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Matrixed Business Support Comparison Study

Josh D. Parsons

Prepared by
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Abstract

The Matrixed Business Support Comparison Study reviewed the current matrixed Chief Financial Officer (CFO) division staff models at Sandia National Laboratories.

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Acronyms

BNL	Brookhaven National Laboratory
BSM	Business Service Manager
CBM	Center Business Managers
CFO	Chief Financial Officer
CRM	Customer Resource Manager
DBM	Division Business Managers
DOE	Department of Energy
DOL	Department of Labor
ES&H	Environment, Safety and Health
FY	Fiscal Year
FTE	Full Time Equivalent
HQ	Headquarters
HR	Human Resources
ID	Internal Directive
IES	Integrated Enabling Services
KAPL	Knolls Atomic Power Laboratory
KCP	Kansas City Plant
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LLNL	Lawrence Livermore National Laboratory
LMC	Lockheed Martin Corporation
NNSA	National Nuclear Security Administration
ORNL	Oak Ridge National Laboratory
PMF	Performance Management Form
PNNL	Pacific Northwest National Laboratory
SBU	Strategic Business Unit
SMU	Strategic Management Unit
SNL	Sandia National Laboratories
VP	Vice President

EXECUTIVE SUMMARY

The Matrixed Business Support Comparison Study reviewed the current matrixed Chief Financial Officer (CFO) division staff models at Sandia National Laboratories. There were two primary drivers of this analysis: (1) the increasing number of financial staff matrixed to mission customers and (2) the desire to further understand the matrix process and the opportunities and challenges it creates.

STUDY OBJECTIVES
<ul style="list-style-type: none"> Assess current performance Identify a strategy for becoming a more effective business support service

Background

In this study, Sandia matrixed support was defined as financial staff that have two reporting roles. One role is to the home organization, CFO Division 10000, and the other role is to the matrixed organization, a mission customer. The staff members report solid line to the CFO Division and dotted line to their mission customer. Typically, the matrixed staff member is physically located with the mission customer. The staff member takes day-to-day direction from the mission customer. Management areas including hiring, training, performance review and compensation, and disciplinary action rest with the CFO Division. The staff member is funded by the mission customer.

Currently, the CFO Division has approximately 50 individuals matrixed. There are three jobs that are matrixed: financial staff members, business managers, and co-located buyers. Co-location is very

similar to matrixing except that the staff member is funded by the home organization.

Overall, the study focuses on the matrixing of financial staff and the management of this financial staff. The study was broken into two phases. Phase one, was an internal look at Sandia matrixing. It gives an overview of the experiences of Sandia employees who have seen matrixing implemented at Sandia. Three groups were interviewed based upon their matrix experience: (1) managers matrixed to mission customers, (2) staff members matrixed to mission customers, and (3) mission customers who had staff matrixed to them. The second phase of the study was external comparisons with eight peer Department of Energy (DOE) facilities and three commercial companies.

Summary: Internal Surveys

From the responses of all participants (matrixed managers, matrixed staff, mission customers), the surveys established the following strengths and opportunities for improvement for Sandia’s Matrix Program.

Top 3 Strengths of Sandia’s Matrix Program
<ol style="list-style-type: none"> 1. Staff members had increased financial expertise 2. Increased employee career development and personal growth 3. Improved communication between the CFO Division and the mission customers

Sandia's Top 3 Opportunities for Improvement
<ol style="list-style-type: none"> 1. Improved integration between CFO Division and mission customers 2. Increased planning for the Matrix Program 3. Increased recognition for matrixed staff members

Summary: External Comparisons

The following are seven themes established through the external comparisons. These are trends that were illustrated in most of the DOE facilities and the commercial companies compared in the study.

Common Matrix Themes
<ol style="list-style-type: none"> 1. Matrix-in teams to facilitate success 2. Did not differentiate matrixed financial staff from nonmatrixed financial staff 3. Performance reviews rested with the home (financial) organization 4. Had informal rotational programs 5. Either fully matrixed financial support or they did not matrix financial support 6. Matrixed staff was co-located (physically located with mission customer) 7. Increased focus on their communication processes

Recommendations

In the external comparisons, organizations that matrixed their financial support staff did so for one primary reason: organizational control. This control included ensuring that proper financial procedures and checks and

balances were established and deployed throughout the organization. It further included establishing a management structure for the financial staff of the organization that encompassed planned career development and hiring with the future organization's needs in mind. *If Sandia National Laboratories' reason for matrixing is similarly based on organizational control*, the comparison study would make the overall recommendations shown below:

OVERALL RECOMMENDATIONS
<ul style="list-style-type: none"> • Matrix all mission customer financial support • Utilize team-based matrixing, when feasible

Additionally, the study established specific recommendations to address key opportunities for improvement discovered through the internal surveys and applicable knowledge gained from the comparison companies. These recommendations are applicable regardless of whether Sandia's purpose for matrixing is organizational control or is solely for providing a customer-support service.

The internal survey and external comparisons showed that proper implementation of matrixed financial support *can* be a beneficial tool for a national laboratory. The study concluded that implementing matrixing of financial staff for Sandia National Laboratories could, as in its peer laboratories, serve as a beneficial organizational structure.

BACKGROUND

Purpose/Objectives

As part of the Integrated Enabling Services (IES) Strategic Management Unit (SMU) management plan, Business Liaison and Technologies (10750) seeks, in alignment with the IES SMU ten-year objectives and five-year goals, to improve its management processes, integrated services, activities, and functional capabilities and capacities. These improvements will be accomplished by regular and systematic benchmarks and comparisons with industry standards and leaders, academia, and the DOE/NNSA complex. In selecting and implementing benchmarks and comparisons, the objective is to understand not only where industry/academia and the DOE/NNSA complex are at today but also where they are headed in the future.

To identify and prioritize IES benchmarks and comparisons based on the potential payoff to SMU objectives, goals, and milestones, Business Liaison and Technologies established criteria based on:

- The Business Liaison and Technologies mission of enabling Sandia’s mission success through business expertise. The department focuses on its business and how it contributes to Sandia success by linking “our assets: our exceptional people, our lean and customer-friendly processes, and our dynamic and robust business systems.”
- The IES SMU FY04 focus areas of urgent customer needs, integration, productivity, and value.

The FY04 comparison study focused on the matrixed CFO Division staff models. The primary drivers of this decision were the increasing number of financial staff

matrixed to mission customers and the desire to further understand the matrix process and the opportunities and challenges it creates.

STUDY OBJECTIVES
<ul style="list-style-type: none"> • Assess current performance • Identify a strategy for becoming a more effective business support service

General Matrixing Overview

From a “textbook” perspective of matrixing, there are two primary roles. One is the role of the Resource Manager. This is the manager who directs hiring, training, and disciplinary action for the matrixed staff, but this manager does not direct the employee’s day-to-day work. The other role is that of the Business Results Manager who directs the work, but does not deploy the staff. This manager is typically accountable for profits and performance goals. A cooperative relationship between the two managers is established.

Reasons for matrixing include challenges with traditional organizational approaches and/or changes in the character and complexity of the business environment that have developed over time. Industries that matrix are typically focused on construction, industrial research, aerospace and defense, pharmaceuticals, and research and development. For example; Pfizer, PAR Pharmaceuticals, GlaxoSmithKline, Baxter, Honeywell, Lucent Technologies, Fluor, GM, IBM, Motorola, and GE Medical Systems all currently deploy matrixing.

There are four areas that traditionally receive more emphasis when matrixing.

1. Staffing. Emphasis is placed on knowledge of business, interpersonal skills, and one’s ability to handle ambiguous responsibility and authority.
2. Training. Roles and responsibilities are established.
3. Management Development and Human Resource Planning.
4. Compensation. Systems that are based on individual incentives through shared work and accountability.

Division and dotted line to their mission customer. Typically, the matrixed staff member is physically located with the mission customer. The staff member takes day-to-day direction from the mission customer. Management areas including hiring, training, performance review and compensation, and disciplinary action rest with the CFO Division. The staff is funded by the mission customer.

Potential Advantages of Matrixing

- Increased flexibility
- More efficient use of resources
- Increased employee motivation and higher morale
- Better cooperation across functions
- Increased customer service
- Better performance accountability
- Improved strategic management

Matrixing at Sandia began approximately seven years ago when the Vice President (VP) CFO created a position where a Business Service Manager (BSM) served as a liaison between the mission Strategic Business Unit (SBU) (now called SMU) and Division 10000. More recently, the CFO Division has experienced increasing requests for matrixed financial staff. This has caused the number of staff matrixed to mission customers to expand to approximately 50 individuals.

Potential Disadvantages of Matrixing

- Sacrifice of accountability and performance
- Conflicting work priorities
- Susceptibility to power struggles
- Time consuming
- Developed team loyalty may create a decreased focus on organizational goals

Currently, there are both financial staff members and financial managers matrixed from the CFO Division. The financial staff members typically have a broad work scope, depending on the requests of their mission customer and the skills of the staff member. However, their work scope is primarily financial, and their skills include budget formulation and execution, financial operation of the SMU, Human Resources (HR), and facilities. Similarly, Procurement has buyers (physically located with their mission customer) throughout Sandia. However, these buyers differ from traditional matrixing in that the buyers are funded by their home organization instead of the matrix organization. Overall, the matrixed financial staff members create most of the matrixed staff in the CFO Division.

Sandia Matrixing

In this study, Sandia’s matrixed support was defined as financial support staff members that have two reporting roles. One role is to the home organization, CFO Division 10000, and the other role is the matrixed organization, a mission customer. The staff member reports solid line to the CFO

Furthermore, there are also many financial managers matrixed from the CFO Division. These include two Division Business Managers (DBM), a Center Business Manager (CBM), two Project Managers, and six Business Service Managers (BSM). These individuals are responsible for the enhancing of SMU revenues, facilitating strategic hiring, staffing and placing of business personnel, and assuring that corporate business processes add value to mission operations.

Study Overview

When financial staff members are matrixed to mission customers, it creates new opportunities and challenges for the staff member, the CFO Division, and the mission customer. Given these new opportunities and challenges, it creates a reason to further analyze the matrixing process. The study was implemented to help Sandians answer the following questions: Is matrixing a value added service for mission customers and if so, to what degree? Is it helping Business Liaison and Technologies and the CFO Division as whole reach the IES SMU FY04 Focus Areas and mission success?

The study was tasked to evaluate how Sandia provides this matrix business support and if/how other DOE facilities and commercial sources are using similar processes. The overall focus was to supply information about individual Sandia experiences and future thoughts on matrixed financial support as well as to provide overview information about which DOE facilities are matrixing financial support. The study was broken into two major phases.

Phase I: Internal Surveys

This phase of the study was the internal surveys. It was designed to give an internal

look at the experiences of Sandia employees who have seen matrixing implemented at Sandia. Three groups were established relevant to their matrix experience: (1) managers matrixed to mission customers, (2) staff members matrixed to mission customers, and (3) mission customers who had staff matrixed to them. Three sets of questions were established for each group ranging from 18 to 24 questions (Appendix A). A selection of employees in each of these experience groups was selected and individually interviewed.



Phase II: External Comparisons

The second phase of the study was the external comparisons. It was directed at peer DOE facilities and commercial companies. Facilities and companies were selected based upon their diversity of business (e.g., multiple business units), experience in matrixing, and/or management with multiple supervisors. The study primarily targeted individuals in the financial department. Contacts were then selected based on their experience in the financial organization, matrix experience, and peer recommendations.

Upon contact, the first objective was to establish if the facility or company matrixed financial support to its internal customers. If the facility did not matrix financial staff, the focus was on a high-level understanding of how they currently operate and whether they have centralized previously or have any future plans to do so. The comparisons, rather than being structured as formal interviews (as were the internal surveys), were structured as a guided dialogue. A list of key areas of interest was developed based upon the analysis of the internal Sandia matrix surveys (Phase I). The key areas list was used as a reference for driving the direction of the conversation (Appendix B).

Overall, the study compared eight DOE facilities and three commercial companies.

Department of Energy - Comparison Companies

1. Brookhaven National Laboratory
2. Kansas City Plant
3. Knolls Atomic Power Laboratory
4. Lawrence Berkeley National Laboratory
5. Lawrence Livermore National Laboratory
6. Los Alamos National Laboratory
7. Oak Ridge National Laboratory
8. Pacific Northwest National Laboratory

Commercial – Comparison Companies

1. Fluor Corporation
2. Lockheed Martin
3. Lucent Technologies

INTERNAL SURVEYS

Strategic Approach

Before the study could begin comparing external companies, it was deemed important to first thoroughly understand Sandia’s own matrix experiences. For example, the study sought to understand the positive and negative experiences of matrix managers, staff, and customers of matrix staff. By segmenting the Sandia experiences into these three groups, the study was able to establish a consistent line of questioning with respect to that individual’s matrix experiences.

The interviews were conducted primarily in person or over the telephone. On average, each survey was about one-half hour in length, and each interviewee was asked a set of survey questions established for their respective segment (Appendix A). However, the first four questions of all surveys were consistently asked. They were directed at establishing overall themes consistent among all segments. The segmented, structured questioning allowed for consistent themes to be exposed and analyzed based upon one’s matrix experience. The results from the study were analyzed from four perspectives: the overall system-wide perspective (first four questions on all surveys), manager, staff, and customer perspective.

General Participant Survey

This portion of the study looked at four common questions asked among all interviewees. These questions were designed to help expose an overall perspective of Sandia matrixing.

The four questions were:

1. What are the three most important factors in matrixing administrative support to the mission customer?
2. What are the top three strengths of Sandia National Laboratories (SNL) matrix program?
3. What are the top three opportunities for improvement of SNL matrix program?
4. What measures do you feel would be useful for comparing SNL matrix program to other similar programs?

<i>Top 3 Factors in Matrixing</i>
<ol style="list-style-type: none"> 1. Staff members have strong financial expertise 2. Support from the home organization 3. Individual's personality

The survey established that the most important factor in matrixing administrative support to the mission customer was the individual’s expertise. Expertise was commonly defined as competent/qualified staff, experience (both internal and external), and knowledge base. High emphasis was placed on the individual’s current knowledge base of Sandia resources and processes.

Another important factor when matrixing staff was the support provided from the home organization, in this case the CFO Division. The main points addressed were the contact network provided through CFO Division, the integration between the home organization and the matrixed organization, and the job support provided.

Lastly, the third most important factor in matrixing support was the individual’s personality. Interviewees strongly felt that

there had to be a right match of personalities, that the individual was self-motivated and valued customer service.

<i>Top 3 Strengths of SNL Matrixing</i>
<ol style="list-style-type: none"> 1. Staff members had increased financial expertise 2. Enhanced employee career development and personal growth 3. Improved communication between the CFO Division and the mission customers

The top strength of the Sandia matrixing program was the matrixed individual's expertise. This illustrated that survey participants have primarily had matrix experiences with matrixed staff that have had the expertise needed to fulfill their job requirements. Survey participants also stated that the employees possessed a Sandia expertise, where the employee viewed situations from a corporate perspective vs. a divisional perspective.

The second strength of the SNL matrix program was the opportunity for employee growth. It was consistently exhibited that through matrixing, an individual has an opportunity to develop new skills and broaden knowledge of Sandia. It was also communicated that career development was enhanced based upon the extra exposure and the breadth of Sandia knowledge established.

The third strength of Sandia's current matrixing structure is "customer understanding and representation to CFO." This referred to an increased communication channel in which the mission customer was able to better understand the financial organization, the why's and how's of its operation, and vice versa. This hand-on communication allowed the matrixed staff to

better explain to the CFO Division how a financial change affected the mission customer. Lastly, it expressed how matrixing helped to move away from an "us vs. them" mindset and put a face to IES and the CFO Division.

<i>Top 3 Opportunities for Improvement</i>
<ol style="list-style-type: none"> 1. Improved integration between the CFO Division and mission customers 2. Increased planning for the Matrix Program 3. Increased recognition for matrixed staff members

The top opportunity for improvement was increasing the integration between the CFO Division and the matrixed customer. Areas of concern included keeping matrix staff informed about activities in the CFO division and increased communication and understanding between the managers. A theme in integration was the importance of both managers understanding the jobs their employees are performing and the differing priorities that the staff member faces.

Planning was also established as a top area for improvement: planning in the aspect of career development (who should rotate into what positions), crisp processes, consistent evaluation and expectations, and roles and responsibilities. There were some expressions of "fuzziness" on who was responsibility for what aspects of the matrixed individual.

The third opportunity for improvement was in the area of recognition. Included in this area is the important need of ensuring that the matrixed staff member feels a sense of belonging. There were questions regarding performance review and whether their

manager was truly able to understand their job tasks and reward them properly. Fears were also expressed of losing visibility in one's home organization. The overall challenge in this area is how to recognize and reward matrixed staff so they feel that they truly belong somewhere and feel valued.

Comparison Measures

The fourth question was directed at establishing what would be effective measures to compare Sandia's matrix program to that of other DOE facilities and companies. The results of this question were used to create a key areas list that served as a resource tool to drive the direction of the external comparison conversations (Appendix B).

Manager Survey

The manager survey consisted of fourteen questions beyond the four general participant questions.

These questions were then broken into three categories:

- Questions relevant to the matrixed manager role
- Questions relevant to managing matrixed staff
- Questions relevant to individual matrixing perspectives

Matrixed Manager Role

This category of question emphasized the ability of a matrixed manager to understand how to determine how business changes affect the mission customer, how to represent concerns to the CFO Division, and how to establish creative solutions.



Two-thirds of the managers surveyed felt that they were able to better understand how business changes affected the mission customer because of their matrixed link to the customer. However, it is important to note that most of the managers felt that they were better able to understand their matrixed customer not necessarily because they were matrixed, but because they were physically located with the mission customer.

Two-thirds of the matrixed managers also felt that the concerns of their mission customer were better represented to the CFO Division because they were matrixed. Managers felt that they were more readily able to engage and influence the CFO functions to address the needs/issues of the mission customer. It was also shown that it is not because one is matrixed that one is able to do this, but, rather, it is because of the relationships and program/business awareness matrixing creates as well as being co-located with the mission customer.

Also, 80 percent of the managers felt that they were able to establish a more creative solution because they were matrixed. One of the common reasons stated for this is that with matrixing there are fewer territory boundaries and thus one is able to take more risks and capitalize on a wide range of experiences.

Most Important Aspect of Matrixed Manager

- Liaison role between CFO Division and the mission customer

Area Needs Improvement

- Communication to CFO VP

The managers felt that the most important role of their job was to serve as a liaison between the CFO Division and their mission customer. They also expressed that this must be driven by staying connected to the operations of the mission customer.

The area that managers felt needs improvement is the communication to the CFO VP. The importance of a stronger link to the CFO VP was emphasized because of their strong link to their mission customer VP.

Managing Matrixed Staff

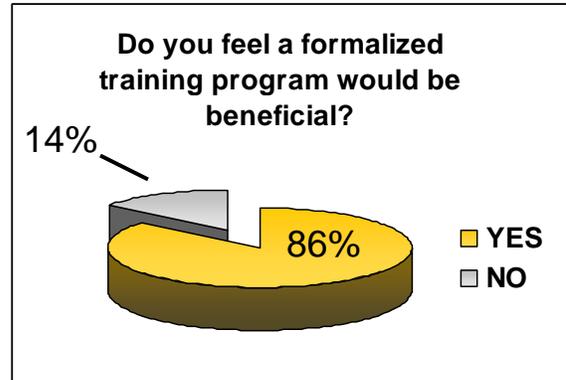
Managers’ top two concerns of matrixing their staff were:

- Mission customer understanding and valuing matrixing process
- Fair performance and compensation review

The concern with the mission customer understanding and valuing matrixing process rests with the staff not being accustomed to having business personnel present. An underlying challenge of this understanding was having the mission customers approve of and expect rotations as part of the staff members’ career enrichment.

The concern with performance and compensation can be generally summarized by the

technical line giving less critical performance reviews and the home organization giving more challenging reviews.



Most managers felt that a more formalized training program would be beneficial for Sandia. However, the focus of the training program varied from manager to manager. Focus included mentoring, professional certifications, Sandia’s financial systems, and overall consistency in training. Managers also stated that the top ways to educate their matrix staff to better fulfill the needs of the SMU were through training and mentoring.

Individual Perspectives

When questioned about their individual experiences with matrixing, managers addressed three areas: personal advantages and disadvantages of matrixing, and leadership challenges.

Manager: Personal Advantages

1. Opportunity to touch mission work of Sandia
2. Increased personal exposure
3. Individual learning and growth

Managers cited that the leading advantage for them personally being matrixed was the

opportunity to touch Sandia’s mission work. Managers also place a high value on the additional exposure that is generated from being matrixed. They appreciated the feeling that they were valued, that they served as representatives of the administrative staff, and the increased career path opportunities. Managers also felt that through matrixing, they were able to increase their individual learning.

Manager: Personal Disadvantages
 1. Decreased sense of belonging

The primary disadvantage for managers was a lowered sense of belonging. Through matrixing, they felt that they did not have full acceptance by either organization. There were questions of loyalty from the mission customer, and they felt unequal treatment between the matrixed business individuals and the nonmatrixed business individuals.

Managers also expressed that, personally, they faced two leadership challenges: staying connected and effective performance and compensation. Managers found challenges in staying connected to their staff members because of distance management and the lack of day-to-day interaction. Furthermore, they also found the challenge of ensuring that they were giving their employees fair performance and compensation reviews because of the limited day-to-day interaction and thus the increased importance of mission customer feedback.

Staff Survey

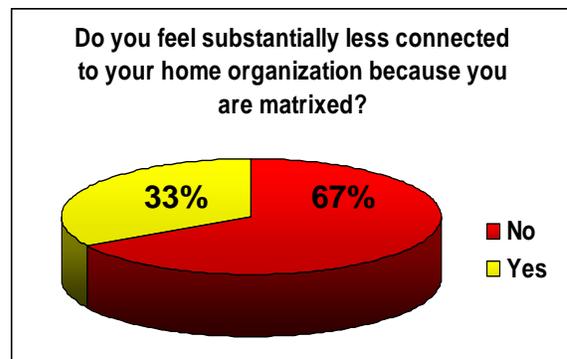
The second experience group that was analyzed was from a staff perspective. This group makes up the largest portion of the matrixed staff and thus made up the largest proportion of the surveying.

The staff survey consisted of sixteen questions beyond the four general participant questions. It was broken down into three categories:

- Questions relevant to management of matrixed staff
- Questions relevant to matrixed organization (mission customer)
- Questions relevant to individual matrixing perspectives

Management of Matrixed Staff

This set of questions was designed to help establish the aspects of matrixing that were creating challenges.



Two-thirds of the matrixed staff interviewed did not feel that they were “substantially less connected” because they were matrixed. Reasons cited for not being substantially less connected were having a strong manager and an individual effort to stay connected.

Individuals were also asked: *How could management improve unity/morale within your home organization?* Forty percent of the interviewees felt that low unity/morale was not a current issue for them. However, the top recommendation for keeping morale high was to increase effective communication. Staff emphasized the desire to learn what other matrixed staff were doing and were further desirous of learning

of their lessons learned and sharing common practices.

Formalized Training Program: The staff members were evenly split on whether they wanted a more formalized training program. This is contrary to their management who felt overwhelmingly that a more formalized training program would be beneficial. The top reason against a more formalized training program was that the staff member already possessed the Sandia experience to do the previous tasks, and thus, they feared repetitive training.

Matrixed Organization

These questions were designed to exhibit the top advantages and disadvantages for the customer as perceived by the matrixed staff.

Staff: Customer Advantages
<ol style="list-style-type: none"> 1. Staff believed they had the required level of financial expertise 2. Fostered a relationship with CFO Division 3. Matrixing created a convenient service for the mission customer

Expertise was the staff's skill that was believed to create the strongest advantage for the mission customer. Staff members felt that they were able to offer professional service based on their financial knowledge. This expertise is an asset to the customer because of the strong networking skills matrixed personnel brought with them to the matrixed organization.

The other primary advantage was the relationship CFO Division. This relationship allowed them to have a direct connection with the financial organization. Overall, the primary advantage established was that the

individual was not center or division oriented, but because of this CFO relation, the individual had a Sandia perspective, in turn creating a more independent viewpoint.

The third advantage brought to the customer was convenience. Coming from a service organization, the staff members felt that they were able to create an extended level of service for the customer so that the customer was able to focus on mission work. Examples included: eliminating the full hiring and selection process, ability to fill a temporary need, quick response time, and the lack of need to find an employee a new task once the project was completed.

Staff: Customer Disadvantages
<ol style="list-style-type: none"> 1. Staff members faced competing priorities 2. Increased staff turnover

The staff members believe that the number one disadvantage for their customer was the staff's competing priorities. This is a traditional challenge of matrixing. The matrix staff expresses this as a disadvantage for the mission customer because there are questions of which tasks have what priority, and they have less time availability as result of having to meet requirements for dual organizations.

The staff members said that the second disadvantage for their customer was the constant turnover of matrixed staff. The challenge was in regards to the length of time it takes for an individual to become part of the team and progress up the learning curve.

Individual Perspectives

Motivation: More than 70 percent of the matrixed staff said that they did not face

motivational challenges because they had two supervisors. Interestingly, some of the respondents stated that because they had two managers, it created a challenge that made them work harder. They stated that this was because of their individual personalities. On the other hand, for 30 percent of the matrix staff members, having two managers served as a motivational challenge. These individuals stated the primary reason for this motivational challenge was that each manager had a different viewpoint on what the job responsibilities encompassed.

The suggestions for increasing motivational levels all rested within the home organization. The staff members felt that the only way to increase motivation was for the home manager to be more involved in job responsibilities, encourage involvement in Division 10000, and increase recognition.

- | Staff: Personal Advantages |
|---|
| <ol style="list-style-type: none"> 1. Individual learning and growth 2. Increased personal exposure 3. Opportunity to touch mission work of Sandia |

The staff cited three personal advantages of being matrixed, and they were individual growth, exposure, and mission work. Interestingly, these three advantages are the same three that the managerial staff stated except that mission work was cited as the top advantage.

As with the manager responses, employee growth was viewed as extended learning opportunities. The staff members were able to learn new skills in different areas that allowed them to establish a more rounded view of Sandia versus a divisional view. The second advantage for the staff was increased exposure. They felt that they had more

visibility and more opportunities to work on a variety of tasks and interact with different individuals. Lastly, the opportunity to touch the mission work of Sandia was valued.

- | Staff: Personal Disadvantages |
|---|
| <ol style="list-style-type: none"> 1. Performance, compensation, and job security 2. Competing priorities 3. Belonging |

The matrix staff members' top disadvantages of matrixing were their concerns over performance, compensation, and job security. The main concern was that their manager does not see their day-to-day work and thus the breadth of activities they perform. Staff also felt that their job is one of a kind and were not sure if anyone knew the whole picture of what they do. The next major concerns were compensation and where they will work after their current project is completed. There was an inherent fear of not having a job after the completion of the project.

The second disadvantage was the challenge of having two managers and two sets of priorities. The challenge was prioritizing work when two managers were in disagreement. Third, there was the disadvantage of not belonging, which was also emphasized from the manager's perspective. Staff members had the similar feeling of not having full acceptance in either organization.

Interestingly, while some of the staff had concerns of what job they would be doing once their matrix job was completed, more than two-thirds of the staff felt that there was an opportunity to grow within their organization through matrixing. The other

third was not sure if there was an opportunity to grow.

When looking at ways to improve matrix staff, the staff made the three recommendations shown below.

Staff Recommendations
<ol style="list-style-type: none"> 1. Increased training courses and funding 2. Increased support from home organization 3. Increased communication with home organization

The recommendations with training included additional funding for training, expanding the courses offered at the business school, and mentoring. To increase home organization support, the staff recommended that management in Division 10000 increase awareness of what is going on in line organizations and be sensitive to the fact that all mission customers are different. In regards to increased communication, the staff suggested to increase opportunities to learn more about what their peer matrix staff members are doing, to increase team building, and to create an annual matrix social activity.

Customer Survey

The foundation of the customer survey was focused on the study’s objective of assessing current performance. A key objective of assessing performance lies with customer feedback. While there are frequent conversations concerning matrixing at Sandia, these conversations typically revolve around individual staff members. The study’s questions were not directed at individuals, but the processes of matrixing.

Comparable to the manager surveys, the customer survey had 20 questions beyond the four general participation questions. The survey was also broken into three segments:

- Questions relevant to the matrixed manager
- Questions relevant to the matrixed staff
- Questions relevant to general matrixing

Matrixed Manager

These questions were focused on the manager matrixed to the customer, typically the Business Service Manager.

The customers were split on their opinion of whether the manager matrixed to them was better able to understand how business changes affect their SMU. However, when looking at how the customers concerns were represented to the CFO Division, all the customers felt that they are better represented because of their matrixed manager.

100% of the mission customers surveyed felt their concerns were better represented to the CFO Division because they had a matrixed manager.

Matrixed Staff

An important concern in matrixing staff is the length of time a staff member should be matrixed. Typically, the reasons for rotating staff members, from a home organization perspective, is to ensure that a staff member keeps a corporate viewpoint and for the individual’s career development. However, rotating staff members can create additional strain on the customer. Thus, customer input was sought to help establish what would be

the ideal time period for a matrixed employee.

Length of Time a Staff Member Should be Matrixed



Seventy-five percent of customers felt that the ideal time to matrix staff was from three to five years. The perspective was that it would take the matrix employee about one year to understand the job and its requirements. Then the employee has two years to implement improvements to the job. At the three-year point, customers felt that staff members might consider a new task to ensure their career development, maintain their Sandia perspective, and ensure that they are challenged.

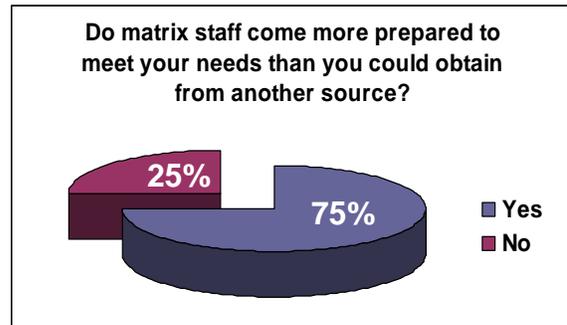
Training: Customers also felt that overall the matrixed staff members did not need more formal training. They cited that the staff members need support from their home organization. Others felt that the training required could only be supplied by the mission customer because of its uniqueness.

Overwhelmingly, the most desired skill of the matrix staff was advanced financial skills. Financial management in the areas of cost estimation, cost management, and analysis were all highly desired. Customers appreciated the staff member having an understanding of Sandia’s financial systems.

The most desired attributes of the matrixed staff members were their ability to think critically and team with one another.

The matrix customers also felt that the matrix staff came more prepared to meet their individual needs than those from other sources. Reasons expressed were that the staff members typically have “real-life” experiences, formal education, ability to

analyze information, and experience with Sandia’s financial tools. Other comments were that the CFO Division knows what it takes for a business person to do the job. Others, who felt that matrixing does not necessarily provide a better resource than they could find elsewhere, stated that some matrixed staff may come without the desire to learn and compared matrixing to the post and bid system.



General Matrixing

As in the manager and staff surveys, the customer surveys also addressed what the customers perceived to be the top advantages and disadvantages of being matrixed.

- Customer: Matrix Advantages**
1. Employee learning and growth
 2. Opportunity for employee to decide career path

The customers viewed the top advantage of being matrixed as employee growth. This is a repeated advantage that was illustrated in both the manager and staff surveys. The customer perceived this as advantage because the employee has an opportunity to learn about a much broader base of Sandia and is exposed to the mission work of Sandia.

The second advantage they perceived for the matrix staff was the opportunity to decide

their career path. Because the staff was matrixed, customers felt that the staff members have an opportunity to experience both sides of the Sandia, technical and administrative. Furthermore, staff members were able to evaluate the different types of financial jobs and positions available to them because of the breadth of the matrixed work.

Customer: Matrix Disadvantages

1. Challenge of multiple managers
2. "Out of sight, out of mind"

The disadvantages that the customer perceives for the matrix staff lie in the challenges a staff member must face from having multiple managers and the problems of being "out of sight, out of mind."

Because the staff member has multiple managers, there is a potential that the staff member may be pulled in many different directions and face loyalty conflicts. The customer also stated that the home organization management does not always understand the demands placed upon their employee's time. Customers also stated that there can be feelings of abandonment and potential lack of adequate achievement recognition.

Leadership Challenges: When customers have staff matrixed to them they cited they faced two primary leadership challenges.

First, the mission customers face difficulties in offering guidance to their matrix staff. There were common questions of where their responsibilities lie in relation to the reporting manager. They also said that there is a potential for conflicting career guidance to the matrixed staff.

Second, there were challenges that rested with ensuring that the employee has a balanced workload. The task was how to keep the employee balanced while still feeling challenged.

Requesting Matrix Staff: Customers also stated that they felt that the CFO Division was not able or only sometimes able to provide the needed financial staff in a reasonable time period. Only one of the customers felt that the CFO Division was able to provide staff in a reasonable time frame. However, customers did state that they believed that this was not just a CFO challenge, but that Sandia as a whole has a limited number of financial staff.

Customers stated that the average amount of time they give for notifying the CFO Division of their request is two months. Other customers stated that they give their request as soon as possible.

Furthermore, customers said that the only way they could provide more notice was through additional planning. By planning, they meant including in their project planning their business support needs. They also stated that working with their Level II Manager would also provide them with a heads-up on when larger projects may be forthcoming. Other customers stated that they feel the job itself prevents them from being able to provide more than two months of notice.

Improving the Matrix Process

- Increase communication between managers of matrix staff
- Increase Sandia's awareness of matrixing

The mission customers established two ways to improve the overall matrix process at

Sandia. The first recommendation was to increase communication. They stated that to do this would require increasing the face-to-face communication with both managers of the matrixed staff. It was also stated that it is important to get the home manager out, visiting their staff and attending some of the staff member's meetings. This would enable them to have a better understanding of the contributions their staff is making.

The second recommendation was to increase the awareness of the matrix process throughout Sandia. It was encouraged to do this through increasing the value recognition by line management, beginning at the VP level. The customers also recommended advertising matrix management so that the Level I Managers become more aware of the inherent benefits.

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EXTERNAL COMPARISONS

Strategic Approach

Upon completion of the internal surveys, the experiences of matrix staff, matrix managers, and mission customers had been gathered to provide a more developed picture of the Sandia Matrix Program.

After defining the key areas of matrixing to Sandia and the opportunities for improvement, the study moved into its second phase and began comparing DOE facilities and commercial companies. The external comparisons were conducted primarily through the telephone. The dialogue was guided by the list of key areas of interest, which were based upon the analysis of the internal surveys (Appendix B). In total, eight DOE facilities and three commercial companies provided information for the study.

Companies were broken into three groups based upon the level of matrixing they implemented among their financial staff. The comparison companies were placed in the *Financial Personnel are Matrixed* category if the company matrixed most of its financial staff. A company was placed in the *Financial Personnel are Partially Matrixed* category if the company does matrix financial support, but most employees are not matrixed. Lastly, a company was placed in the *Financial Personnel are not Matrixed* category if the company did not matrix its financial support or only matrixed a very limited number of individuals. Note that some of the companies in this category do matrix individuals, but they do not matrix financial support.

DOE Facilities:	
Los Alamos National Laboratory	Financial Personnel Are Matrixed
Oak Ridge National Laboratory	Financial Personnel Are Matrixed
Pacific Northwest National Laboratory	Financial Personnel Are Matrixed
Knolls Atomic Power Laboratory	Financial Personnel Are Matrixed (Not Co-located)
Brookhaven National Laboratory	Financial Personnel Are Partially Matrixed
Lawrence Berkeley National Laboratory	Financial Personnel Are Partially Matrixed
Kansas City Plant	Financial Personnel Are Not Matrixed
Lawrence Livermore National Laboratory	Financial Personnel Are Not Matrixed
Commercial Companies:	
Lockheed Martin	Financial Personnel Are Matrixed
Lucent Technologies	Financial Personnel Are Matrixed
Fluor Corporation	Financial Personnel Are Partially Matrixed

DOE Facilities

The DOE facilities served as an important aspect of the comparison study due to similarities between all facilities. As Sandia’s peer institutions, it was important to understand how these facilities are managing their business support services. The following eight facilities were selected based upon their commonalities to Sandia National Laboratories.

Financial Personnel Are Matrixed

Los Alamos National Laboratory (LANL):
 At LANL, financial personnel are matrixed from the CFO Directorate. Furthermore, their budgeting personnel are matrixed from the CFO, the HR personnel are matrixed from HR, and the other functions report direct.

The organizational structure is set by five group leaders; and under each group leader are their deputies. The deputies charge 20% of their time to the CFO and the other 80% to the mission customer. Under the deputies are the business team leaders, approximately 30 for each division. The business team leaders manage the matrixed budget analysts, which represents approximately 195 employees.

The respective financial analysts have one or two groups for which they manage all the financial activity beneath them. There is always a team leader matrixed to each division, so no one is ever matrixed alone.



Communication is a key factor in the LANL’s success with the matrix process. The focus is on consistent and clear communication from all management to all matrixed financial staff.

LANL became fully matrixed in 1992, when the Laboratory Director led an initiative that all financial staff will report through the CFO Division. With this change, LANL limited the number of financial staff to focus more on specialists than the previous generalists.

LANL: Top Challenge
<ul style="list-style-type: none"> • Encouraging horizontal job movement of the matrixed financial staff

The top challenge for LANL in regards to matrixed support is encouraging lateral/horizontal movement within the Laboratory. LANL feels that this movement is important for an individual’s career development; however, the staff members sometimes become comfortable where they are and prefer to not move laterally.

Oak Ridge National Laboratory (ORNL):
 All of the financial personnel, called financial officers, are matrixed out. This is approximately 50 individuals.

The organization structure, in regards to matrixing, is set up so that the financial officers report to a business manager. There are eight business managers. Each directorate has one business office with one or more business managers who own the financial staff for that directorate. The business managers report to a manager who reports directly to the CFO.

The business manager and financial officers charge direct to the directorate they are supporting. They have operated under this matrixing structure for more than ten years.

ORNL: Advantages of Matrixing

- Staff is physically located with peer group
- Have structured career path
- Limited conflicts of interest
- Improved training
- Improved staff rotation

ORNL cited the above as the top reasons why their laboratory utilizes matrixing. Furthermore, ORNL financial officers do work that is primary financial (specialists), but they do limited procurement and contract work as well. However, the business managers depending on the directorate take on broader tasks than the finance activities.

ORNL: Top Challenge

- Employee classification: non-exempt to exempt status

Oak Ridge’s top challenge rested in employee classification. They cited an occasional challenge where a financial officer will be classified as nonexempt because of their stricter educational requirement in the financial division. Then this financial officer may be recruited by a mission customer and hired on as an exempt employee increasing the individual’s salary base.

Oak Ridge also stated that the matrixed staff member sometimes feel torn between representing the CFO Directorate and the

mission customer. ORNL also stated that this is a good natural tension that creates a check and balance. If the mission customer is doing something improper according to financial standards, it is important that the financial officer feels empowered to question that process.

In regards to recognition, the financial staff receives the majority of their rewards from the CFO Directorate and on occasion from the mission customer. For example, ORNL gives small rewards in the form of \$50 gift cards to reward specific achievements of the financial staff.

Pacific Northwest National Laboratory (PNNL): At PNNL, the financial personnel are matrixed from the CFO division and other functions report direct. Organizationally, there are business offices for each mission customer. The manager of the business office reports solid line to the CFO and dotted line to the associate director of the mission customer. This structure has been implemented for at least 30 years at the laboratory.

PNNL: Lessons Learned



1. Initially: large matrix fears
2. Post-Implementation: fears were not established

PNNL expressed that approximately five years ago, their contracting division shifted to a matrix structure. It was expressed that there were large fears of problems associated with matrixing. However, in PNNL’s experience the feared problems did not turn into reality.

Rotation of staff is more on a basis of career development than a set schedule. They used to try to rotate individuals every three to five years. However, more recently, PNNL has stopped formal rotation and let it be at the employee's discretion. There are certain jobs that they do rotate, and these are typically their junior management positions.

The breadth of the individual's work scope depends on the matrixed individuals and their capabilities. For example, the more knowledgeable the individual, the broader financial tasks they will partake in (e.g., a strategic marketing plan).

PNNL: Top Challenge
<ul style="list-style-type: none"> • Employee classification: non-exempt to exempt status

One of the challenges that PNNL faces in regards to matrixing is classification, which is a similar challenge that ORNL faces. This occasional challenge is that mission customer will promote clerical staff to an exempt status, and this creates a challenge for organizational development.

The finance staff charges to the finance overhead (indirect). The directorate's overhead rates are then affected by the number of financial staff they require. Overall, PNNL feels that the staff that are matrixed typically enjoy being matrixed and that sometimes the matrix jobs are more desirable. However, the staff members that are not matrixed typically enjoy not being matrixed. The jobs that are matrixed to the directorate tend to be more varied, and the employees receive more immediate feedback. The nonmatrixed staff usually only hear feedback when things are not operating as intended.

PNNL: Strategy
<ul style="list-style-type: none"> • Avoid differentiating matrix staff from nonmatrix staff

PNNL believes that part of the key to matrixing is to avoid differentiating the matrix staff, even though they may be more preferred jobs because of the opportunity to work with a mission customer. For example, the CFO views all staff as CFO staff, not matrixed staff vs. nonmatrixed staff. In regards to recognition, the same philosophy is taken, and the matrix staff has the same recognition program as other CFO staff.

Knolls Atomic Power Laboratory (KAPL):
 Knolls also has financial representatives who report to a financial manager and take day-to-day orders from their functional manager, but they are typically not co-located.

KAPL: Strategy
<ul style="list-style-type: none"> • Matrix without co-location (physically sitting with mission customer)

Knolls prefers to matrix without co-locating the staff to ensure that their staff is constantly learning from their peers. KAPL cites the importance of training for their staff, and when they sit with their mission customer, they often do not hear about training or they miss training. KAPL also feels that when the staff members sit with their customer, the staff members tend to be underutilized.

Knolls, similar to LANL, stressed that communication with the functional manager is very important. Input from the customer is

stressed on a day-to-day basis. There is an agreement with the mission customers to ensure this communication so that the home organization has effective feedback to provide to its staff member. It is also important to ensure that when it is performance review time, the employee does not discover that they are struggling in their job. KAPL also recommended documenting these conversations, especially because it lowers the amount of required work for performance review.

Furthermore, at Knolls, the ability of the matrix individual to speak up is stressed. There is training to ensure that individuals are comfortable to speak up. The staff members that are matrixed are usually the ones that are seasoned with the laboratory, typically not straight from college. This is because the individual has to speak up and let the functional line know how their numbers are looking and cannot simply present the information.

Financial Personnel Are Partially Matrixed

In this category are the DOE facilities that matrix financial staff, but these matrixed staff are not the majority.

Brookhaven National Laboratory (BNL):

At BNL, approximately one-third of the Business Operations Support reports to the CFO. All are matrixed out to mission customers. The other two-thirds of the Business Operations Support are hired directly by the mission customer and report directly to the mission customer. BNL suspects that there will not be a change in the near future due to the culture of their laboratory.

Lawrence Berkeley National Laboratory (LBNL): LBNL is undergoing a process change in which its Division Financial

Analysts will report to the CFO Division through their field operations manager. This is a change from the current structure in which the Division Financial Analysts reported to the mission customer. These analysts perform financial and/or budgeting functions. However, there are other mission customer business managers that are responsible for the other functions, and they report to the mission customer.

Financial Personnel Are Not Matrixed

Included in this category are the DOE facilities that do not matrix their financial personnel.

Kansas City Plant (KCP): KCP follows a traditional hierarchical structure and does not implement matrixing. The closest thing that KCP has in regards to matrixed financial support is four Division Financial Specialists. These employees serve as the liaison between the mission customers and the finance organization.

KCP operates on a centralized budget and everyone issues request through this source budget. However, loaning of employees is common at KCP, frequently within a division. For example, an area like program management will have a one-year need for a financial person and borrow a financial person from elsewhere within KCP for that one year. KCP has a relatively small CFO organization, approximately 100 people who do primarily cost accounting, budgeting, and ledgers. If someone needs a business person, the manager of that unit would issue a request through the centralized budget and hire directly.

KCP: CFO Liaison Initiative

- Helped illustrate finance organization’s commitment to service
- Increased awareness of how costs affect KCP
- Improved financial communication

The Division Financial Analysts spend approximately half of their time working on CFO functions and half working for their division. This job began a couple of years ago and overall is felt to have been a very positive endeavor. It has helped the financial division appear more proactive and committed to customer service. It has also created awareness of how costs affect KCP. Also, it has provided insight on cost management issues, helped communication, and offered financial staff an opportunity to learn about the mission customers. One of the initial challenges was that in the beginning, there were no set job requirements and thus each job is now slightly different.

Lawrence Livermore National Laboratory (LLNL): Business personnel at LLNL report directly to the mission customer. The CFO Division at LLNL is small, and they do not perform any matrixing. LLNL has thirteen directorates, and four of these are business directorates. Each directorate receives information from the CFO through a liaison called the “SPOT” contact. They have used this system for 10 to 15 years. From the directorate’s perspective, they like having the direct control, and this process has worked well for them because of their consistent flow of information.

Laboratory Services, a business directorate, is a larger directorate with approximately

1500 Full Time Equivalent (FTE). Under this directorate, matrixing is heavy in procurement and administration integration systems. In procurement, there are three teams matrixed out. Procurement only matrixes out in teams. The requesting customer typically has to have a need for one year or more. Procurement does not see a benefit in matrixing out for simple, high-volume or low-dollar type projects. The benefit they receive from matrixing is in the form of eliminating back and forth communication. The staff members matrixed out are typically the individuals with more experience because of the more unique purchases they are required to perform.

LLNL Procurement: Strategy

- Do not matrix out staff individually to prevent losing control of that matrixed staff member

The procurement division expressed its emphasis on maintaining close control of the procurement staff and minimizing the risk associated with procurement activities. Thus, procurement does not matrix out staff members individually because of their concern for maintaining control of that staff member.

At LLNL, for all matrixed staff, there is a memorandum of agreement. This is not a specific form and is pretty high level; however, it addresses costs and length of commitment. Typically, LLNL cites that staff members enjoy matrixing because they have an opportunity to learn about the mission customer and then return home where they learn what others are doing and then bring that back to their customers.

LLNL: Key Matrixing Factor

- Performance review is signed by both the home organization and the matrixed organization

The performance review at LLNL rests with the home organization. This is done so that the staff member is able to compare their performance review to others with similar jobs. This appraisal is also signed by the matrix supervisor. This in turn forces communication from both parties in the process. However, when there is a disagreement the home organization makes the final call.

LLNL: Strategy

- Avoid differentiating matrix staff from nonmatrix staff

The breadth of work scope of the matrixed staff is usually limited to ensure that the staff member does not move into a different job classification where the directorate could not support the individual’s career path. They try to have a matrix supervisor whenever possible. LLNL also tries to never single out the matrix staff; thus, there are no activities directed only at matrix staff.

Commercial Companies

The commercial inputs comparison was designed to provide overview information of whether corporate entities implement matrixing in their financial organizations. The study looked at three corporate entities.

Financial Personnel Are Matrixed

Lockheed Martin Corporation (LMC):

Lockheed Martin Corporation principally researches, designs, develops, manufactures, integrates, operates, and supports advanced technology systems, products, and services. The company serves customers in domestic and international defense, civil and commercial markets, with its principal customers being agencies of the United States Government. It has approximately 130,000 employees.

Lockheed has utilized matrixing for more than 20 years. LMC structures the company through functional organizations and programs. The functional organizations (e.g. CFO, Engineering, Quality, IS, etc.) own their people. The functional organizations are responsible for hiring, career development, and training.

Lockheed: Performance Review

- Performance review rests with mission customer, not the home organization

However, the individual performance management form (compensation) is owned by the program they support. The functional organization owns the people, but they do not have any funding. In turn, it is the programs that have the funding, but not the people.

For example, a program would negotiate with the functional owner for a resource. The program will provide a Gantt chart illustrating the length of time the matrix staff member will be needed and thus how long they will be funded for.

Lockheed’s CFO division is a small organization in the sense of indirect funding,

and a large organization in the sense of direct funding. The CFO Division provides policy, criteria, and experience requirements, and it funds core training and serves as a guidance resource to address issues. In the CFO, procurement is all matrixed and is direct funded except for Just-In-Time. Overall, Lockheed tries to keep its organizations extremely lean to keep indirect costs down.

Lockheed: Strategy
<ul style="list-style-type: none"> • Matrix staff should perform specific tasks, not day-to-day tasks.

Lockheed states that it has seen matrixing work very effectively. However, it also focuses on matrixing staff for unique projects. If the project is a day-to-day task, from a Lockheed perspective, the position would typically not be matrixed.

Lucent Technologies: Lucent Technologies, Inc., designs and delivers the systems, services and software that drive next-generation communications networks. It has approximately 34,500 employees.

At the Lucent site level, Purchasing, HR, and Finance staff members have a matrix relationship with Lucent corporate. For example, the purchasing manager at the Omaha Plant would work at the business unit in Omaha. This person would be solid line to headquarters and dotted line to the business unit in Omaha. This manager would be co-located: sit with the plant customer in Omaha and the supervisor would be in Atlanta.

These types of matrixed individuals charge their time to their business unit and their operational supplies (e.g. computer) are charged to the CFO office or corporate

office. The financial staff at a site location is in many aspects like a mini-CFO office. The matrixed individuals have a broad-based work scope. They do everything from budgeting, capital equipment and expenditures, operations budget, tax analysis, accounting, and gross receipts. The main activities that are directed through the corporate CFO office are accounts receivable and accounts payable.

The performance review for these matrixed individuals rests with their home organization, the corporate office. Furthermore, the financial staff are typically not rotated. The only way to move up the career path is if one was willing to relocate to the corporate office in Atlanta.

Financial Personnel Are Partially Matrixed

Fluor Corporation: Fluor Corporation’s focus is on engineering, procurement, construction, and maintenance. It oversees construction projects for a wide range of industrial sectors worldwide. It employs approximately 29,000 employees. Fluor has about five sizable locations worldwide and over 60 percent of its business is done outside the United States. Each unit in many aspects operates as its own entity. For example, they are accountable for the profit and losses.

Fluor utilizes matrixing in its individual site locations and from an overall perspective implements matrixing similar to Lockheed Martin Corporation. The centralized CFO at the corporate location directs all transactions, accounting, and overhead rates. The geographical units direct the budget accounting (billing to clients), financial management reporting, and financial planning analysis. The financial leader from

each geographic unit reports up to the VP of Financial Operations.

The matrixing utilized within Fluor is primarily at the site level. For example, the Houston office has a project accountant's office, and that office matrixes out project accountants throughout the Houston facility. All the financial individuals that are not centralized charge their time to their respective geographical unit (locally funded). From a hiring perspective, the financial individual is hired at the local level, depending on what level of job the applicant is applying for. The higher the position the individual is going applying for, the more corporate individuals and individuals from other sites; get involved in the hiring process.

There is also a group controller for each of the five industry lines (Oil and Gas, Government, Global Services, Power, and Industrial and Infrastructure). They also manage the financial individuals working within their line.

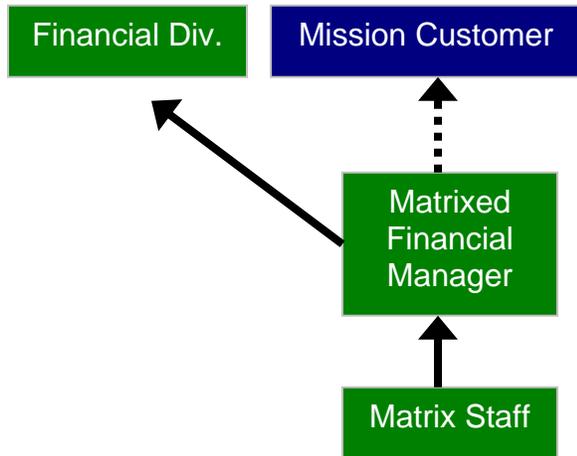
Common Themes

The following are seven themes that have been established through the external comparisons. These are trends that were illustrated in the majority of the DOE facilities and commercial companies compared in the study.

Common Matrix Themes
1. Matrix in teams to facilitate success
2. Did not differentiate matrixed financial staff from nonmatrixed financial staff
3. Performance reviews rest with the home (financial) organization
4. Had informal rotational programs
5. Either fully matrixed financial support or they did not matrix financial support
6. Matrixed staff was co-located (physically located with mission customer)
7. Increased focus on their communication processes

Matrix in Teams

All the DOE Facilities contacted in the study had a similar belief when it came to matrixing staff that it is important to matrix a manager, if possible, in all situations when matrixing staff. The belief centered on the idea that having a staff member report to a manager that is physically sitting with them decreased the challenges of matrixing. It appeared to help minimize some of the traditional challenges of an individual being "out of sight, out of mind." The manager more frequently sees the individual, which helps improve the performance evaluation process.



Do Not Differentiate Matrix Staff

Throughout the study, the team members focused on trying to establish the difference in policies and procedures with matrix staff. However, the comparison revealed that none of the DOE facilities contacted had specific practices directed at matrix staff. Instead, it was quite the contrary. Staff members of PNNL and LLNL stated directly that it is their philosophy to do the opposite and minimize the number of differentiators from matrix staff and nonmatrix staff. They stated that from an overall CFO perspective, both nonmatrix staff and matrix staff members are members of the CFO team, and they want both groups to feel they are part of the CFO team.

Performance Reviews Rest with Home Organization

Performance review in all but one of the DOE facilities and commercial companies reviewed revealed that performance reviews rested with the home organization. The only instance where this varied is at Lockheed Martin Corporation. At Lockheed, the performance review rested with the individual project, not the organization that owned the staff.

Typically, reasons for keeping the performance review with the home organization include maintaining oversight control of the staff member, evaluating with the peer set, and minimizing potential conflicts of interest. For example, from a laboratory perspective, the staff performance rests with the home organization so that a financial staff member matrixed to the mission customer would feel empowered to question an improper financial practice.

Informal Rotational Programs

Interestingly, of all the facilities contacted, only one said that it used to have a formal rotation program and currently none of the facilities have such a program. Pacific Northwest National Laboratory used to have a formalized rotation program for its employees. However, it was recently removed.

The challenges of formalized rotational programs rested in the fact that each individual's job varied slightly, and it is important to rotate individuals at proper times in their projects. There are also challenges of staff members who enjoy their current job, are performing it adequately, and prefer staying where they currently are. Furthermore, the mission customers preferred to keep individuals because then they do not have to train a new individual. On the contrary, the home organization prefers rotation because it challenges the individual, increases career development, and helps the employee keep an organizational perspective instead a divisional viewpoint.

Overall, most of the external comparisons stated that the individuals who are typically rotated are the ones who are interested in moving into management positions. Many of the companies also stated that they have informal rotational programs and jobs that

they prefer to rotate because they serve as junior management positions.

Everybody’s Matrixed or Nobody’s Matrixed

The trend is that companies either matrix their financial staff or they do not. There is only one laboratory, Brookhaven National Laboratory, that matrixes part of its financial staff, and the other portion is hired directly by the line. Brookhaven stated that because of its laboratory culture, it will probably never become fully matrixed.

However, it appeared that most laboratories either decided that they were going to matrix their financial staff, or that the mission customer would directly hire its financial staff.

Matrixed Staff Is Co-Located

Of all the matrixing discussed with the comparison companies, regardless of whether the staff was financial support or a different type of business support, these companies had their matrixed staff physically located with whomever they were matrixed to. The only exception is Knolls Atomic Power Laboratory where they emphasize training and thus prefer to not co-locate their staff.

Increased Focus on Communication

LANL and KAPL both directly stated that from their perspective, one of the most important aspects of matrixing is their focus on communication. Furthermore, in the other comparison companies much of the matrixing discussion revolved around their respective communication method. The external comparisons felt that a key factor in successful matrixing was ensuring that the communication lines are open. This becomes an especially important aspect in

regards to an employee’s performance review where the home organization relies on the feedback of the mission customer.

Strengths with Matrixing

The external comparisons cited repeatedly four common reasons for which they matrix their staff members:

- | Common Reasons for Matrixing |
|-----------------------------------|
| 1. Decreased conflict of interest |
| 2. Controlled career path |
| 3. Laboratory mindset |
| 4. Connected to peer group |

Decreased Conflict of Interest

The top reason for matrixing financial staff is to minimize conflicts of interest. Through matrixing, management feels that the financial staff feels more empowered to question financial practices of mission customers. This is because if the financial staff member reports to the mission customers there are fears that the financial staff member may not question a practice that may not be in the best interest of the laboratory as a whole because of fear for their job and compensation.

Controlled Career Path

Another top advantage for matrixing is that management feels it is better able to control the career path of financial staff. By having the financial staff hired through them, management felt that they could better ensure that hiring would be more focused on future contributions to the laboratory then hiring for specific projects. Matrixing also helps management focus on broadening the individual’s experiences so that these individuals would be ready for management positions later in their career.

Laboratory Mindset

Another advantage of matrixing is that matrixed staff is perceived to have more of a laboratory mindset than a divisional mindset. It was stated that because individuals were not hired by a specific mission customer, but by the CFO division and worked with multiple mission customers, staff members have more of a corporate perspective. This was viewed as an advantage for all parties because the staff member was able to provide a unique perspective to the mission customer.

Connected to Peer Group

Lastly, a common advantage that was stated for matrixing is that the financial staff was connected to its peer group. This was viewed as a benefit in performance review because the employee was evaluated against other individuals with similar skill sets, and that helps to ensure that the individual is properly challenged.

Another advantage was that in most cases, the matrixed individual sits with the mission customer, but they also sit with other financial individuals matrixed to the same customer and thus increase their interactions with others in their peer set.

Challenges with Matrixing

Additionally, the comparison also revealed three common challenges with matrixing.

Common Challenges with Matrixing
1. Encouraging horizontal rotation
2. Employee classification: exempt vs. nonexempt
3. Initial fears

Encouraging Horizontal Rotation

Specifically, Los Alamos National Laboratory, Oak Ridge National Laboratory, and Pacific Northwest National Laboratory stressed the importance of rotating employees horizontally in the organization. This task, however, can become a challenge. As previously stated, staff and mission customers comfort levels within their current environment create challenges in encouraging rotation. It takes time to build relationships, become comfortable, and understand job responsibilities. However, for the organization, it is also important to have staff members who are ready for management positions and who have breadth of experience behind their decision making. Thus, it has created challenges of how to encourage staff to take on new jobs at the same level they are currently at to enhance their frame of reference.

Employee Classification: Exempt vs. Nonexempt

Both Oak Ridge National Laboratory and Pacific Northwest National Laboratory directly expressed their challenge in classifications of exempt to nonexempt. The challenge rests in that the financial organization typically has set educational requirements for a staff member to be classified as exempt. The mission customer, on the other hand, does not always have the same level of educational requirements. This can create problems in that there may be uneasiness between individuals within these classifications. For example, some laboratories stated that a financial staff member would be classified as nonexempt and would be offered a job with the mission customer and be hired as an exempt employee. There were questions presented of whether some of these jobs are more financial based and should rest with the CFO division, not the mission customer.

Initial Fears

Another challenge that was presented was an initial challenge that, for example, Pacific Northwest National Laboratory faced about five years ago. The laboratory switched its contracting division to a matrix structure. Management remembers the depth of serious fears that were expressed about implementing a matrixing management structure. This created a challenge of helping staff members understand the matrixing environment, and also illustrating to staff members that many of the matrixing fears will not be established.

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RECOMMENDATIONS

Overall Recommendation

The internal survey and external comparisons illustrated that proper implementation of matrixed financial support *can* serve as a beneficial tool for a national laboratory. The study concluded that implementing matrixing of financial staff for Sandia National Laboratories could, as in the peer laboratories, serve as a beneficial organizational structure.

In the external comparisons, the organization that matrixed its financial support staff did so for one primary reason: organizational control. This control included ensuring that proper financial procedures and checks and balances are established and deployed throughout the organization. It further included establishing a management structure for the financial staff of an organization, which encompassed planned career development and hiring with the future organization’s needs in mind.

If Sandia National Laboratories’ reason for matrixing is similarly based on organizational control, the study recommends matrixing all mission customer financial support and utilizing team-based matrixing. This would accomplish the objective while also addressing the top challenges of Sandia’s matrixed staff.

OVERALL RECOMMENDATIONS
<ul style="list-style-type: none"> • Utilize team-based matrixing • Matrix all mission customer financial support

The top challenges that Sandia is currently facing in matrixing rest with matrixed individuals feeling that they are not fully accepted (integration) and are not fully valued (recognition). When seeking to understand these challenges through the experiences of peer laboratories, the challenges of integration and recognition were not prevalent. The study believes that these challenges were eliminated at peer organizations through the strategy of team-based matrixing, and the cultural acceptance of matrixing.

Team-Based Matrixing: The peer institutions that matrixed were committed to matrixing with a manager present. They tried to have the matrixed staff all physically located together within their customer unit when possible. When the manager and staff are physically sitting together with their mission customer, it allows the staff members to sit with their peer group. This helps them feel more like they are part of a team and less isolated.

For example, this was illustrated at Sandia in the Nuclear Weapons Business Office where the matrixed staff and the matrixed manager all physically sit together with their mission customer. The surveys respective to this unit illustrated that this staff felt more accepted and valued than peers surveyed who were individually matrixed.

Team-based matrixing has two components:

1. Matrix staff with a matrixed manager
2. When possible, physically locate matrix staff together within their customer’s facility

Through matrixing with a manager present, the matrixed staff members report to a

manager that is physically located close to them. This in turn allows the matrixed staff members to feel in many aspects like they are not matrixed. The distance challenges of matrixing are then shifted to one manager instead of every staff member facing these distance challenges. One way this was accomplished at peer laboratories was through the establishment of business offices for each mission customer.

The second component is geared primarily towards allowing the matrixed staff members to physically sit with their peer group, when possible. This allows the matrixed staff members to share lessons learned and easily utilize their peer group as a reference point. Furthermore, it creates a feeling of belonging for the staff members.

Matrix All Mission Customer Financial Support: The recommendation for matrixing all financial support rests on two reasons:

1. Establishing organizational control
2. Creating cultural acceptance

The top reason for the recommendation of matrixing all financial support rests with establishing organizational control. To create this management control, as defined above, the entire financial support would need to be matrixed. Otherwise, management would only be enabled to facilitate these objectives in the matrixed staff and would not be able to ensure them for the organization as a whole.

Second, some of Sandia's acceptance challenges with matrixing appear to be caused by limited organizational acceptance of matrixed financial staff. The peer institutions did not exhibit these challenges because of their cultural acceptance of matrixed financial support. Through matrixing all financial support, these

individuals would be viewed as a part of the day-to-day life of the laboratories and would not be perceived as challenging the "norm."

Overall, the study believes, relative to project needs and size, that minimizing the matrixing of one or two individuals and focusing on team-based matrixing would help staff members to feel accepted and valued.

Additionally, the study established specific recommendations to address key opportunities for improvement established through the internal surveys and applicable knowledge gained from the comparison companies. These recommendations are applicable regardless of whether Sandia's purpose for matrixing rests with organizational control or solely for providing a customer support service. The overall top three opportunities for improvement (integration, planning, and recognition) were the categories that the study's recommendations were broken into.

Integration Recommendations

Integration is an important aspect of matrixing: How is the mission customer united with the CFO Division? How can help matrixed staff members be helped to feel they belong? These are all challenges within any organization and especially important with matrixing.

The study established three strategies that could help minimize some of the current challenges of integration.

Integration Recommendations

- Focus on CFO unity and be careful with differentiating matrix staff
- Frequent, clear, consistent communication
- Increasing understanding of matrixing across the Laboratories

Unity Focus, Avoid Differentiators

This focus on minimizing the differentiators was an interesting message discovered consistently in Sandia's peer laboratories that matrix. The focus with matrixing emphasized the increased importance of unifying the CFO staff. One method chosen to help aid in this endeavor was an increased focus on minimizing the number of differentiators from matrix staff and nonmatrix staff.

The overall goal should be that individuals who are matrixed to mission customers enjoy being matrixed and that individuals who perform centralized jobs enjoy not being matrixed. This philosophy appears to be applicable to Sandia. In helping to ensure that the CFO Division stays unified, the CFO Division could emphasize unity and only make differentiators of matrix and nonmatrixed staff on a need basis. For example, LLNL focuses on unity and avoids differentiators by the centers having a social committee. Each month, a department (including matrixed departments) volunteers to host a themed social lunch, like Pirates of the Caribbean boat races, where each division tries to integrate all its departments.

Frequent, Clear, Consistent Communication

This tag line adopted from a conversation with LANL, illustrates a key focus with matrixing in peer laboratories. Part of Sandia's staff member concerns rested with feelings of being out of the loop of communication, and thus feelings of being "out of sight, out of mind."

A method to help address some of the distance challenges of matrixing may be to focus on presenting a frequent and consistent message to matrix staff. This top-down focus on communication should serve as a focus area for the management of matrixed staff. Regardless of whether it is implemented through policies or ensuring that email distribution lists include matrixed staff, the focus on communication would be a time-consuming process, but it is important because of the liaison role in matrixing.

Understanding Matrixing

Education has always served as a method to break down acceptance barriers. As recommended by Sandia's matrixed managers, staff, and customers, increasing the Sandia-wide understanding of why a staff member is matrixed and what the benefits are may increase the acceptance of matrixed staff members. For example, an idea may be a website that serves as a promotional tool for matrixing, a tool for understanding matrixing, and resources tool for matrixed staff members.

Planning Recommendations

The study identified four areas as possible segments to focus planning upon.

Planning Recommendations
<ul style="list-style-type: none"> • Defining roles and responsibilities of matrixing • Rotational planning (career development) • Employee classification: exempt vs. nonexempt status • Training: class recommendations

Defining Roles and Responsibilities

From the internal surveys, there were concerns expressed of “fuzziness” on whose responsibilities lie where. By defining the roles and responsibilities, it might help to eliminate some of the confusion that may currently exist in some of the management of matrixed staff. In turn, clarifying these roles and responsibilities may help to lessen some of challenges of conflicting priorities that were expressed in the staff survey.

Rotational Planning

None of Sandia’s peer laboratories have formal rotational programs in place any longer. Based upon this information, the study recommends that Sandia may want to avoid any set rotational programs, but offer an informal rotational program. This was a common theme in the peer laboratories where the laboratory had established a more informal rotational program that was especially important for junior staff interested in management positions. An informal rotation program may benefit Sandia by also eliminating some of the staff fears of job security.

Exempt vs. Nonexempt Status

The third planning recommendation is a current challenge that peer laboratories said that they are facing. There will never be a clear solution to address the challenges of exempt vs. nonexempt status with matrixing; however, it may be beneficial to try to prevent problems from arising. Both ORNL and PNNL stated that a challenge they face today is that a nonexempt matrixed CFO staff member will be hired by a mission customer as exempt. They stated that when this happens, it can create uneasiness. The challenge rested in the fact of determining if the job they are doing for the mission customer is more financial based and if so should report to the CFO. They stated that is was not an everyday challenge, but it does arise and thinking about how to determine whether a job is more financial based is worth considering.

Training: Class Recommendations

Another interesting point was that peer laboratories do not have a formalized training program. When asking Sandians about their perspectives of a formalized training program, opinions varied. The common concern of a program appeared to come from more experienced staff members who feared having to participate in training for processes they have already learned through experience. It appears that a clear training recommendation is specifying which training classes an individual should take in order to perform each financial task. This may help staff members and their manager know what background one should have in order to perform a job properly.

Recognition Recommendations

The most prevalent concern with recognition appeared to be a concern that neither manager truly understood the complexity of the job the individual was doing. If the matrixed manager sat with the matrixed individual, then this concern was not expressed. Thus, the best scenario may be using team-based matrixing if possible, where the matrixed manager sits with their staff members and increases the frequency of interaction. The other key driver in this concern is communication. Beyond the concern that the individual's work was not fully valued for its complexity, the other concern was a fear in job security. The three recommendations in this category are directed at those concerns.

Recognition Recommendations
<ul style="list-style-type: none"> • Dual signatures on PMF • Reward program • Job security

Dual Signatures on PMF

During a site visit with LLNL, the study learned of a practice that LLNL implements to promote more thorough communication between the managers of matrixed staff. On their performance review form, there are signature spots for both the home organization manager and the mission manager. The ultimate authority rests with the home organization, but LLNL stated they had seen very few conflicts with performance reviews. This process seems very applicable to Sandia's culture. It would emphasize the value the CFO places on the performance information provided by the mission customer.

Reward Program

The idea of a specific award established for matrix personnel was expressed by a handful of the matrixed staff individuals. Given the Sandia culture, which values recognition highly, those concerns do illustrate a need to increase the recognition directed at the matrixed personnel.

The challenge becomes how to recognize these individuals while also keeping in mind the strategy of not creating unnecessary differences between the matrixed CFO staff and nonmatrixed staff. From the experiences of the comparison companies, the best strategy may be to expand eligibility of CFO Division rewards to matrixed staff. For example, some of laboratories used \$50 gift cards to local restaurants and merchants as a small positive award for working hard to meet a deadline.

Job Security

The concern of job security was an important point that was expressed by a few matrixed staff. It is important because employees should not feel a risk in their job because they are matrixed. Currently, there is a low attrition rate on these matrixed jobs, but when concerns are present, they should probably be addressed. The top recommendation in this aspect is to set an informal rotational program and to promote this program. Increased awareness of these concerns in matrixed managers would also help managers assure to their employees that if they are performing up to standards they will have another matrixed job.

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Appendix

Appendix A: Internal Survey Questions

Matrix Manager Survey:

Questions for matrix benchmarking

1. What are the 3 most important factors in matrixing administrative support to the SMU (SNL matrix program)?
2. What are the top 3 strengths of SNL matrix program?
3. What are the top 3 opportunities for improvement in SNL matrix program?
4. What measures do you feel would be useful for comparing SNL matrix program to other similar programs?

Questions relevant to BSM

5. Do you feel because you are matrixed to your SMU that you are better able to understand how business changes affect the SMU/ line?
6. Do you feel the concerns of the SMU are better represented to the CFO because you are matrixed?
7. Do you believe you are able to establish a more creative solution that satisfies the SMU and business objectives because you are matrixed?
8. What is the most important aspect of a matrixed BSM?
9. What is the most important aspect of a matrixed BSM that needs improvement?

Questions relevant to Matrix Staff

10. What are the top concerns you have of matrixing your staff?
11. How do you educate your matrixed staff to better fulfill the needs of the SMU?
12. Do you feel a formalized training program would be beneficial?
13. If you could improve matrix staff what things would you do?
14. Do you find difficulties in keeping matrix staff motivated? Recommendations?

Questions relevant to general Matrixing

15. What do you view as the top 3 advantages of being matrixed?
16. What do you view as the top 3 disadvantages of being matrixed?
17. What are some of the leadership challenges you face of having your matrixed staff and yourself having two supervisors?
18. Any comments/contacts you would like to add in regards to the matrix benchmarking endeavor?

Matrix Staff Survey:

Questions for matrix benchmarking

1. What are the 3 most important factors in matrixing administrative support to the SMU (SNL matrix program)?
2. What are the top 3 strengths of SNL matrix program?
3. What are the top 3 opportunities for improvement in SNL matrix program?
4. What measures do you feel would be useful for comparing SNL matrix program to other similar programs?

Questions relevant to Matrixed Staff

5. Do you feel substantially less connected to your home organization because you are matrixed?
6. How could management improve unity / morale with your home organization?
7. What is the biggest trouble you face in communication with your BSM or manager?
8. Do you feel it would have been helpful for you to have gone through a more structured training program before being matrixed?
9. What are the most positive attributes that the CFO uses in regards to management issues of one being matrixed and where could improvements be made?

Questions relevant to SMU/line

10. What is the most valuable asset you are able to bring to your SMU/line?
11. What are the top 3 advantages for the customer of you being matrixed?
12. What are the top 3 disadvantages for the customer because you are matrixed?
13. Do you feel you face a larger workload because you are matrixed?

Questions relevant to general Matrixing

14. Do you face motivational challenges because you have 2 supervisors?
15. How could one improve motivation levels from matrixed staff?
16. What are the top 3 advantages for you personally of being matrixed?
17. What are the top 3 disadvantages for you personally because you are matrixed?
18. Do you feel there is opportunity to grow within the organization through matrixing?
19. If you could improve matrix staff what things would you do?
20. Any comments/contacts you would like to add in regards to the matrix benchmarking endeavor?

Matrix Customer Survey:

Questions for matrix benchmarking

1. What are the 3 most important factors in matrixing administrative support to the SMU (SNL matrix program)?
2. What are the top 3 strengths of SNL matrix program?
3. What are the top 3 opportunities for improvement in SNL matrix program?
4. What measures do you feel would be useful for comparing SNL matrix program to other similar programs?

Questions relevant to the BSM's

5. Do you feel the BSM matrixed to your SMU is able to better understand how business changes affect your SMU than previous management methods?
6. Do you feel your concerns with regards to the CFO are better represented because of the BSM?
7. Do you believe the BSM is able to establish a more creative solution that satisfies the SMU and CFO because they are matrixed?
8. If you could improve the BSM structure what things would you do?

Questions relevant to Matrix Staff

9. On average what is the length of time a manager/staff member should be matrixed to the SMU?
10. Do you feel matrixed staff need more training or a formal training program?
11. What types of knowledge and skills are the most important to you?
12. What attributes of the current manager/staff are most valuable to you?
13. What are the most positive attributes that the CFO uses in regards to management issues of matrixed staff and where could improvements be made?
14. Does matrix staff come more prepared to meet your individual needs than you could obtain from another source?
 - a) If not – Where else would you / do you go and what are they able to provide that currently the matrix staff is not providing?
 - b) If yes – What makes matrix staff valuable compared to other sources?

Questions relevant to general Matrixing

15. What do you view as the top 3 advantages of being matrixed?
16. Do you feel the matrixed staff has a large contact network (internally/externally), typically who are these contacts and, is it of value to you?
17. What do you view as the top 3 disadvantages of being matrixed?
18. What are some of the leadership challenges you face in interacting with matrixed staff who may have two or more individuals directing their work?
19. Do you face motivational struggles because of employee being matrixed? Suggestions?
20. Is the CFO able to provide adequate matrix financial staff in reasonable time period?
21. How long does it take and how much notice do you give them regarding your request for matrixed support?
22. What would allow you to give more notice in the future?
23. If you could improve matrix process what things would you do?
24. Any comments/contacts you would like to add in regards to the matrixing benchmarking endeavor?

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Appendix B: External Interview Discussion Topics

Matrixed Business Support Discussion Topics:

1. Matrixed Business Staff
 - 1.1. How is business support provided
 - 1.2. Quantity and percent matrixed
 - 1.3. Trend in matrix activities
 - 1.4. Critical mass to keep as a home organization
 - 1.5. Services provided to matrix organization
2. Types of Jobs
 - 2.1. Type of tasks the matrix staff perform
 - 2.2. Breadth of work scope
 - 2.3. Communication of responsibilities / matrix policies
 - 2.4. Average length of time matrixed
 - 2.5. Rotational program
3. Educational Background of matrix personnel
 - 3.1. Academic credentials (bachelors, masters, professional certifications)
 - 3.2. Years of company experience
 - 3.3. Years of general business experience
 - 3.4. Experts in specific area
 - 3.5. Personality traits
4. Training
 - 4.1. Formal training program
 - 4.2. Amount of training
 - 4.3. Types of training
 - 4.4. Funding
5. Performance and Compensation
 - 5.1. Accountability for performance review and compensation
 - 5.2. Who funds matrix staff
 - 5.3. Compensation variance from matrixed vs. nonmatrixed administration
 - 5.4. Career path
 - 5.5. Types of recognition (monetary, acknowledgement, etc.)
 - 5.6. Integration
6. Satisfaction
 - 6.1. Employee
 - 6.2. Customer
 - 6.3. Measure

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