notes that "matrix project team members have multiple loyalties and if the team is not cohesive, these divided loyalties can be harmful to the success of the project."[74] Training in team-building helps establish these beneficial team relationships. Similarly, leadership training is also necessary to develop horizontal as well as vertical management techniques.[75]

- **Successful matrix organizations understand that they need to give the matrix time.** A transition to a matrix structure often constitutes a significant upheaval in daily operations, and positive, productive change will not occur overnight. Bartlett and Ghoshal note that

> …a new structure creates new and presumably more useful managerial ties, but these can take months and often years to evolve into effective knowledge-generating and decision-making relationships. And because the new job requirements will frustrate, alienate, or simply overwhelm so many managers, changes in individual attitudes and behavior will take even longer.[76]

Because change at the cultural level requires time, Bartlett and Ghoshal recommend that, prior to any top-down implementation of structural change, efforts to transition to matrix structures should begin with changing the organization's culture.[77]

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[73] "An Evaluative Study of the Matrix Structure in Small Public Service Organizations," Op. cit., p. 24.
[74] "Team Building and Development in a Matrix Environment," Op. cit.
[75] "Succeeding at Novartis." Training Magazine, May 5, 2007. http://www.trainingmag.com/article/succeeding-novartis
[76]"Matrix Management: Not A Structure, A Frame of Mind," Op. cit.
[77] Ibid.

SECTION III: CASE STUDIES IN MATRIX ORGANIZATIONAL STRUCTURES

The following section details two organizations that have implemented matrix structures. By profiling different aspects of the two companies, Hanover Research hopes to inform other organizations' decisions of whether or not to adopt a similar structure, either partially or wholly.

NOVARTIS

Created in 1996 as the result of a merger between two Swiss companies, Novartis provides "healthcare solutions that address the evolving needs of patients and societies."[78] Though based in Switzerland, Novartis has a global presence and currently employs just over 127,000 full-time equivalent personnel.

When pharmaceutical management received overwhelming feedback from employees that poor communication and lack of cooperation were having a deleterious effect on their business, Novartis decided that their organizational structure needed to change. Geographical separation and lack of inter-team communication meant that information flow was slow and siloed, and Novartis needed a way to address priorities in a timely, efficient manner. As they employed over 80,000 people in over 140 countries at the time, Novartis realized that any solution to the lack of cooperation and communication needed to be structural.[79]

TRAINING

To address these information flow problems, Novartis—with the help of Global Integration consultants—created training modules that focused on global team building and matrix structure leadership. The modules emulated real-life scenarios, often using high-stress prompts to mimic typical situations likely to be encountered in the matrix structure. Though some employees resisted initially, the benefits of the team-building exercises began to have real effects on inter-personal and team connections.[80]

Novartis expected its leaders to be capable of leading both horizontally and vertically, but leaders were not left to struggle without support. Even now, Novartis supports their leadership with extensive training. Frank Waltmann, is Head of Learning at Novartis, which spans many divisions and provides training opportunities in twelve languages across the globe. Each leader attends five days of training annually, and training includes pre- and post-course work to supplement the training materials. In this way, Waltmann's team can train

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[78] "About Novartis." Novartis US, Novartis. http://www.us.novartis.com/about-novartis/index.shtml
[79] "Case Study: Novartis." Global Integration. http://www.global-integration.com/case-studies/novartis/
[80] Ibid.

its first-line managers more effectively with an eye to both vertical and horizontal management techniques.[81]

LEADERSHIP

Frank Waltmann emphasizes that, to succeed, Novartis needs excellent leadership in both dimensions of the matrix. In addition to the requisite functional skills, Waltmann argues that successful leadership in the matrix also requires both vertical and horizontal leadership skills. Leaders are taught to build strong relationships without resorting to exercising authority. Frequently, leaders must manage horizontally and may need to guide the work of employees that technically do not report to them. The need for exceptional horizontal leadership also extends to different geographical regions; leaders must be prepared to manage horizontally over great distances as well. Waltmann says that Novartis leadership must "be very good in our global company across geographic and cultural boundaries. They have to understand how to manage a Japanese manager they're working with on a project team, and they have to understand how to work with our U.S. colleagues." [82]

GENERAL ELECTRIC

In the early 1970s, General Electric's (GE) local managers were growing increasingly uncomfortable with the organization's structure. Managers perceived figurative horizontal and vertical "walls" that separated them from their colleagues, making inter-team collaboration difficult. At the time, "employee questions, initiatives, and feedback were discouraged."[83] Jack Welch, the Chief Executive Officer from 1981 to 2001,[84] decided that this pervasive attitude of non-communication was problematic, and he decided to create "an open collaborative workplace where everyone's opinion was welcome." [85] Welch understood that GE's greatest competitive edge was its people, and, "if you want to get the benefit of everything employees have, you've got to free them—make everybody a participant. Everybody has to know everything, so that they can make the right decisions by themselves."[86]

GE's business was diverse and spanned many countries. Because of the growing complexity of its departments, GE decided to adopt a matrix structure.[87] Regarding the switch to matrix organization, management said

> We've highlighted matrix organization. Not because it's a bandwagon that we want
> you all to jump on, but rather that it's a complex, difficult, and sometimes

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[81] "Succeeding at Novartis," Op. cit.

[82] Ibid.

[83] Kotelnikov, V. "Case Study: General Electric (GE): Creating An Extraordinary Organization." 1000 Ventures.
http://www.1000ventures.com/business_guide/cs_inex_ge.html

[84] "Jack Welch." Wikipedia. http://en.wikipedia.org/wiki/Jack_Welch

[85]"Case Study: General Electric (GE): Creating An Extraordinary Organization," Op. cit.

[86] Ibid.

[87] Davis, S. M., and Lawrence, P. R. "Problems of Matrix Organizations." *Harvard Business Review*, 1978.
http://hbr.org/1978/05/problems-of-matrix-organizations/ar/1

frustrating form of organization to live with. It's also, however, a bellwether of things to come. But, when implemented well, it does offer much of the best of both worlds. And all of us are going to have to learn how to utilize organization to prepare managers to increasingly deal with high levels of complexity and ambiguity in situations where they have to get results from people and components *not* under their direct control...Successful experience in operating under a matrix constitutes better preparation for an individual to run a huge diversified institution like General Electric—where so many complex, conflicting interests must be balanced—than the product and functional modes which have been our hallmark over the past twenty years.[88]

The matrix structure allowed GE to maintain a centralized locus of power among its multinational offices. When business leaders separated by geography are able to report directly to decision-makers at headquarters, operation is permitted to "be tightly integrated with global strategy, leaving little leeway for the country head."[89]

CULTURAL CHANGE

After the matrix structure had been highlighted, Welch began to make changes. Central to this change was a company-wide focus on GE's values. Much attention was focused on the development of these core values, and, after much deliberation, GE leaders arrived at a consensus about the core values that would drive the future of GE's business. So dedicated to these core values was Welch that he issued company-wide guidelines that each employee was required to read and sign. The pamphlet outlined GE's commitment to integrity and outlined its core values. The GE Values Statement said:

> While GE has always performed with integrity and values, each business generation expresses those values according to the circumstances of the times. Now more than ever the expression and adherence to values is vital. They are our words and our values...in our own voice.

> Passionate

> Curious

> Resourceful

> Accountable

> Teamwork

> Committed

> Open

> Energizing

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[88] Ibid.

[89] Ganguly, D. "Matrix Evolutions: How GE Underwent a Fundamental Change in Its Organizational and Matrix Structure." *Economic Times,* India Times, February 17, 2012. http://articles.economictimes.indiatimes.com/2012-02-17/news/31071478_1_matrix-structure-country-head-ge-india

Always with Unyielding Integrity.[90]

Until his departure in 2001, Welch was dedicated to increasing the flow of ideas and revolutionizing the concept of teamwork between managers and subordinates. He developed a series of town hall meetings "designed to encourage employee feedback, cross-pollination of ideas, and employee empowerment."[91] These meetings, called "Work-Out" meetings, focused on four key goals designed to:

- Encourage employees to share their views in a collaborative culture;

- Vest greater responsibility, power, and accountability with front line employees;

- Eliminate wasteful, irrational, and repetitive steps in the work process (which would come to light through employee feedback); and

- Dismantle the boundaries that prevent the cross-pollination of ideas and efforts.[92]

Welch attributed his success—increasing GE's market value from roughly $14 billion in 1981 to more than $410 billion at the time of his retirement[93]—to adherence to a seven-point program for management by leadership. Leaders should:

- Develop a vision for the business;

- Change the culture to achieve the vision;

- Flatten the organization;

- Eliminate bureaucracy;

- Empower individuals;

- Raise quality and efficiency; and

- Eliminate boundaries.[94]

By hiring and training effective managers, establishing Work-Out meetings, and re-conceptualizing the definition of leadership, Welch broke down the walls that previously divided employees from one another and created an environment that relied on "interdisciplinary and interdepartmental cooperation."[95]

TRANSITION AWAY FROM A MATRIX STRUCTURE

In 2009, GE named John Flannery President and CEO of its operations in India. Rather than have business heads report to functional managers with specialties like energy, healthcare, aviation, and transportation, Flannery decided they would be better served by reporting to a generalist. The decision to transition back to a traditional structure, Flannery argued, was

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[90] "Case Study: General Electric (GE): Creating An Extraordinary Organization," Op. cit.

[91] Ibid.

[92] Ibid.

[93] "Past Leaders." General Electric. https://www.ge.com/about-us/leadership/past-leaders

[94] "Case Study: General Electric (GE): Creating An Extraordinary Organization," Op. cit.

[95] Ibid.

logical because India only accounted for a small proportion of GE's total global business (less than one percent), making it "an ideal location to try something new."[96] This transition at the India location led to a more decentralized structure, constituting what Flannery called "a willingness to loosen up and let go."[97] Decentralization had the greatest chance of succeeding in India because "the India numbers do not affect our global numbers in any substantial way...[and] decentralization would have the most impact in places where the company does not have scale or market presence."[98]

Much like the transition to a matrix structure, the transition away from it was met with a fair amount of controversy. Flannery noted that navigating the transition back to a more traditional structure was difficult but "manageable," admitting that "creating a totally different organization structure is a big challenge, but GE has a cultural history of reinventing itself. You just have to communicate a lot."[99]

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[96] "Matrix Evolutions: How GE Underwent a Fundamental Change in Its Organizational and Matrix Structure," Op. cit.
[97] Ibid.
[98] Ibid.
[99] Ibid.

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