DOCUMENTED BRIEFING

RAND

Strategic Sourcing

Measuring and Managing Performance

Laura H. Baldwin, Frank Camm, Nancy Y. Moore

Project AIR FORCE

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Prepared for the United States Air Force

Project AIR FORCE

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PREFACE

This documented briefing discusses the use of performance metrics in outsourcing by innovative commercial customers and providers of facility management services. It is part of a series of documented briefings from the Project AIR FORCE study, "Improving Readiness Through Increased Access to Private Sources of Support." The project was sponsored by the Deputy Chief of Staff for Plans and Programs.

This work should interest those concerned with innovative ways to outsource support activities—especially those charged with expanding outsourcing in the Air Force and the Department of Defense.

Work on this topic and related outsourcing topics continues in the Resource Management Program of Project AIR FORCE. For additional information, please contact the study leader, Dr. Frank Camm, at (202) 296-5000 x5261 or camm@rand.org. To convey comments on this paper to the authors, please contact Dr. Camm or the principal author, Dr. Laura Baldwin, at (310) 393-0411 x6537 or Laura_Baldwin@rand.org.

Project AIR FORCE

Project AIR FORCE, a division of RAND, is the Air Force federally funded research and development center (FFRDC) for studies and analysis. It provides the Air Force with independent analyses of policy alternatives affecting the development, employment, combat readiness, and support of current and future aerospace forces. Research is performed in four programs: Aerospace Force Development; Manpower, Personnel, and Training; Resource Management; and Strategy and Doctrine.

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SUMMARY

This documented briefing describes the ways innovative commercial customers and world-class providers of facility management services use performance metrics to execute their sourcing activities. The sourcing process has several steps, including evaluating alternative sources of provision, choosing a provider, and managing a relationship with that provider. A strategic sourcing process links the decisions made during the sourcing process to the strategic goals of the customer organization. Performance metrics play many different roles throughout the strategic sourcing process. They help a customer firm decide whether to outsource an activity, guide the source-selection decision, manage the customer/provider relationship, and enable continuous improvement in the provision of services.

Under pressure to improve performance and reduce infrastructure expenditures, the Air Force is reexamining the source of provision of many of its support activities such as base operating support and other installation services. These activities appear to represent lower risks and a higher potential for performance improvements and cost savings than many other candidates for outsourcing. In our examination of commercial uses of performance metrics in sourcing activities, we focus on facility management services because they are similar to these Air Force support activities.

The customer and provider firms that we interviewed represent the innovative leading edge of commercial sourcing practices rather than typical commercial practices. Although the priorities and constraints that the Air Force faces in its sourcing activities are not always the same as those of innovative commercial firms, the practices that these firms use to choose and implement performance metrics in their sourcing processes should, with appropriate adaptations, help the Air Force reduce its oversight burden and improve the results of its sourcing activities.

Roles of Performance Metrics in the Sourcing Process

Customers and providers choose different performance metrics for different purposes throughout the sourcing process. A customer first uses metrics to help decide whether to outsource an activity. If it decides to

outsource the activity, the customer uses metrics to guide the selection of an external provider. Once the customer has chosen a provider, the customer and provider each use metrics to help manage their relationship. Finally, parallel to customers' sourcing activities, providers use metrics to promote and enable continuous improvement in the provision of services. Our primary focus is on how firms use metrics to manage the customer/provider relationship.

Choosing the Appropriate Set of Metrics

In managing their relationship, a customer and a provider jointly choose metrics that they believe will support the corporate goals of the customer organization. Such metrics align the provider's priorities with those of its customer. Customers tend to track output-oriented metrics, whereas providers may track additional process-oriented metrics. Both qualitative and quantitative metrics are common.

We discerned several patterns in the choice of metrics by customers and providers. Customers tend to focus on a few key metrics to easily convey to providers those dimensions of performance that are most important. Customers and providers refine the set of metrics used to manage their relationships throughout the duration of those relationships. Metrics evolve as focus and needs change so that they continue to add value. To preserve the flexibility to adjust metrics over time, many customers separate the specific metrics they will use to manage their relationships from their contracts with providers.

Although we observed diversity in the specific choices of metrics used to manage customer/provider relationships, several topic areas were common to many of the firms we interviewed. Financial and customer satisfaction metrics and quantitative metrics targeting the performance of specific services (including safety) were observed most often. Many firms also chose metrics that reflect their concern for human resources issues and special interests such as socioeconomic concerns.

Collecting Data and Generating Metrics

Customers and providers use several methods to collect data to generate the metrics that they track to manage their relationships. Customer surveys

are used to collect customer satisfaction data. Management information systems, such as those associated with centralized call centers and bar-code scanners, are used to collect detailed data about operations. Customers and providers also perform financial and operational audits, or bring in third-party auditors, to verify performance and costs.

Many firms expressed frustration with data accuracy. Customer firms can take a variety of steps to verify the accuracy of metrics generated by their providers—spot-checking work, collecting samples of data, and auditing providers' data collection and metrics generation processes.

Managing Performance and Cost Against Goals

Customers and providers set mutually agreeable goals for metrics that reflect both short-run and long-run desired levels of performance and cost for the customer organization. Benchmarking studies often are used to set feasible goals. However, because of the difficulty of finding "apples-to-apples" comparisons, customers and providers stressed the need to understand sources of variances in performance and costs across sites and companies to ensure that goals are based on process or technological innovations, rather than differences in facilities' characteristics or uses or in levels of services.

Once goals are in place, customers and providers use both informal and formal reviews to facilitate communication about performance. Project managers for both organizations tend to meet informally daily or weekly to discuss ongoing work. Formal reviews occur less often, involve additional corporate leaders, and are used to monitor performance along specified dimensions.

Both customer and provider firms noted that it is costly to generate metrics and track performance and cost. Ultimately, these monitoring costs are paid by customers; therefore, providers advise their customers to request and track only those metrics that add net value to their organizations.

Implications for the Air Force

The sourcing process is not new to the Air Force; however, many of the practices discussed here differ dramatically from the Air Force's traditional approach to sourcing. Nonetheless, the practices of innovative commercial firms are broadly compatible with current Air Force efforts to extend the

benefits of acquisition reform to services acquisition. Effective metrics lie at the heart of this effort. The Air Force can adapt the practices discussed here to improve the effectiveness of services acquisition and, in the long run, move beyond its current plans toward even more innovative commercial acquisition practices that allow for greater performance and cost improvements and that encourage more of the best commercial providers to want to do business with the Air Force. However, the Air Force cannot accomplish this alone. Broader public policy will have to advance to accommodate all the innovative practices discussed here.

First, the Air Force can use metrics to focus its limited sourcing resources on those activities that appear to offer the highest potential returns in performance and cost improvements. Audits that baseline internal performance and cost and benchmarking studies that identify external capabilities can facilitate this process.

Second, if the Air Force chooses to conduct a competition for provision of services, it can use metrics to focus the source selection decision on those aspects of performance and cost that best support the goals of the Air Force customer organization.

Third, the Air Force can use metrics to better manage its relationships with external providers. For example, output-oriented, rather than process-oriented, metrics give providers the freedom to innovate. New Air Force policy provides installations the flexibility to update these metrics outside of formal contract modifications to reflect the changing needs of rotating wing commanders so that providers stay focused on current priorities. Metrics also can facilitate communication between customer and provider organizations, which can lead to more responsive service. Good metrics are powerful tools that allow a small group of project managers to track the important dimensions of provider performance. Thus, if the Air Force uses metrics that support its strategic goals, sets aggressive goals for the metrics, and manages performance through open, frequent communication and problem solving supplemented by longer-term efforts to improve performance, the experiences of innovative commercial firms suggest that the Air Force can build mutual trust with its providers and thereby dramatically reduce the manpower and other costs associated with its quality assurance program.

Finally, independent of outsourcing, the Air Force can use performance metrics to improve the performance of its organic provider organizations. In particular, cross-site, as well as Air Force/external, benchmarking studies can be used to promote sharing of best practices and to set performance goals. However, good metrics and aggressive goals will not be effective unless performance is tracked and personnel are held accountable for meeting goals. The Air Force may benefit from investing in a commercial management information system or outsourcing data collection to generate desired information about service outputs and processes.

ACKNOWLEDGMENTS

Although the material presented in this document is the responsibility of the authors, we wish to acknowledge the many employees of the customer and provider firms that we visited who graciously donated their time to help us understand their innovative sourcing practices. Because of our pledge of confidentiality, we are unable to identify them by name; however, without their cooperation, this document would not have been possible.

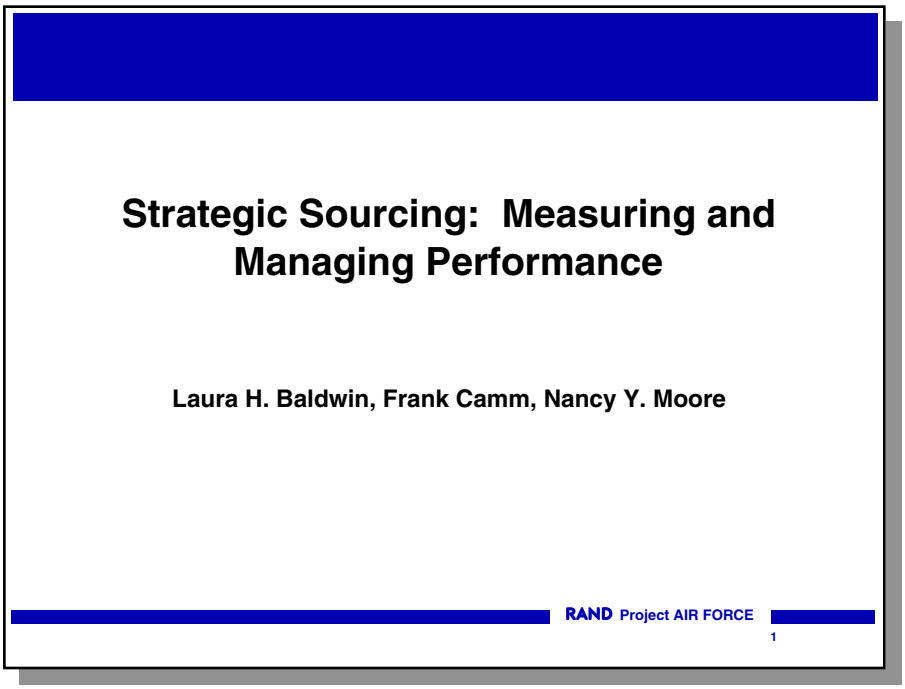
We would like to thank participants of the Air Education and Training Command Strategic Outsourcing seminar, the Civil Engineering Outsourcing Workshop, the Air Combat Command Manpower and Quality Office Chiefs' Conference, the RAND logistics seminar series, and the 1998 Western Economic Association meetings for their comments. Air Force officers Lieutenant Colonel Hans Jerrell, Captain David King, Captain Scott King, Lieutenant Colonel Jim Playford, Captain Matt Santoni, and Major John Tigges also provided thoughtful comments. In addition, we thank Steven Connair, Walter Hosey, and Francois Melese and his colleagues at the Naval Postgraduate School for their comments and suggestions. Finally, we thank our RAND colleagues Cynthia Cook and Edward Keating for their insightful comments and Susan Gates for her careful review of this document.

This work would not have been possible without the help of these people. Nonetheless, all assertions and interpretations in this report belong to the authors alone.

ACRONYMS

BOMA	Building Owners and Managers Association
BOS	Base Operating Support
CAIRS	Commercial Activities Inventory Reporting System
CME	Contractor Manpower Equivalent
CNA	Center for Naval Analyses
DoD	Department of Defense
FASA	Federal Acquisition Streamlining Act
FFRDC	Federally Funded Research and Development Center
FY	Fiscal Year
HR	Human Resources
IFMA	International Facility Management Association
ISO	International Organization for Standardization
KRA	Key Result Area
MEO	Most Efficient Organization
MIS	Management Information System
OMB	Office of Management and Budget
PBSA	Performance-Based Services Acquisition
QAE	Quality Assurance Evaluator
RFI	Request for Information

1. INTRODUCTION



This documented briefing describes Project AIR FORCE research on the ways innovative customers and providers of facility management services use performance metrics to help execute their sourcing activities. Performance metrics play many different roles throughout the sourcing process, in which a customer decides whether to outsource or keep an activity or service in-house, chooses a source, and manages its relationship with the chosen provider, including the pursuit of continuous improvement in the provision of the activity or service. Under performance-based services acquisition, each of these issues arises in the Air Force sourcing process. The priorities and constraints that the Air Force faces in its sourcing process are not always the same as those faced by innovative commercial customers, but the practices that innovative commercial firms use to choose and implement performance metrics in their sourcing processes should, with appropriate adaptations, help the Air Force reduce its oversight burden and improve the results of its sourcing activities.

This briefing is the third in a series of documents based on our structured interviews with "world-class" commercial providers of facility management services and with commercial firms that buy such services from these providers. The first draft document provides an overview of our findings, touching on a broad range of topics including (1) why firms choose to outsource, (2) the outsourcing process, (3) how firms bundle activities for outsourcing, (4) source selection, (5) contract design, (6) the transition process, and (7) managing the customer/provider relationship. A second draft document details how innovative firms bundle activities to be outsourced and presents a process for doing so that other organizations should find useful.[1]

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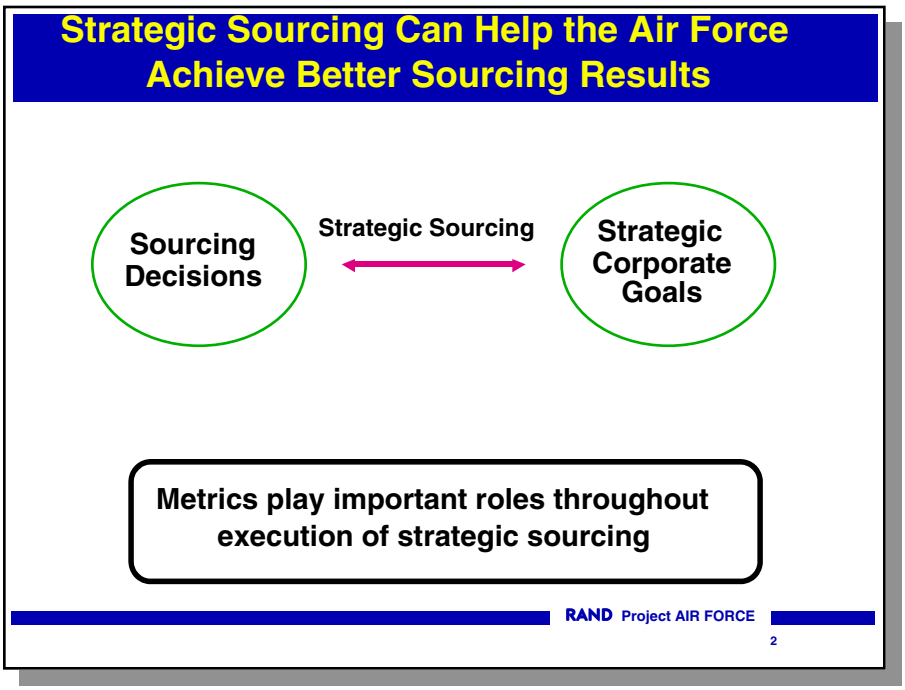
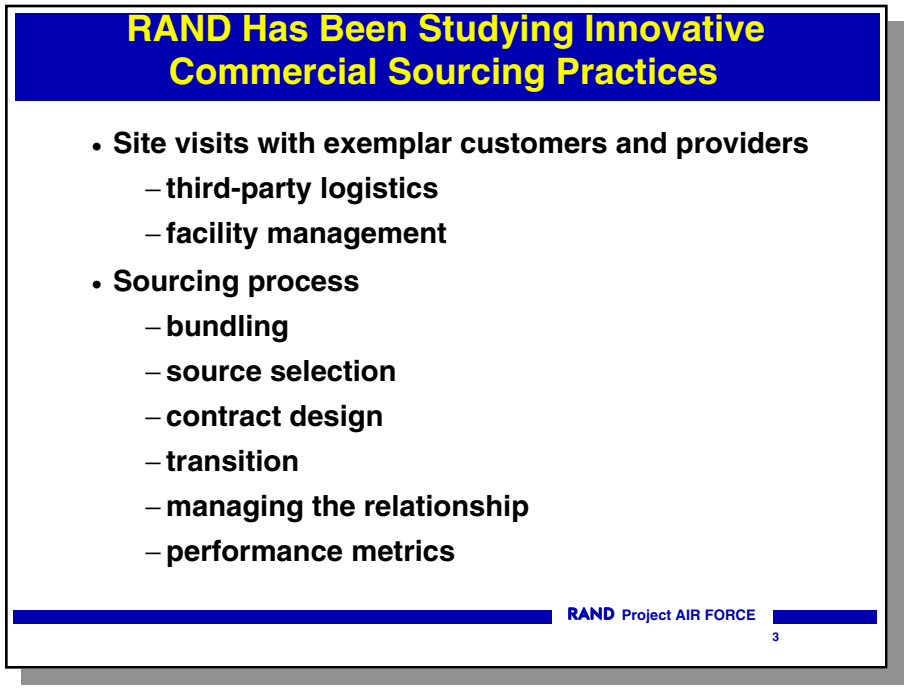
[1] Copies of these two draft documents can be obtained from Dr. Nancy Moore, subject to approval from the research sponsor. She can be reached via email at Nancy_Moore@rand.org.



Facing strong pressure to improve performance and reduce expenditures on infrastructure, the Air Force has embarked upon a multiyear plan to re-examine the source of provision of many of its support activities. RAND's recent research on outsourcing, privatization, and recontracting has been oriented toward defining a strategic sourcing process that the Air Force can use to achieve the best possible results from its sourcing activities. Such a strategic sourcing process links decisions made during the sourcing process to the strategic goals of the customer organization. As we will see, performance metrics play key roles throughout the execution of strategic sourcing.



During Fiscal Years (FY) 1996–1997, RAND examined innovative sourcing practices of commercial customers and providers of both third-party logistics services and facility management services.

During FY 1996, we examined how innovative commercial firms decide between in-house and external provision of services. This work is based, in part, on visits with selected customers and providers of logistics services. During FY 1997, we focused on detailed aspects of the sourcing process in visits with selected customers and providers of facility management services.

We emphasize that the sourcing activities of the firms we interviewed do *not* represent standard commercial practices. Rather, these firms were chosen because of their innovative approaches that have led to their recognition for successful sourcing practices (e.g., improved performance, more control and flexibility, lower costs of services). In other words, these customers and suppliers are defining the leading edge of commercial sourcing practices.

To find the most innovative sourcing practices, we searched for exemplar firms that were identified by their peers as being the most progressive customers or best providers in the markets for third-party logistics and facility management services.

We began by identifying an initial group of customer and provider firms through a review of the trade literature, contacts at trade organizations, and attendance at conferences. To progress from this initial set of firms to the final group of firms that we visited, we asked these firms a series of questions. We asked innovative customers who their providers were and which other leading firms they had considered choosing; we asked leading providers who their competitors were; and we asked leading providers which of their customers were engaged in the most innovative outsourcing practices. We selected 30 companies that are customers or providers of third-party logistics or facility management services, and we made 41 site visits, including multiple divisions of nine of the companies.[2] We also visited four Air Force installations that have outsourced large bundles of support services.

During site visits to both customer and provider locations, we interviewed key managers about their outsourcing experiences, using a structured questionnaire that we provided in advance. Of primary interest were the practices and experiences of these firms concerning how they (1) bundled services to be outsourced, (2) selected one or more providers, (3) set up the initial contract(s), (4) transitioned from an in-house workforce to an external one, (5) managed the customer/provider relationship, and (6) used performance metrics throughout this process.[3]

This document focuses on the use of performance metrics in the strategic sourcing process, and it draws upon our site interviews with customers and providers of facility management services, presentations at trade association meetings, and the business literature. The use of performance metrics in the strategic sourcing process was not a primary focus area during our interviews with customers and providers of third-party logistics services; however, the principal ideas and practices are quite similar across logistics and facility management services.

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[2] Twenty-two of these organizations purchase and nineteen provide facility management or logistics services. We visited one or more customers for each of the providers.

[3] The questions addressing the use of performance metrics are contained in Appendix A of this document.

We focus on facility management services because of their similarity with base operating support (BOS) and other services that are provided at Air Force installations. There is high-level Air Force interest in reexamining the source of provision of these kinds of activities, partly because these activities represent lower risks than many other prospective candidates for outsourcing and have a high potential for improved performance and cost savings.

The lower risk associated with outsourcing these activities stems from several factors. First, installation services and base maintenance activities (e.g., grounds, custodial, and building maintenance) are often only indirectly related to the primary missions of the Air Force. Second, the robust commercial market for many of these services and activities suggests that the Air Force would have many choices for providers, so that no one provider could exert monopoly pressure. Third, many leading commercial firms are expanding their outsourcing activities in the facilities support area, suggesting that they have identified ways to mitigate most of the risks associated with outsourcing these activities. Finally, most BOS and related support services have already been successfully outsourced at one or more Air Force installations.

The potential for performance improvement in BOS and related support services stems from the likely gaps between the capabilities of leading commercial providers and those of in-house Air Force providers. Such gaps stem from differing levels of investments in capital (e.g., management information systems) and training of both managers and technicians. Commercial facility management providers justify making much larger investments because these activities are their *core competencies*.[4]

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[4]The concept of "core competencies" was developed by Prahalad and Hamel (1990) and is now pervasive in the business management literature. A firm's core competencies are limited to a few activities that are most critical to the future success of the organization. Generally, these activities should never be outsourced (although some firms have outsourced a core activity and then later brought it back in-house). See Pint and Baldwin (1997) for an overview of the business literature on this topic.

The Department of Defense's definition of "core" activities should not be confused with "core competencies" as defined in the business literature. These two concepts evolved independently of one another and, in principle, could differ. However, both refer to activities that are deemed so important to the organization that they should not be outsourced.

Although commercial estimates of cost savings associated with outsourcing facility management services vary widely, every customer that we spoke with was confident that savings do exist.[5] Because of the large number of commercial activities billets currently associated with BOS and related support areas,[6] the potential exists for the Air Force to realize enormous savings through sourcing studies.[7] Further, existing contracts could be rebundled into larger, integrated service contracts that are likely to yield additional savings from economies of scale and scope and reduced transactions costs.

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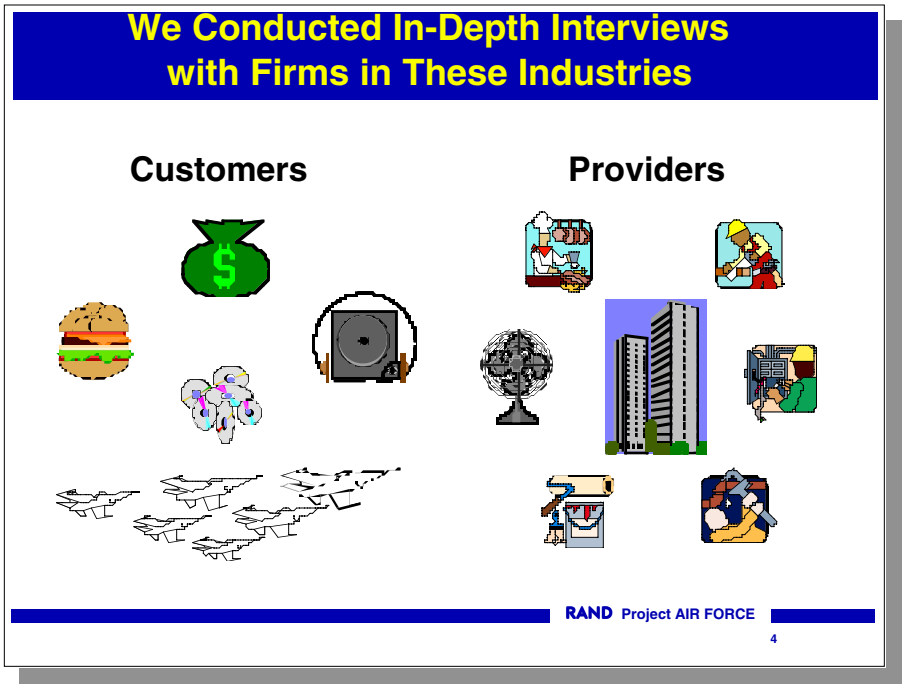
[5] The Morrison Knudsen Corporation, a leading provider of facility management services, estimates initial savings between 5 and 24 percent and ongoing annual savings from continuous improvement between 3 and 22 percent. (Presentation at the 1997 Tradeline Conference, San Diego, CA.)

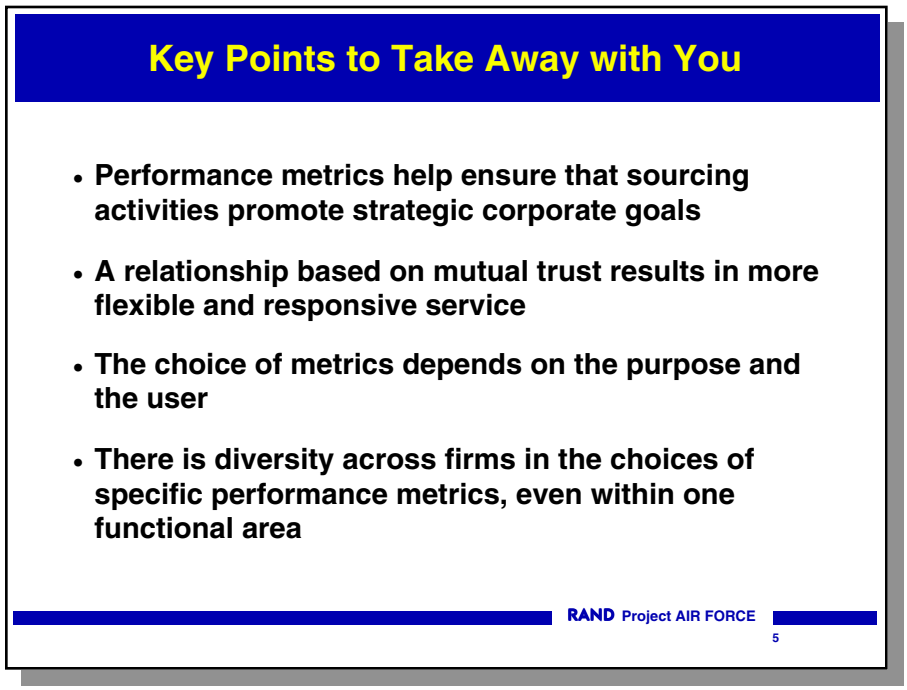
[6] The Air Force's Commercial Activities Inventory Reporting System (CAIRS) database (9/30/95) indicates that there are 17,000 civilian billets, 49,000 military billets, and 27,000 Contractor Manpower Equivalents (CMEs) in installation services and base maintenance.

[7] The Air Force used 20 percent in the past, and 25 percent more recently, to estimate expected savings from sourcing competitions. Although we have not seen a document describing the methodology used to derive these estimates, we believe that they are based in part on estimates of initial savings from prior sourcing studies. In a study of Navy competitions for provision of commercial activities, Marcus (1993) found an average savings of 30 percent. However, these estimates of savings are thought to be exaggerated as a result of a lack of information about (a) the military/civilian personnel mix prior to sourcing studies, (b) the civilian pay grades associated with an activity before and after a study, and (c) the scope, quality, and type of work performed before and after the study. See Baldwin, Camm, Keating, and Pint (1998) and Robbert, Gates, and Elliott (1997) for a more detailed discussion of historical savings associated with military sourcing studies.



We visited world-class providers of a wide range of facility management services, including food services, engineering and construction, controls, and property management. Their most innovative customers include electronics firms, manufacturers of high-tech equipment, fast-food corporations, banks, and defense contractors.

Many of these providers do not currently do business with the Department of Defense (DoD). These innovative sourcing practices have evolved almost entirely within the commercial sector.



Our research contains four overarching themes. The first is that innovative customers of facility management services use performance metrics to help them ensure that the results of their sourcing activities support their strategic corporate goals. This begins with the decision to stay with the in-house provider organization or seek an external provider of services. A customer firm uses performance metrics to compare the cost and performance of its in-house organization with that of external providers. If external provision proves to be more effective, the customer then uses metrics to help identify the provider(s) best able to meet the customer's needs. Finally, performance metrics help customers manage their relationships with providers by communicating expectations and providing a vehicle to track results.

Metrics often reflect a balance between the customer firm's short-run and long-run strategic priorities. Consequently, metrics emphasize near-term performance/cost objectives as well as longer-term objectives for process

improvements that will help meet the customer's (potentially unknown) future needs.[8]

Second, performance metrics play an important role in developing a relationship between the customer and provider that is based on mutual trust. Such a relationship results in more flexible, responsive service from the provider. Keys to building such a relationship are (a) to align metrics with those aspects of performance and cost that are most important to the customer, (b) to promote open communication between the customer and provider organizations, (c) to adjust metrics and goals as customer priorities change, and (d) to include higher levels of management from both the customer and provider organizations in periodic, formal performance reviews. By treating the provider as a member of the customer's management team and communicating to the provider changes in workscope, budgets, or expectations in a timely way, a customer can gain the trust of its provider. Providers gain the trust of their customers by delivering the level of services promised.

Third, there is no magic set of metrics that fits every sourcing need. The choice of metrics for both the customer and provider varies throughout the sourcing process because information needs change over time. For example, when deciding whether to outsource, customers may use fairly broad metrics to determine the relative performance, cost, and risks associated with in-house versus external provider organizations (e.g., cost of facility management services per square foot). If a decision is made to outsource, customers may seek more-detailed metrics to evaluate the performance and cost of different providers along several key dimensions of services (e.g., cost of specific services per square foot, safety history, and employee turnover). Then, during a relationship, customers and providers may track a variety of metrics covering many dimensions of performance and cost at varying levels of detail (e.g., number of unscheduled maintenance calls by service, average cost associated with unscheduled maintenance, or percentage of preventive maintenance performed on schedule).

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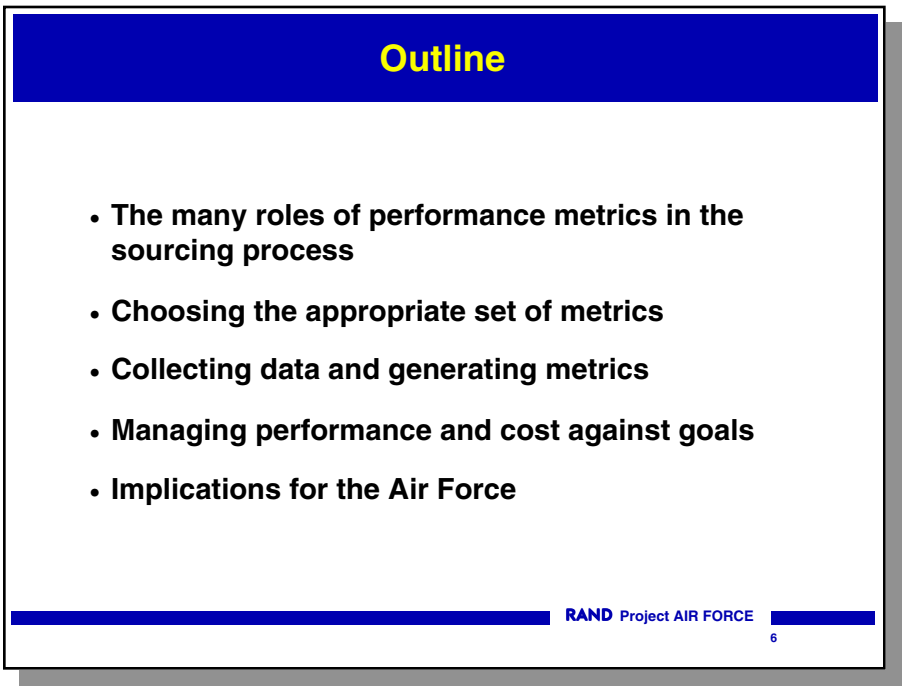
[8]See Kaplan and Norton (1996) for further discussion of choosing metrics that reflect the many dimensions of corporate strategy.

The choice of metrics will also vary between the parties in the sourcing process—each seeking information relevant to its own goals. For example, in managing their relationship, customers tend to track those dimensions of performance that indicate whether they are receiving the service that they need, whereas providers track indicators of whether their processes are generating appropriate results. Similarly, managers at different levels within the customer firm are often interested in metrics that depict information that has been aggregated to varying degrees. Whereas the project manager may be interested in tracking the cost associated with a specific service such as employee moves, corporate managers may wish to track only total facilities costs.

Fourth, there is diversity across firms in the choice of performance metrics to provide information within a given part of the sourcing process. For example, each customer firm we interviewed chose a different set of metrics to select its provider. In large part, these differences reflect the fact that the facility management goals of the customer and provider in each relationship are related to the unique strategic goals of the customer.

We believe that the diversity in the choices and uses of metrics across customer and provider firms also can be attributed to the continuing evolution of these innovative practices. In fact, many customers appear to be conducting informal sourcing experiments, trying bold new practices to see whether they can be comfortably applied more broadly. Customers told us that part of their motivation for trying new sourcing practices is to encourage expansion in the provider market. Similarly, providers are trying new practices to encourage customers to feel comfortable outsourcing more of their facility management services.

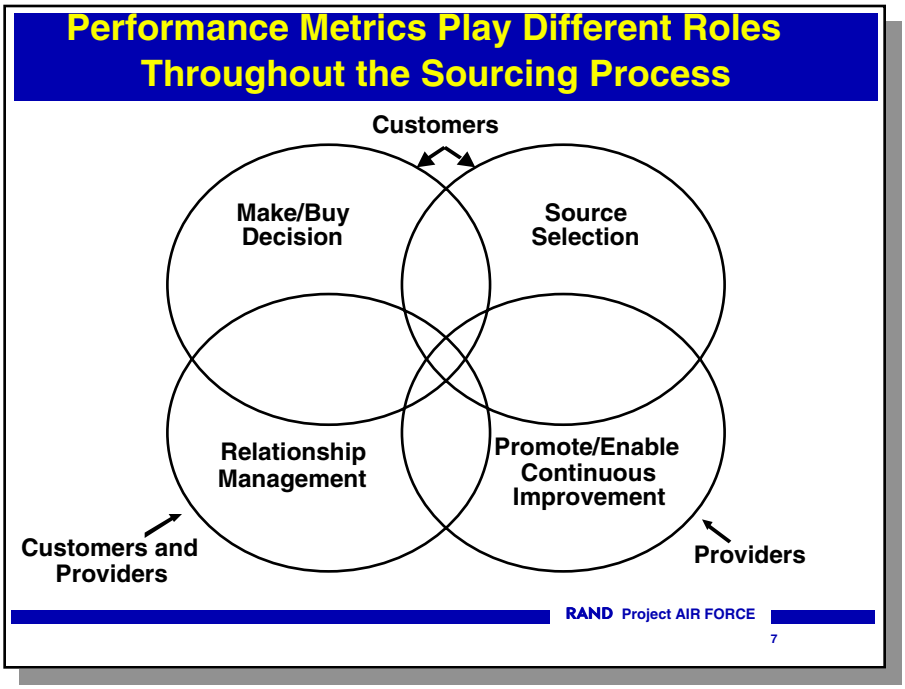
This diversity raises the question of how to interpret the practices discussed in this document. Many practices represent trends that are either widely accepted ways of doing business within this community of innovative firms or activities that many firms said they plan to pursue in the future. In those cases where firms spanned the spectrum of approaches to a given sourcing activity, we chose to present the most aggressive practices that represent the cutting edge.



The remainder of this briefing is divided into five chapters. In Chapter 2, we examine the various ways that customers and providers use performance metrics in the sourcing process. Chapter 3 discusses how customers and providers choose metrics that are tailored to their specific sourcing situations. In Chapter 4, we look at how commercial firms collect data and generate the metrics that they use. Chapter 5 examines how firms choose goals for their metrics and then manage the provider's performance and cost against those goals. We conclude in Chapter 6 by discussing how the Air Force might use performance metrics more effectively to achieve better results from its sourcing activities.

Appendix A contains the portions of our customer and provider questionnaires that address the use of performance metrics. Appendix B contains examples of performance metrics used by customers and providers of facility management services.

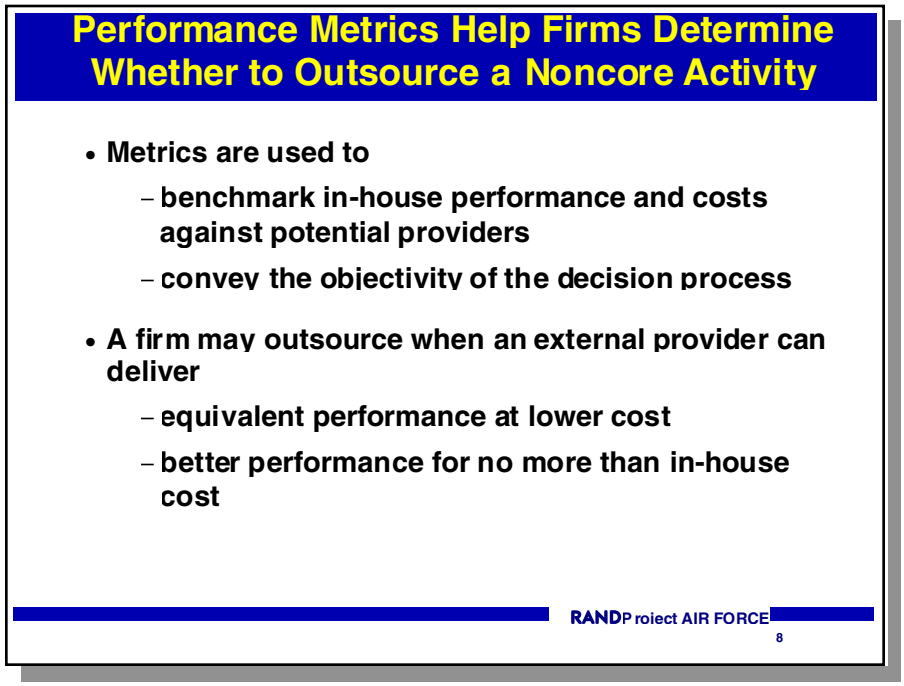
2. ROLES OF PERFORMANCE METRICS



Customers and providers use performance metrics for many different things throughout the sourcing process. The choice of metrics varies depending on where the parties are in the sourcing process (e.g., the make/buy decision vs. the source selection decision) and the user of the information (e.g., customer vs. provider).

A customer first uses performance metrics to help decide whether to outsource. If it does decide to outsource, the customer then uses metrics to guide the source selection decision. Once a customer has chosen a provider, the customer and provider each use metrics to help manage their partnership. Finally, parallel to customers' sourcing processes, providers use metrics to promote and enable continuous improvement in the provision of services.

The next charts discuss each of these roles.



When faced with the decision of whether to outsource an activity that is not a core competency, customer firms can use metrics to compare the performance and cost of their internal provider organization with those of external providers. When armed with this information, customers can make the decision that best supports their strategic corporate goals. Such information about the internal organization also provides a baseline against which future performance and cost can be compared.

In addition, several customer project managers said that the use of objective measures in the decision process helped convince their senior leadership that their recommendation for internal or external provision of facilities services was in the best interest of the firm—i.e., that it supported corporate goals and provided the best value of services for the money. As we discuss below, the support of high-level management is an integral part of a successful customer/provider relationship, whether the provider is an internal or external organization.[9]

[9] When outsourcing was warranted, these objective measures also helped make the case to affected employees and those in other parts of the customer firm that the decision process was fair.

Generally, the customer organizations we visited viewed the ability of an external provider to provide either equivalent performance at a lower cost or better performance for no more than the cost of the in-house organization as a necessary condition for outsourcing. However, meeting one or both of these criteria did not guarantee a decision to outsource.

Customers also use other, less easily quantifiable criteria, such as the risk of catastrophic failure to perform or the risks associated with loss of control, to help decide whether to outsource a given activity.

Most customers we interviewed did not adequately measure the performance of their in-house provider organization prior to being faced with the outsourcing decision. Therefore, they had to implement an internal measurement process prior to making the comparison with external sources.[10] Ideally, in-house provider organizations use performance metrics to continually improve internal processes independent of deciding whether to outsource. Without such measurements, in-house providers may not know what or how to improve. However, customer time and resource constraints do not always allow for this.

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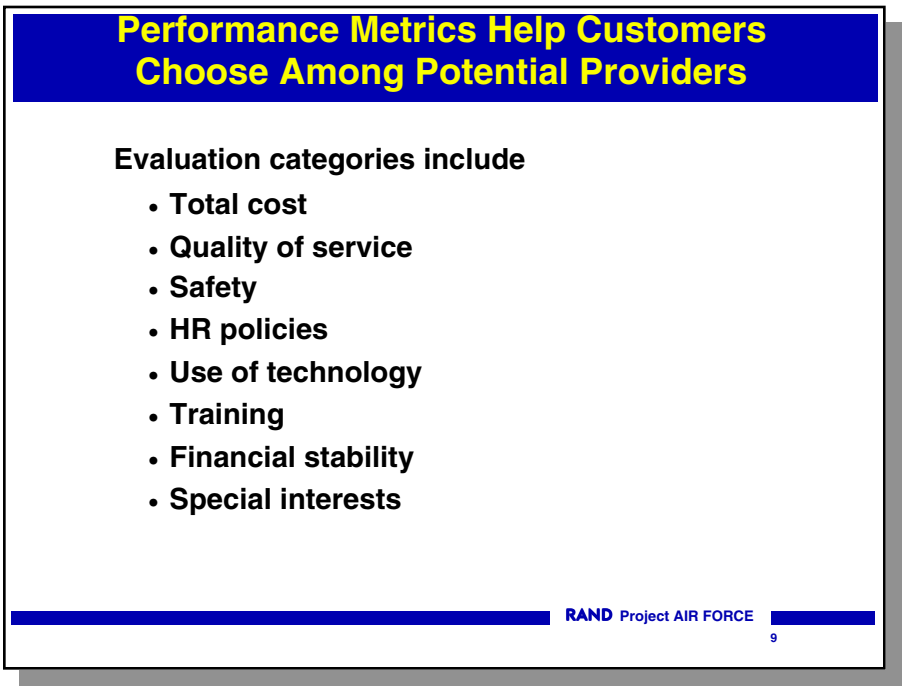
[10] Some firms used internal resources to implement this measurement process; others used consultants.



Once the customer has decided to outsource provision of a service or a set of services, the customer can use performance metrics and associated weights to pick the provider or group of providers that best meets its strategic objectives. Customers use metrics to evaluate providers along many dimensions of performance. Although no two customers chose the exact same criteria to evaluate providers, many customers were interested in similar dimensions of performance. The above chart lists the categories of performance that the customers we interviewed cited most often.

Total cost includes the price, customer management costs, and any implications for facility life-cycle costs associated with a given level of services. The quality of service can encompass many dimensions of performance such as reliability, responsiveness of the provider to changing customer needs, and reputation based on past performance for other customers. Safety records and human resources policies reflect how the provider organization treats its employees.[11] These metrics are especially

[11]These metrics also provide information that is useful in the "due diligence" process. Customer firms use safety records and human resources files of potential providers to

important to customers that expect many of their displaced employees to be hired by the chosen provider. The use of technology, training opportunities for employees, and financial stability of the firm are good predictors of the future performance of the provider. Finally, many customers are concerned with providers' policies on social issues like the use of small, minority-, or women-owned businesses and environmental policies such as energy efficiency programs.

Several customers used performance metrics such as these to narrow the competition to a subset of providers that could meet all of their performance and cost objectives and then based the final decision on other factors that are not easily quantifiable. One such factor is the cultural fit between the customer and provider organizations. A good cultural fit between the customer and provider facilitates the alignment of priorities and communication between the two organizations. (These dimensions of the sourcing process are discussed below.) Many customers judged cultural fit through interviews with prospective project managers for the provider organizations and through site visits to other customers of those providers.

When we asked firms how customers ranked these evaluation categories in terms of importance, we received varying answers, depending on the strategic goals that the customer wanted to accomplish through outsourcing. One provider told us that most of its customers are primarily concerned with lowering the costs associated with facility management services. This firm attributed this to the fact that the level of services its organization could provide would more than meet customer expectations. At the other extreme, one customer did not include price in the source selection decision. It based its decision primarily on technical capability and training. The price was negotiated after the fact.

Several customers told us that they used performance metrics and weights in the source selection process to help make the process as objective as possible. Some constructed score cards with metrics and associated weights that allowed them to calculate an overall score for each of the top competing providers. One large firm said that its corporate leaders were

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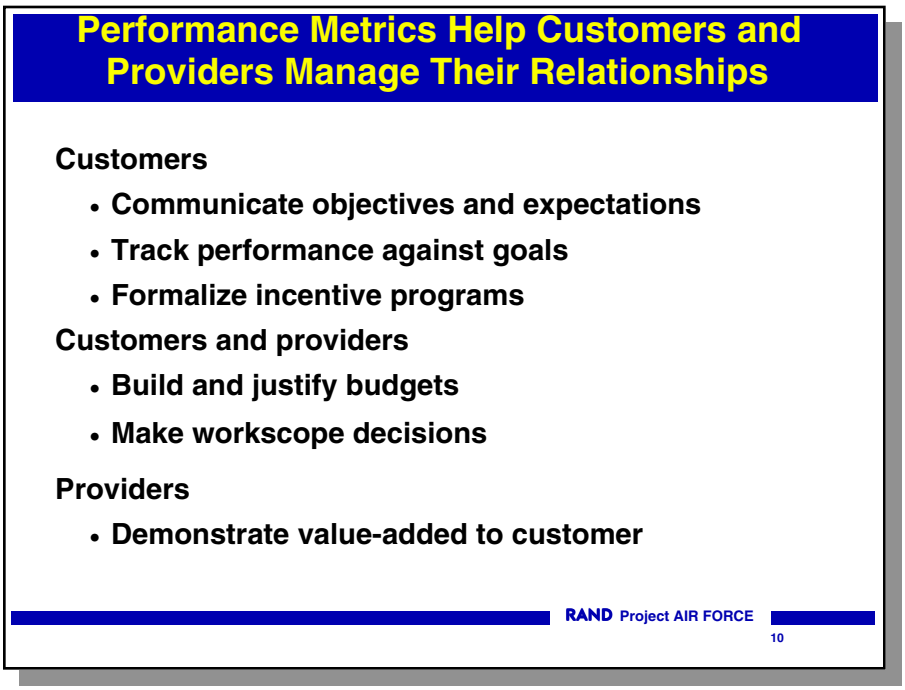
identify any outstanding liabilities associated with environmental, product liability, or worker safety issues.

especially concerned that the source selection process be objective, because many of the prospective providers were also clients. The corporate leaders wanted to minimize the risk of those providers that were not selected taking their business elsewhere because of perceived biases in the source selection process.

As mentioned earlier, customers may use different metrics to provide information during the various stages of the sourcing process. This is illustrated by the customer firm discussed above that did not include cost in its source selection criteria. This firm's primary reason for outsourcing its facility management services was to reduce its expenses because it faced a dramatic cut in the facilities budget that it could not satisfy within the required time frame with its in-house organization. However, once it determined that external providers could maintain services at the reduced budget level, the firm chose the provider that best met its performance needs. The quality of services and ability of the provider to meet future needs entered heavily into this customer's selection criteria because of the firm's reliance on data centers and the importance of the appearance of the facilities to clients who visited its offices.



Customers and providers each use different performance metrics in a variety of ways to help them manage their relationships with one another.

Customers use performance metrics and the associated goals to communicate their objectives and expectations to their providers. The metrics themselves indicate the dimensions of performance that most directly contribute to the customer's strategic goals, and the goals convey information about the level of performance that the customer expects in those areas. For example, a customer concerned about lost employee productivity because of facilities problems (e.g., burned-out light bulbs) may track cycle time for unscheduled maintenance. The goal for this metric would then convey the maximum amount of time that is acceptable for employees to wait for a service request to be satisfied. Once the metrics and goals are in place, customers use them to track whether their providers are meeting their expectations and needs. In the next chapters, we provide details about how firms choose metrics and goals and about their processes for reviewing performance.

Customers sometimes use metrics to create formal monetary incentives for their providers; however, we observed this less often than we had

anticipated at the beginning of the study. Instead, the primary use of metrics seems to be to provide information that the customer and provider use to improve performance and reduce cost over time. Several customers told us that they hesitate to tie metrics to award fees because of the difficulty of choosing a set of metrics that conveys priorities without leading to distortions in provider performance.[12] For example, too much emphasis on building maintenance activities may lead a provider to forgo some grounds-keeping activities, such as fertilizing and pruning shrubs, that its customer values. It is especially difficult to choose an ideal set of metrics at the beginning of a long-term relationship. Given these challenges, we see firms selectively attaching incentives to overarching measures such as cost savings, e.g., sharing savings above a threshold level, and overall customer satisfaction, e.g., a bonus based on achieving a target level of customer satisfaction.[13] These metrics are likely to be relevant throughout the duration of a contract. Those customers that chose not to tie metrics to award fees used other tactics to create incentives for their providers. Many providers told us that the possibility of a customer renewing a contract without rebidding it or expanding scope without competing the additional work is a powerful incentive to meet and exceed customer expectations.

Several customers noted that facility management services are often at the top of the list when corporate leadership looks for areas to cut costs. Customers in these situations use performance metrics to help justify the cost of providing a given level of services. One customer that participates in a broad benchmarking exercise uses the benchmarking results to demonstrate to its corporate leaders that its costs are low and that the level of facilities services will have to drop if budgets fall. Similarly, providers use metrics and

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[12] The principal-agent literature formalizes the difficulties associated with incentive contracts. Holmstrom and Milgrom (1991) derive optimal contracts for agents that perform several distinct tasks for principals or have a single task with multiple dimensions. They demonstrate that a fixed wage contract that is independent of measured performance of a certain activity can be optimal when it is difficult to measure performance of other activities that compete for the agent's time and attention.

[13] However, even simple measures like cost savings can lead to distortions. For example, placing too much emphasis on the current cost of providing facilities services may lead a provider to forgo preventive maintenance (thus increasing long-term costs) that its customer would be willing to pay for.

benchmarking results to justify their budgets to their customers.[14] However, the metrics customers and providers use to justify budgets may be very different. The metrics providers use for this purpose may contain much more detail about operations than customers convey to high-level corporate leaders. For example, a customer manager may use benchmarking results on the costs of centralized facilities call centers to demonstrate to corporate leaders that its cost compares favorably with similar firms. The provider may use call volume and hold-time metrics to justify its call center staffing level to the customer project manager.

Customers and providers also use metrics to realign workscope with the budget when funds are unexpectedly short or plentiful. If budgets are cut midyear, metrics help both customer and provider project managers make informed decisions about which activities can be scaled back or eliminated, e.g., carpet cleaning or painting. Similarly, metrics help identify activities that would most benefit from any additional funds, e.g., cosmetic services that would increase customer satisfaction or preventive maintenance that was previously eliminated from the workscope.

Finally, providers use performance metrics to demonstrate how they have added value to the customer organizations. More than one provider said that their best project managers are attracted to those customers that effectively use performance metrics because metrics enhance a manager's ability to understand and meet or exceed his/her customer's expectations.

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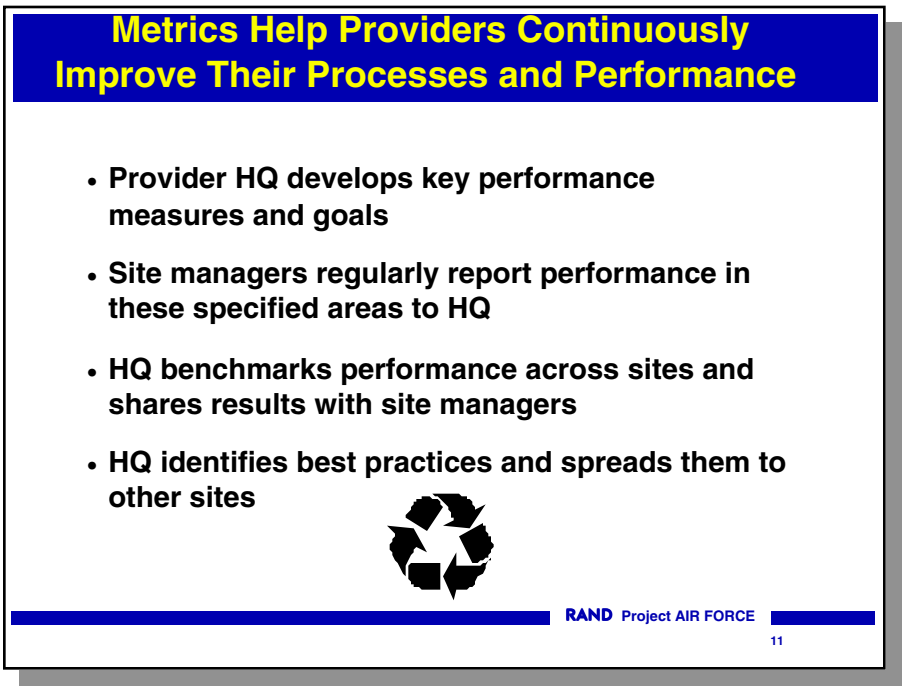
[14] Although nomenclature differed (e.g., fixed price, cost plus, or time and materials), many of the commercial facility management contracts can be characterized as follows. A contract generally has a fixed annual budget that the provider cannot exceed, and the provider is not obligated to spend the entire amount. Expected prices for materials and labor are used to construct the budget, and actual prices determine provider expenditures. The provider receives a fee that is exogenous to expenditures.



Performance metrics help provider firms implement a process to continuously improve performance over time. Continuous improvement is a never-ending process of identifying underperformance of a service, identifying and fixing the root causes of the poor performance, and then looking for the next opportunity. Providers use metrics to identify performance constraints or outliers, "drill down" to understand how to improve processes, and verify improvements in performance over time.

This chart outlines a generic continuous improvement process that we formed based on a combination of several providers' process improvement practices. First, staff in the corporate headquarters of the provider organization work with site managers to identify the important dimensions of providing a service and to develop performance measures and associated goals for these key performance drivers. This communicates to all site managers those areas of performance that are most important for demonstrating value-added and satisfying customer needs. Next, site managers report at specified time intervals their performance in these areas. One provider goes through this process quarterly. Third, corporate headquarters staff compile information to benchmark performance across

sites.[15] This information is shared with all site managers. Finally, headquarters staff use metrics to investigate variances in performance across sites. For example, if at one site the provider does not fulfill new orders for services as quickly or accurately as it does at others, headquarters may check the accuracy of the data systems or segment times for specific parts of the order fulfillment process. When variances result from process innovations, headquarters staff share those innovations with management and staff at their other sites. Because of the difficulty of finding "apples-to-apples" comparisons in benchmarking exercises, even among one provider's customer sites, the last step is crucial to the success of a continuous improvement program.

To the extent that problems are brought to light while "drilling down" to understand variances, metrics help site managers know where to concentrate limited training resources. In some cases, corporate headquarters may send a team to help a site manager improve.

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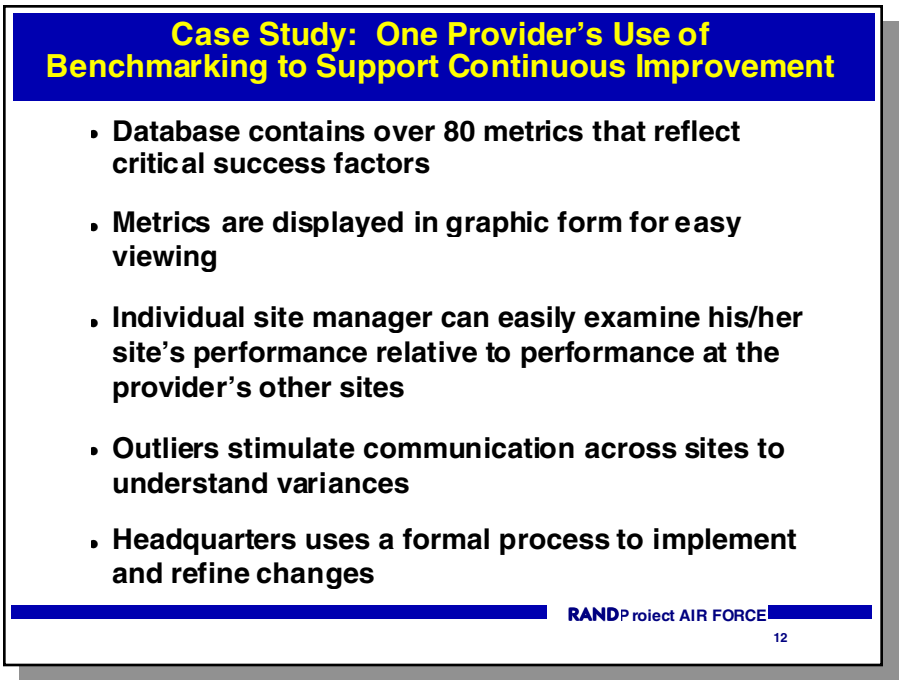
[15] Performance is also compared with organizations that are not customers of the provider, even competitors.



We next examine more carefully one particular provider's continuous improvement program. This commercial firm provides third-party facility management services to many commercial buyers at many sites. The buyer at each site requests a different bundle of services. To help manage these services and improve them over time, the provider maintains a comprehensive database of over 80 metrics that reflect seven dimensions of performance that the company has identified as critical to success across a range of services: customer service, marketing and leasing, maintenance and engineering, administration, human resources, accounting and reporting, and construction management. Some metrics measure dimensions of performance directly relevant to the customer at each site. Others measure key processes the provider uses to generate this performance. Current and historical information on these metrics can be accessed via the internet through a company home page for each site. The metrics are displayed in graphic format for easy viewing and are normalized for comparison across sites where appropriate.

This database, which is updated monthly, supports day-to-day management at each site and longer-term efforts to improve performance.

On a day-to-day basis, the database is a source of information to calculate the selected metrics that the customer has requested for regular reporting. The provider can also compare more-detailed metrics internally to verify that its processes are working as expected. Corporate headquarters can use the database to compare performance at different sites as part of its ongoing effort to compare and reward its managers with bonuses or future career opportunities.[16]

Longer-term improvement can flow from informal and formal corporate efforts to change performance. Informally, on a routine basis, a site manager can easily examine performance at his/her site over time and compare that performance with other company sites. Headquarters staff hope that easy access to cross-site benchmarking information will stimulate communication across sites as managers seek to understand variances in results along specific performance dimensions. Of course, not all metrics are relevant to all sites, depending on the services provided in each case.

More formally, headquarters can introduce a new practice and use the database to measure the effects of the change. A new practice might be a new training program, a centralized call center, or a new preventive maintenance program. This provider uses a formal process to introduce a change at one or more sites. The first step in this provider's program is to design a practice for providing a given service and an execution plan for its implementation. The second step is to train its employees to execute the practice. The third step is to implement the practice at relevant customers' sites. The fourth step is to use the database to measure performance across sites. The fifth step is to audit processes at sites to understand variances in performance. Two regions are randomly chosen for third-party site audits each year. Audits seek greater detail than the database routinely reflects. The detail sought is tailored to the variances observed. When a change has been made, audits carefully track implementation to verify that the change is proceeding as planned. The sixth step is to repeat the process by redesigning the practice as needed to take advantage of process improvement.

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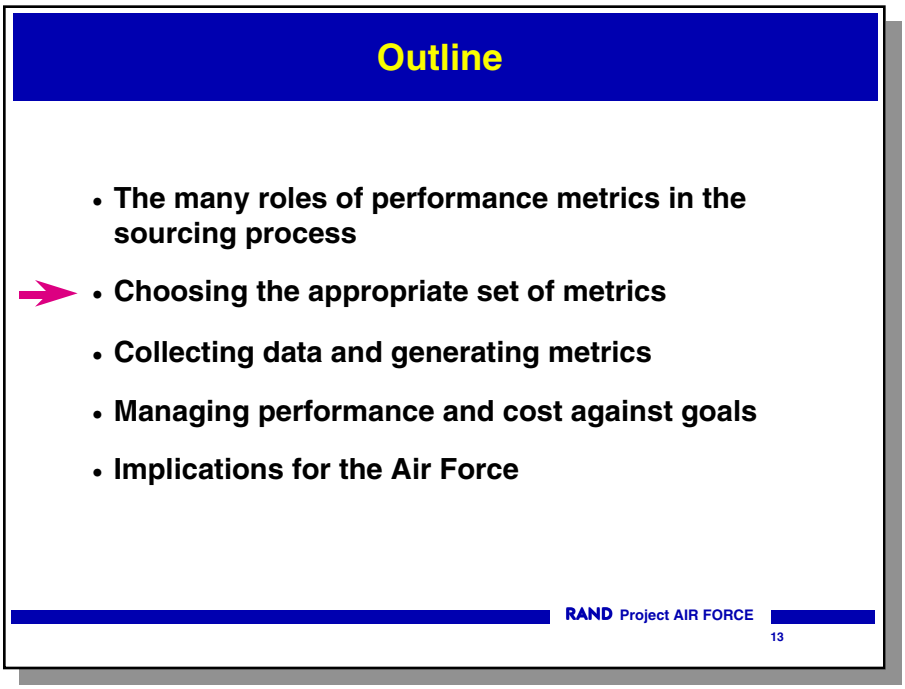
[16] In addition, this benchmarking data can help the provider bid more accurately in competitions for new work.

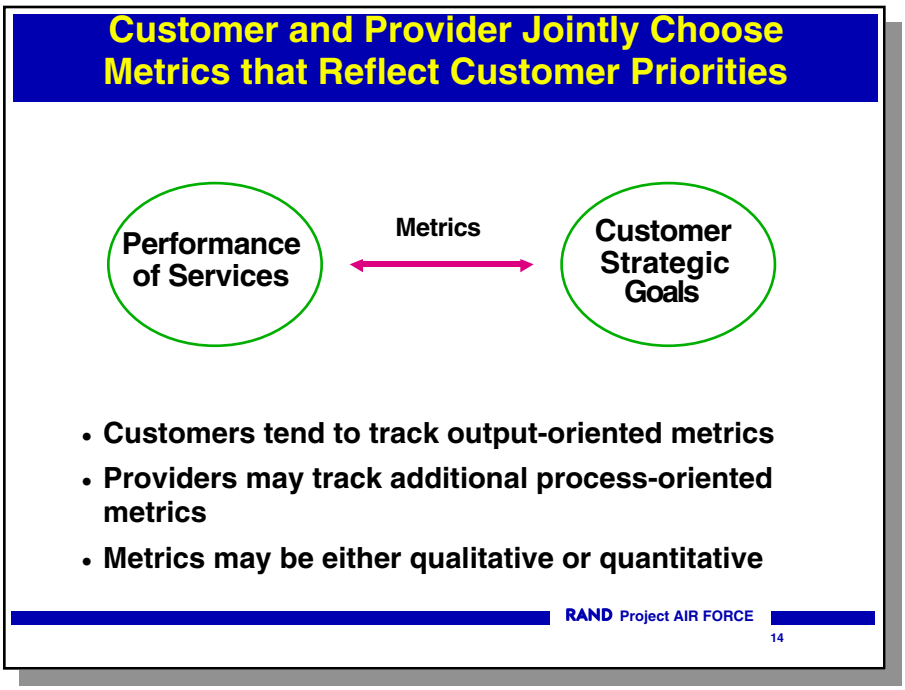
3. CHOOSING METRICS



The next three chapters address the metrics that customers and providers use to manage their partnership relationships. In this chapter, we discuss how firms choose the best set of metrics. We examine the process that customers and providers go through to choose performance metrics that align the priorities of the provider with those of the customer, the characteristics of these metrics, and patterns in the use of metrics. Finally, we offer some examples of metrics that we observed during our site visits with customers and providers of facility management services.

The focus of this chapter is on metrics used to manage the customer/provider relationship, but many of the principles apply to metrics used earlier in the sourcing process.[17]

[17] Appendix B contains examples of metrics used in the source selection decision as well as metrics used to manage the relationship.



Commercial customers and providers of facility management services often sit down together to choose the set of metrics that they will use to govern their partnership. A customer that does not have a program in place to measure the performance of its in-house provider organization or that is not happy with its internal measures may begin with the standard group of metrics tracked by its chosen provider and then add and/or subtract metrics from that list as needed. This exercise is often referred to as the *alignment process* because the objective is to choose metrics that accurately reflect those dimensions of performance and cost that are most important to the customer. Such metrics link the performance outputs of facility management services with both the short-run and long-run strategic corporate outcome goals of the customer.[18] Because of customers' unique goals and priorities, metrics differ across customer/provider relationships.

[18] Typical overarching outcome metrics of the customer firm include profitability, market share, customer satisfaction, customer retention, employee satisfaction, employee retention, and employee productivity. In contrast, output metrics reflect the performance of those activities, such as facility management services, that enable and/or drive the core firm outcomes. Whereas outcome metrics are lagging indicators of the firm's performance, output measures are leading indicators. Kaplan and Norton (1996) provide a detailed discussion of

During our interviews, several customers discussed the link between their metrics and their strategic goals. The corporate leadership of one customer firm was especially concerned about increasing its use of small businesses and minority- and women-owned businesses because the firm operates in a regulated industry. To promote this, the customer set goals for its providers to do a certain amount of business with these firms at its sites. The providers have been able to meet and exceed these goals over time. When another firm with an extremely large campus outsourced the provision of its food services, its primary concern was to provide appealing lunch options for its employees to keep them on-site and productive. Thus, the food service provider was evaluated on the employee participation rate and customer satisfaction. Another customer firm with facilities spread across several states has regional providers that manage a wide range of services. Because this customer was concerned that its regional providers, which are competitors in other situations, might not partner with one another for the good of their customer, the customer tracks metrics that indicate how well its providers communicate and share best practices among themselves.

During our interviews, we discerned several other general characteristics of metrics used to manage the customer/provider relationship. Many customers, especially those that have transferred a significant portion of the management responsibility to their providers, prefer to track output-oriented metrics rather than the details of provider processes. One customer firm told us that it set up partnerships with world-class providers and then adopted a "hands-off" policy. It closely tracks the level of performance of the services provided, but it does not worry about the processes the providers use to meet performance goals. For example, it tracks the performance of scheduled preventive maintenance but not how often provider technicians visit each building. However, some customers are not comfortable relying only on output-oriented metrics. These customers expressed concerns about their ability to define and measure outputs for all activities. This difficulty leads them to use a mixture of output- and process-oriented metrics. One high-technology firm uses both types of metrics for food services, tracking

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the different categories of metrics. The interested reader should note that they use the term performance measures to describe those that we refer to as output metrics.

fulfillment of specific menu guidelines (e.g., number of entrée choices offered) in addition to customer satisfaction.

Providers use many process-oriented metrics in addition to the output metrics that their customers track. These process-oriented metrics help diagnose the underlying causes of poor performance and are an integral part of continuous improvement programs.[19] For example, slow cycle times for work orders could arise from any number of problems such as high absentee rates for technicians, poor inventory management practices for parts, or an inefficient reporting system. Process-oriented metrics help providers isolate problems and target resources to correct them.

Finally, customers and providers commonly track both qualitative and quantitative metrics. The most common example of qualitative metrics are those that track customer satisfaction, such as overall satisfaction with services provided or satisfaction with the execution of a particular work order, e.g., replacing missing ceiling tiles. An example of a quantitative metric is the percentage of preventive maintenance activities that are completed on schedule.

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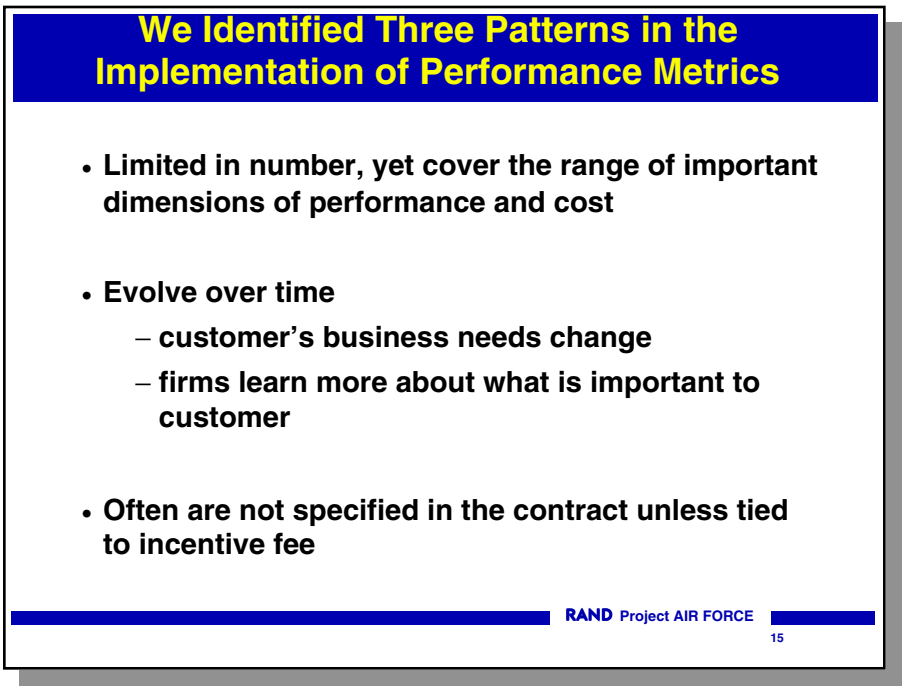
[19] Kaplan and Norton (1996) refer to these process-oriented metrics as diagnostic measures.



During our site visits, we discerned that there are several patterns in the implementation of performance metrics used to manage the relationship between customers and providers of facility management services. First, customers tend to focus on a few key metrics for each service provided in order to easily convey to providers those dimensions of performance that are most important.[20] For example, virtually every high-technology customer that we interviewed told us that it measures the cost of employee moves. This is an important dimension of facilities performance for high-technology firms; these firms move their professional staff frequently as project teams repeatedly form and disband because of the short-lived nature of most projects. One provider told us that its customers typically specify two to four metrics per activity or service. However, the customer must be careful to ensure that the set of metrics for any service or group of services is large enough to cover the entire range of important performance dimensions.

As part of the process of aligning customer and provider priorities, the set of metrics used by a given customer and provider is refined throughout

[20]However, one customer we interviewed chose to measure virtually every aspect of cost and performance.

the relationship lifetime. Metrics evolve over time as the provider and customer learn more (from experiences both inside and outside of the partnership) about which aspects of performance contribute most to satisfying the goals of the customer or as the business needs of the customer change.[21] This evolution is especially important for measuring those services that are difficult to specify, such as landscaping. One customer told us that it has refined its performance measures for landscaping services to reflect the importance of appearance across different outdoor "zones." Another customer told us that it examines its metrics over time to make sure that each continues to add value. It eliminates those metrics that no longer add value and adds new ones as priorities shift. As will be discussed below, ongoing communication between a customer and its provider creates opportunities to refine and update the set of metrics used to manage the relationship.

Finally, to create the flexibility to adjust metrics over time, many customers separate the specific metrics that they will use to manage their partnerships from their contracts with providers. In place of specific metrics, one provider recommends inserting a clause in the contract that indicates that the customer and provider will reach an agreement about a set of metrics to track over time and how those metrics will be reported to the customer. However, some customers do specify an initial set of metrics in the contract and then either modify the contract to adjust those metrics or informally change them over time outside of the original contract.[22] When a customer does leave metrics out of the contract, it reaches agreement about initial metrics with its provider soon after the contract is signed.

There is one circumstance in which the customers and providers we interviewed unanimously elected to formally specify metrics in the contract: when those metrics were directly tied to provider compensation. However, as noted earlier, many customers and providers avoid formalizing incentives with performance metrics because of the difficulty of coming up with the perfect set of metrics that accurately reflects all the important dimensions of performance at the very beginning of their relationship. One provider said that it had to dismiss several project managers who performed well according

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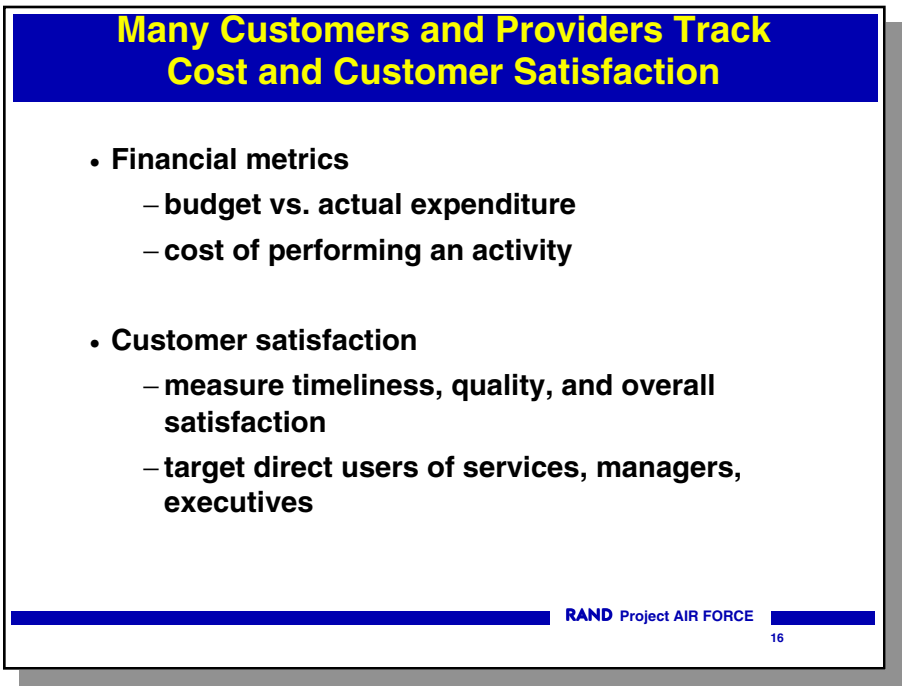
[21] See also Courty and Marschke (1997).

[22] Some customers have hybrid approaches in which some metrics are included in the contract and others are determined outside of the contract.

to metrics but ignored other aspects of performance that their customers valued (which led to low customer satisfaction ratings).

The next three charts provide examples of metrics that many of the customers and providers we interviewed use to manage their relationships.

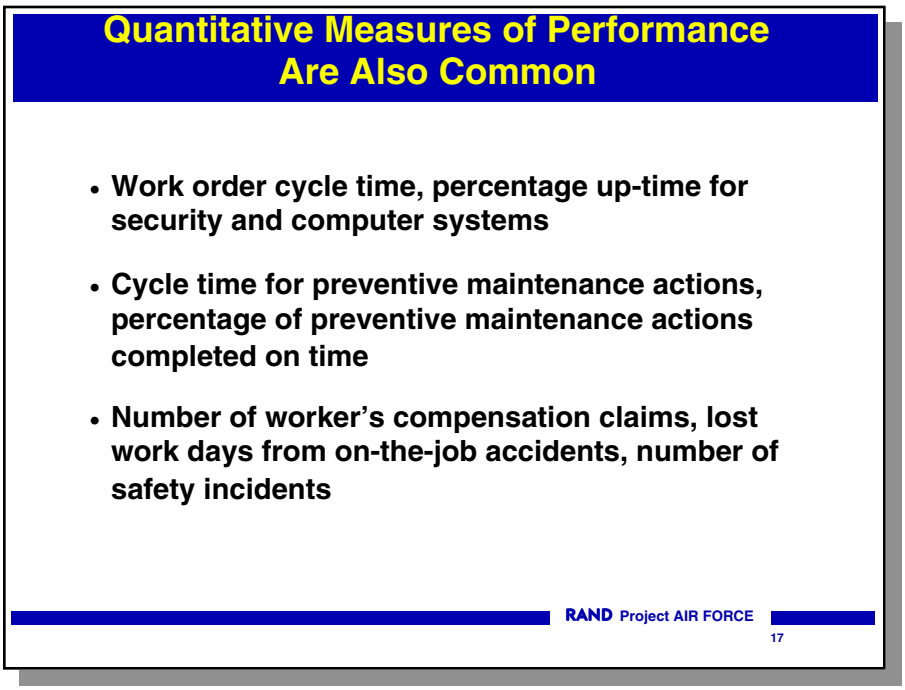


Although the specific metrics vary across customer/provider relationships, several topic areas were common to many of the firms that we interviewed. Two kinds of metrics that we observed frequently are financial metrics and customer satisfaction metrics.

Common financial metrics include those that track the actual expenditures of the provider against the facilities budget and the cost of performing a given activity. Because the demands for facilities services can be difficult to predict, at least one customer that we interviewed said that it tracks expenditures against the budget monthly so that the scope of work can be adjusted up or down as needed to stay within the budget. Several customers said that they try to take advantage of budget underruns by adding out-of-scope work or expanded services such as additional preventive maintenance. Customers and providers also track the cost of performing key activities as part of benchmarking exercises. Building maintenance and utility costs per square foot are commonly measured across sites for such studies.

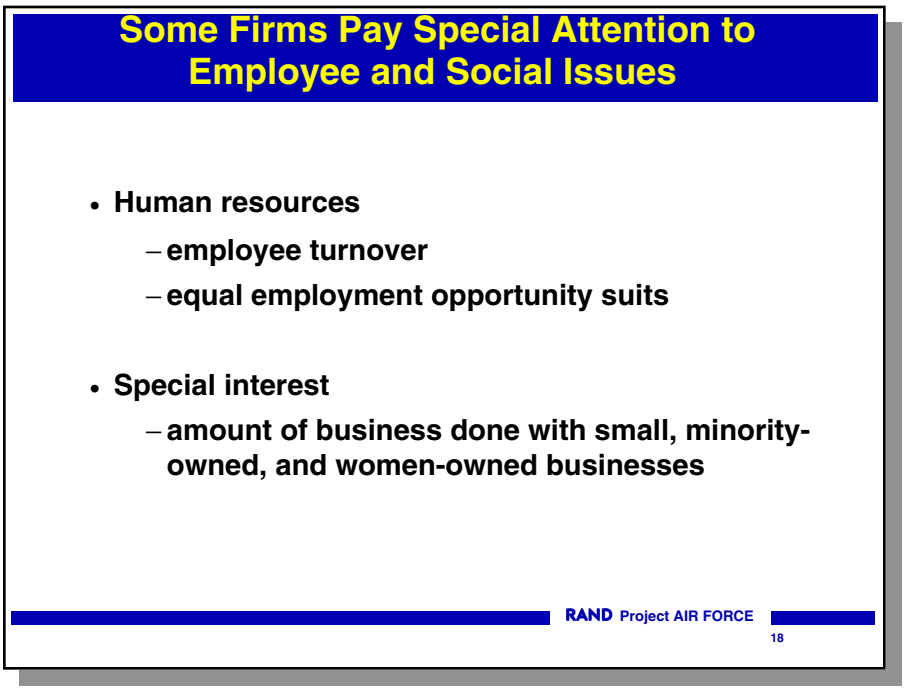
Innovative customers and providers have constructed many different measures of customer satisfaction. Customer satisfaction is measured for

different groupings of services, from the overall package of services provided down to specific services such as cleaning break rooms. Also, firms measure many dimensions of performance; a few that were mentioned often in our interviews are overall performance, timeliness of services, quality, manners of the technicians, and responsiveness to change. Finally, satisfaction may be measured at multiple levels in customer firms, from the direct users of services such as the staff member who requests a new light bulb, to the project manager who oversees the provider, to the high-level leaders in the firm.



In addition to financial metrics and qualitative customer satisfaction metrics, all of the customers and providers we talked to track quantitative metrics that target performance of specific services. Examples of output-oriented metrics are the cycle times to complete work orders and the percentage of time security systems are operational. One customer tracks the percentage of up-time for the computers at its data centers. Providers also track process-oriented metrics like the percentage of preventive maintenance tasks that are completed on schedule and cycle times for preventive maintenance tasks.

Many customers and providers emphasize their commitment to safe work environments by tracking safety-oriented metrics. Frequently observed examples include the number of worker's compensation claims, the number of lost work days from on-the-job accidents, and the number of safety-related incidents during a specified time period.



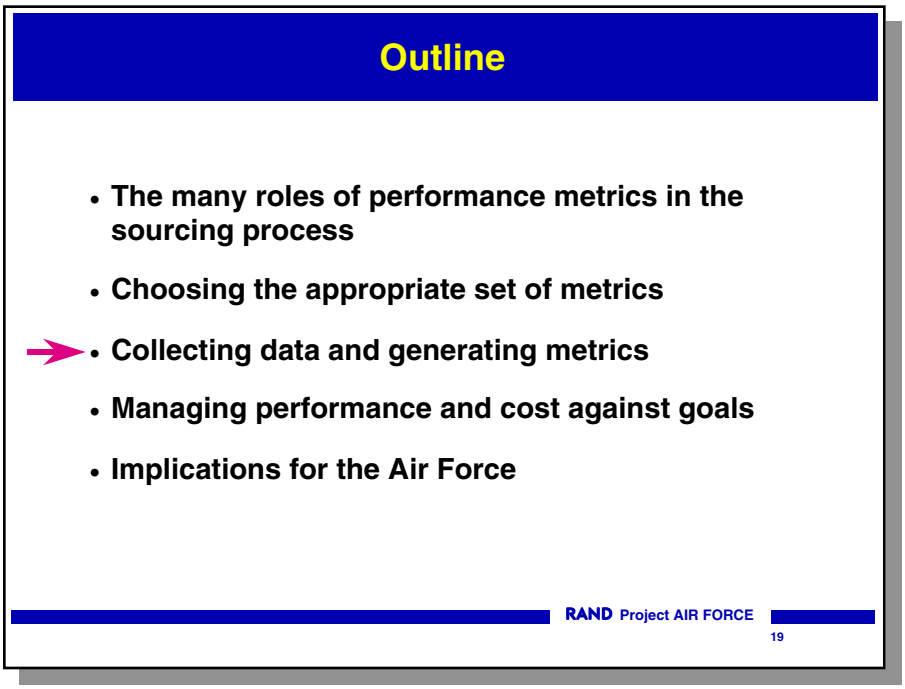
In addition to metrics that directly target the cost and performance associated with the provision of facility management services, a subset of customers is interested in monitoring how well their providers address human resources (HR) issues and special-interest social issues. Customer interest in tracking these kinds of metrics appears to stem both from the effect human resources policies and practices have on the provision of services and from an interest in forming a partnership with a provider whose culture closely matches its own.

Many customers are interested in tracking employee turnover because they believe the performance of services that involve higher levels of skills, institutional knowledge, or personal interaction with customer employees benefits from stable workforces.[23] Customers also track providers' implementation of human resources policies through metrics such as the number of equal employment opportunity suits filed against the provider organization.

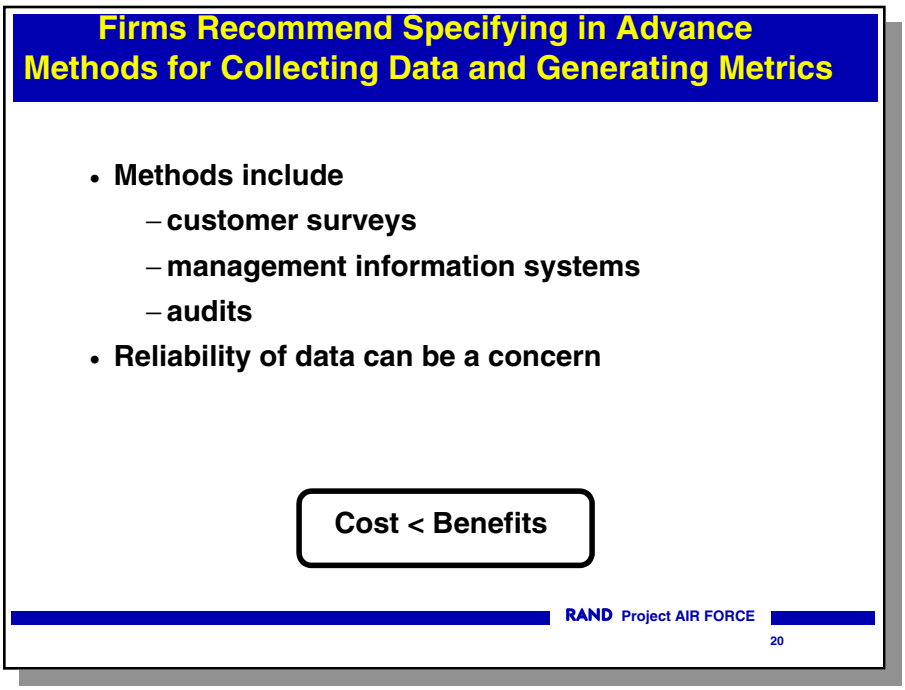
[23]A stable workforce also helps create a more safe and secure working environment.

One provider told us that special-interest metrics are tracked less often than other kinds of metrics; however, we observed that many customers are interested in the amount of business their providers do with small, minority-owned, and women-owned businesses, either at a particular site or companywide. This is especially true for those customers that do business with the government or are in regulated industries such as banking.

4. COLLECTING DATA AND GENERATING METRICS



In this chapter, we discuss how customers and providers collect data to generate metrics. Again, we examine those metrics used to manage the relationship between a customer and its provider.



Choosing the set of metrics that will be used to manage the customer/provider relationship takes careful consideration. Customers and providers emphasized the importance of understanding how the data to support potential metrics would be collected and how the metrics would be generated. This avoids wasted time arising from unrealistic expectations about the use of metrics that might lead to disputes.[24]

There are several ways in which customers and providers collect data to generate the metrics that they track, including customer surveys, management information systems, and audits. The next several charts discuss each of these in detail.

Virtually every firm that we interviewed said that it has trouble collecting accurate data necessary for the generation of useful metrics.[25]

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[24]Although specific metrics to manage the relationship may not be chosen until after the contract has been signed, the customer and provider should have a fairly good idea about the general categories of metrics that will be used. Based on this, the firms can discuss methods for collecting data and generating metrics early in their relationship.

[25]Many facility services contracts are variants of time and materials contracts. Thus, providers indicated that they are concerned about accuracy of cost data, such as the number of hours provider employees spend working at a customer site and materials used at a customer site, for contract reimbursement, in addition to generation of useful metrics.

However, firms have increased the accuracy of their data through such methods as automation of the data collection process. As will be discussed below, the use of bar-code scanners virtually eliminates the need for technicians to enter data by hand. One provider added a manager at one of its best customer's site to help improve data entry. This person reinforced employee responsibility for data accuracy by tracking errors back to individuals and reporting those errors to their supervisors. This provider emphasized the key role that communication plays in improving data accuracy. Not only is it important to track errors and hold people accountable for them, it also is important to communicate to employees how others (whom they may never see) use the data that they enter.

As customers devolve more and more of the management of services to external providers, they rely more heavily on output information furnished by those providers. Several firms we spoke with indicated that they took steps to satisfy themselves that they can trust metrics generated by their providers. As will be discussed below, customers spot-check providers' work and perform their own customer-satisfaction surveys. They also periodically audit their providers' data collection and metrics generation processes.[26]

Finally, firms emphasized that the cost of generating accurate metrics should never outweigh the benefits associated with those metrics. The generation and examination of metrics are costly to both customers and providers, and firms try to eliminate those metrics that do not add value above the associated costs. We return to this point in the next chapter.

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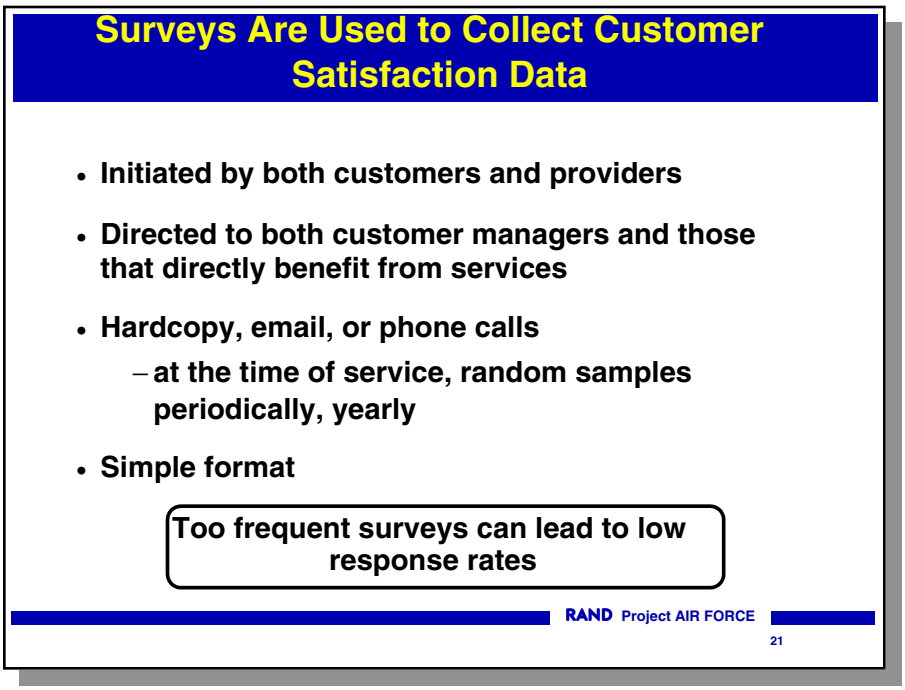
[26] Customers may perform the audits themselves or hire consultants.



We observed heterogeneity in the processes firms use to conduct customer satisfaction surveys. This heterogeneity is an indication that innovative firms are still experimenting, trying to determine the best methods to generate the information they need to evaluate and improve performance.

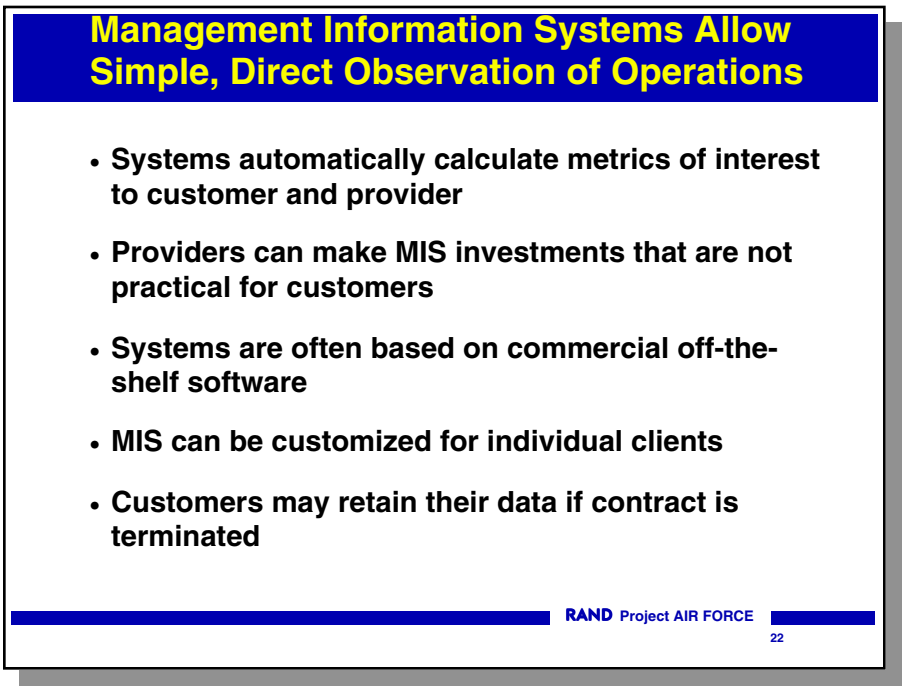
Both customers and providers conduct customer-satisfaction surveys.[27] Providers use the surveys both to satisfy customer requests for information and to track the performance of the site team, of individual staff, and of their subcontractors. Customers conduct their own surveys to verify the level of performance reported by their providers. These surveys target personnel at several levels of the customer organization—the end users of the services such as the occupants of a building whose heating and cooling systems are maintained by an external provider, the project manager who maintains the relationship with the provider, and corporate leaders.

Customers and providers collect information through hardcopy, email, or phone surveys, or through some combination of these. Firms time their

[27] None of the firms we interviewed had outsourced their customer-satisfaction surveys.

surveys to target different groups. Some firms ask the technicians to leave survey cards with the end user each time a service request is completed or send email shortly thereafter. Others send surveys several times a year to random groups of customer employees. One provider surveys customer managers yearly. Customers and providers tend to agree that effective surveys have simple formats and easy-to-answer questions.

Many customers and providers seem to be aware of the dangers of conducting excessive surveys. Several firms told us that they redesigned their survey strategies after experiencing low response rates associated with surveying customer employees too frequently. However, other firms seem to be unconcerned about this issue. One customer/provider group that we talked with indicated that each firm surveys employees in multiple parts of the customer's organization frequently. It even appeared that these firms have overlapping surveys.



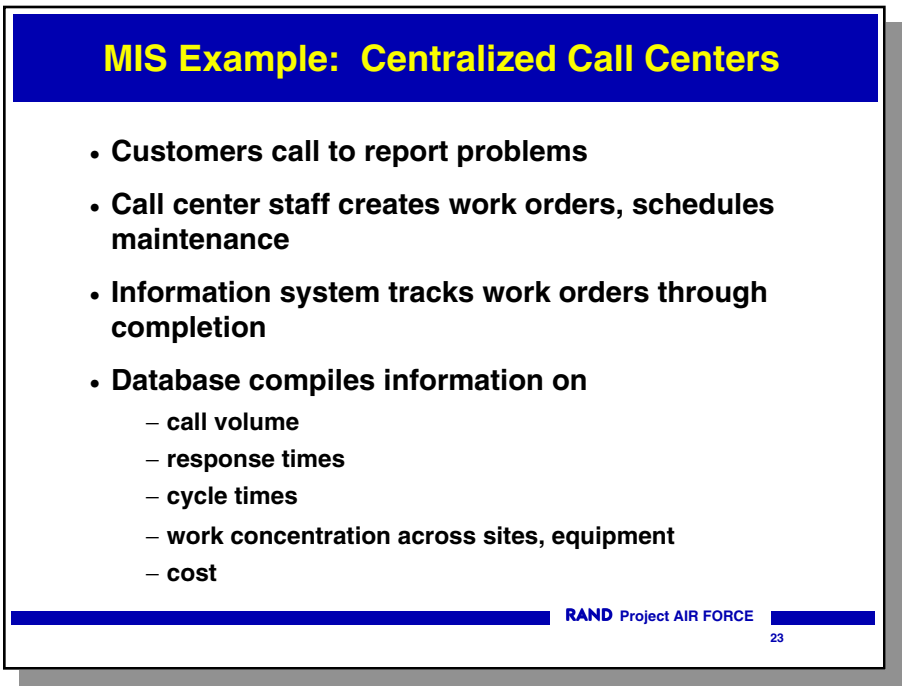
As discussed above, leading providers of facility management services use management information systems (MIS) to automate the collection of data and the generation of operational metrics that are of interest to providers and their customers. Customers use this information to track provider performance, and providers use the information to improve processes and control costs.

Customers generally do not have internal MIS capabilities that are as sophisticated as those of external providers because of the large investments required to sustain these systems. A customer remarked that one of its providers invests $5–$10 million each year in its MIS. Customers cannot afford to make such investments in tools that support noncore activities, whereas a single provider can leverage an investment in its MIS across multiple customers.

Provider MIS tend to be based on commercially available software, although these systems vary across providers. Some systems are more powerful and complex than others, and some have been customized. In fact, MIS capability is one of the primary ways facility management providers differentiate themselves in the market.

Some providers can tailor their MIS to the particular needs of their customers. For example, the metrics database described above in the case study can be expanded to include metrics requested by that provider's customers. Even though the systems themselves generally are proprietary, customers can build into their contracts the right to retain their own data, should the relationship end for any reason.

The next two charts discuss two types of MIS that are used by several large, world-class providers.



Many large customers use centralized call centers to manage internal requests for facilities services.[28] Often, a customer's call center is operated by one or more of its provider organizations, although some firms have chosen to keep this function in-house.[29]

The concept behind the centralized call center is as follows. A customer employee calls a single phone number to report a facilities problem such as a clogged drain in a restroom or a pest control need; the call center staff records the problem, tasks the appropriate service provider (either internal or external), and tracks the work order to completion. A single database records this information, including time stamps, the affected equipment, the cause of the problem, materials used, and the services provided.

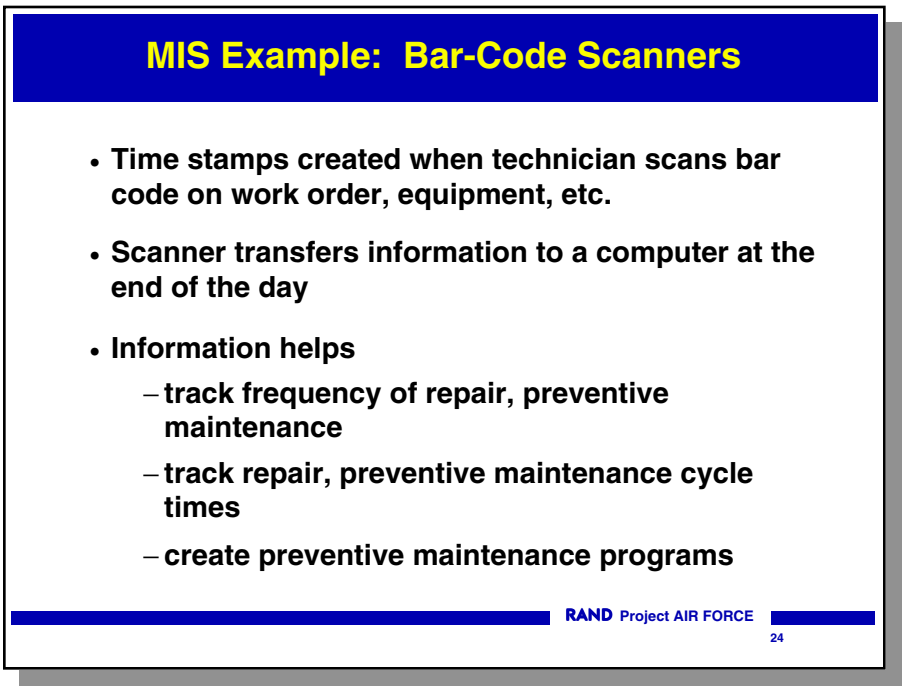
Customers and providers use call center databases to track the following kinds of metrics: the volume of calls, response times to those calls, cycle times for work orders, the distribution of problems across locations,

[28]Several large providers mentioned plans to implement additional call centers that can be shared by several small customers.

[29]Presentation on "Outsourcing the Facilities Help Desk at the World Bank—Panel Discussion," International Facility Management Association (IFMA), Dallas, October 1997.

frequency of problems associated with specific pieces of equipment, and the cost associated with the problems observed.

One customer has a call center for each of the three regions of the country in which it has offices. These centers handle all requests for services that cost less than $500. Together, the three call centers receive a total of 225,000 calls per year. The associated databases allow the customer and providers to manage both performance and costs. For example, they use the information generated about repeat repairs for individual pieces of equipment to make repair-vs.-replace decisions and to fine-tune the preventive maintenance program. This customer believes that its call centers have resulted in higher-quality services at lower costs.



Many large providers are implementing bar-code scanner technology at the sites of their largest customers. These scanners essentially eliminate the need for field technicians to record information by hand. Instead, a technician scans a work order, creating a time stamp marking initiation of work. The technician also scans the piece of equipment to be serviced, recording the serial number and type of equipment. Parts are scanned to record materials used to perform the work. After completing the service, the technician scans the work order again to create a closing time stamp. This information is then either transmitted or downloaded into a computer at the end of the day. The technician no longer needs to manually keep track of his/her time or the materials that he/she uses during the day. Providers indicate that this technology has increased data accuracy immensely.

Providers use this information to track the frequency of repair of specific pieces of equipment, whether preventive maintenance is taking place according to schedule, and the cycle times for repair and preventive maintenance. This information can then be used for purposes such as

designing preventive maintenance schedules for the customer and determining a budget for the work.[30]

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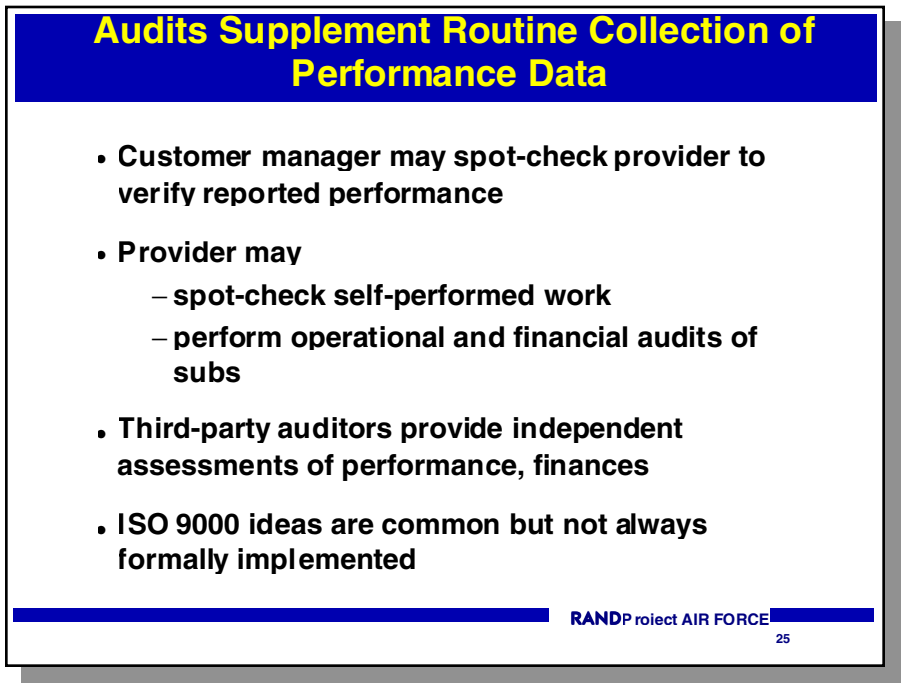
[30]More than one firm expressed some doubt that the benefits of bar-code scanner technology outweigh the high costs. One provider told us that the cost of each bar-code scanner (wand) is $790. This provider supplies each technician per shift with a scanner. The link between the scanner and a computer is $122 per scanner, $30 for the cable. The complete computerized work order and preventive maintenance software system is $1990 for the first user and $950 for each additional user. In addition, all customer equipment would have to be equipped with a bar-code, plus all equipment would have to be entered into a master database for reference. This is still a somewhat controversial application of technology in the facility management industry. Nonetheless, we expect the cost of this technology to fall over time, making it more cost-effective.



Customers and providers of facility management services often collect data through visual, operational, and financial audits to use in managing their relationships. These audits are performed by the customer, provider, a third-party organization, or some combination of these.

First, customer managers may spot-check the performance of their provider to verify that the services provided are of the quality reported in their metrics. For example, one customer walks the grounds periodically to check the quality of the landscaping work. As discussed above, such checks are especially useful when the provider is in charge of collecting the data that is used to generate the performance metrics.

Next, managers of the provider organization may do similar spot-checks of work that is self-performed or subcontracted. Providers may also perform operational and financial audits on their subcontractors.[31] One provider that self-performs most activities but contracts out some services such as custodial

[31]Operational audits are similar to financial audits. An operational audit may consist of measuring the quality of the output of processes or sampling processes to make sure that the actual implementation of processes matches company policy.

work, performs operational audits on its custodial subcontractor. This provider has a formal process for performing these audits.

Finally, both customers and providers hire third-party auditors to provide independent assessments of performance and financial status. This same provider employs two separate auditors to evaluate the provision of food services by its subcontractor. The provider told us it feels more comfortable having multiple assessments of performance in such an important service area. Another provider that subcontracts out most services hires a third-party auditor to perform surprise audits at its sites. One customer hires one of the large accounting firms to perform financial audits of its providers to verify cost information and financial practices. It uses a separate auditor to perform operational audits of its providers. This customer is faced with rapidly decreasing facilities budgets, and it uses operational audits to verify the condition of its facilities to make sure that its providers are not forgoing valuable preventive maintenance in order to stay within stringent budget targets.

We were surprised that many world-class providers of facility management services are not ISO 9000 certified.[32] When we asked why, we were told that ISO 9000 ideas are valuable, but that the process is so cumbersome and costly that they have decided not to implement it formally unless customers request it. Instead, many firms go through what appears to be a self-certification process to get the benefits of certification without the bureaucratic burden. Other more aggressive firms indicated that ISO 9000 ideas are primitive compared with their internal process documentation and audit program.

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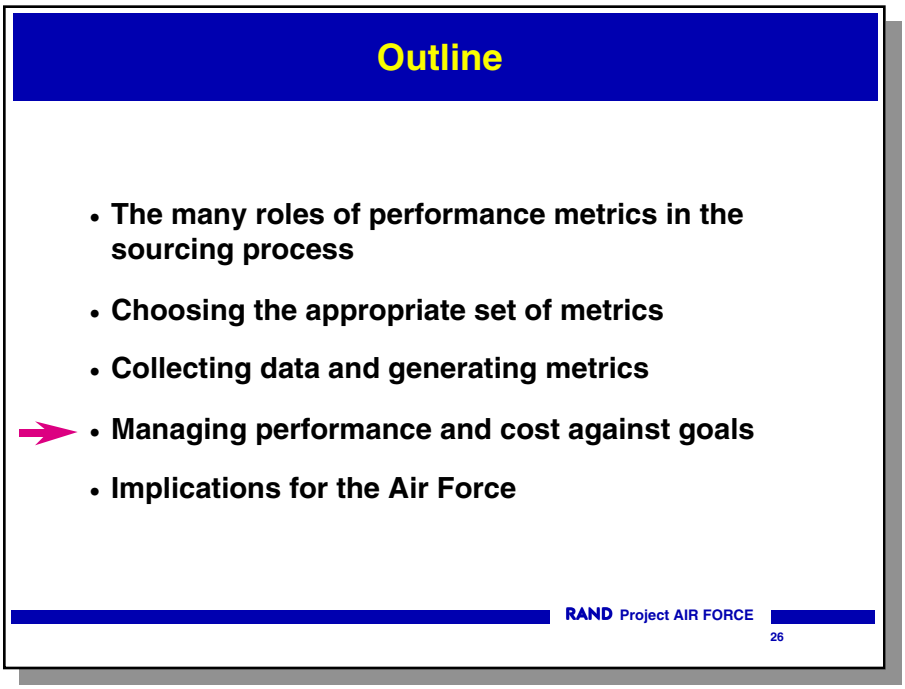
[32]The objective of the International Organization for Standardization (ISO) is to develop generic standards to promote the development of manufacturing, communication, and trade among business operations. ISO 9000 is a series of standards that define a basic quality management system that can be used in any industry, of any size, anywhere in the world (source: www.ppmfg.com/iso9000.html). See Johnson (1993) for a discussion of ISO 9000 certification.

5. MANAGING PERFORMANCE AND COST AGAINST GOALS



In this chapter, we discuss how customers and providers choose performance and cost goals and how they manage the provision of facility management services against those goals.

Innovative customers and providers combine the needs and desires of the customer with the expertise of the provider to derive a set of performance and cost goals for the metrics they use to manage their relationship. Rather than representing minimum acceptable performance outputs, these goals represent desired levels of performance and cost. Some firms take the goal-setting process a step further by differentiating between short-run and long-run goals. As the term suggests, short-run goals represent outputs the customer desires based on the current capabilities of the provider or improvements that could be made within the immediate measurement period. In contrast, long-run goals convey desired significant improvements in provider capabilities that are possible through continuous improvement programs. Firms tend to devote much of their time and resources to meeting long-run goals.

Both customers and providers noted the desirability of disassociating the goal-setting process from engineering standards for facilities activities because use of such standards as goals works against the concept of continuous improvement. Engineering standards, such as the number of technicians needed per 10,000 square feet of office space, are based on the

performance that can be expected given existing processes for accomplishing activities. Goals that represent the status quo, such as the labor cost associated with the "standard" number of technicians needed to service 10,000 square feet, do not provide motivation for the kinds of improvements that customers seek and that leading providers use to differentiate themselves in the market.

Instead, many customers and providers look to benchmarking studies to provide information about feasible improvements in performance and cost. Because of the difficulty of finding "apples-to-apples" comparisons of facilities and levels of services, firms focus on variances in performance and cost and seek to understand the sources of those variances.[33] To the extent that top performance in an activity results from process improvements or technological innovations rather than differences in facilities' characteristics or uses or the scope of services, the leading level of performance reflects a feasible goal to strive for.

Customers with facilities that have unusual uses or characteristics (such as specialized laboratories) will have difficulty comparing their own performance and cost with the results of benchmarking studies. In these cases, customers and providers may benefit from specifying performance and cost goals in terms of percentage improvements, relative to current levels, over time.

Finally, in some organizations, aggressive internal requirements set by corporate leaders drive the choice of facilities goals. As discussed above, one customer's primary motivation for outsourcing its facility management services was an upcoming cut in its facilities budget. The performance and cost goals for this firm's chosen providers were driven by the budget reduction.

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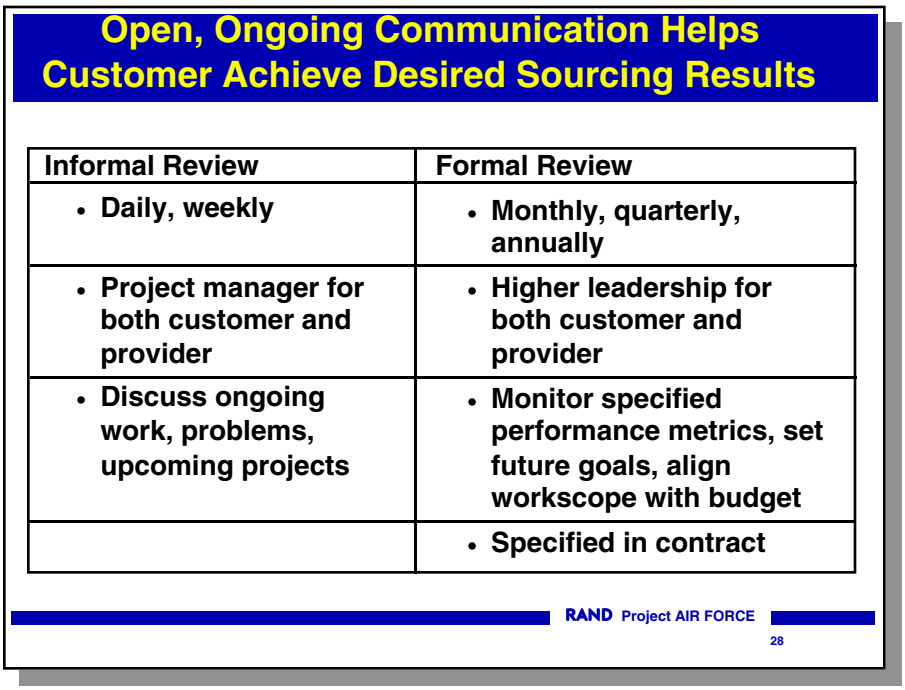
[33] Some firms join benchmarking networks with similar firms.



Once the customer and provider have chosen performance metrics and associated goals to manage their relationship, they need a process to communicate with one another about how well the provider is meeting customer needs. The communication process gives the customer opportunities to reinforce good performance, draw attention to problems, and convey any changes in priorities or needs. Moreover, this process gives the provider opportunities to demonstrate how it is contributing value to the customer.

Most of the customers and providers of facility management services that we interviewed communicate with their partners through both an informal and a formal review process. Informal reviews occur daily or weekly and primarily involve the project managers for both the customer and provider organizations. One customer literally tore down the walls that separated its project management from the staff of its provider to facilitate frequent communication. Project managers use informal reviews to discuss the details of day-to-day operations such as ongoing work, the status of previous initiatives, new problems that have arisen, "get-well" programs for

previous problems, and upcoming projects. Customers and providers are able to discuss and resolve issues before they become costly problems.

Formal reviews occur at less frequent intervals, e.g., monthly, quarterly, or annually, and may include higher leadership from both the customer and provider organizations.[34] Two providers told us that as they demonstrate continued satisfactory performance, their customers lengthen the time between their formal reviews.

Many customers and providers stressed the importance of involving senior leadership in managing the customer/provider relationship. On the provider side, senior management needs to be aware of how well their company is satisfying customer needs. The involvement of customer senior management provides an opportunity to tailor facilities services to the strategic needs of the firm.

Formal reviews are used to discuss higher-level issues such as the provider's performance against a specified set of output-oriented metrics, to set goals, and, if necessary, to realign the scope of work with the budget. One large customer uses monthly reviews to monitor performance within its regions and then has comprehensive reviews with all regions quarterly. During quarterly reviews, regional providers are strongly encouraged to discuss problems in individual regions and share best practices.

Although the details of the information covered in formal reviews may not be specified in the contract (e.g., specific performance metrics), the review process is often spelled out. This is an additional way that customers reduce the risk of losing control over the provider while maintaining the flexibility to shape services as needs change.

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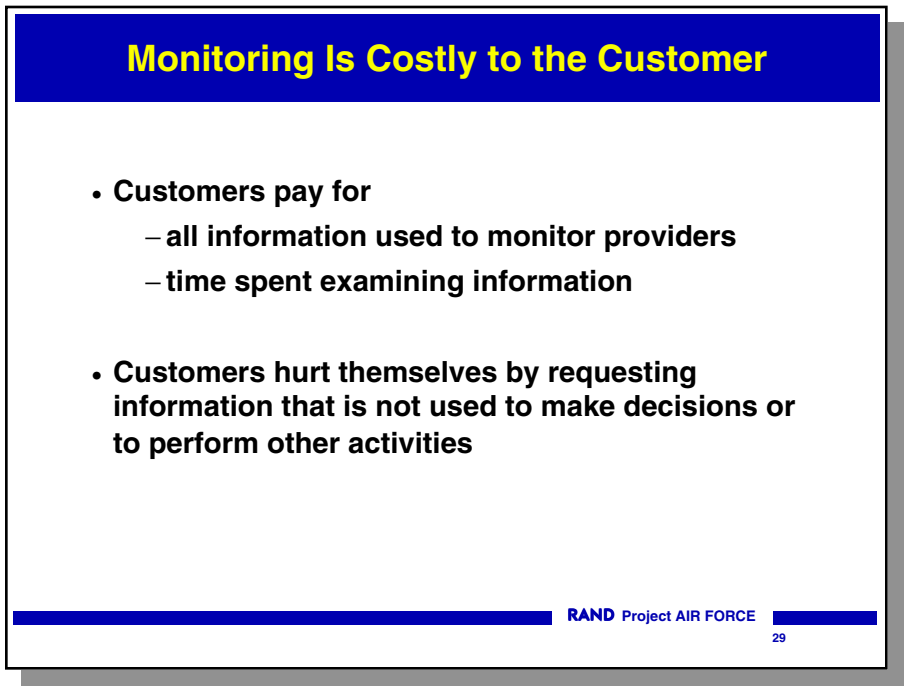
[34]Different firms have formal reviews at different intervals. One provider has formal reviews monthly and quarterly with its customers while another focuses on large comprehensive annual reviews. High-level corporate leaders are often involved in only the quarterly or annual reviews rather than monthly reviews.

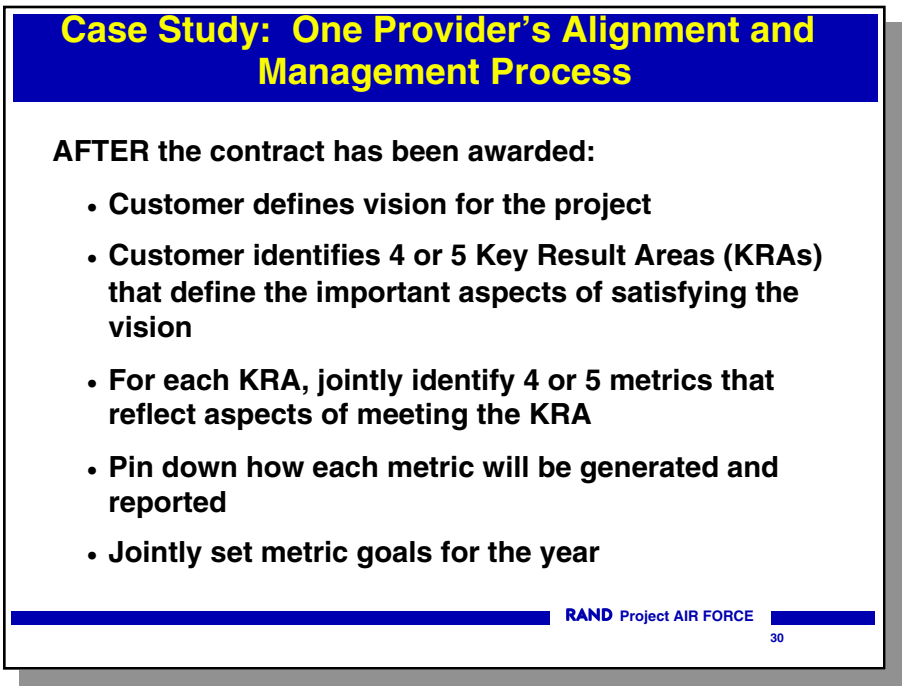


Customers may have a strong compulsion to track many different dimensions of operational performance and cost, feeling that this is necessary to maintain control and to verify that their providers are achieving the agreed-upon level of performance within the specified budget. Although customers are responsible for monitoring the performance and cost outputs, providers note that customers benefit from taking into consideration the fact that they pay for the privilege of seeing this information, regardless of which party generates it. When providers are required to generate metrics and reports, they pass through to their customers the costs of compiling the information. Similarly, customers pay for the information they put together internally or purchase from third-party auditors. Also, there is an opportunity cost associated with the time customer managers spend examining this information.

Innovative customers of facility management services carefully select the information that they request and examine. Customers hurt themselves by asking for information that they do not use to make decisions or for other activities. During discussions with its customers about the choice of metrics, one provider asks how each metric will be used. It discourages customers

from requesting information that does not add value, net of generation and opportunity costs, to their organizations.

In the end, as noted above, the actual number of metrics that customers request to be reported depends heavily on trust. Trust cannot persist in a vacuum; metrics play a central role in sustaining trust. But because metrics are costly to use, the better the relationship between a customer and provider is, the fewer the metrics typically used to sustain a productive relationship. At a minimum, a customer will demand information on the satisfaction of the departments and/or business units within its organization served by the provider. Customer satisfaction is typically broken down by service provided; different ratings might be tracked for grounds maintenance, mailroom and copying services, personnel management services, and so on. In a cost-based relationship, customers and providers always track disbursements relative to plan and cost savings relative to plan. Quantitative metrics for specific services are added where difficulties persist or the provider is explicitly trying to improve performance against a plan. Relationships between customers and providers are always dynamic; because they are costly to maintain, the actual metrics that customers request vary over time to reflect experience to date and the demands of joint plans to change processes and performance.



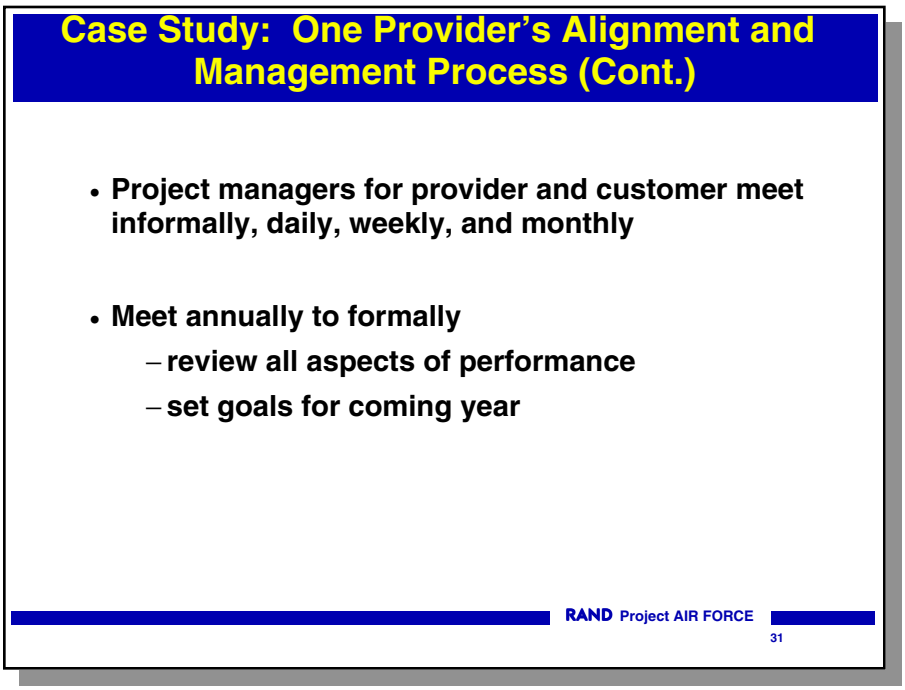
We conclude our discussion of the uses of metrics by innovative commercial firms with an example of a particular provider's alignment and management process. This provider uses the process to tailor performance metrics to individual customer's sites and circumstances and to manage the customer/provider relationship.

This provider prefers that the alignment process begin after its proposal has been selected and the contract signed. First, the provider and customer sit down to better define the customer's expectations through a vision or mission statement for the project. The provider then asks the customer to identify the dimensions of performance that are keys to successfully accomplishing the mission statement—Key Result Areas (KRAs). Examples include ability and willingness of the provider to respond to new requirements; timeliness of completion of work; cost containment; use of technology; training; equipment reliability; and use of small, women-owned, or minority-owned businesses. Customers often begin by laying out all the dimensions of performance that they care about and then refining the list to four or five major areas that become the KRAs. The provider stresses the importance of going through this exercise at all levels of the customer's

organization to avoid any disconnects between the expectations of top management and the project managers.

Next, for each of the KRAs, the customer and provider discuss the important concerns about meeting expectations and identify four or five metrics that reflect those concerns. For example, if timeliness of work is a KRA, then one type of metric might be cycle times for work orders and preventive maintenance. For each metric, the customer and provider discuss how the metric will be generated and how it will be reported to the customer. Finally, they set performance goals for each of the metrics for the first year of the contract. In the case of cycle-time metrics, they may agree upon a 10 percent reduction in times as a goal. As part of the process of identifying goals, the customer and provider discuss potential projects that will help the provider achieve the goals. For example, they may examine the possibility of implementing a centralized call center to help cut cycle times for work orders.

Throughout this process, the provider stresses to the customer the need to ensure that the quality of available data is acceptable and that each metric yields net benefits.



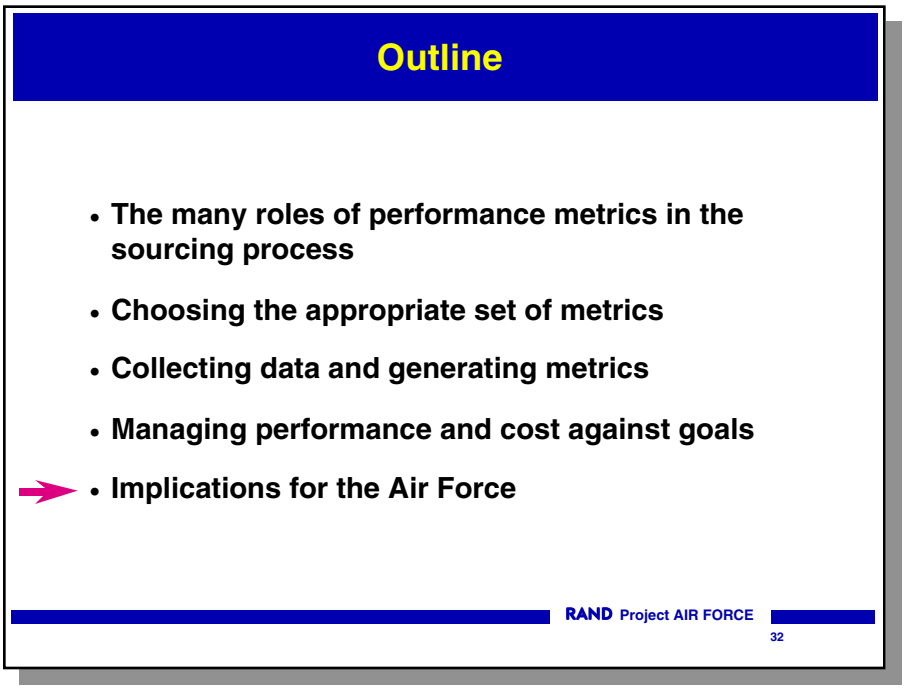
Once the relationship is in place, this provider relies upon frequent interaction between its staff and the customer to make sure that it continues to satisfy the customer's expectations and needs. Project managers meet daily, weekly, and monthly to informally discuss performance.

In addition to this frequent interaction concerning the tactical aspects of the relationship, this provider encourages each of its clients to schedule an annual meeting to formally discuss the strategic dimensions of the relationship. During this meeting, the provider seeks a detailed critique of its performance that it and the customer can use to build future performance goals. The customer and provider also evaluate the process and metrics that they are using to manage the relationship, discuss work processes in place, and examine HR practices such as training. When possible, the provider encourages the customer to involve corporate leaders, in addition to project management, in this review.

Because of the cost of conducting an in-depth annual review, some customers that are happy with this provider's performance request to forgo the review. However, the provider tries to convince them to go through the

process because it is an integral part of the provider's continuous improvement process.

6. IMPLICATIONS FOR THE AIR FORCE



The process of choosing and managing sources for support services is not new to the Air Force. Many of the ideas presented in the previous chapters differ dramatically from the way the Air Force has approached its sourcing process in the past. However, they are broadly compatible with new and ongoing Air Force efforts to extend the benefits of acquisition reform to services acquisition and, in particular, to introduce performance-based services acquisition (PBSA). Without an effective regime of metrics, PBSA is a meaningless concept.

The traditional Air Force approach, which was based on the Office of Federal Procurement Policy, began with the identification of a "required" activity or service.[35] Once the customer identified the requirement, the contracting officer ran the source selection process. The statement of work reflected a static view of this requirement, specifying the desired performance attributes (based on current practice) and their relative importance. Metrics

[35]This approach was similar to that of other military services and federal agencies.

often tracked performance of processes or application of tools rather than the outputs of those processes or tools. They specified the performance of these processes in such detail that process improvement was inhibited or even prohibited. Goals for performance metrics typically represented the minimum acceptable level of performance to avoid unnecessary exclusion of any firms from the set of potential providers. Past performance and experience were not taken into account in the source selection process. If an external provider was chosen, that provider's main interaction with the Air Force took place through Quality Assurance Evaluators (QAEs) who are trained to scrutinize the provider's actions to make sure that it is meeting all the contract specifications. As a result of the high cost of bidding, the low probability of winning relative to strong commercial demand, and the arm's-length nature of the resulting customer/provider relationship, many leading providers chose not to compete. This traditional approach has led to failures to perform and cost escalation in many instances because poor providers have been awarded contracts based on proposals that they cannot execute.

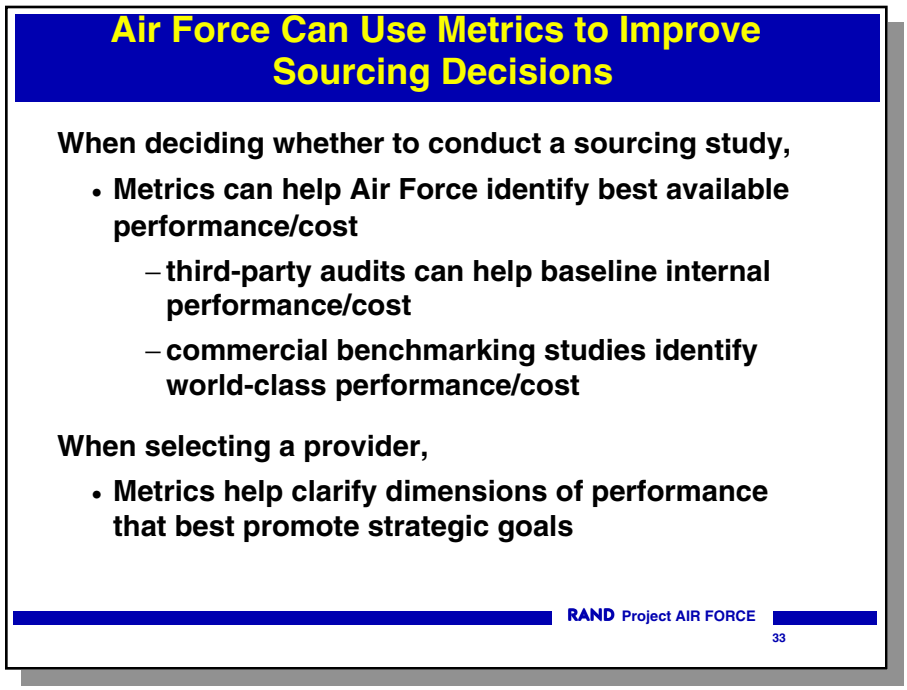
Federal procurement policy has experienced dramatic changes in recent years, primarily as a result of the Federal Acquisition Streamlining Act (FASA) of 1994. Perhaps the most dramatic change is the new emphasis on performance-based contracting. The Federal Acquisition Regulation, Part 37, on Service Contracting defines performance-based contracting as "structuring all aspects of an acquisition around the purpose of the work to be performed as opposed to either the manner by which the work is to be performed or broad and imprecise statements of work" (section 37.101).

These changes have empowered the Air Force to introduce PBSA. Past performance is being added to the source selection criteria,[36] formal metrics in contracts are becoming more output oriented, and threshold levels of performance and cost are being tied to positive and negative incentives. The

[36] Very little past performance data on government contractors exist at this time. The data that have been collected are not readily available to customers across Air Force organizations, and it will be some time before information on current contracts is widely available. However, information on past performance should be available from commercial customers of providers. Relatively more information is available for extreme cases of poor performance on government contracts. Providers must report whether they have defaulted on a government contract within the last three years when bidding on a new government contract.

innovative commercial practices discussed above provide illustrations that the Air Force can use to (1) move toward PBSA and (2) over the longer term move beyond it toward commercial-like service acquisition practices that will allow even higher performance levels and encourage even more of the best commercial firms to provide services to the Air Force.

The Air Force cannot do this alone. Broader public policy will have to advance to accommodate all the practices discussed here. In this final chapter, we discuss how the Air Force can apply many of the practices of innovative commercial customers and providers to achieve better results from its sourcing activities today and promote more effective public policies on services acquisition in the future. We provide information about how the Air Force might implement these practices within its current environment; however, more research is needed to fully address any potential challenges.



Performance metrics can help the Air Force make better sourcing decisions by helping it become more aware of the capabilities of external providers and how they compare with internal organic provider organizations. This increased awareness can lead to a better allocation of scarce sourcing study resources and improved source selection decisions between internal and external provision of services and among external providers.

The Air Force has completed an assessment of its commercial activities that are currently performed by military or government-employed civilians to determine whether they are critical to the warfighting mission or candidates for competitive sourcing.[37] For those installation services that are candidates, the Air Force has two vehicles through which to conduct sourcing studies: competition under the rules of Office of Management and Budget (OMB) Circular A-76 and direct conversion from military to contractor

[37] The Air Force recently identified 54,000 potential positions to compete between FY93 and FY03. Over 22,000 of those positions are scheduled for competition between FY00 and FY03 (Bundy, 1999).

provision.[38] All candidates cannot be competed at once because of resource constraints and personnel disruptions, so the Major Commands are selecting activities to be competed each year. This selection process appears to suffer from a lack of information about the best candidate activities. Functionals, who have the most information about the savings potentials associated with competing different activities, have little incentive to participate effectively in this process.[39] A lack of information, combined with other issues such as socioeconomic concerns, can lead the Air Force to allocate study resources suboptimally.

Instead, the Air Force can use performance metrics to identify the best performance and cost that are available in the external market and to compare performance and cost in the external market with those of current organic providers. This information could help the Air Force direct scarce study resources to those services and activities that, ex ante, appear to offer the largest potential benefits.[40] However, such a public/private comparison is not easy because of a lack of information about organic processes and performance as well as difficulties in identifying "apples-to-apples" comparisons with external capabilities.[41] To overcome these difficulties, the Air Force can use third-party operational and financial audits to baseline the performance and costs associated with its organic providers.[42] In addition, it can use commercial benchmarking studies to identify the performance and

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[38] There are separate rules that govern sourcing competitions for depot maintenance activities.

[39]See Baldwin, Camm, Keating, and Pint (1998) for a discussion of Air Force incentives to undertake and complete sourcing studies.

[40]Large differences between external and organic provision do not imply that a sourcing study will result in external provision. In many circumstances, the organic Most Efficient Organization (MEO), which is the civilian organization's bid, reflects significant cost improvements over the current organization. Early research by the Center for Naval Analyses (CNA) indicates that the Navy achieved almost 20 percent savings through its studies won by the MEO (Marcus, 1993). Recent RAND research found that expected personnel cost savings for three competitions won by the MEO range from 34 to 59 percent (Gates and Robbert, in draft).

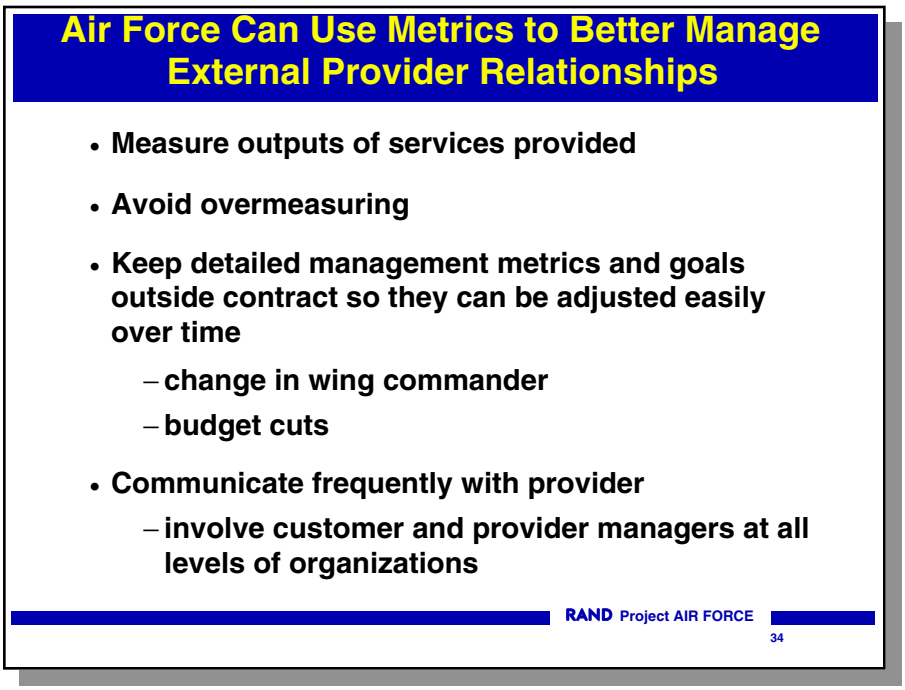
[41]As discussed above, the Air Force is not the only organization facing such challenges. Many commercial firms encountered similar obstacles and successfully overcame them.

[42] The City of Indianapolis also lacked information about the cost of performing activities and services when it began its outsourcing activities. It hired KPMG Peat Marwick to develop cost models and to train its administrators to use them to implement activity-based costing. See Goldsmith (1997).

cost associated with world-class commercial providers. For BOS (and audit) services, it is important to look beyond traditional defense contractors to the set of providers that are known as leaders in the commercial market for facility management services. Access to benchmarking studies can be obtained through Air Force participation in such studies and through trade associations such as the International Facility Management Association (IFMA), Building Owners and Managers Association (BOMA), and Tradeline.

If the Air Force decides to study a service or activity, metrics and their associated weights can aid in the selection of the provider organization that best meets the unique needs of the customer organization (e.g., an installation, a Major Command, the Air Staff). In fact, in many situations, new federal acquisition policy *requires* federal agencies to use source selection criteria that reflect key dimensions of performance in addition to the cost associated with the scope of work. (See, for example, FAR 12.206 and 12.602.) The customer organization can issue Requests for Information (RFIs) to all potential bidders to better understand capabilities of potential providers. This additional information can be used to refine the selection criteria, or metrics. The weights associated with these metrics should be chosen by the Air Force customer that will actually consume any service provided, with advice and recommendations from contracting and relevant functional personnel. The relevant Air Force customer is typically an operational Air Force organization, e.g., a wing or squadron, or an organization that represents the military personnel and their dependents who consume base-related services. The use of metrics and associated weights in the source selection process helps focus selection decisions on those dimensions of performance that directly contribute to the strategic goals of the Air Force customer organization.

As discussed above, the use of performance metrics in the source selection decision can also help convince senior Air Force leaders, such as wing commanders, and Air Force personnel, such as the functional leadership, that the chosen provider will best meet the needs of the Air Force. The objective nature of performance metrics can help create a feeling of legitimacy in a process that consumes scarce resources and leadership focus and is often emotional.



If the Air Force chooses to outsource a given service or activity and selects a provider with a successful track record, it can use performance metrics to better manage the customer/provider relationship and achieve more desirable performance outputs throughout the length of the contract.

Metrics used to manage the relationship between the Air Force and one of its providers should focus on the outputs of services and activities, rather than the processes used to achieve them.[43] The closer Air Force oversight gets to the way the provider operates, the greater the chance that the Air Force will deprive itself of the benefits of innovation in processes and technologies that led to the selection of that provider. At the heart of the Air Force's ongoing effort to implement PBSA is the challenge of moving from process-oriented to output-oriented metrics to manage providers.[44] For

[43] Of course, if the performance of the provider falls below customer expectations, the Air Force may want to work with the provider to resolve difficulties. Such collaboration may require the use of additional process-oriented metrics. Process-oriented metrics may also be desired for those activities and services with outputs that are difficult to specify.

[44] Many government agencies are facing similar difficulties. The GAO (1997) found that the most challenging dimension of implementing the Government Performance and Results Act of 1993 is moving from measuring activities to measuring the results of those activities. See also GAO (1999).

example, a typical Air Force contract for cleaning restrooms now specifies the number of times the restrooms must be cleaned each week, rather than the process used to clean them. Although this is a step in the right direction, customer satisfaction with cleanliness or a cleanliness rating by a third-party auditor is closer to a true output-oriented metric. Although new federal acquisition policy supports this shift toward output-oriented metrics, traditional Air Force culture and organizational structure have supported an input rather than an output orientation, which will be difficult for the sourcing community to overcome.[45]

The Air Force collects many metrics to help it monitor the activities of its contractors. Although some of these metrics contribute to decisionmaking or other activities, many are never acted on.[46] As the Air Force achieves higher levels of mutual trust with its providers, it can benefit from the use of a smaller set of meaningful metrics that focuses attention on those dimensions of performance that most directly contribute to the Air Force's corporate strategic goals. In addition, by evaluating the net value that metrics add—taking into account the costs of generating and reporting them as well as the staff time required to monitor them—the Air Force can reduce its monitoring costs.

The Air Force can benefit from separating the choice of performance metrics and goals used to manage a given customer/provider relationship from the associated contract. As a result, metrics can be changed more easily as customers and providers learn about meeting customer needs. Air Force customers traditionally expect contracting to reduce their flexibility, because a signed contract generates a "must-pay" bill over its lifetime and its quality assurance surveillance plan states what is expected over its lifetime. Changes can be made only through a formal contract modification. But in the current environment, the Air Force perceives a need for more flexibility, not less. And with the recent trend toward longer-term contracts, it is

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[45] Training in best commercial practices for performance measurement and exposure to exemplar commercial firm examples through forums such as Tradeline conferences can help address this need.

[46] Some metrics may be collected primarily because the data are readily available. Baker (1992) suggests that when organizational objectives are not easily quantifiable, organizations may employ targets that are easily measured but that may not be highly correlated with the organization's true objectives.

increasingly likely that wing commanders will rotate at least once during a contract period, bringing about changes in customer priorities for BOS services. Leaving metrics and goals out of the contract allows each wing commander more flexibility to shape services at his or her installation. Similarly, changes in budgets (which are becoming more and more common) can be better managed when metrics and goals are not tied to formal contracts. Thus, by leaving metrics and goals outside of the formal contract, the Air Force customer and the provider can more easily satisfy Air Force priorities at any given time.[47] The most innovative commercial providers of support services are comfortable with such an approach. The Air Force's new policy governing contracting for services, AFI 63-124, allows Air Force customer organizations to choose metrics and goals after contract award, but before the contract start date.

Because the Air Force is limited in its ability to provide informal incentives to its providers (e.g., expanding contract scope without a rebid), it must rely on formal contractual incentives (e.g., award fees) to motivate its providers to excel over time.[48] However, separating metrics from the contract breaks the link between metrics and formal incentives, which is at the heart of performance-based acquisition. The Air Force can preserve flexibility and still give providers incentives by including in contracts only those metrics that are tied to formal award fees and by keeping all other management metrics outside of contracts.[49] Overarching metrics such as customer satisfaction ratings are ideal for formal incentives because their importance is unlikely to change during the contract period and they are less likely to lead to the distortions in provider performance discussed above.

Finally, the Air Force can improve the results of its sourcing activities by communicating openly and frequently with its providers. Currently, the

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[47] Courty and Marschke (1997) suggest that it is more difficult for government agencies to continually reevaluate and realign metrics with organizational goals because often there is no specific person(s) who directly benefits from this process.

[48] As discussed above, another informal incentive used in the private sector is contract extension without a rebid and without specification of decision criteria in the original contract. The Air Force has transformed this idea into a formal incentive through the use of "award terms" that extend existing contracts based on provider performance relative to standards specified in those contracts.

[49] Dan Fulmer of HQ AFMC/AQ indicates that if additional metrics are specified in the requirements section of the bid solicitation, they must be included in the contract as well.

Air Force's primary communication with its providers occurs through its QAEs. This method of review and feedback reinforces an adversarial, arm's-length working environment between the Air Force and its providers, rather than building a mutually beneficial relationship based on open communication and trust. In contrast, daily and weekly communication between the project managers or leaders of the customer organization (rather than the QAEs) and the provider would help build understanding and trust that can lead to more responsive service for the Air Force. To build trust, one goal of such communication should be to identify and solve problems before they escalate, rather than to look for reasons to penalize the provider. (Unfortunately, some interpretations of performance-based acquisition still focus on the latter.) Another goal should be to respond quickly to unexpected workscope or budget events. Providers are often willing to make suggestions about the best way to address unexpected events, but customer input is necessary to ensure that any changes in services continue to support strategic goals. High-level management on both sides should also participate in the communication process, on a quarterly to annual basis as needed. Depending on the organizational levels covered in the contract, communication between wing commanders, Major Command personnel, and even Air Staff leadership and the provider's corporate leaders can improve the contributions of the provider to the strategic goals of the Air Force.

If the Air Force (1) uses metrics that are aligned with its strategic goals, (2) sets aggressive goals for the metrics, and (3) adopts an approach to performance management that promotes day-to-day communication and problem solving and longer-term mutual efforts to improve processes, best commercial practice suggests that the Air Force will enhance and sustain mutual trust with its service providers and thereby dramatically reduce the manpower and other costs associated with quality assurance. Good metrics are powerful tools that allow a small group of project managers to track the important dimensions of a provider's performance. For example, a large customer firm that has outsourced 35 million square feet of facilities has five or six people dedicated only part-time to managing its providers. As Air Force leaders feel more comfortable with their ability to maintain control of external service providers, the Air Force may choose to turn over more of the management of services to them. Our interviews with commercial firms

indicate that the resulting partnership environment can lead to much greater improvements in performance and cost over time.[50]

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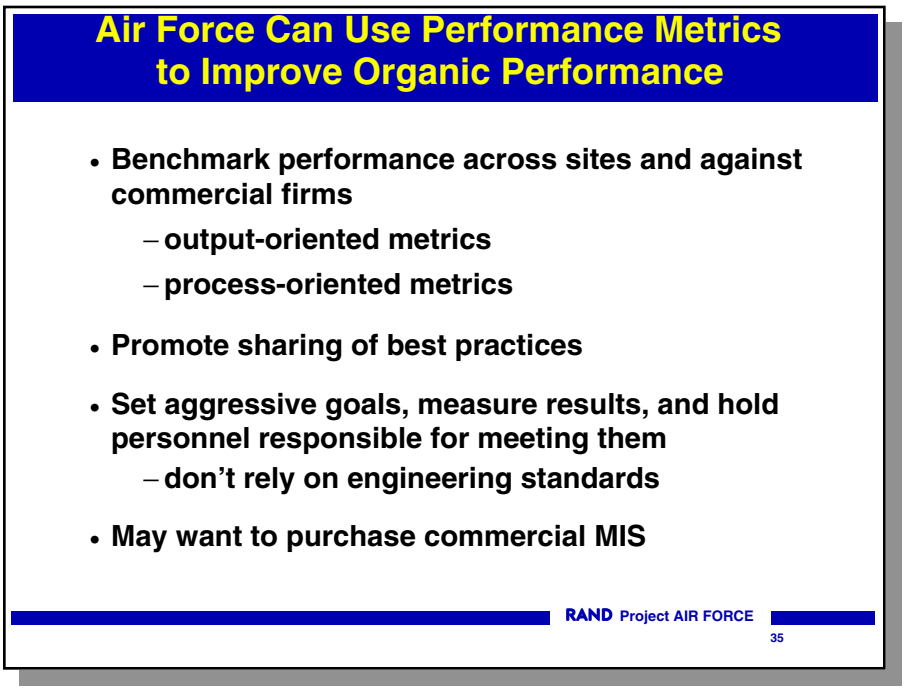
[50] See also Goldsmith (1997).



Many of the Air Force's activities will continue to be provided by organic workforces in the foreseeable future. Activities considered too important to the warfighting mission are removed from the list of possible candidates for sourcing studies. It will be some time before some other candidate activities will be evaluated for possible outsourcing because of the time, resources, and disruptions associated with studies.

Traditionally, the Air Force has placed greater emphasis on measuring the performance of its external providers than on measuring its organic providers. Unfortunately, this lack of information about processes and outputs of organic activities limits the ability of Air Force personnel to improve their performance and cost. A key insight of this research is that many of the ways innovative firms use performance metrics to manage customer/provider relationships can be applied to internal provider organizations as well as external ones. Just as the Air Force can use performance metrics to improve the outputs associated with its outsourcing

activities, it can use metrics to improve the performance of its internal organic provider organizations.[51]

In particular, the Air Force can use output-oriented metrics to benchmark performance and costs across its own sites and to compare them against the performance and costs achieved by leading commercial firms. Comparisons of customer satisfaction ratings, financial metrics, and operational metrics can be used to continually reassess the benefits of keeping a service or activity in-house.

Organic provider organizations can use process-oriented metrics to improve their performance and cost over time. As part of a continuous improvement program, process-oriented metrics can be used to understand variances identified in benchmarking exercises with leading commercial firms and with other military and government organizations. When variances result from process innovations, the innovations can be shared across Air Force sites through management meetings, web sites, and other communication tools.[52]

It is important to note that simply having output and process metrics is not sufficient to bring about improved performance and cost of an organic provider. Air Force customer and provider organizations must jointly set aggressive performance goals for those metrics, measure performance against those goals regularly, and then hold organic provider personnel responsible for meeting the goals. Although civil service employment rules and reduced opportunities for advancement in the current environment may somewhat limit the Air Force's ability to use rewards/penalties for good/poor performance by civilian workforces, the Air Force can create nonmonetary incentives, such as promotion opportunities, for its military workforces.

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[51] Wilson (1989), Courty and Marschke (1997), Dixit (1997), and Heckman et al. (1997) discuss the difficulties associated with providing performance incentives to employees of government agencies. A primary driver of these difficulties is that there are no private-sector substitutes for many of the activities performed by these organizations. Thus, it is more difficult to specify and quantify objectives so that performance can be measured. However, this is clearly not the case for most BOS services.

[52] Benchmarking across Air Force sites should be done constructively. Installation commanders may not wish to share information with other sites if they perceive that the risk of being penalized for relatively poor performance and costs is greater than the potential benefits from learning about performance in other organizations.

Finally, to benefit from the use of such metrics, the Air Force may need to invest in a commercial MIS capability or outsource its facility call center operations to a provider with a robust MIS capability. Currently available Air Force data may not be sufficient to determine outputs or to understand processes associated with the provision of services.

Appendix A
INTERVIEW QUESTIONNAIRE ON PERFORMANCE METRICS

In advance of our interviews with commercial customers and providers of facility management services, we provided each firm with a structured questionnaire detailing the dimensions of outsourcing that we were most interested in learning about. Some firms gave us written responses to these questions; others used them as a guide for preparing personnel for our visit. In each case, the questions served as an effective guide for our discussions. The customer and provider questions on the use of performance metrics are given below.

Customer Questions

A. For each activity you outsource, what metrics do you and your providers use to measure performance, and how frequently are they measured (e.g., responsiveness, reliability, quality, . . .)?
    1. What goals or standards are used for each metric?

B. Which metrics, goals, and standards are explicitly written into your contracts and which are negotiated after the contract is complete? How are these goals typically set?
    1. What is your role?
    2. What is the role of your providers?

C. On average, how many metrics do you use to evaluate a provider's performance for a given activity?

D. In general, when developing metrics, do you focus on the outputs of services provided, processes involved in providing services, or both?

E. Do you or your provider(s) use formal (e.g., ISO 9000) or informal audits? If so, do you use them for measurement? For improvement? For communication?

Provider Questions

A. For each service you provide, what metrics do you and your customers use to measure performance, and how frequently are they measured (e.g., responsiveness, reliability, quality, . . .)?
    1. Can you rank these metrics as to whether they are always, often, sometimes, or rarely used?
    2. What goals or standards are typically used for each metric?
    3. What are some of the reasons metrics and goals vary among customers (e.g., industry, size, experience)?
    4. In general, when developing metrics, do you focus on the outputs of services provided, processes involved in providing services, or both?

B. Which metrics, goals, and standards are explicitly written into contracts and which are negotiated after the contract is complete?
    1. How are goals typically set?
        a. What is your role?
        b. What is the customer's role?

C. On average, how many metrics are you evaluated against for a given activity?

D. Do you or your customers use formal (e.g., ISO 9000) or informal audits? If so, do you use them for measurement? For improvement? For communication?

Appendix B
METRICS EXAMPLES

In this appendix, we provide examples of metrics that customers use to select their providers and metrics that customers and providers use to manage their relationship over time. These lists are not inclusive. Rather, they provide additional concrete examples to supplement the ideas in the main text. The superscripts after each metric refer to the sources listed at the end of this appendix.

SOURCE SELECTION METRICS

- Total facilities cost and cost of specific services per square foot[l]
- Percentage of a provider's business a prospective customer would represent[a]
- Depth of training for provider employees (how well trained is the second string?)[a]
- Financial stability of provider[a]
- Training hours (total and hours per employee)[l]
- Percentage of business done with small or minority- or women-owned businesses[l]
- Quality of environmental and safety programs[a,l]
- Employee turnover rate[l]
- Reputation relevant to ethical business practices[a]

METRICS USED TO MANAGE THE CUSTOMER/PROVIDER RELATIONSHIP

Call Center Metrics

- Number of customer service representatives on duty[c]
- Total number of calls[l]
- Number of calls per customer service representative[b]

- Calls answered per day[c]
- Calls abandoned per day[c]
- Average queue time for calls[c]
- Average number of calls in the queue[c]
- Total queue hours[c]
- Average duration of calls[b]
- Average hold times[b,l]

Customer Satisfaction Metrics

- Overall customer satisfaction[e,l]
- Satisfaction with temperature, janitorial service, and landscaping[e]
- Satisfaction with quality of facility support staff, ability to solve facility problems, availability, timeliness of response, follow-up and closure of service request, courteousness, and understanding customer needs and requirements[e,l]
- Employee satisfaction with building services[c,l]
- Owner satisfaction with building services[l]
- Completion of scheduled visits (actual number of tenant visits divided by the scheduled number)[l]
- Satisfaction with quality of space, appearance, configuration[c,h,l]
- Satisfaction with efficiency of space[c]
- Most/least desirable aspects of property[c]
- Distribution of responses indicating that service exceeded, met, nearly met, or missed customer standards (by service)[d]
- Rating of responsiveness and demonstrated flexibility of provider[a,l]

Operations

- Total cost of ownership (includes attention required by customer managers, continuous improvement programs)[a]
- Occupancy cost (total and by line item)[e]
- Cost of activities relative to leading firms in benchmarking studies[a]

- Total facilities cost and cost of specific services per square foot (by space classification, market location, line of business)[f,l]
- Operating expenses per real estate square foot[g]
- Occupancy cost per square foot, by location[e,k]
- Building maintenance cost per gross square foot vs. customer satisfaction[i]
- Total annual administrative costs per square foot[l]
- Total annual cost of insurance and taxes per square foot[l]

- Variance between actual expenses and budget for main cost categories, year to date (in dollars and as a percentage of budget)[l]

- Energy cost per square foot[g,l]
- Total utility cost per square foot[i,l]

- Occupancy cost per output[k]
- Occupancy ratio (cost as a percentage of revenue)[f,k]

- Cost per employee (by market location, line of business)[f,k]
- Capital cost per employee[k]

- Groundskeeping cost per acre[i]

- Total custodial cost per square foot cleaned vs. customer satisfaction[i]
- Number of unscheduled custodial requests per month by service type[l]
- Number of unscheduled custodial requests per month per 100,000 square feet[l]
- Cleaning efficiency (square feet cleaned per manhour)[g,l]

- Cost of employee moves [f,j]
- Number of moves per year[j]
- "Churn" rate (average moves per employee per year or time between moves)[f]

- Percentage uptime for elevators[l]
- Number of unscheduled elevator service requests per month per 100,000 square feet[l]
- Number of unscheduled elevator service requests per month by type of problem[l]

- Percentage of time computer systems are operational[l]

- Total work orders, by task and by priority[e,g]
- Number of service requests per month by site[g,l]
- Percentage of work orders initiated by customer[e]
- Work order and inquiry response time[a,l]
- Work order completion time[f,k,l]
- Number of open work orders[b,k]
- Frequency of work orders for specific pieces of equipment[l]
- Labor hours[k]

- Emergency inquiry response time[a]
- Security incidents per month per 100,000 square feet[l]
- Number of security incidents by type[l]
- Percentage of time security systems are operational[l]

- Preventive maintenance tasks completed and not completed[g]
- Percentage of preventive maintenance completed on time[g,l]
- Percentage of life safety preventive maintenance tasks completed on time[l]

- Number of service requests in and out of scope[g]
- Number of unscheduled maintenance calls per 100,000 square feet (total and by type of service)[l]
- Hours devoted to scheduled vs. unscheduled maintenance[g]
- Average cycle time for unscheduled maintenance requests[l]

- Use of technology to improve efficiency of processes[a]

Real Estate

- Gross square feet owned vs. leased[i]
- Square feet per employee[h,j,k]
- Real estate cost (total, per employee, and per square foot)[h]
- Real estate cost as a percentage of net revenues[h]
- Real estate assets as a percentage of equity[h]

Safety

- Worker's compensation claims[a,l]
- Safety incidents[a,l]
- Number of lost work days as a result of work accidents[l]
- Quality of environmental and safety programs[a,l]

Human Resources

- Employee turnover rate (cumulative employees for the period/total number of positions authorized)[l]
- Security personnel turnover rate[l]
- Custodial employee turnover rate[l]
- Training hours (total and hours per employee)[g,l]
- Number of equal employment opportunity suits[l]

Special Interest

- Percentage of business done with small or minority- or women-owned businesses[l]

SOURCES:

(a) Presentation by David Hartings, Hewlett-Packard, "TQRDCEB," Tradeline Conference, San Diego, CA, December 1997.

(b) Presentation by Thomas Bogle and Pat Shreffler, CB/Koll, "Customer Service Call Centers for Facilities Organizations: A Strategic Imperative," Tradeline Conference, San Diego, CA, December 1997.

(c) Presentation by Gary Guarisco and Lloyd Lichtenberg, COMPASS Management and Leasing, "Customer Satisfaction Measures and How to Use Them to Improve Services," Tradeline Conference, San Diego, CA, December 1997.

(d) Presentation by David Rodriguez, Bellcore, "Bellcore Contracts to Get an On-line, Computerized Measurement Program," Tradeline Conference, San Diego, CA, December 1997.

(e) Presentation by Stephanie Walker, AmSouth Bank, "Strategic Use of Performance Measures," Tradeline Conference, San Diego, CA, December 1997.

(f) Presentation by Paul Garity, KPMG Peat Marwick, "Linking Corporate Real Estate Strategy to Performance Measurement and Benchmarking," Tradeline Conference, San Diego, CA, December 1997.

(g) Presentation by Helen R. Arnold and Arthur P. Hall, Cushman & Wakefield, "Benchmarking as Operational Necessity," Tradeline Conference, San Diego, CA, December 1997.

(h) Presentation by Janet Halo and Michael Torre, Merrill Lynch, "The Movement of Headquarters Facilities to Lower Cost Environments," Tradeline Conference, San Diego, CA, December 1997.

(i) Presentation by Jim Carmody, Jeff Mervin, and Leo Michaud, Morrison Knudsen, Operations and Maintenance Division, "FM Costs: What They Should Be and How to Get Them Lower," Tradeline Conference, San Diego, CA, December 1997.

(j) Presentation by Greg Myers, Intel, "Putting Performance Numbers on High-Tech Facilities—Intel's Approach," Tradeline Conference, San Diego, CA, December 1997.

(k) Open Forum, Tradeline Conference, San Diego, CA, December 1997.

(l) Literature provided by customers and suppliers during interviews.

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