

# **Evaluation of Service Delivery to NIH Customers**

## **Final Report**

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# ***1 Executive Summary***

## **1.1 Introduction**

In an effort to continuously improve services provided to the National Institutes of Health (NIH), the Office of Research Services (ORS) conducted an evaluation study of its effectiveness at achieving its organizational goals. Namely, those goals that ORS strives to achieve are:

Goal 1: Continue to focus on improving customer service to NIH customers

Goal 2: Modify service options and the service portfolio to keep pace with changing customer needs

Goal 3: Study and improve processes to increase operational efficiency

Goal 4: Reduce costs of services to customers, where possible, while maintaining quality

Goal 5: Invest in the quality of work life for all ORS employees

Goal 6: Analyze changes in the unit cost of products/services to understand why changes occur

To evaluate how well ORS was moving towards accomplishing the goals listed above, in FY01, ORS began implementation of the Annual Self Assessment (ASA) Process, which subsequently came to be known as the ORS Performance Management (PM) process.

The ORS provides a comprehensive portfolio of services to support the biomedical research mission of the NIH. Some examples of the diverse services ORS provides include: laboratory safety, police and fire departments, veterinary resources, the NIH Library, events management, travel and transportation, services for foreign scientists, and programs to enrich and enhance the NIH worksite. In April 2003 the NIH created the Office of Research Facilities (ORF) to provide a single point of accountability for all NIH facility activities, to streamline information flow, and to facilitate decision-making on research and research support facility issues. ORF is responsible for all aspects of facility planning, construction, renovation, and maintenance as well as for protecting the NIH environment. Prior to its creation in April 2003, ORF resided within ORS. Both Offices are included as participants in the evaluation study.

The Office of Quality Management (OQM) within the ORS adapted the theory and methods used in the Balanced Scorecard (BSC) approach to performance management in developing the PM process. This approach was developed in the early 1990s in a Harvard Business School research project with twelve companies at the leading edge of performance measurement (Kaplan & Norton, 1992). The value of the BSC approach is that it provides a comprehensive picture of complex businesses while minimizing the number of measures. This limited set of measures allows managers to focus attention on those things that are most important and prevents information overload that occurs with having too many measures. It also guards against sub-optimization in one area by encouraging managers to consider important measures all together. The BSC approach has been implemented in numerous organizations, both public and private, during the past ten years (Kaplan & Norton, 2001).

The BSC approach uses a set of measures comprised of 4 measurement perspectives: Customer Perspective, Internal Business Perspective, Learning and Growth Perspective, and Financial Perspective (Kaplan & Norton, 1996). Figure 1, Section 3.1, shows the interrelationships of the 4 perspectives.

In addition, the PM process includes the use of tools and techniques such as vision, strategy, and objectives definition, measures definition, data collection and analysis, and the use of customer satisfaction surveys. The OQM promotes the use of the PM process throughout the ORS and the ORF by providing training, consultation, and data analysis services to participants.

The OQM pilot tested its PM process in FY01. The evaluation examines the PM implementation process from FY02 – FY04. The evaluation assesses the impact of a variety of performance management tools and techniques on product and service delivery to NIH customers. The results of this evaluation can be used to enhance the PM training curriculum, consultation services, and performance tools and techniques used by the OQM to facilitate product and service delivery improvement. The evaluation sought to answer these important questions:

1. How satisfied are NIH customers with ORS/ORF products and services?
2. What needs do NIH customers have that ORS/ORF is not currently fulfilling?
3. Can ORS/ORF describe how their processes operate through depiction in process maps?
4. Can ORS/ORF diagnose and improve the methods they use to deliver products and services?
5. Is ORS/ORF retaining the employees it needs to meet customer demand?
6. Are ORS/ORF employees satisfied with their quality of work life here?
7. Did the unit cost of service delivery change? If so, why? Was it due to changes in customer demands? Was it due to changes in the cost of operations?
8. Have ORS/ORF's business operations, products, and service delivery improved as a result of the inputs provided by OQM?
9. Have ORS/ORF's products and service delivery improved as a result of diagnosing and implementing changes to business operations?
10. Have ORS/ORF's products and service delivery improved with the implementation of performance measurement methods?
11. Have ORS/ORF customer satisfaction ratings improved with the implementation of performance measurement methods?
12. Have ORS/ORF outcomes improved with the implementation of performance measurement methods?
13. Overall, what have been the organizational effects of implementing the PM process? Have those effects been positive or negative?
14. How do ORS/ORF's efforts to measure performance through the Balanced Scorecard (BSC) approach compare to those of other Federal Government Agencies?

The answers to these questions provide information about:

- The extent to which NIH customers are satisfied with ORS/ORF product and service delivery
- The extent to which the PM process has impacted ORS/ORF product and service delivery
- Which PM tools and techniques are most effective in improving ORS/ORF product and service delivery
- How to improve PM tools and techniques for future use in ORS/ORF
- How ORS/ORF efforts in BSC implementation compare to those of other Federal Government Agencies

## 1.2 Approach

The PM process implemented by ORS/ORF involves the collection and analysis of data that are used to both improve product and service delivery to NIH customers as well as to document results. These data were provided to the OQM in a variety of reports and provide the basis for the evaluation. Data include:

- Customer satisfaction survey results
- BSC scorecard objectives, measures, and results
- Employee turnover
- OQM consultant hours
- PM training attendance

The evaluation study uses the ORS/ORF Service Hierarchy to organize and evaluate the data. The Service Hierarchy is a schema that categorizes the services ORS/ORF provides to its NIH customers. Within the Service Hierarchy, ORS/ORF manages service delivery at 2 levels: The Service Group level and the Discrete Service level. There are 55 Service Groups and 198 Discrete Services in the Service Hierarchy. Appendix A contains a copy of ORS/ORF Services Hierarchy.

Over 75% of Service Groups and Discrete Services have implemented the PM process.

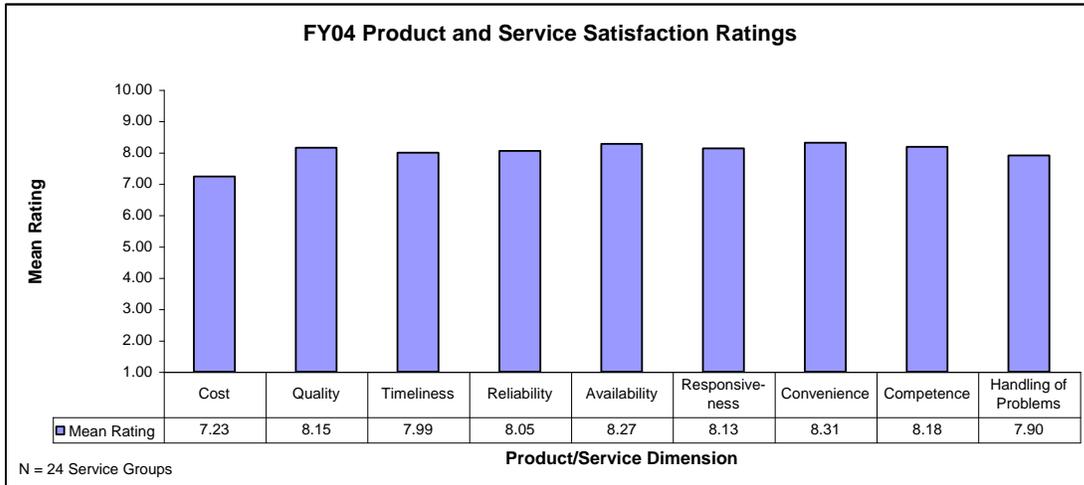
## 1.3 Results

### Customer Perspective:

#### *1.3.1 Question 1: How satisfied are Service Group customers with ORS/ORF products and services?*

Service Groups used the ORS/ORF Customer Scorecard to obtain survey data from their customers on product and service delivery dimensions. For each dimension, customers are asked to rate their satisfaction on a scale that ranges from (1) Unsatisfactory to (10) Outstanding. By FY04, 55% of Service Groups conducted a customer survey using the ORS/ORF Customer Scorecard for a total of 85 surveys.

The chart below shows that ratings on each dimension are well above the midpoint of the scale. Satisfaction rating dimensions with mean ratings above 8.0 include Reliability of Product/Service, Quality of Product/Service, Competence of Staff, Convenience of Service, Responsiveness of Staff, and Availability of Staff.



**1.3.2 Question 2: What needs do Service Group customers have that ORS/ORF is not currently fulfilling?**

Only two Service Groups obtained data on customer needs from a survey designed for that purpose. However, many service groups obtained information that could lead to the identification of new service or service delivery needs. Basically these data were collected through the use of open-ended questions in the ORS/ORF Customer Scorecard. The comments are summarized by the Office of Quality Management for each Service Group, and any needs identified by customers are included in the summary.

Service Groups use the data to adjust their current production and service capability as well as to forecast requirements for the future (e.g., new technology, additional employees, training needs, etc.). These data are specific to Service Groups and Discrete Services and thus consolidating across Service Groups is not possible.

**Internal Business Perspective**

**1.3.3 Question 3: Can Service Groups describe how their processes operate through depiction in process maps?**

As part of the PM implementation process, Service Groups and Discrete Services were required to prepare and analyze process maps that depict the steps that are involved in delivering products and services to customers. In FY 02, 62% of the Service Groups developed process maps. In FY 03 69% of the Services Groups had process maps. This number remained constant in FY04 with 69% of Service Groups and 57% of Discrete Services developed process maps for their respective products and services for a total of 148 process maps.

**1.3.4 Question 4: Can Service Groups diagnose and improve the methods they use to deliver products and services?**

As part of the PM implementation process, Service Groups were required to define measures related to each of the BSC Perspectives and collect data for each measure. Data obtained on measures are used to diagnose and improve the methods used to deliver products and services to the NIH community. In FY 02 64% of the Services Groups had defined measures for 51% of their discrete services. In FY 03 67% of the Service Groups defined measures for 58% of their discrete services. By FY04, 73% of Service

Groups and 63% of Discrete Services have defined at least one measure. By FY04, Service Groups have collectively defined a total of 821 measures and are actively collecting data on 452 measures, representing 55% of the defined measures.

## **Learning and Growth Perspective**

### ***1.3.5 Question 5: Are Service Groups retaining the employees they need to meet customer demand?***

In FY02 the OQM worked closely with the Office of Human Resources (OHR) to obtain Service Group level data on employee turnover. High employee turnover is thought to negatively impact customer service. Thus, Service Groups with high employee turnover are expected to receive lower customer satisfaction ratings on the ORS/ORF Customer Scorecard. Regression was used to examine the relationship between employee turnover and customer satisfaction ratings. No relationship was found in the data obtained between employee retention and the Service Group ability to satisfy customers.

### ***1.3.6 Question 6: Are Service Group employees satisfied with their quality of work life here?***

Service Groups are encouraged to measure quality of work life for their employees if deemed important to achieving important Service Group objectives. Quality of Work Life surveys typically ask employees about their satisfaction with work policies, practices, and procedures within their Service Group that contribute to a positive work environment and ultimately, to customer satisfaction. Examples of survey items include:

- My Service Group has a well-defined mission, vision, and values.
- I understand what my supervisors expect of me regarding customer service.
- My Service Group has acquired the technology it needs to accomplish its mission.
- My Service Group devotes enough resources to effectively train its employees.
- I know what constitutes “good performance” with respect to my job.

Several Service Groups have conducted Quality of Work Life surveys. Service Groups use the data to improve the policies, practices, and procedures within their respective Service Groups that impact employee perceptions of their working environment. There is no overlap in the questions used by Service Groups thus consolidation of survey ratings is not possible.

## **Financial Perspective**

### ***1.3.7 Question 7: Did Discrete Service unit cost of service delivery change? If so, why?***

- In FY02 the OQM worked closely with the Manage ORS Budget and Finance Service Group to define unit cost and its components. Service Groups were asked to define and collect unit cost data for each of their Discrete Services. Unit cost is calculated at the Discrete Service level and takes into account the number of products or services provided (i.e., customer demand or output) and the total cost (i.e., actual total budget) for the product or service.

Eighteen Discrete Services calculated unit cost each fiscal year beginning in FY02. Six Discrete Services calculated unit cost each year beginning in FY03. The percentage change in unit cost is ***calculated against the earliest reporting value*** for a total of 24 Discrete Services.

The data shows that unit cost decreased over time for 11 Discrete Services (Table 7). 64% of the time the decrease was associated with an increase in units *and* an increase in total cost. 27% of the time the decrease was associated with a decrease in total cost *and* a decrease in total units. The remaining 9% of the time, there was no change in either units or total cost.

Unit cost increased over time for 13 Discrete Services (Table 7). 54% of the time the increase was associated with an increase in units *and* an increase the total cost. 39% of the time the increase was associated with an increase in total cost *and* a decrease in units. The remaining 7% of the time, there was no change in either units or total cost.

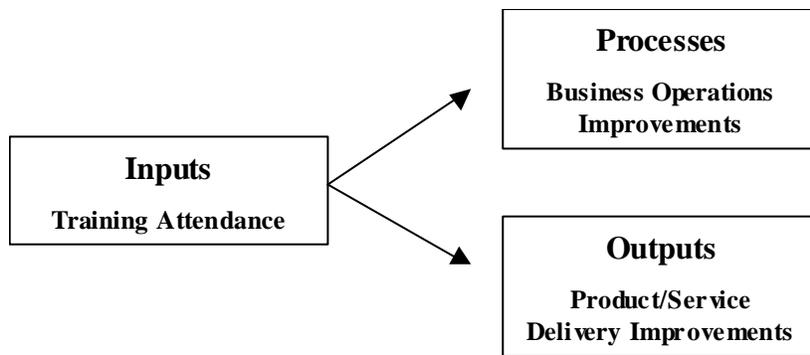
*It appears that there is not enough data to determine the relationship between customer demand, actual budget, and resulting unit cost at the Discrete Service level.*

**General Questions**

**1.3.8 Question 8: Have ORS/ORF’s business operations, products, and service delivery improved as a result of the inputs provided by the Office of Quality Management (OQM)?**

As part of the PM implementation process, the OQM developed and provided 8 training courses for Service Group members and provided both internal and external consultants to Service Groups members. The training courses and consultant services are the inputs provided by the OQM. Service Group members use the knowledge gained to make improvements to their business operations. It is hypothesized that the improvements made to business operations will positively impact ORS/ORF’s product and service delivery to NIH customers.

The diagram shows significant relationships found in the evaluation.

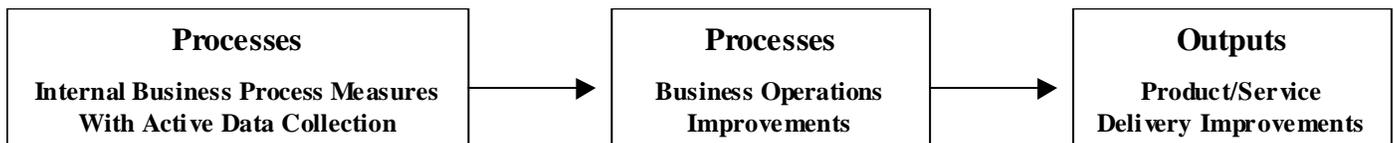


Training attendance is directly linked to both ORS/ORF business operation improvements and product and service delivery improvements. (See Section 7.16, Figure 4).

**1.3.9 Question 9: Have ORS/ORF’s products and service delivery improved as a result of diagnosing and implementing changes to business operations?**

As part of the PM implementation process, Service Groups were required to diagnose and implement changes to their business operations. Service Groups collect and analyze data using their defined internal business process measures to diagnose and improve their business operations. It is hypothesized that the diagnosis and changes made to business operations will positively impact ORS/ORF’s product and service delivery.

The diagram shows significant relationships found in the evaluation.

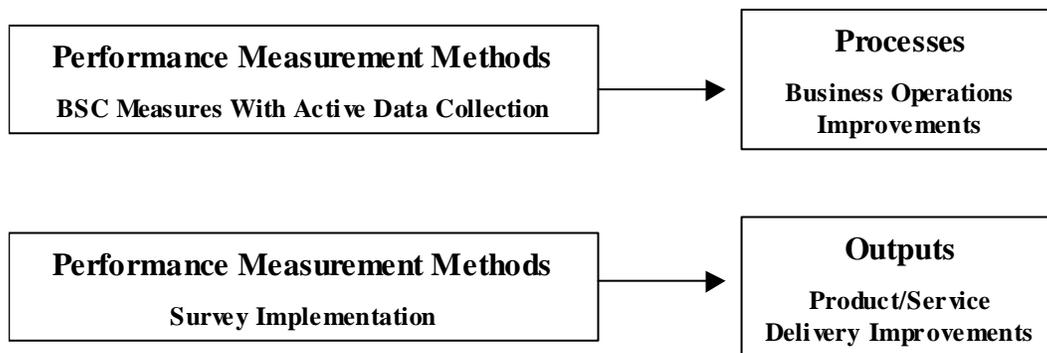


Active internal business process measurement appears to be a critical factor in driving business operations improvement. Business operation improvement appears to be a critical factor in driving product and service delivery improvement. Further, active internal business process measurement improves product and service delivery indirectly, through business operations improvement. (See Tables 17 and 18).

**1.3.10 Question 10: Have ORS/ORF’s products and service delivery improved with the implementation of performance measurement methods?**

As part of the PM implementation process, Service Groups were required to implement a variety of performance measurement methods including the adoption and use of BSC measures and the use of customer surveys to assess customer satisfaction. Service Groups collect and analyze data using their BSC measure results and customer survey results to diagnose and improve their business operations. It is hypothesized that the diagnosis and changes to business operations will positively impact ORS/ORF’s product and service delivery.

The diagram shows significant relationships found in the evaluation.



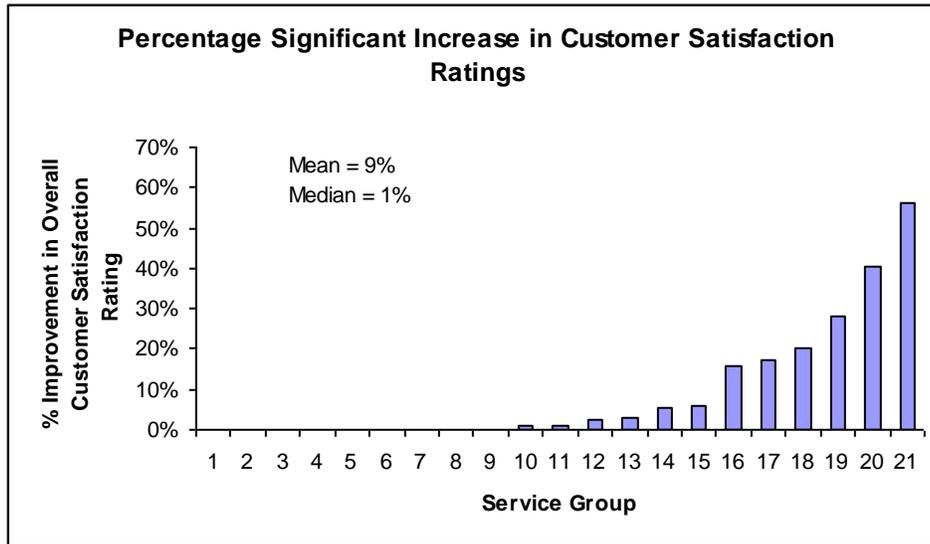
BSC measurement appears to be a critical factor in driving business operation improvement and survey implementation appears to be a critical factor in driving product and service delivery improvement.

**1.3.11 Question 11: Have ORS/ORF customer satisfaction ratings improved with the implementation of performance measurement methods?**

As part of the PM implementation process, Service Groups were required to implement a variety of performance measurement methods including the adoption and use of BSC measures and the use of customer surveys to assess customer satisfaction. Service Groups collect and analyze data using their BSC measure results and customer survey results to diagnose and improve their business operations. Improvements made to business operations will, in turn, impact product and service delivery. It is hypothesized that improved product and service delivery will positively impact ORS/ORF’s customer satisfaction ratings.

It is not possible to test the relationships hypothesized since we currently we do not have enough data. More Service Groups would have to conduct customer surveys for the same product or service more than once. Though no attribution of cause can be made, it is possible to view customer satisfaction rating improvement for those Service Groups that conducted customer surveys using the ORS/ORF Customer Scorecard over time.

Of the 21 comparable customer surveys conducted more than once, there were 9 that yielded insignificant results (e.g., the increase or decrease in the overall customer satisfaction rating was not significantly different from the previous rating). These surveys were assigned a 0 percentage improvement. None of the surveys showed significant decreases in customer satisfaction. Twelve surveys showed significant increases in overall customer satisfaction ratings as shown in the chart.

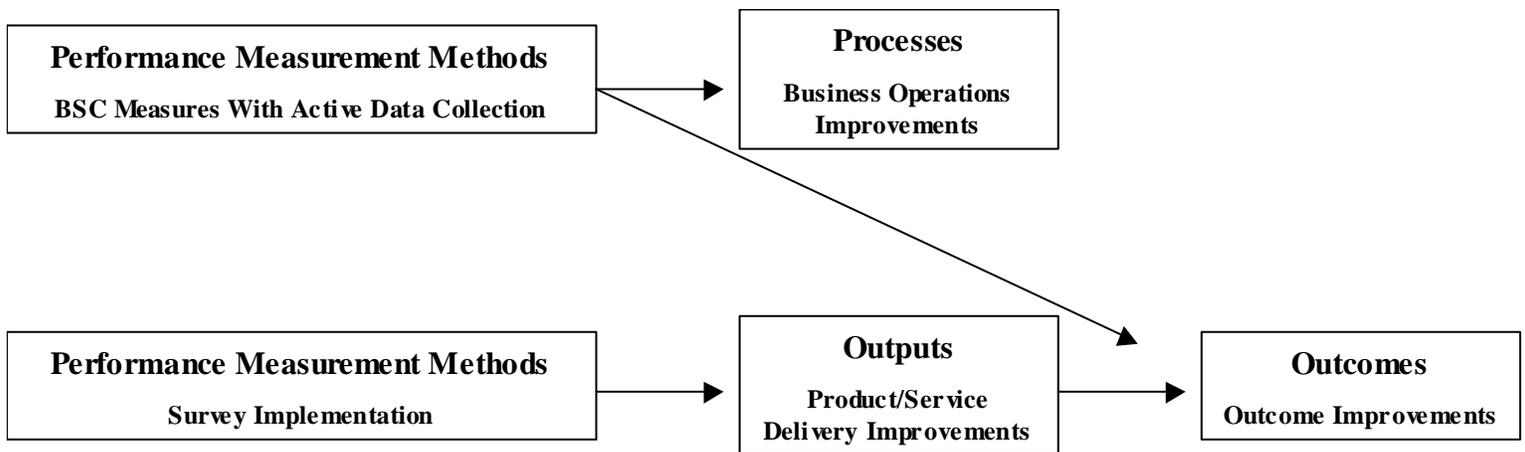


For the 21 comparable surveys conducted, there were **no instances** of significant decreases in customer satisfaction since FY02. Fifty-seven percent of the surveys showed **significant increases** over time and 43% showed no differences.

**1.3.12 Question 12: Have ORS/ORF outcomes improved with the implementation of performance measurement methods?**

As part of the PM implementation process, Service Groups were required to implement a variety of performance measurement methods including the adoption and use of BSC measures and the use of customer surveys to assess customer satisfaction. Service Groups collect and analyze data using their BSC measure results and customer survey results to diagnose and improve their business operations. Improvements made to business operations will, in turn, impact product and service delivery. It is hypothesized that improved product and service delivery will positively impact ORS/ORF’s outcomes. Outcomes may include customer satisfaction, cost savings, cost avoidance, new services, etc.

The diagram shows significant relationships found in the evaluation.



BSC measurement appears to be a critical factor in directly driving business operation improvements and outcome improvements. BSC measurement does not appear to be related to output improvements either directly or indirectly.

Survey implementation appears to be a critical factor in driving product and service delivery improvement. Survey implementation also appears to drive outcome improvement indirectly through product and service delivery improvement.

***1.3.13 Question 13: Overall, what have been the organizational effects of implementing the PM process? Have these effects been positive or negative?***

The OQM used the ORS/ORF Customer Scorecard to gather satisfaction data from their customers (i.e., Service Group members). The OQM modified the scorecard to obtain additional data that provide insight into the organizational effects of the PM process implementation. The scorecard was used each fiscal year since FY02, though additional questions were added in subsequent fiscal years.

The OQM Scorecard obtained customer data on the following areas:

- FY04 PM Implementation
- FY05 PM Implementation Needs
- PM Climate

*1.3.13.1 FY04 PM Implementation*

The OQM provided an extensive array of tools, resources, and training to its Service Group customers. Service Group members were asked to rate the helpfulness of these resources on a scale that ranged from (1) Not at all Helpful to (10) Extremely Helpful. Mean ratings ranged from a high of 7.97 on PM Consultants (i.e., OQM-provided external consultants) to a low of 4.78 on the PM Website. The lowest mean rating (4.78) was around the midpoint of a 10-point scale. In general, respondent perceptions are that all OQM-provided tools, services, communication vehicles, and support were at least somewhat helpful and many were very helpful. The tools, services, communication vehicles, and support that achieved ratings of 6.5 or above include external consultants, supervisor support, PM Template, and PM Presentation Template.

*1.3.13.2 FY05 PM Implementation Needs*

In addition to asking Service Group members about the helpfulness of OQM-provided resources in FY04, Service Group members were asked to rate proposed resources for FY05. For each proposed resource respondents were asked to rate their perceptions on a scale that ranged from (1) Not at all Helpful to (10) Extremely Helpful. Mean ratings ranged from a high of 7.84 on PM Consultants (i.e., OQM-provided external consultants) to a low of 5.59 on a yearly PM conference. The lowest mean rating (5.59) was around the midpoint of a 10-point scale. In general, respondent perceptions are that all proposed OQM-provided tools/resources and training will be at least somewhat helpful and many will be very helpful. The proposed FY05 tools, resources and training that achieved ratings of 6.5 or above include external consultants, IT support to establish data collection systems, regular meetings with management to discuss results, and training on customer assessment.

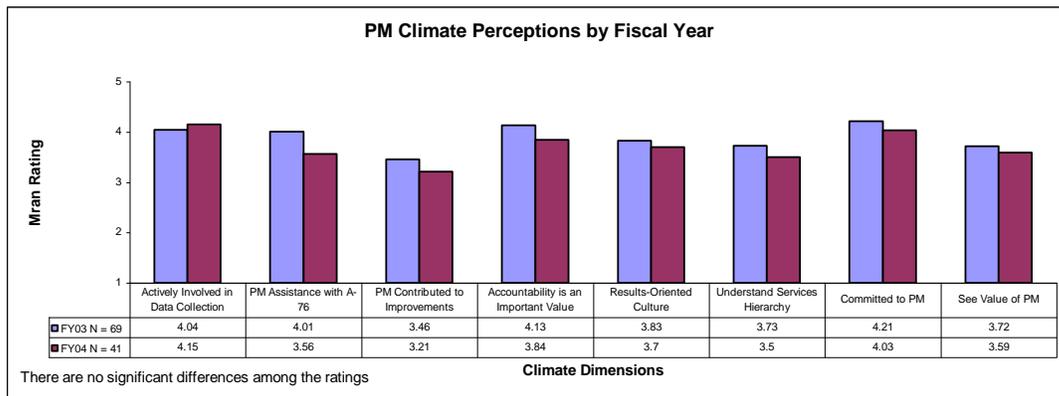
*1.3.13.3 PM Climate*

Climate is an important factor in promoting a variety of desired organizational outcomes. Climate is defined as the practices and procedures in an organization that connote or signal to people what is important (Schneider, 1975). The PM climate measure used by the OQM is designed to measure

respondent’s perceptions of the extent to which important practices and procedures related to PM implementation exist in their organizations.

The chart shows mean ratings on PM climate dimensions in FY03 and FY04. For each dimension respondents are asked to rate their perceptions on a scale that ranges from (1) Strongly Disagree to (5) Strongly Agree. Mean ratings range from a high of 4.21 on PM Commitment in FY03 to a low of 3.21 on PM Contribution to Improvements in FY04. Notice that the lowest mean rating (3.21) is around the midpoint of a 5-point scale. In general, respondent perceptions are that most PM climate dimensions have been impacted positively by the implementation of the PM process. Note also that while the ratings are different on dimensions by fiscal year, none of the ratings are statistically significantly different.

Climate dimensions that achieved ratings of 4.0 or above include commitment to PM, accountability as important value, PM assistance with A-76 directive, and ability to actively participate in data collection.



**1.3.14 Question 14: How do ORS/ORF’s efforts to measure performance through the Balanced Scorecard approach compare to those of other Federal Government agencies?**

With the enactment of legislation such as the Government Performance and Results Act (GPRA) in 1993 and the Klinger-Cohen Act in 1996, federal agencies began searching for performance management systems, such as the BSC, to help them implement a standardized approach to performance measurement. The BSC made its first appearance in government with the Naval Undersea Warfare Center in 1996 and is now being used by several federal agencies. The ORS/ORF adopted the BSC as its performance management model in 2001.

The majority of federal agencies do not display their BSC performance measures so it is difficult to determine with any certainty where on the spectrum ORS/ORF falls. Based on interviews conducted with consultants (i.e., The Balanced Scorecard for Government, Inc) that work extensively with Federal Agencies to implement the BSC, it is believed that ORS/ORF is the second largest implementer of the BSC in the US Federal Government with over 40 scorecards.

The Office of Management and Budget (OMB) developed a diagnostic tool to evaluate federal agencies on performance and determine future funding levels of agencies based on the results. The tool is called the Program Assessment Rating Tool (PART). In FY04, 593 organizations were included in the PART review. Based on PART ratings, over 70% of the organizations using the BSC received high performance ratings (effective or moderately effective performance). Zero organizations using the BSC received low ratings (ineffective or results not demonstrated). Though not subject to the PART review, it is assumed that ORS/ORF would receive similar ratings.

## 1.4 Recommendations

Based on the evaluation results, it is recommended that the ORS and ORF continue its PM process as a means to improve the performance of its products and services. In particular, these two organizations should:

- Continue to gather data from Service Groups to evaluate the progress of the implementation.
- Continue to provide ORS/ORF Customer Scorecard implementation and data analysis assistance to Service Groups.
- Continue to develop and deliver training to Service Group members particularly in the areas of process mapping, measures definition, data analysis, and customer assessment. Encourage service team members to take previously offered training courses if they have not already done so. In particular, it appears that Process Mapping Training should be provided in FY05. There are many Service Groups that have not yet mapped all of their Discrete Services. For those Service Groups that have completed all process maps, it would be useful to re-visit the maps, as changes in process flow are likely to have occurred.
- Continue to develop and provide templates that Service Groups can use to develop their BSC scorecard, define measures, collect and report data, and present their results
- Continue to provide consultation services to Service Group team members. Encourage consultants (both internal and external to OQM) to provide their services to Service Groups when it is possible for all service team members to be present.
- Continue to encourage ORS/ORF senior management involvement in the PM process. Continue to sponsor a quarterly PM conference to promote discussion and to share results among Service Groups.
- Continue to work closely with Service Group team members and the Manage Information Technology Service Group to help Service Groups develop databases they can use for data collection and analysis.
- Continue to require regular performance measure reporting by Service Groups.
- Continue to require regular identification of improvements made to inputs, processes, outputs, and outcomes by Service Groups.

## *Introduction*

### **1.5 Description of Program**

The ORS provides a comprehensive portfolio of services to support the biomedical research mission of the NIH. Some examples of the diverse services ORS provides include: laboratory safety, police and fire departments, veterinary resources, the NIH Library, events management, travel and transportation, services for foreign scientists, and programs to enrich and enhance the NIH worksite. The ORF was created in April 2003 to provide a single point of accountability for all NIH facility activities, to streamline information flow, and to facilitate decision-making on research and research support facility issues. ORF is responsible for all aspects of facility planning, construction, renovation, and maintenance as well as for protecting the NIH environment. Prior to its creation in April 2003, ORF resided within ORS. Both Offices are included as participants in the evaluation study.

ORS/ORF supports all of the 27 NIH Institutes and Centers (ICs) that operate in multiple locations, including the primary location on the Bethesda campus. ORS/ORF Divisions are shown in Table 1.

**Table 1: ORS and ORF Divisions and Offices**

<b>NIH Office</b>	<b>Division/Office</b>	<b>Description</b>
ORS	Office of the Director	Contributes stewardship, direction, and vision. Supports all the ORS business and Service Groups by providing an effective management infrastructure.
	Security and Emergency Response Services	Dedicated to supporting the NIH's biomedical research mission by providing a secure work environment for the NIH campus including visitors and guests, facilities and the ongoing research.
	Program and Employee Services	A diverse array of resources designed to support the NIH mission and its scientific and research challenges by providing essential services. These services include: 24/7 access to information-rich print and electronic resources; video production; conference services; parking and shuttle operations; travel services; laboratory equipment repair; mechanical instrumentation design and fabrication; child care and wellness programs; safe and efficient mail; and immigration services to NIH's foreign scientists.
	Scientific Resources Services	Provides support for the NIH intramural research investigators, laboratories and specialized research facilities. These services work closely with the NIH Intramural Research Program in providing regulatory services, laboratory safety, collaborative research and development, and central animal resource support.
ORF	Office of the Director	Provides operational and strategic leadership to the Research Facilities organization. Agency-wide accountability for all NIH installations and all aspects of real property assets are the Director's responsibility. The Director is also the primary point of contact with the Department of Health and Human Services' Office of Facilities Management and Planning.

NIH Office	Division/Office	Description
	Division of Facilities Planning	Coordinates and manages all planning related to NIH owned and leased facilities on all campuses
	Division of Capital Project Management	Manages all aspects of the construction of new laboratory and administrative facilities on all NIH campuses.
	Division of Property Management	Oversees the operations, maintenance, repair and renovation of all NIH facilities and utility systems and performs general facility management for all NIH real property.
	Division of Real Property Acquisition Services	Provides centralized acquisition services for architecture, engineering, and construction contracting, as well as real property purchase and lease activities.
	Division of Policy and Program Assessment	Ensures that operations of the ORF conform to applicable regulations, codes, standards, and existing policies and guidelines; implement new policies; provide oversight and surveillance of quality initiatives; assess and provide performance tools; and develop uniform management processes across projects.
	Division of Environmental Protection	Works to protect and enhance the NIH environment.

The ORS and ORF represent two of six Central Service Organizations at the NIH. These Central Service Organizations do not receive direct appropriations, but rather support their operations through two NIH authorities: the Management Fund (MF) and the Service and Supply Fund (SSF). Historically there were many concerns with the methods used to fund Central Service Organizations (ORS Office of Business Systems and Finance, 1999). In response to these concerns, ORS searched for an alternative approach to accounting for and funding services it provides to the NIH community. The approach that emerged is known as the New Business Model. Using a managerial accounting technique called activity-based costing (Kaplan & Cooper, 1998), the New Business Model associates demand for service, the level of service, the cost of service, with a beneficiary of the service – the customer.

Movement to the New Business Model has initiated fundamental organizational change in the way ORS/ORF conducts its business, and how it defines what it delivers to customers. One outcome of this change has been the development of the Service Hierarchy as a schema to describe, organize, and communicate the many services ORS/ORF provides to its NIH customers. The Service Hierarchy (Appendix A) categorizes ORS and ORF services into nine major Service Clusters in addition to the Offices of the Directors.

Within each of these Service Clusters, ORS/ORF manages service delivery at two levels: the Service Group level and the Discrete Service level. At the present time there are 55 Service Groups and 198 Discrete Services. It is from this service structure, known as the Service Hierarchy, which ORS/ORF intends to evaluate its service delivery to NIH customers.

## **1.6 Organization Goals**

Regardless of the Service Cluster/Office in ORS/ORF in which service delivery occurs, there are general organizational goals ORS/ORF strives to achieve:

Goal 1: Continue to focus on improving customer service to NIH customers

Goal 2: Modify service options and the service portfolio to keep pace with changing customer needs

Goal 3: Study and improve processes to increase operational efficiency

Goal 4: Reduce costs of services to customers, where possible, while maintaining quality

Goal 5: Invest in the quality of work life for all ORS employees

Goal 6: Analyze changes in the unit cost of products/services to understand why changes occur

## **1.7 Need For Evaluation**

Results-based management is a critical element of effective program delivery by ORS/ORF. In an effort to evaluate its service and product delivery to NIH customers, ORS/ORF needed a system to measure the outcomes of this process. ORS/ORF also wanted data that would shed light on how well it was moving towards accomplishing the goals listed above. To meet this need, in FY01 ORS piloted the implementation of the Annual Self Assessment (ASA) process. The ASA process adapts the theory and methods of the BSC approach to performance management (Kaplan & Norton, 1996). This approach is discussed in greater detail in Section 2.1. Ultimately, the ASA process was revised based on pilot results and participant feedback and has become a multi-year effort, now known as the PM Process, to determine how well ORS/ORF is accomplishing its service delivery to NIH customers.

The results of the evaluation are useful on many fronts. For senior leaders in ORS/ORF, the PM process evaluation brings together in a single management report many seemingly disparate services that provide a snapshot of how well the organizations are doing. This comprehensive, database view has never been available to senior leadership in such a format. Senior leaders can use the evaluation results in their strategic planning and budgeting processes. It also serves as an indicator of how the PM process is operating, how it is impacting service delivery, and changes that could be made to improve the process.

For operational managers in ORS/ORF the results provided by the PM process clearly describe what their customers want, how to make process improvements, what they need to invest in for future growth and learning, and ultimately how well they are managing their financial costs. The PM process provides performance results that address some performance goals in the NIH Annual Performance Plan and Report (Office of Evaluation, 2002). The PM evaluation process can be replicated within the ICs at NIH to accomplish performance measurement and compliance with the GPRA. Lastly, the results of this evaluation can be shared with other Federal Government organizations that are working on developing and implementing performance measurement systems. ORS/ORF can serve as a model on how to implement and assess organizational change within a large, diverse Government organization.

There is sound rationale for conducting the evaluation during the FY02 – FY04 timeframe. The New Business Model had its implementation occur during the FY99-FY00 time period. During FY01 the ASA process was piloted with 36 ORS/ORF Discrete Services to test the methodology and the types of results that were obtained. This pilot testing allowed refinement of a number of issues, including: 1) the use of common measures to provide an ORS/ORF overall analysis; 2) expanding the availability of consultants to work with individual PM process teams on performance measures, data collection and analysis, and 3) delivering training so as to develop the skills of ORS/ORF employees in performance measurement, process mapping, and data collection and analysis.

## 1.8 Evaluation Questions

The following questions form the basis of the evaluation of organizational change in ORS/ORF as brought about by implementation of the PM process. The purpose of the evaluation is to assess the outcomes of the new approach and its impact on all areas of ORS/ORF. Table 2 shows one set of study questions that are framed in terms of the BSC approach.

**Table 2: Evaluation Questions - Service Group Performance**

<b>BSC Perspective</b>	<b>Question</b>
Customer	1. How satisfied are Service Group customers with ORS/ORF products and services?
	2. What needs do Service Group customers have that ORS/ORF is not currently fulfilling?
Internal Business Process	3. Can Service Groups describe how their processes operate through depiction in process maps?
	4. Can Service Groups diagnose and improve the methods they use to deliver products and services?
Learning and Growth	5. Are Service Groups retaining the employees they need to meet customer demand?
	6. Are Service Group employees satisfied with their quality of work life here?
Financial	7. Did Discrete Service unit cost of service delivery change? If so, why? Was it due to changes in customer demands? Was it due to changes in the cost of operations?

A second set of study questions concern the impact that the PM process has had on overall organization level outcomes. Table 3 shows the questions framed in terms of the Performance Measurement Model discussed in greater detail in Section 2.2.

**Table 3: Evaluation Questions – PM Process Implementation Impact on Organizational Performance**

<b>Performance Measurement Component</b>	<b>Question</b>
Inputs	8. Have ORS/ORF's business operations, products, and service delivery improved as a result of the inputs provided by OQM?
Processes	9. Have ORS/ORF's products and service delivery improved as a result of diagnosing and implementing changes to business operations?
Outputs	10. Have ORS/ORF's products and service delivery improved with the implementation of performance measurement methods?
Outcomes	11. Have ORS/ORF customer satisfaction ratings improved with the implementation of performance measurement methods?

<b>Performance Measurement Component</b>	<b>Question</b>
	12. Have ORS/ORF outcomes improved with the implementation of performance measurement methods?
	13. Overall, what have been the organizational effects of implementing the PM process? Have those effects been positive or negative?
	14. How do ORS/ORF's efforts to measure performance through the BSC approach compare to those of other Federal Government Agencies?

**2 Evaluation Model**

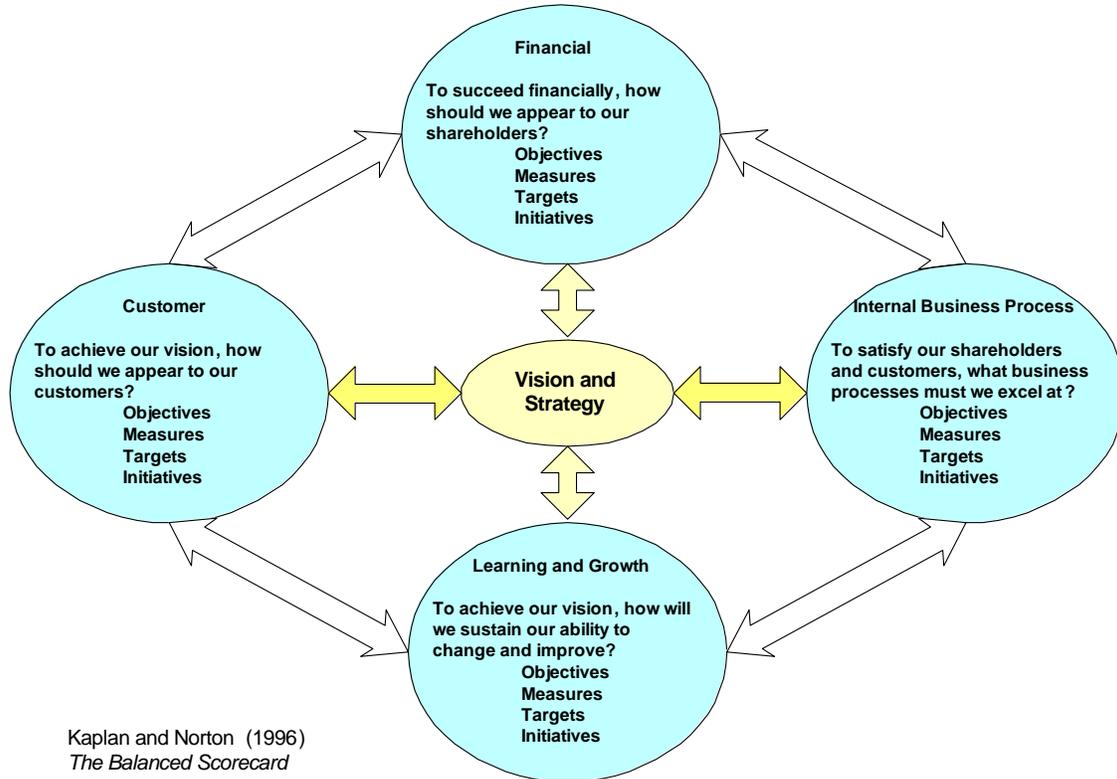
**2.1 Balanced Scorecard Model**

ORS/ORF chose the BSC as the methodology to use to assess and improve the performance of the services delivered to the NIH community. This approach was developed in the early 1990s in a Harvard Business School research project with twelve companies at the leading edge of performance measurement (Kaplan & Norton, 1992). The value of the BSC approach is that it provides a comprehensive picture of complex businesses while minimizing the number of measures. This limited set of measures allows managers to focus attention on those things that are most important and prevents information overload that occurs with having too many measures. It also guards against sub-optimization in one area by encouraging managers to consider important measures all together. The BSC approach has been implemented in numerous organizations, both public and private, during the past ten years (Kaplan & Norton, 2001).

The BSC approach uses a set of measures comprised of 4 measurement perspectives: Customer Perspective, Internal Business Perspective, Learning and Growth Perspective, and Financial Perspective (Kaplan & Norton, 1996). Figure 1 shows the interrelationships of the 4 perspectives.

**Figure 1: Balanced Scorecard Model**

**BSC Provides a Framework to Translate Corporate Vision and Strategy into Operational Terms**



The Customer Perspective of the BSC measures how customers view the organization and its products and services. In essence this perspective often captures measures of both customer satisfaction and the future needs of customers. For Federal Government organizations, the Customer Perspective is the key perspective as agencies are in business to serve their customers. Satisfying customers and meeting their needs are particularly critical to government organizations whose missions are primarily to serve the public (OMB, 1994; Kaplan & Norton, 1996). Thus, it is very typical for Government organizations using the BSC to place the Customer Perspective at the top of their scorecard or template, and have all objectives and measures be driven from that Customer Perspective.

The Internal Business Perspective focuses on translating customer expectations into actions that must occur internally for the organization to deliver to customers. This perspective focuses attention on internal processes, decisions, and actions that occur. It is in this arena where operational efficiencies are typically diagnosed and improved.

The Learning and Growth Perspective recognizes that the targets for an organization to be successful are constantly changing, and to remain in business one must change and innovate. Typically this innovation involves not only making improvements to existing products and services, but also introducing entirely new products and services that meet changing customer needs. It is through the introduction of new products and services that the organization increases its value to customers, and thus encourages

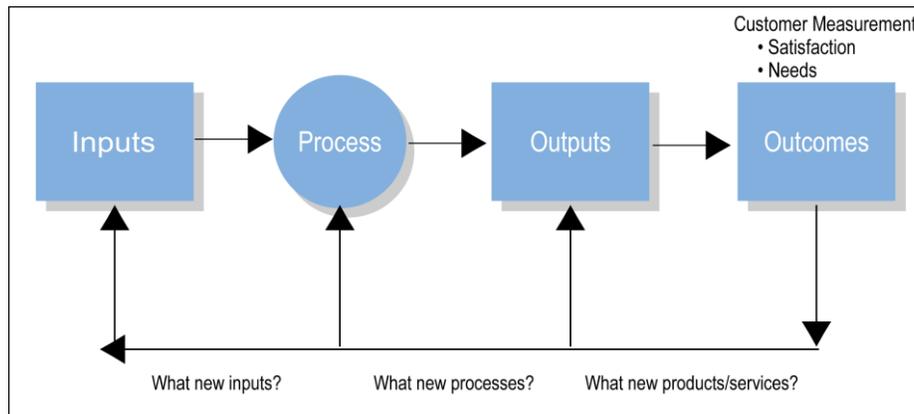
customer loyalty. Often this innovation comes about by investing in the skills and abilities of the organization's workforce, along with the acquisition of new tools and technology.

The Financial Perspective measures whether all other activities are contributing to bottom-line improvement. Since most Federal Government Agencies are not in the business of making a profit, measures in this arena typically relate to the good stewardship of funds, the effective use of resources. ORS/ORF has taken the framework of the BSC to serve as the basis for its PM process.

## 2.2 Performance Measurement Model

Performance measurement has become a key concern for most Government Agencies due to efforts to address the GPRA through Annual Performance Plans and Reports (OMB, 1994). Figure 2 summarizes a widely used model of performance measurement that serves as the conceptual framework for this study. In the model outcomes occur when the organization's products and services are delivered to customers. Thus one critical outcome measure in this model is that of customer satisfaction with an organization's products and services. Another critical outcome measure is the degree to which products and services are meeting the needs of customers. Products and services are typically viewed as outputs created by a process that can be influenced by many process variables that need to be measured and studied. Processes begin with inputs in terms of labor hours, materials, and/or supplies. The model shows the feedback loops between the various components.

**Figure 2: Performance Measurement Model**



## 3 Methodology

### 3.1 Participants

#### 3.1.1 ORS/ORF Service Groups

One participant population is the Service Group. The OQM provided guidance to Office, Program Area, and Division senior managers on selecting Service Group Team Leaders to implement the PM process within their Service Groups. Team Leaders, in turn, selected employees within their Service Groups to form a Service Group Team responsible for PM process implementation. The Service Group Teams are responsible for adapting the BSC for Service Group use, designing performance measures, collecting and analyzing data to improve Service Group performance, periodically reporting on performance to the

OQM, and providing presentations to their peers and ORS/ORF and NIH senior management. Some of the data collected by Service Groups is based on transactions with NIH Service Group customers representing most or all of the ICs. These data are combined to provide the overall measures of performance of the ORS/ORF.

### **3.1.2 NIH Community**

A second participant population is the NIH community. For Service Group customer data collection efforts, the target population included customers who recently received a product/service from ORS/ORF. In some cases, the entire Service Group customer base was surveyed. In other cases (e.g., Provide Library Services, Provide Basic Animal Life Support) sampling plans were used to select random samples of customers to complete data collection instruments (Henry, 1990). For customer data collection efforts that involved interviews or focus groups (e.g., Manage ORS Budget and Finance), individuals were selected to participate based on relevant demographic characteristics, such as their position at NIH, their IC, and/or their interactions with ORS/ORF.

### **3.1.3 The Office of Quality Management**

A third participant population is the OQM that is responsible for developing and overseeing the PM process. As part of its larger mission, the OQM is responsible for:

- Selecting the BSC approach to promote performance improvement throughout ORS/ORF
- Adapting the approach (i.e., PM process) for ORS/ORF use
- Providing training, consultation, data collection, analysis, and reporting support to Service Groups
- Summarizing the results of the PM process implementation to senior ORS/ORF management (e.g., briefings to the Executive Board and Management Council)
- Presenting the approach to the ORS Advisory Committee (e.g., coordinating the annual ORS-wide PM conference with invitation to NIH customers)
- Preparing the Evaluation of Service Delivery to NIH Customers Report.

It should be noted here that the OQM is also represented as a Service Group participant as its Service Group results are included with those of the other ORS/ORF Service Groups.

## **3.2 Data Collection**

### **3.2.1 Sources**

A variety of data sources were used in gathering the performance measures for the Service Groups and ORS/ORF. These data sources included archival data that already existed in financial databases and ordering systems (i.e., transactions data). In many cases data for Service Group process measures did not exist and were established as part of regular Service Group business operations. In all cases, NIH customer satisfaction data were collected using a Customer Scorecard specifically designed for this evaluation effort.

### **3.2.2 Strategies**

Depending on the type of data, different data collection strategies were employed. In the case of archival data, such as financial data or transactions data (e.g., number of orders, number of jobs, number of requests), database extractions were used. For customer data collection, Customer Scorecard data was

collected using both hardcopy surveys and web-based surveys. Personal interviews and focus groups were also conducted. When appropriate, observations of processes were made (e.g. timeliness of access).

### 3.3 Measures

A variety of measures were used to assess the evaluation effort and the PM process implementation. Most of the measures reflect data collected throughout the entire evaluation period (i.e., FY02, FY03 and FY04). Exceptions are noted in the table.

#### 3.3.1 Demographics

Most of the data were collected and analyzed by three demographic variables: Organization (ORS versus ORF), Service Group, and Discrete Service.

#### 3.3.2 Service Group Measures

Table 4 lists the measures used to answer the evaluation questions posed in Table 2.

**Table 4: Service Group Measures**

BSC Perspective	Measure	Description
Customer Perspective	ORS/ORF Customer Scorecard ratings	The extent to which Service Group customers are satisfied with products and services
Internal Business Process	Number and percentage of Service Groups and Discrete Services with process maps completed	The extent to which Service Groups understand and can depict the processes they use to deliver outputs, namely products and services
	Number and percentage of Service Groups and Discrete Services with measures	The extent to which Service Groups have defined measures to analyze and improve product and service outputs
	Number and percentage of Service Group and Discrete Service measures with active data collection	The extent to which Service Groups use measures to analyze and improve product and service outputs
Learning and Growth	Employee turnover (FY02 only)	The extent to which Service Groups maintain a stable workforce.
	ORS/ORF Human Resource Management Index (HRMI) scores (Data not available)	The extent to which Service Group members experience a positive quality of work life
Financial	Unit Cost number of units, total cost, unit cost, and percentage change in unit cost	The extent to which Discrete Service unit cost of products and services changed and why (i.e., customer demand change versus cost of operation)

### 3.3.3 Organization Measures

Table 5 lists the measures used to answer the evaluation questions posed in Table 3

**Table 5: Organization Measures**

<b>Performance Measurement Component</b>	<b>Measure</b>	<b>Description</b>
Inputs	Number of OQM staff and consultant hours	Hours spent by OQM staff or OQM-provided consultants on assisting Service Groups with PM process implementation
	Training attendance	Percentage of Service Group team members attending OQM-developed training courses
Process	Business operation improvements	The extent to which Service Groups have realized improvements in their internal business processes
	Number and percentage of Service Groups with internal business process measures	The extent to which Service Groups have identified internal business process measures
	Number and percentage of Service Group internal business process measures with active data collection	The extent to which Service Groups are using internal business process measures
	Number and percentage of Service Groups and Discrete Services with BSC measures	The extent to which Service Groups have defined BSC measures
	Number and percentage of Service Group and Discrete Service BSC measures with active data collection	The extent to which Service Groups are using BSC measures
	Number of customer surveys conducted by Service Groups	The extent to which Service Groups use customer surveys
Outputs	Product/Service delivery improvements	The extent to which Service Groups have realized improvements in their products and services
Outcomes	ORS/ORF Customer Scorecard ratings	Survey ratings on the ORS/ORF Customer Scorecard summarized for all dimensions Service Group

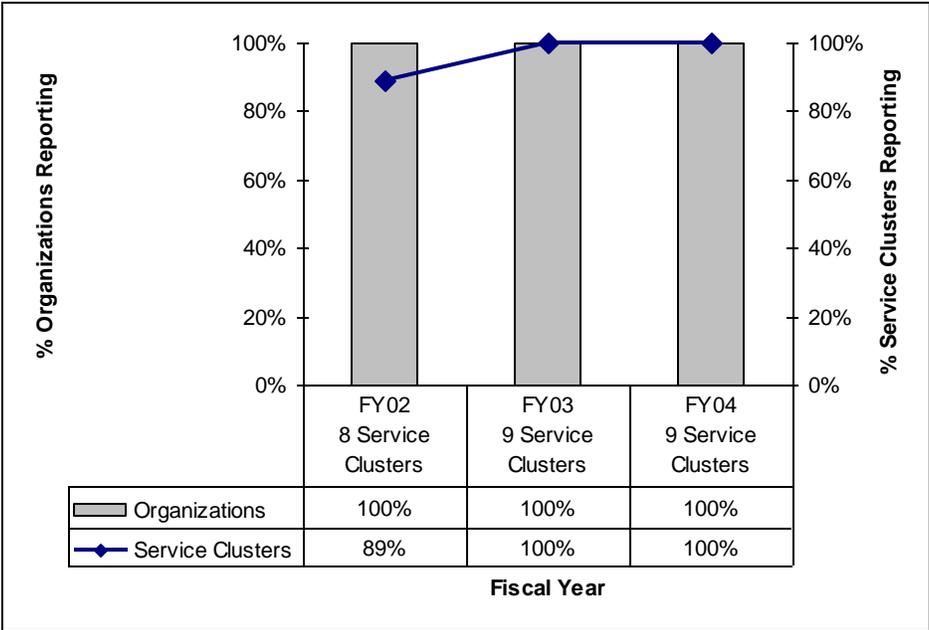
Performance Measurement Component	Measure	Description
	Outcome improvements	The extent to which Service Groups have realized outcome improvements
	OQM Scorecard Ratings	<ul style="list-style-type: none"> <li>The extent to which Service Group members value OQM-provided tools, services, communication vehicles, and support.</li> <li>The extent to which organizational climate has been impacted by PM implementation</li> </ul>

## 4 Demographics

### 4.1 Organization and Service Cluster Participation

There are 2 organizations (ORS and ORF) and 9 service clusters defined in the FY05 Services Hierarchy. Chart 1 shows the percentage of PM participation by organization and service cluster and number of service clusters for each fiscal year. The chart shows that in FY03 and FY04, there is 100% participation by organizations and service clusters.

**Chart 1: Organization and Service Cluster PM Participation by Fiscal Year**



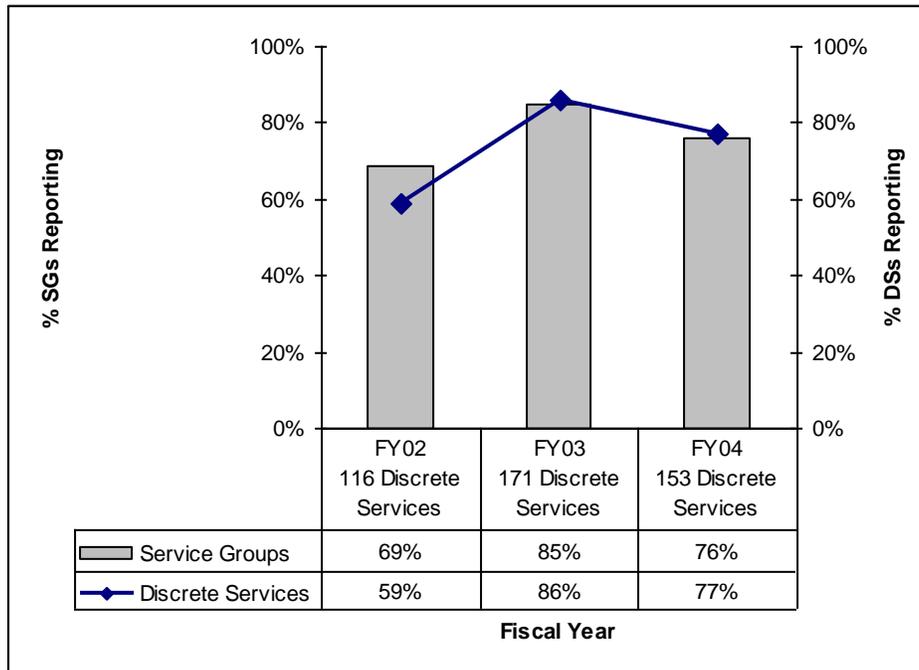
### 4.2 Service Group and Discrete Service Participation

There are 55 Service Groups and 198 Discrete Services defined in the FY05 Services Hierarchy that represent the organizations and service clusters. The Services Hierarchy has been revised each year since

FY02 to reflect both organizational changes (i.e., ORF becoming separate organization) and strategic service level decisions as Service Groups obtained and reviewed PM data and responded to organizational initiatives such as the A76 directive. The revisions allow organizations and Service Groups to better align their services and costs with customer needs and organizational requirements. It is expected that changes to the Services Hierarchy will continue to be made to reflect the ever-changing organizational environment. Data from prior fiscal years are updated as required to align with the current Services Hierarchy.

The goal of the PM process is ultimately to achieve 100% participation by Service Groups. This goal may never be achieved as ORS/ORF is constantly undergoing change to respond to organization level changes often dictated by government directives. Chart 2 shows the percentage of Service Groups and Discrete Services and the number of Discrete Services that participated by fiscal year. The chart shows that in FY04 about three quarters of Service Groups and Discrete Services participated in the PM process. It should be noted that some of the Service Groups not participating in FY04 are groups that have participated in the past and are likely to participate in the future (e.g., Comprehensive Medical Arts Services). For a variety of reasons, such as undergoing an A-76 review, it was impossible for these Service Groups to participate in FY04.

**Chart 2: Service Group and Discrete Service PM Participation by Fiscal Year**



***By FY04, 100% of organizations and service clusters are participating in the PM implementation. Over three quarters of Service Groups and Discrete Services are participating in FY04.***

## 5 Service Group Performance

### 5.1 How satisfied are Service Group customers with ORS/ORF products and services?

#### 5.1.1 Overview

The answer to this question is related to the Customer perspective described in Figure 1. In order to obtain comparable data that could be used to answer this question, the OQM developed a customer

satisfaction survey (ORS/ORF Customer Scorecard) shown in Appendix B. The OQM provided Customer Satisfaction training for Service Groups and consultation services to facilitate Service Group use of the scorecard.

Service Groups used the scorecard to obtain customer satisfaction data from their customers. The OQM worked with Service Group team leaders to determine the best strategy to use to gather the data. Sometimes, hard copy surveys were collected at the point of product/service distribution (e.g., Provide Comprehensive Medical Arts Services, Provide Library Services). Other Service Groups posted web-based surveys (e.g., Lead ORS, Provide Quality, Performance and Organizational Improvement Services). Some Service Groups targeted their entire customer base (e.g., Provide Security Guard Services) while others sampled their customers (e.g., Provide Events Management Services, Provide Basic Animal Life Support). Finally, some Service Groups used focus groups or interviews to obtain the data (e.g., Manage ORS Budget and Finance). In all cases, the OQM served as the repository for data collection and analysis.

Often, Service Groups added additional questions to the scorecard to obtain data they used to answer Service Group- or Discrete Service-specific questions. In rare instances, Service Groups obtained customer data using a different tool. In these rare cases, the Service Group may have already had a customer survey in place, or were surveying for other purposes (e.g., needs assessment).

### 5.1.2 Service Cluster and Service Group Survey Participation

There are 9 service clusters and 55 Service Groups defined in the FY05 Services Hierarchy. Chart 3 shows the percentage of customer survey participation by service cluster and Service Group for each fiscal year. Chart 3 includes all customer surveys conducted, whether using the ORS/OQM Customer Scorecard or not. The chart shows that in FY04 89% of service clusters and 38% of the Service Groups conducted some type of customer survey. The chart also shows the number of customer surveys conducted each fiscal year.

**Chart 3: Service Clusters and Service Groups Conducting Any Customer Survey by Fiscal Year**

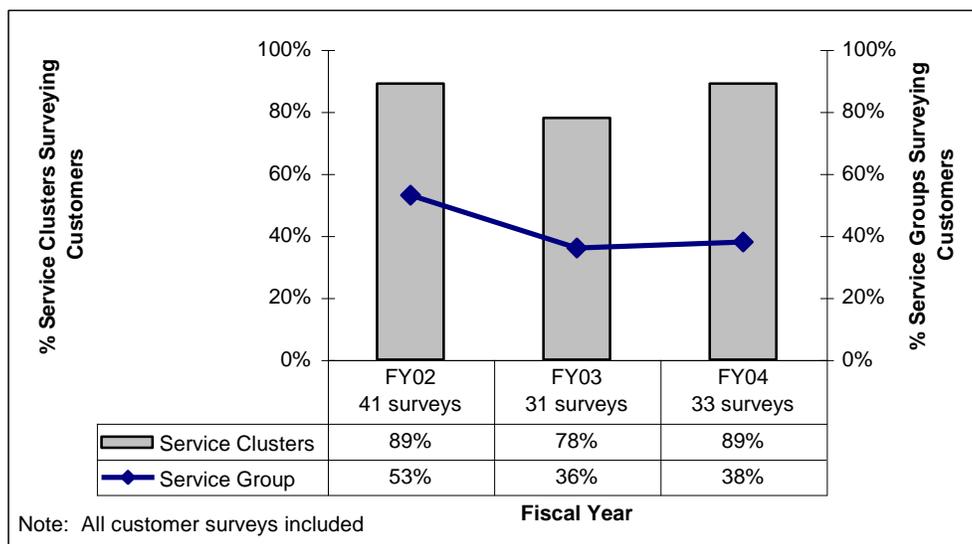
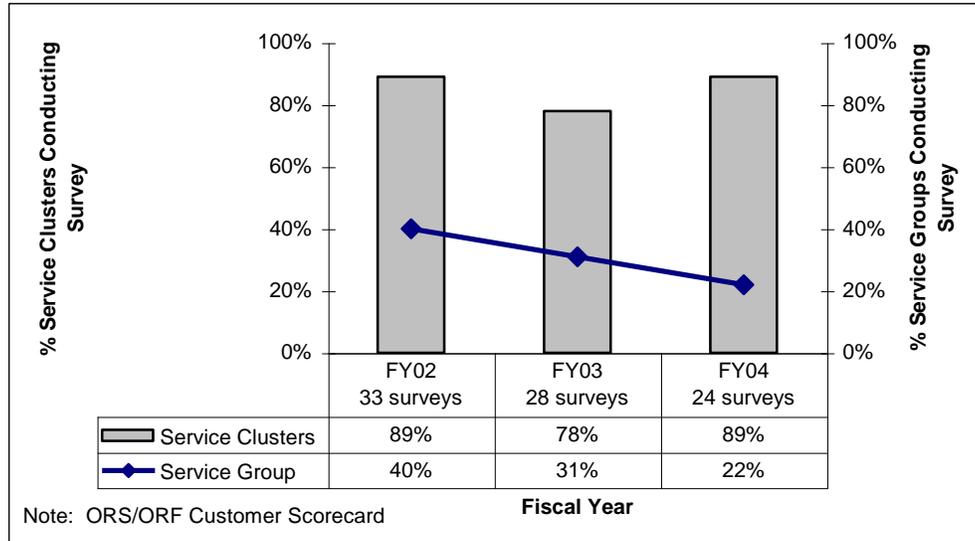


Chart 4 shows the same breakout but shows service clusters and Service Groups that used the ORS/ORF Customer Scorecard as their customer survey. The chart shows that in FY04 89% of service clusters and 22% of Service Groups conducted a customer survey using the ORS/ORF Customer Scorecard. It should be noted here that Service Groups do not necessarily conduct customer surveys yearly. It is up to each

individual Service Group to decide on the frequency that works best for them. Thus, the percentage is merely a reflection of how many surveys were conducted each fiscal year.

**Chart 4: Service Clusters and Service Groups Using ORS/ORF Customer Scorecard by Fiscal Year**



Another way to depict overall customer survey use is to show the percentage of service clusters and Service Groups who have conducted at least one survey since FY02. Chart 5 shows this breakout by fiscal year. The chart shows that by FY04 100% of service clusters and 64% of the Service Groups conducted some type of customer survey. The chart also shows the cumulative number of customer surveys conducted by the end of each fiscal year.

**Chart 5: Cumulative Percentage of Service Clusters and Service Groups Conducting Any Type of Customer Survey by Fiscal Year**

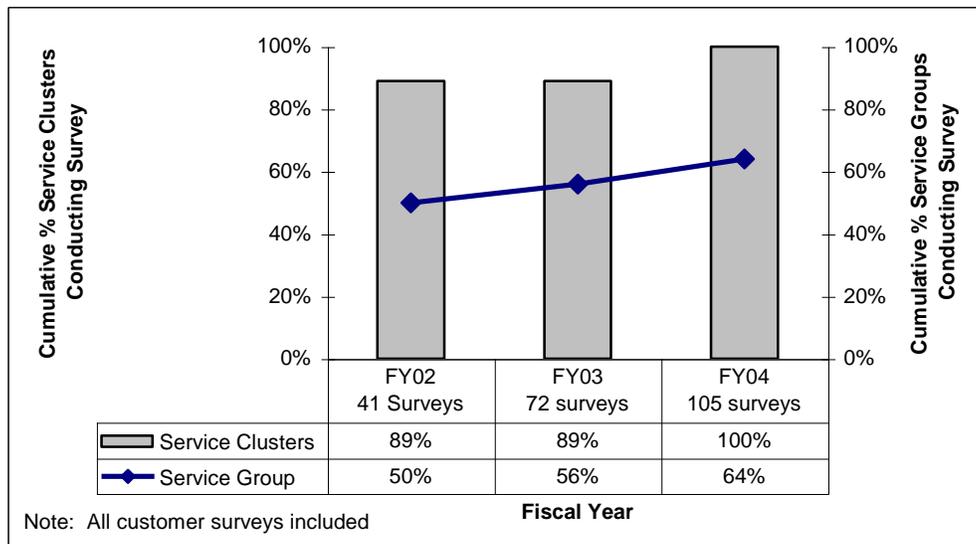
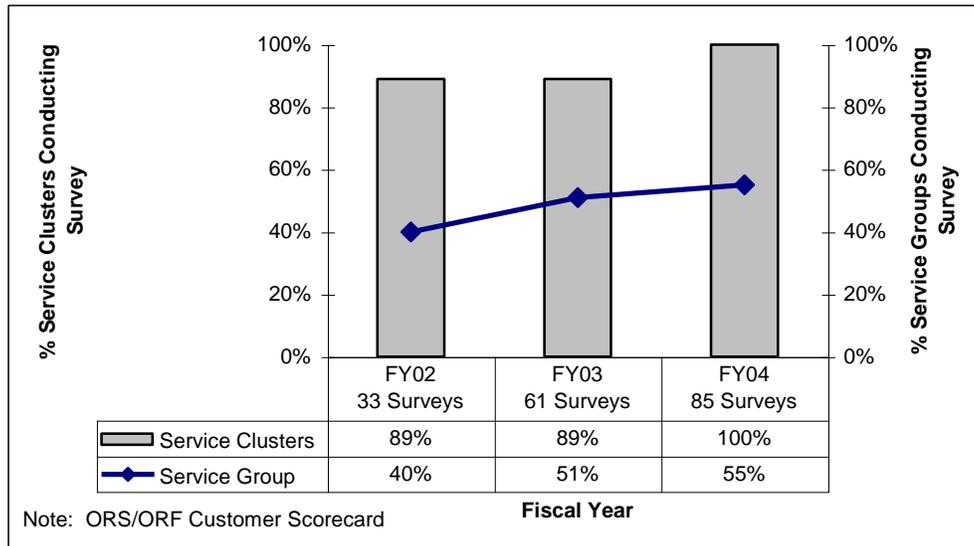


Chart 6 shows the same breakout but shows service clusters and Service Groups that used the ORS/ORF Customer Scorecard as their customer survey. The chart shows that by FY04 100% of service clusters and 55% of Service Groups conducted a customer survey using the ORS/ORF Customer Scorecard. The chart also shows the cumulative number of customer surveys conducted by the end of each fiscal year.

**Chart 6: Cumulative Percentage of Service Clusters and Service Groups Using ORS/ORF Customer Scorecard by Fiscal Year**



### 5.1.3 ORS/ORF Customer Scorecard Results

ORS/ORF Customer Scorecard distribution and response rates are shown in Table 6. The response rates are all over 20% and are well above the average customer survey response rate of about 11%.

**Table 6: Survey Distribution and Response Rates**

FY04 Administration	Number of Surveys Distributed	58,010
	Number of Respondents	14,979
	Response Rate	26%
FY03 Administration	Number of Surveys Distributed	28,796
	Number of Respondents	6,961
	Response Rate	24%
FY02 Administration	Number of Surveys Distributed	2,956
	Number of Respondents	609
	Response Rate	21%

Chart 7 shows the mean ratings on ORS/ORF Customer Scorecard product/service satisfaction dimensions for each fiscal year. For each dimension respondents are asked to rate their satisfaction on a scale that ranges from (1) Unsatisfactory to (10) Outstanding. Only a portion of the scale is depicted in the chart. Satisfaction mean ratings range from a high of 8.15 on Quality in fiscal years FY02 and FY04

to a low of 7.20 on Cost in FY03. Notice that the lowest mean rating (7.20) is still well above the midpoint of a 10-point scale. In general, respondent perceptions are quite positive and similar across the years. It also should be noted that no statistical comparisons between fiscal year ratings are made since ratings represent a variety of Service Group survey participation and customers across the years.

**Chart 7: ORS/ORF Product/Service Satisfaction Ratings**

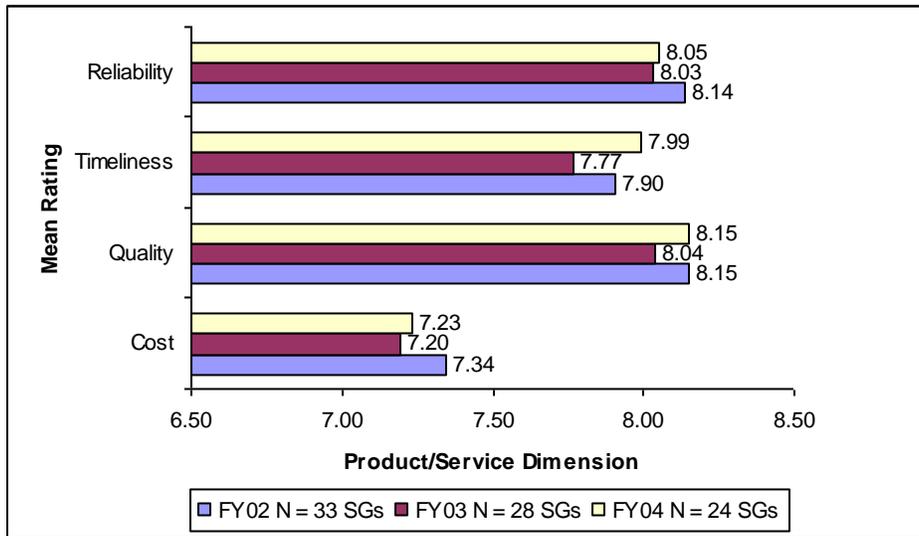
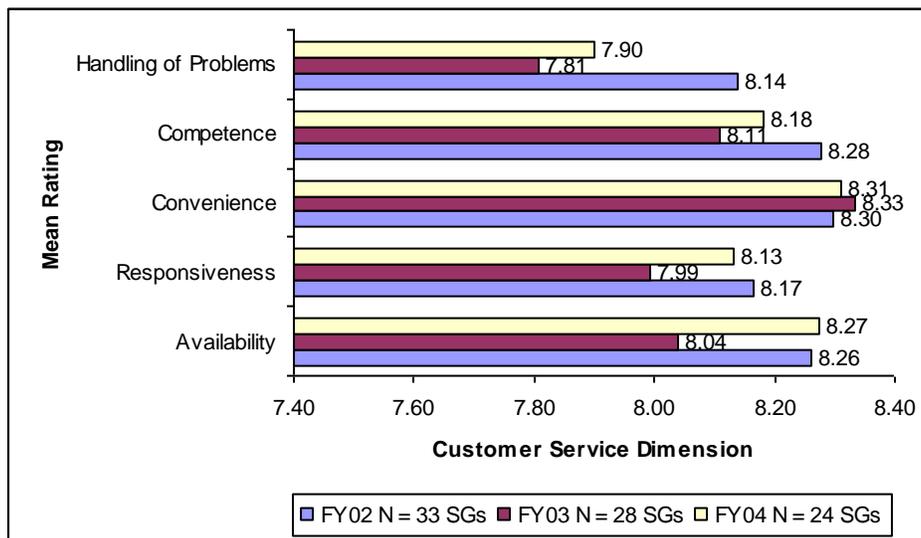


Chart 8 shows the mean ratings on ORS/ORF Customer Scorecard customer service satisfaction dimensions for each fiscal year. Again, for each dimension respondents are asked to rate their satisfaction on a scale that ranges from (1) Unsatisfactory to (10) Outstanding. Only a portion of the scale is depicted in the chart. Satisfaction mean ratings range from a high of 8.33 on Convenience in fiscal year FY03 to a low of 7.81 on Handling or Problems in FY03. Notice that the lowest mean rating (7.81) is still well above the midpoint of a 10-point scale. In general, respondent perceptions are quite positive and similar across the years. As with the product/service dimensions, no comparisons between fiscal year ratings are made since ratings represent a variety of Service Group survey participation across the years.

**Chart 8: ORS/ORF Customer Service Satisfaction Ratings**



*By FY04 64% of Service Groups conducted some type of customer survey for a total of 105 customer surveys. Also by FY04, 55% of Service Groups conducted a customer survey using the ORS/ORF Customer Scorecard for a total of 85 surveys.*

*For surveys using the ORS/ORF Customer Scorecard, all satisfaction ratings across all fiscal years are well above the midpoint of a 10-point scale. Satisfaction rating dimensions with FY04 mean ratings above 8.0 include Reliability of Product/Service, Quality of Product/Service, Competence of Staff, Convenience of Service, Responsiveness of Staff, and Availability of Staff.*

## **5.2 What needs do Service Group customers have that ORS/ORF is not currently fulfilling?**

### **5.2.1 Overview**

The answer to this question is related to the Customer perspective described in Figure 1. There is no one data repository that can be used to assess Service Group customer needs. Service Groups are encouraged to assess customer needs and have done so using a variety of means including:

- Analyzing comments obtained from ORS/ORF Customer Scorecard use (Appendix B)
- Conducting other types of customer surveys such as Needs Assessment surveys

### **5.2.2 ORS/ORF Customer Scorecard Comments**

The ORS/ORF Customer Scorecard provides a section at the end of the survey for customer comments. Three comment categories are included:

- What was done particularly well?
- What needs to be improved?
- Other comments

The OQM provides Service Groups with data and comment analysis. Comment themes are identified for each of the comment categories. Often, customer needs emerge from the comment analysis. For example, the Manage and Administer Worksite Enrichment Programs Service Group conducted a survey in FY04 using the ORS/ORF Customer Scorecard. This Service Group is comprised of 4 Discrete Services:

- Manage childcare services, programs, contracts and use agreements
- Manage food services programs, contracts and use agreements
- Manage retail and fitness services, programs, contracts and use agreements
- Manage interpreting services, programs, and contracts

Data was obtained and comments provided on each of the 4 Discrete Services. Customer needs were summarized by Discrete Service. Using food service as an example, the following customer needs were identified:

- Twenty-four hour dining
- Healthier food
- Fast-food chains
- More food choices
- Additional dining rooms

It is beyond the scope of this evaluation effort to attempt any consolidation of comments across Service Groups. Service Groups are quite diverse in the services and products they provide to their customers. As seen in the example, customer needs are most often specific to Discrete Service and not amenable to consolidation across Service Groups.

### **5.2.3 Needs Assessment Surveys**

Two Service Groups conducted Needs Assessment surveys in FY04: Provide Scientific Equipment and Instrumentation Services and Conduct Collaborative research. Both Service Groups surveyed their actual and potential user populations to obtain data on services used in the past and anticipated use in the future.

Surveys of this type provide valuable information to Service Groups on forecasting customer demand for existing services and identifying new services that are likely to be in demand in the future. As with the ORS/ORF Customer Scorecard comments, it is beyond the scope of this evaluation effort to attempt any consolidation of Needs Assessment results.

*Service Groups obtain data on customer needs through use of the ORS/ORF Customer Scorecard and other types of customer surveys (e.g., Needs Assessment). Customer needs are specific to Service Groups and Discrete Services and are not amenable to consolidation across Service Groups.*

## **5.3 Can Service Groups describe how their processes operate through depiction in process maps?**

### **5.3.1 Overview**

The answer to this question is related to the Internal Business Process perspective described in Figure 1. In order to obtain comparable data that could be used to answer this question, the OQM required each Service Group to complete a process map for the Service Group as a whole and for each of its Discrete Services. The OQM provided Process Map training for Service Groups and consultation services to facilitate Service Group mapping of processes.

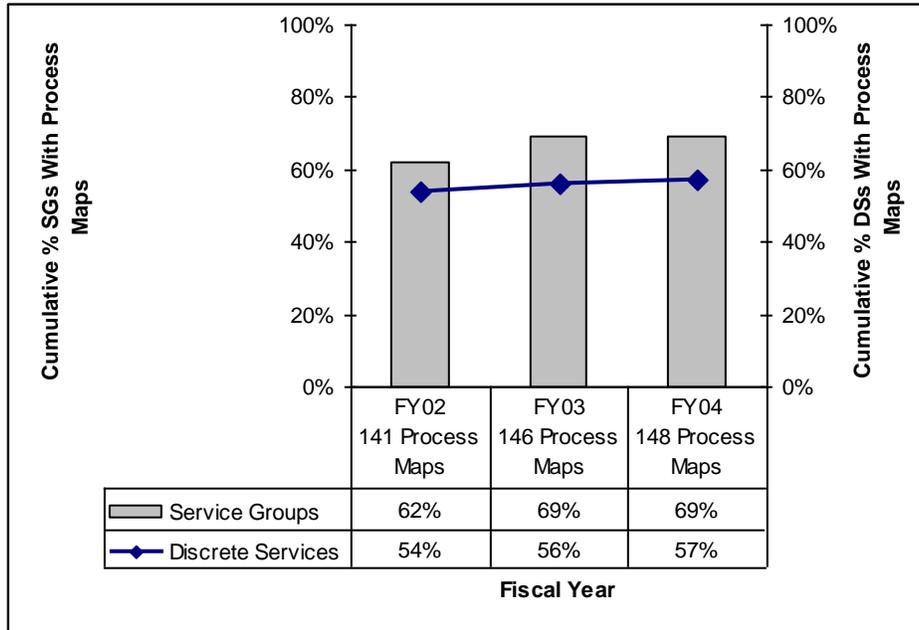
A process is a series of steps that transforms inputs to outputs. Inputs are often thought about in terms of materials, methods, people, equipment, and the environment. Outputs are often described in terms of products and services. A process map is a visual picture of the flow or sequence of events that result in a product or service. A representative process map is shown in Appendix C. Process maps serve several useful purposes:

- Encourage Service Group members to examine and come to agreement on the steps necessary to accomplish their work.
- Assist in examining which activities may impact process performance
- Show unexpected complexity, problem areas, redundancy, and unnecessary loops
- Promote understanding of the relationship of a process to a larger system
- Help to identify boundaries that process cross (e.g., where Service Groups may be dependent upon each other)
- Identify where data can be collected and analyzed
- Serve as a training aid to understand the complete process
- Help to examine the actual process compared to an ideal process

### 5.3.2 Service Group and Discrete Service Process Mapping

Chart 9 shows that by FY04 69% of Service Groups and 57% of Discrete Services developed process maps for their Service Groups and Discrete Services. The chart also shows the cumulative number of process maps developed by the end of each fiscal year.

**Chart 9: Cumulative Percentage of Process Maps Developed by Fiscal Year**



The Process Mapping course was offered in FY02 by the OQM and offered on an as-requested basis in following years. The percentage of Service Groups and Discrete Services with process maps has remained fairly constant over the years. It appears that not all Service Groups have been made aware of the importance of process mapping in subsequent years.

***By FY04, 69% of Service Groups and 57% of Discrete Services developed process maps depicting the process flow of their respective services producing a total of 148 process maps.***

## 5.4 Can Service Groups diagnose and improve the methods they use to deliver products and services?

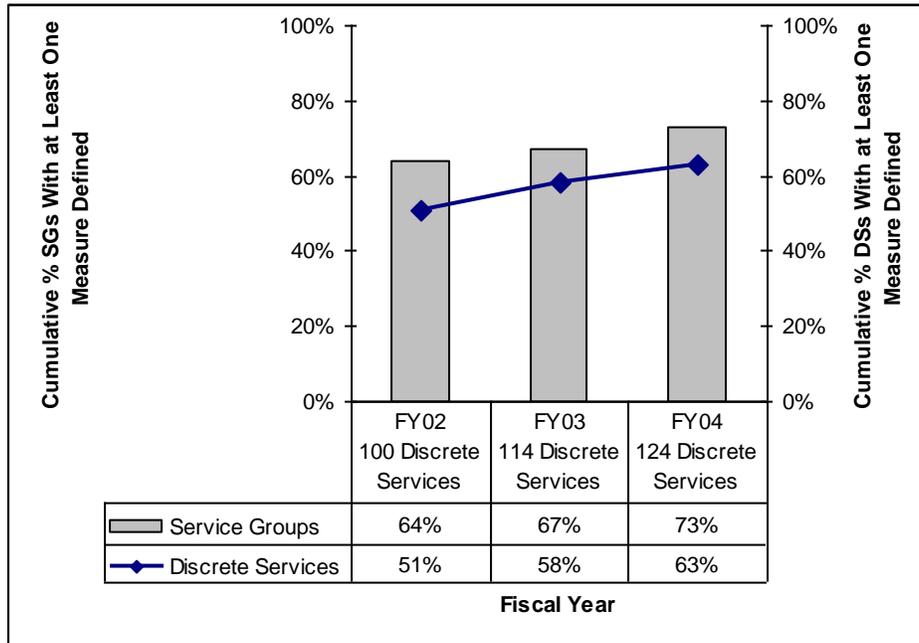
### 5.4.1 Overview

The answer to this question is related to the BSC Model described in Figure 1. In order to obtain comparable data that could be used to answer this question, the OQM required each Service Group to define measures related to each of the BSC Perspectives and collect data for each measure. The OQM provided several training classes (i.e., Data Analysis and Graphing, Behavioral Process Control Chart Analysis, Managing With Measures) for Service Groups and consultation services to facilitate Service Group measure definition, data collection, analysis, and interpretation. A representative set of measures is shown in Appendix D.

### 5.4.2 Service Group and Discrete Service Measure Definition

Chart 10 shows the cumulative percentage of Service Groups and Discrete Services and cumulative number of Discrete Services that have defined at least one measure each fiscal year. The chart shows that by FY04 about three quarters of Service Groups and 63% of the Discrete Services have defined at least one measure.

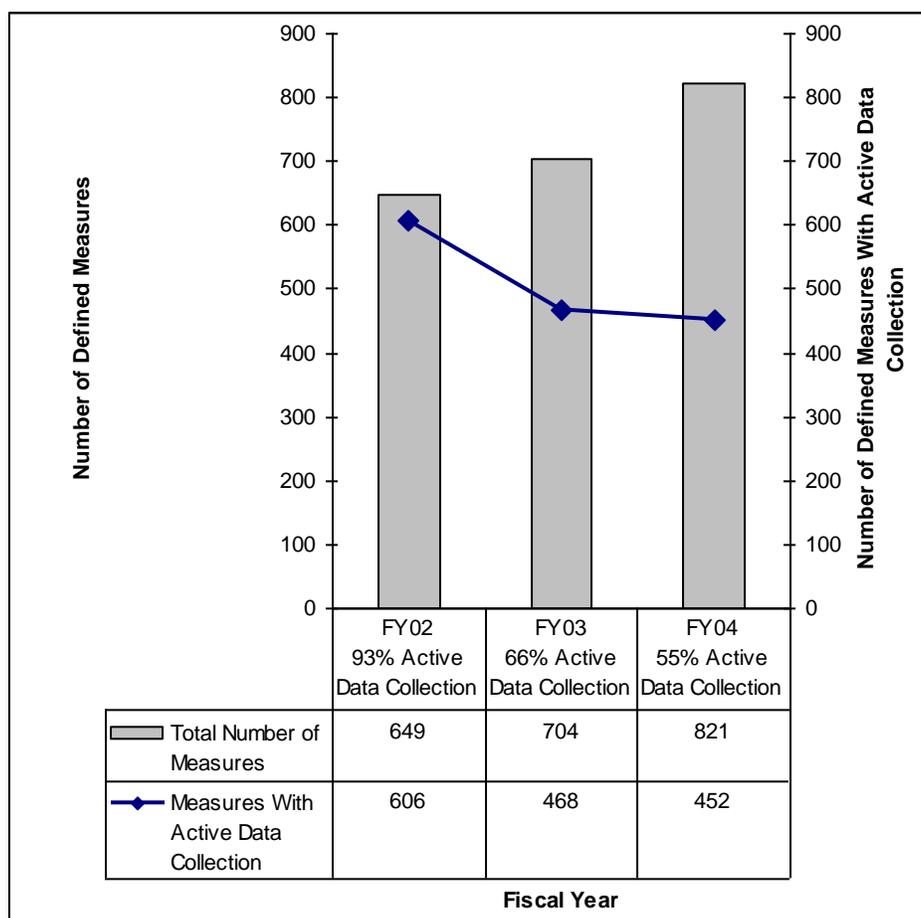
**Chart 10: Cumulative Percentage of Service Groups and Discrete Services With Defined Measures**



### 5.4.3 Service Group and Discrete Service Active Data Collection

Chart 11 shows the total number of defined measures and the total number and percentage of measures with active data collection each fiscal year. The chart shows that while the number of defined measures is increasing from year to year, the number of measures with active data collection is decreasing.

**Chart 11: Number of Defined Measures and Measures With Active Data Collection**



There are several reasons for this. In FY02, Service Groups were required to report 7 common measures (i.e., customer segmentation, customer satisfaction, process maps, turnover, analysis of readiness, unit cost, and asset utilization). Four of the 7 measures were at the Discrete Service level (i.e., customer segmentation, process maps, unit cost, and asset utilization). Thus, the percentage of measures with active data collection was quite high that year. Most Service Group team members were not yet fully trained and not able to go much beyond the required common measures.

In FY03, all but 2 (i.e., customer satisfaction and unit cost) of the required common measures were dropped. It was left up to Service Groups to decide whether it made sense for them to continue with the remaining 5 common measures. Service Groups were (and are) encouraged to re-visit their measures each fiscal year and drop, add, or revise measures as appropriate. Thus, the total number of measures changes from year to year. During this time, Service Group team members were continuing to receive training and becoming more familiar and comfortable defining their own unique measures.

It is not uncommon for Service Groups to initially define a set of measures representing all 4 of the BSC Perspectives, but not necessarily collect data for each measure. Some of the measures require Service Groups to develop data collection tools in order to collect the data (e.g., check sheets, logs, classification systems, databases) or work with other Service Groups or the OQM to collect data from other systems (e.g., unit cost, turnover). In some cases measures were proposed, but data was not collected until implementation of the data collection tools in the next fiscal year.

Finally, as data is collected and analyzed, Service Groups sometimes find that the data is not an adequate measure of what they had intended. Thus, data collection is abandoned, new measures are proposed, and new data collection tools are needed. Similarly, as ORS/ORF undergoes organizational changes (e.g., re-organization, A-76 directive) Service Groups are re-organized with new or modified objectives requiring new or modified measures.

***By FY04, 73% of Service Groups and 63% of Discrete Services have defined at least one measure. By FY04, Service Groups have collectively defined a total of 821 measures and are actively collecting data on 452 measures, representing 55% of the defined measures.***

## **5.5 Are Service Groups retaining the employees they need to meet customer demand?**

### ***5.5.1 Overview***

The answer to this question is related to the Learning and Growth perspective described in Figure 1. In order to obtain comparable data that could be used to answer this question, the OQM worked closely with the Center for Alternative Dispute Resolution (CADR), the Office of Equal Employment Opportunity (EEO), and the Office of Human Resources (OHR) to obtain Service Group level data on employee turnover, employee sick leave, employee dispute resolution, and employee awards. Data for these measures are stored in a variety of NIH databases by Standard Administrative Codes (SACs). It was necessary to cross-reference Service Groups to the codes and there were instances where a one-to-one correspondence did not exist. In these rare instances, Service Groups shared the same data.

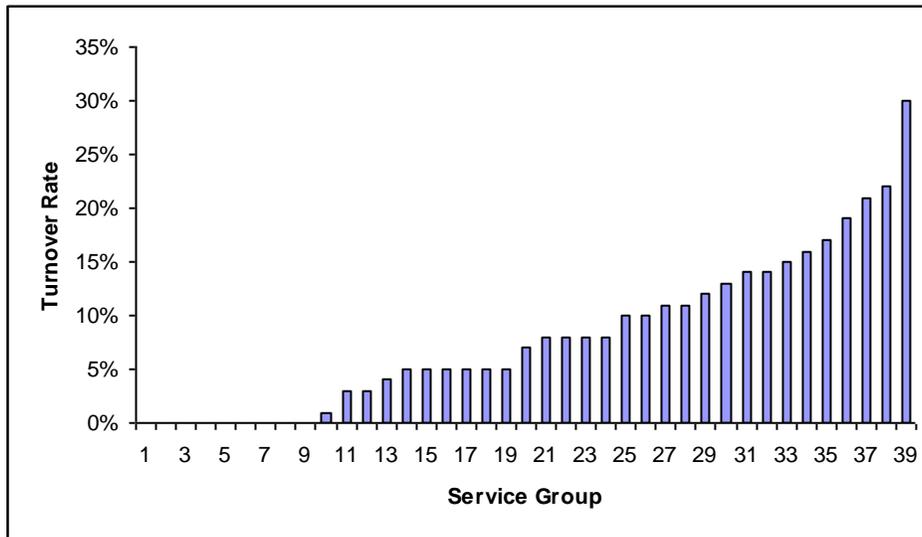
In FY02, data on Service Group level employee turnover was chosen as the common measure. Due to the difficulty in obtaining and cross-referencing the data, the OQM discarded turnover as a common measure for future years. Service Groups are encouraged to track this measure internally over time if deemed important to achieving important Service Group objectives.

Turnover is one indicator of employee quality of work life. High turnover may be indicative of a dysfunctional working environment, the result of organizational changes that have impacted the Service Group's composition or objectives, budgetary constraints placed on the Service Group, etc. It is up to each Service Group to review turnover data in light of other measures to understand its implications. For example, have recent organizational changes necessitated the loss of employees? Could the resulting high turnover be impacting customer satisfaction?

### ***5.5.2 FY02 Service Group Turnover Rate***

Chart 12 shows the turnover rate for 39 Service Groups, for which data were available, in FY02. Turnover ranges from a low of 0% to a high of 30%.

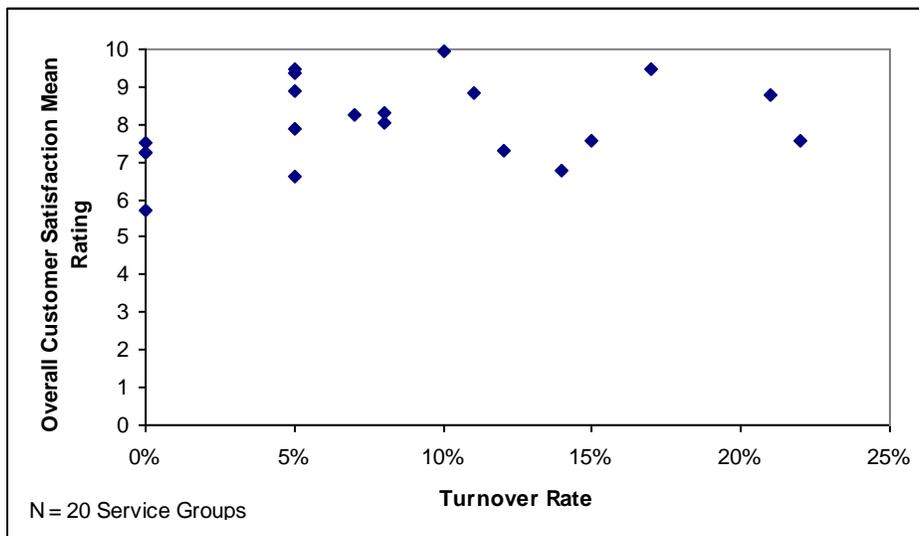
Chart 12: FY02 Service Group Turnover Rate



**5.5.3 Relationship Between Turnover Rate and Customer Satisfaction**

Regression was used to examine the relationship between turnover and customer satisfaction. Of the 39 Service Groups reporting turnover rates in FY02, twenty conducted a customer satisfaction survey using the ORS/ORF Customer Scorecard. Chart 13 shows that there is no relationship between turnover rate and overall customer satisfaction ratings ( $F_{(1, 18)} = 1.33$   $p < .27$ ).

**Chart 13: Relationship Between Turnover Rate and Overall Customer Satisfaction**



It appears that for this set of Service Groups, factors other than employee turnover are associated with their ability to satisfy customers. Keep in mind that the data is quite limited (i.e., 20 Service Groups in FY02). Thus, no firm conclusions can be drawn.

***Turnover does not appear to be related to customer satisfaction. However, it is impossible to draw conclusions from limited data set available.***

## **5.6 Are Service Group employees satisfied with their quality of work life here?**

### **5.6.1 Overview**

The answer to this question is related to the Learning and Growth perspective described in Figure 1. In order to obtain comparable data that could be used to answer this question, the OQM worked closely with the Office of Human Resources (OHR) to determine whether data obtained on the yearly ORS/ORF Human Resource Management Index (HRMI) (i.e., employee quality of work life survey) could be obtained and utilized for the PM effort. After discussions with OHR staff it was determined that the data could not be associated with Service Groups so the proposed measure was dropped.

### **5.6.2 Quality of Work Life Surveys**

Service Groups are encouraged to measure quality of work life for their employees if deemed important to achieving important Service Group objectives. To date, 5 Service Groups have conducted such surveys: Provide NIH Events Management Services, Manage and Administer Worksite Enrichment Programs, Provide Animal Research Services, Procure and Deliver Animal Product, and Provide Basic Animal Life Support.

Quality of Work Life surveys typically ask employees about their satisfaction with work policies, practices, and procedures within their Service Group that contribute to a positive work environment and ultimately, to customer satisfaction. Examples of survey items include:

- My Service Group has a well-defined mission, vision, and values.
- I understand what my supervisors expect of me regarding customer service.
- My Service Group has acquired the technology it needs to accomplish its mission.
- My Service Group devotes enough resources to effectively train its employees.
- I know what constitutes “good performance” with respect to my job.

Quality of Work Life surveys provide Service Groups with important data on how employees perceive their work environment. Ratings can be used to influence changes to Service Group policies, practices, and procedures that will affect employee satisfaction with their work environment and improved customer satisfaction.

It is beyond the scope of this evaluation effort to summarize Quality of Work Life Service Group results. The results are specific to Service Groups and are not amenable to consolidation.

***Service Groups obtain data on employee quality of work life through use of Quality of Work Life surveys. Results are specific to Service Groups and are not amenable to consolidation.***

## **5.7 Did Discrete Service unit cost of service delivery change? If so, why?**

### **5.7.1 Overview**

The answer to these questions is related to the Financial perspective described in Figure 1. In order to obtain comparable data that could be used to answer these questions, the OQM worked closely with the Manage ORS Budget and Finance Service Group to define unit cost and its components. The Manage ORS Budget and Finance Service Group developed a Financial Measures training course to address unit cost. This group, in conjunction with the OQM staff, provided training and consultation to Service Groups to develop unit cost measures for their Discrete Services.

Determination of unit cost is important so that Service Groups can evaluate the relative costs of their products and services. Unit cost is calculated at the Discrete Service level and takes into account the number of products or services provided (i.e., customer demand or output) and the total cost (i.e., actual total budget) for the product or service. Measures involved in unit cost calculations include:

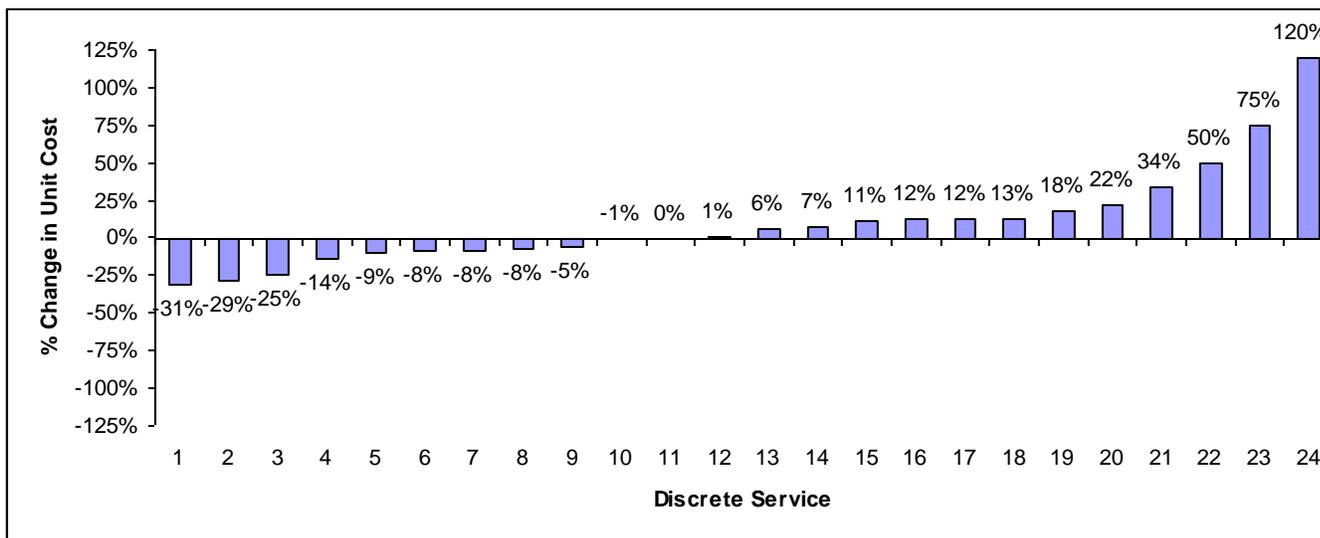
- Total Number of Product/Service Units (Customer Demand or Output)
- Total Cost (Actual Total Budget)
- Unit Cost (Total Cost/Total Number of Product/Service Units)

### 5.7.2 Discrete Service Unit Cost

Chart 14 shows the percentage change in unit cost for each Discrete Service in FY04. Only those Discrete Services with unit cost calculations beginning in FY02 or FY03 are depicted. There are 24 such Discrete Services. It should be noted that many Discrete Services began unit cost calculations, disbanded them, and started anew. For the most part, the revisions were due to organization or Service Group re-organization. Other times this was a result of incorrect unit cost definition. In all cases, Service Group team members work closely with the Manage ORS Budget and Finance Service Group and the OQM to finalize unit cost measures.

Eighteen Discrete Services calculated unit cost each fiscal year beginning in FY02. Six Discrete Services calculated unit cost each year beginning in FY03. The percentage change in unit cost shown in the chart is *calculated against the earliest reporting value* for a total of 24 Discrete Services.

**Chart 14: Percentage Change in Unit Cost**



The chart shows that the percentage change in unit cost ranges from a decrease of 31% to an increase of 120%.

### 5.7.3 Factors Contributing to Unit Cost Change

Unit cost is defined as the Total Cost/Total Number of Units. Unit cost may decrease either as a result of a numerator change to the negative (Total Cost decrease) or a denominator change to the positive (Number of Units increase) or some other combination of factors. Table 7 shows the relationship among Discrete Service unit cost measures.

**Table 7: Unit Cost Measures**

Number of Units and Total Cost	Unit Cost		
	Decrease	No Change	Increase
Units Up and Total Cost Down	0	0	0
Units Up and Total Cost No Change	0	0	0
Units Up and Total Cost Up	7	0	7
Units No Change and Total Cost Down	0	0	0
Units No Change and Total Cost No Change	1	0	1
Units No Change and Total Cost Up	0	0	0
Units Down and Total Cost Down	3	0	0
Units Down and Total Cost No Change	0	0	0
Units Down and Total Cost Up	0	0	5

Table 7 shows that unit cost decreased over time for 11 Discrete Services. Sixty-four percent of the time the decrease was associated with an increase in units *and* an increase in total cost. Twenty-seven percent of the time the decrease was associated with a decrease in total cost *and* a decrease in total units. The remaining 9% of the time, there was no change in either units or total cost.

Table 7 also shows that unit cost increased over time for 13 Discrete Services. Fifty-four percent of the time the increase was associated with an increase in units *and* an increase the total cost. Thirty-nine percent of the time the increase was associated with an increase in total cost *and* a decrease in units. The remaining 7% of the time, there was no change in either units or total cost.

*It appears that there is not enough data to determine the relationship between customer demand, actual budget, and resulting unit cost at the Discrete Service level. There are components of total cost that may be fixed and others that may be variable. For example, government organizations are not often at liberty to react to customer demand due to budget constraints imposed on them by congress. Conversely, budgets often drive customer service levels associated with products and services that must be provided regardless of budget.*

## **6 Organization Performance**

### **6.1 Have ORS/ORF’s business operations, products, and service delivery improved as a result of the inputs provided by the Office of Quality Management (OQM)?**

#### **6.1.1 Overview**

The answer to this question is related to the Inputs, Processes, and Outputs components of the Performance Measurement Model described in Figure 2. Products and service delivery are typically viewed as outputs created by business operations (processes) that are influenced by inputs such as labor hours, materials and/or supplies.

The inputs component consists of the OQM consultation and training provided to Service Groups:

- Consultation Hours (both OQM staff and external OQM consultants)

- Training Attendance (% Service Group team members attending OQM training courses)

The processes component consists of improvements made to Service Group internal business processes:

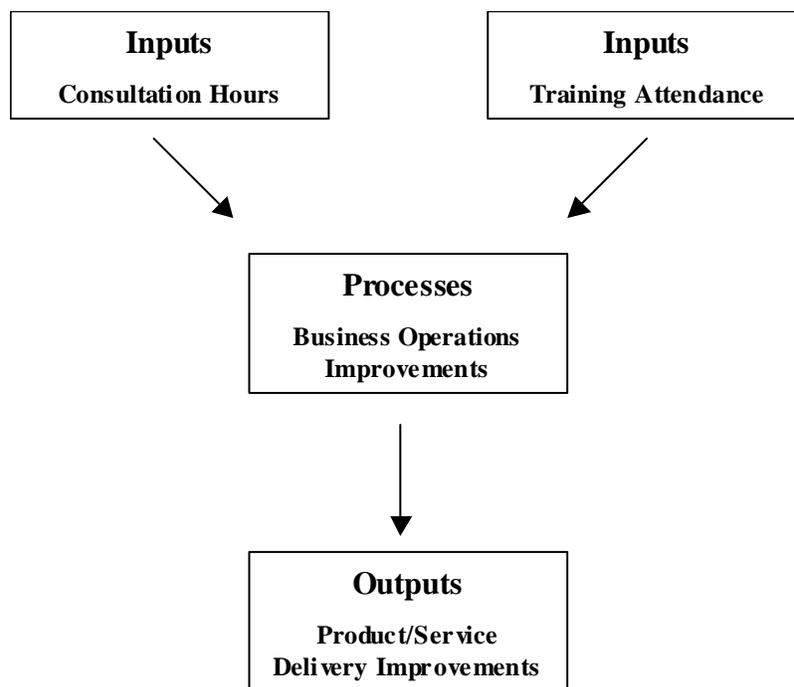
- Business Operations Improvements (Internal Business Process Improvements)

The outputs component consists of improvements made to Service Group products and service delivery:

- Product/Service Delivery Improvements (Output Improvements)

The proposed relationships among the model components are shown in Figure 3.

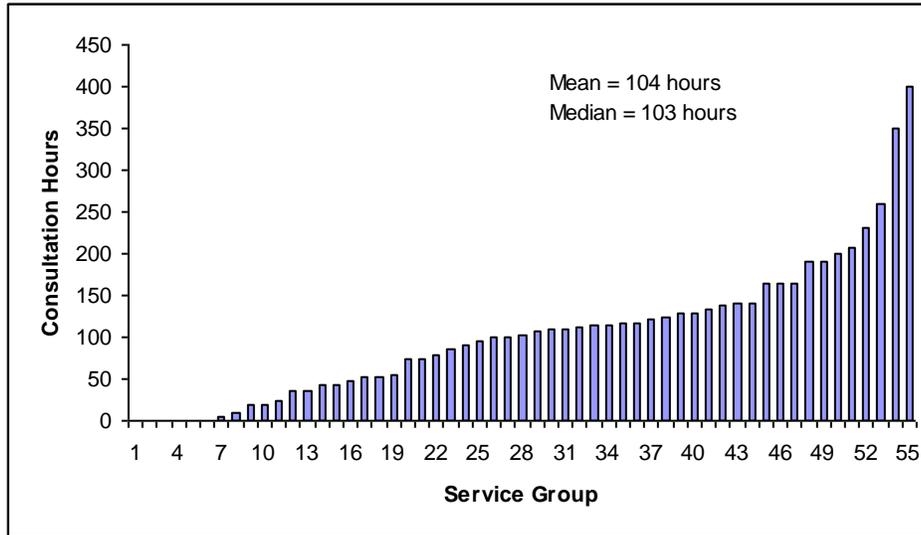
**Figure 3: Consultation, Training, Business Operations Improvement, and Product/Service Delivery Improvement**



### 6.1.2 Consultation Hours

Both OQM staff and external consultants were made available to Service Groups on demand. Chart 15 shows that Service Group use of consultant services ranged from 0 hours to 400 hours over the course of 3 fiscal years. Mean use of consultants consisted of 104 hours, or about 34 hours per year.

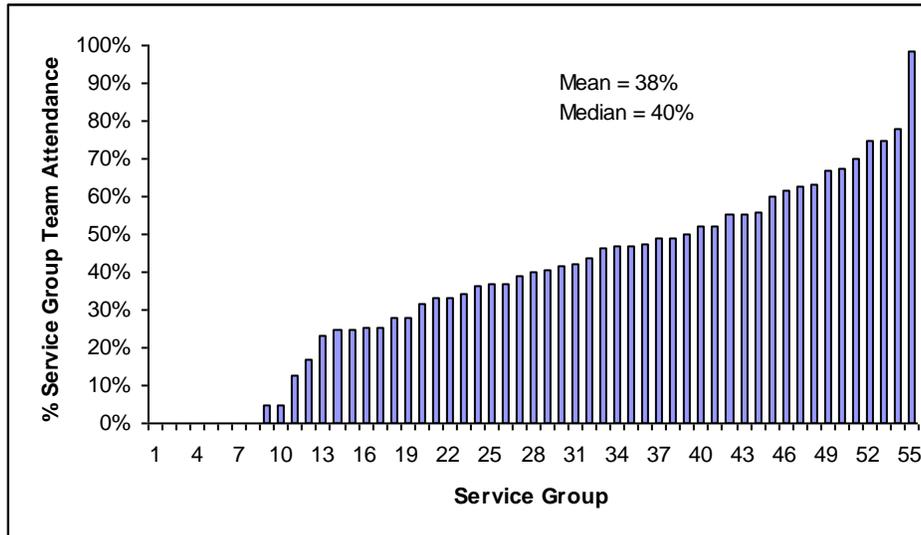
**Chart 15: Cumulative Consultation Hours as of FY04**



**6.1.3 Service Group Training Attendance**

The OQM developed a series of training courses offered to Service Group team members. The courses included ASA Template, Process Mapping, Data Analysis and Graphing, Financial Measures, Process Behavior Analysis, Performance Management Orientation, Balanced Scorecard Approach, and Managing With Measures. Chart 16 shows that overall Service Group training attendance ranged from 0% attendance to 98% attendance over the course of 3 fiscal years.

**Chart 16: Cumulative Service Group Training Attendance as of FY04**

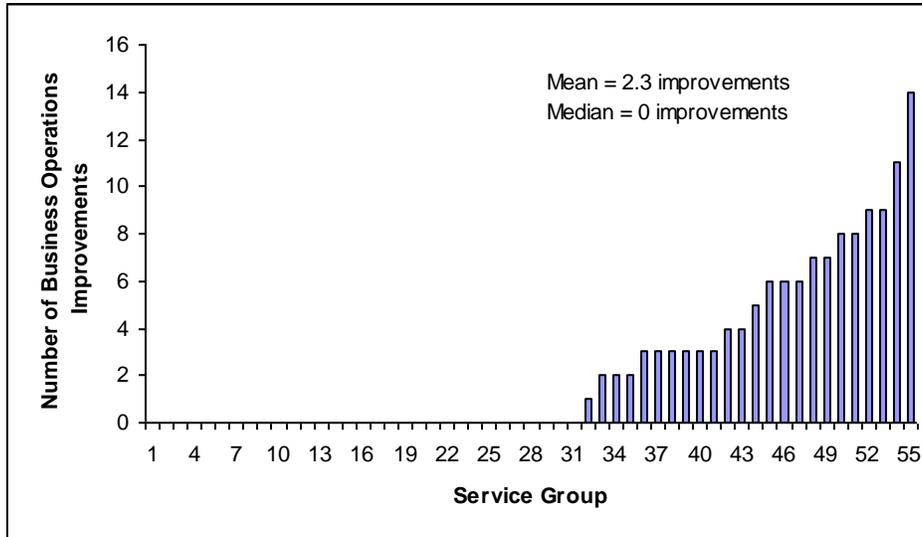


**6.1.4 Business Operations Improvements**

In order to obtain comparable Business Operations Improvements (or Process Improvements) data, in FY03 the OQM developed a template, shown in Appendix E, for Service Groups to use to capture these

data. Chart 17 shows the number of business operation improvements made by each Service Group as of FY04. Chart 17 shows that the number of business operation improvements made by Service Groups range from a low of 0 to a high of 14 over the course of the past 2 fiscal years.

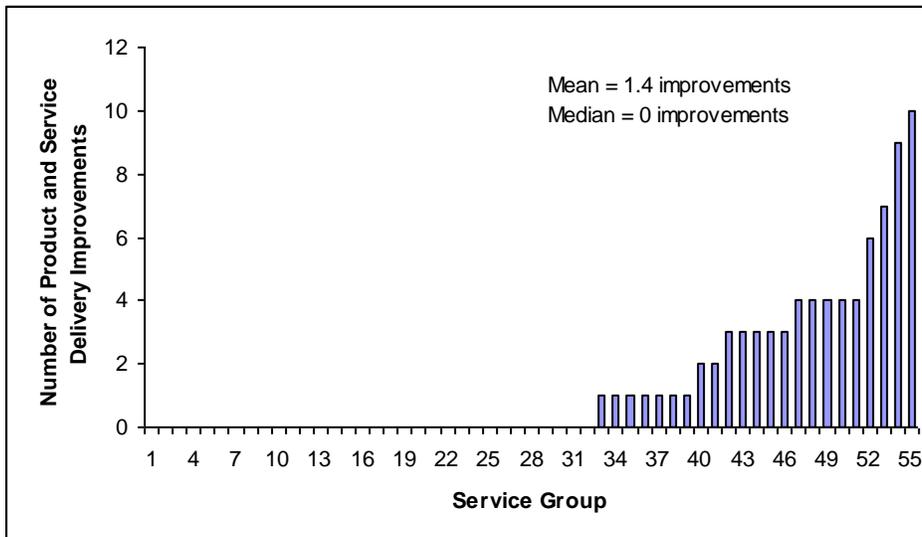
**Chart 17: Cumulative Number of Business Operation Improvements as of FY04**



**6.1.5 Product and Service Delivery Improvements**

In order to obtain comparable Product and Service Delivery Improvements (or Outputs Improvements) data, in FY03 the OQM developed a template, shown in Appendix F, for Service Groups to use to capture these data. Chart 18 shows the number of product and service delivery improvements made by each Service Group as of FY04. Chart 18 shows that the number of product and service delivery improvements made by Service Groups range from a low of 0 to a high of 10 over the course of the past 2 fiscal years.

**Chart 18: Cumulative Number of Product and Service Delivery Improvements as of FY04**



### 6.1.6 Relationship Among Components

Data obtained on each of the individual model components shown in Figure 3 are used to examine the relationships among the components. Path analysis is used to test the proposed model. Path analysis is a technique that uses multiple regression to test the relationships proposed to be significant, as well as those proposed to be *not* significant, in a model. Only those Service Groups with complete data on each of the components are used to test the model. There are 35 such Service Groups.

The model can be described in terms of 2 equations:

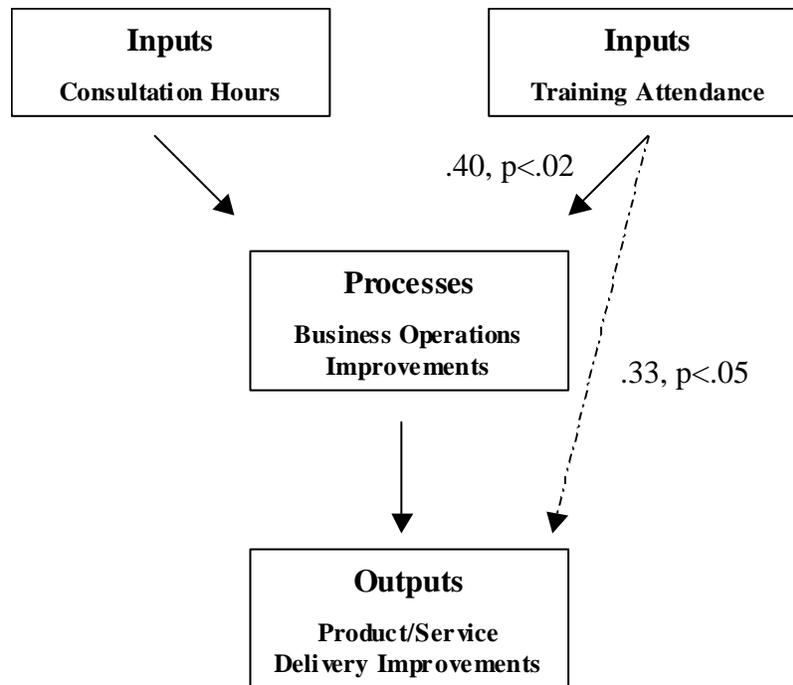
Equation 1: Business Operations Improvements is a positive function of the amount of consultation hours and the amount of training Service Group members have received (plus random error).

Equation 2: Product and Service Delivery Improvements is a positive function of Business Operations Improvements (plus random error).

Equations 1 and 2 are based on the Performance Measurement Model depicted in Figure 2. It is thought that greater amounts of consultation and training will increase the number of business operation improvements realized by Service Groups. Increased numbers of business operation improvements will, in turn, increase the number of product and service delivery improvements achieved by Service Groups. The further implications of the model suggest that the consultation hours and amount of training improve product and service delivery indirectly (i.e., through) business operations improvements.

The results are shown in Figure 4. Details are provided in Appendix G.

**Figure 4: Consultation, Training, Business Operations Improvement, and Product/Service Delivery Improvement Results**



Equation 1 was supported in that business operations improvement was significantly predicted by training attendance. However, consultation hours did not predict business operations improvements.

Both consultation and training are means of imparting knowledge to Service Group members. However, training attendance is a much more “active” participation by Service Group team members as it involves a greater commitment by team members. For example, consultation is provided at the Service Group’s location of work at their discretion. Training attendance involves a greater commitment by Service Groups to re-arrange schedules, work flow, etc.

In addition, though no hard data exists, consultation is often provided to a single Service Group point-of-contact (e.g., Service Group team leader). An assumption is made that the Service Group team leader will, in-turn, share knowledge gained with team members. This may not be happening. The training attendance measure, on the other hand, involves the percentage of Service Group team members who have attended training. Thus, the training measure is probably more indicative of Service Group knowledge than the consultation measure.

Equation 2 was not supported. Business process improvement does not predict Product/service delivery improvement. However, training attendance is significantly related to product/service delivery improvement.

*Training attendance appears to be a critical factor in promoting both improvements made to business operations processes and to improvements achieved in product/service delivery.*

## **6.2 Have ORS/ORF’s products and service delivery improved as a result of diagnosing and implementing changes to business operations?**

### **6.2.1 Overview**

The answer to this question is related to the Processes and Outputs components of the Performance Measurement Model described in Figure 2. Products and service delivery are typically viewed as outputs created by business operations (processes).

The processes component consists of diagnosing and making improvements to Service Group internal business processes:

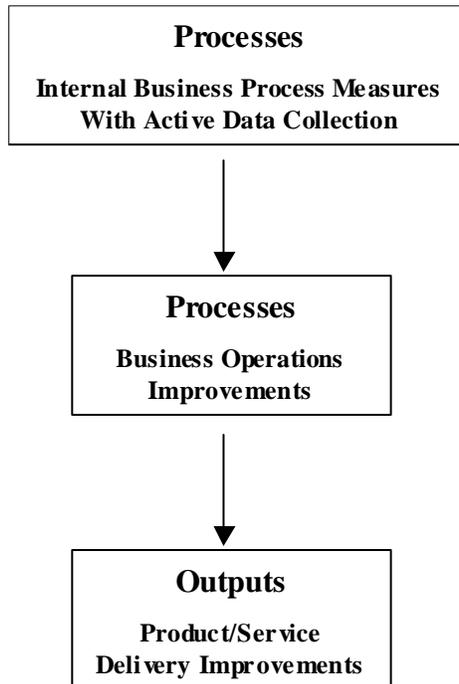
- Active Internal Business Process Measures (Diagnosis)
- Business Operations Improvements (Internal Business Process Improvements)

The outputs component consists of improvements made to Service Group products and service delivery:

- Product/Service Delivery Improvements (Output Improvements)

The proposed relationships among the model components are shown in Figure 5.

**Figure 5: Internal Business Process Measures, Business Operations Improvements, and Product/Service Delivery Improvements**

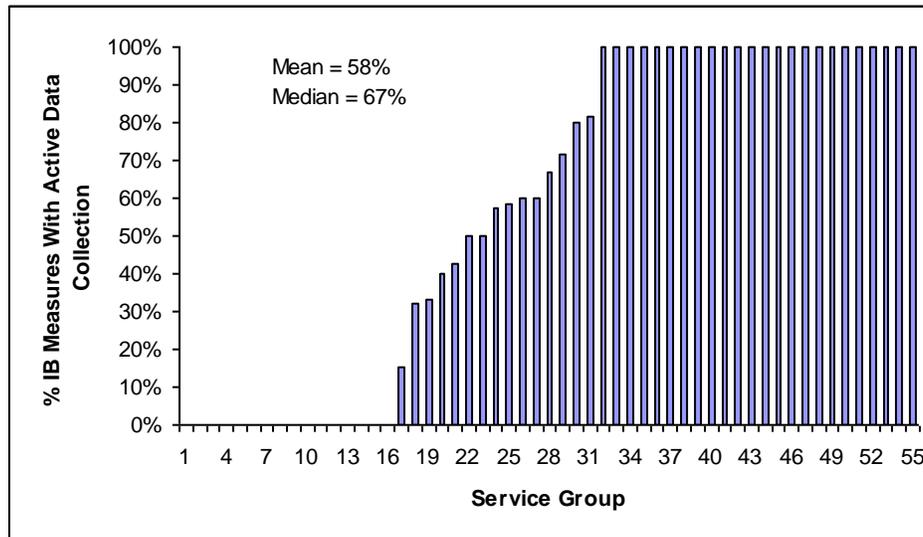


**6.2.2 Internal Business Process Measures With Active Data collection**

As discussed in section 5.4, the OQM required each Service Group to define measures related to each of the BSC Perspectives and collect data for each measure. The percentage of internal business process measures with active data collection is used to define this component. It is thought that Service Groups that are measuring and analyzing their internal business processes will be more likely to realize business operation improvements.

Chart 19 shows the percentage of internal business process measures with active data collection for each Service Group as of FY04. Chart 19 shows that the percentage of internal business process measures with active data collection ranges from a low of 0 to a high of 100% by FY04.

**Chart 19: Percentage Internal Business Process Measures With Active Data Collection**



### 6.2.3 Business Operations Improvements

Business operations improvements are shown in Chart 17, used in an earlier model. Chart 17 shows that the number of business operation improvements made by Service Groups range from a low of 0 to a high of 14 over the course of the past 2 fiscal years.

### 6.2.4 Product and Service Delivery Improvements

Product and service delivery improvements are shown in Chart 18, used in an earlier model. Chart 18 shows that the number of product and service delivery improvements made by Service Groups range from a low of 0 to a high of 10 over the course of the past 2 fiscal years.

### 6.2.5 Relationship Among Components

Data obtained on each of the individual model components shown in Figure 5 are used to examine the relationships among the components. Path analysis using multiple regression is used to test the proposed model. Thirty-five Service Groups are used to test the model.

The model can be described in terms of 2 equations:

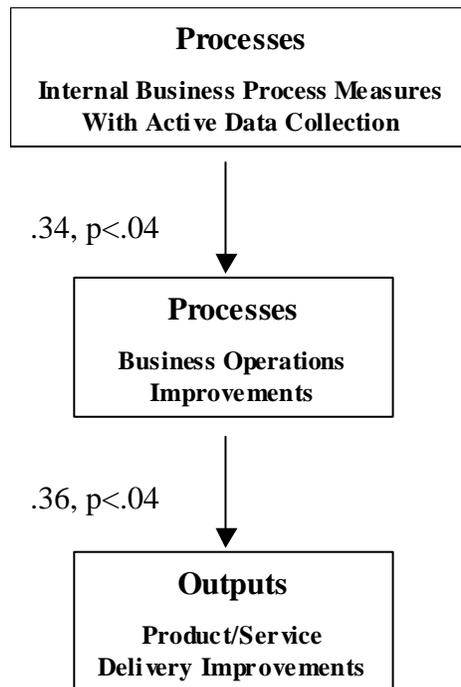
Equation 1: Business Operations Improvements is a positive function of the percentage of internal business process measures with active data collection (plus random error).

Equation 2: Product and Service Delivery Improvements is a positive function of Business Operations Improvements (plus random error).

Equations 1 and 2 are based on the Performance Measurement Model depicted in Figure 2. It is thought that a greater percentage of internal business process measures that are actively being measured will increase the number of business operation improvements realized by Service Groups. Increased numbers of business operation improvements will, in turn, increase the number of product and service delivery improvements achieved by Service Groups. The further implications of the model suggest that the percentage of internal business operation measures with active data collection improve product and service delivery indirectly (i.e., through) business operations improvements.

The results are shown in Figure 6. Details are provided in Appendix H.

**Figure 6: Internal Business Process Measures, Business Operations Improvements, and Product/Service Delivery Improvements Results**



Equation 1 was supported in that business operations improvement was significantly predicted by the percentage of internal business process measures with active data collection. Service Groups that are actively measuring their internal business processes are more likely to realize business operation improvements.

Equation 2 was supported in that product/service delivery improvement was significantly predicted by business operation improvement. Service Groups that realize business operation improvements are more likely to achieve product/service delivery improvements. Further, the percentage of internal business process measures with active data collection improves product/service delivery indirectly, through business operation improvements.

*Active internal business process measurement appears to be a critical factor in driving business operations improvement.*

*Business operation improvement appears to be a critical factor in driving product/service delivery improvement. Further, active internal business process measurement improves product/service delivery indirectly, through business operations improvement.*

### **6.3 Have ORS/ORF's products and service delivery improved with the implementation of performance measurement methods?**

#### **6.3.1 Overview**

The answer to this question is related to the Processes and Outputs components of the Performance Measurement Model described in Figure 2. Products and service delivery are typically viewed as outputs created by business operations (processes).

The processes component consists of 2 performance measurement methods deemed important to product and service delivery improvement as well as making improvements to internal business processes:

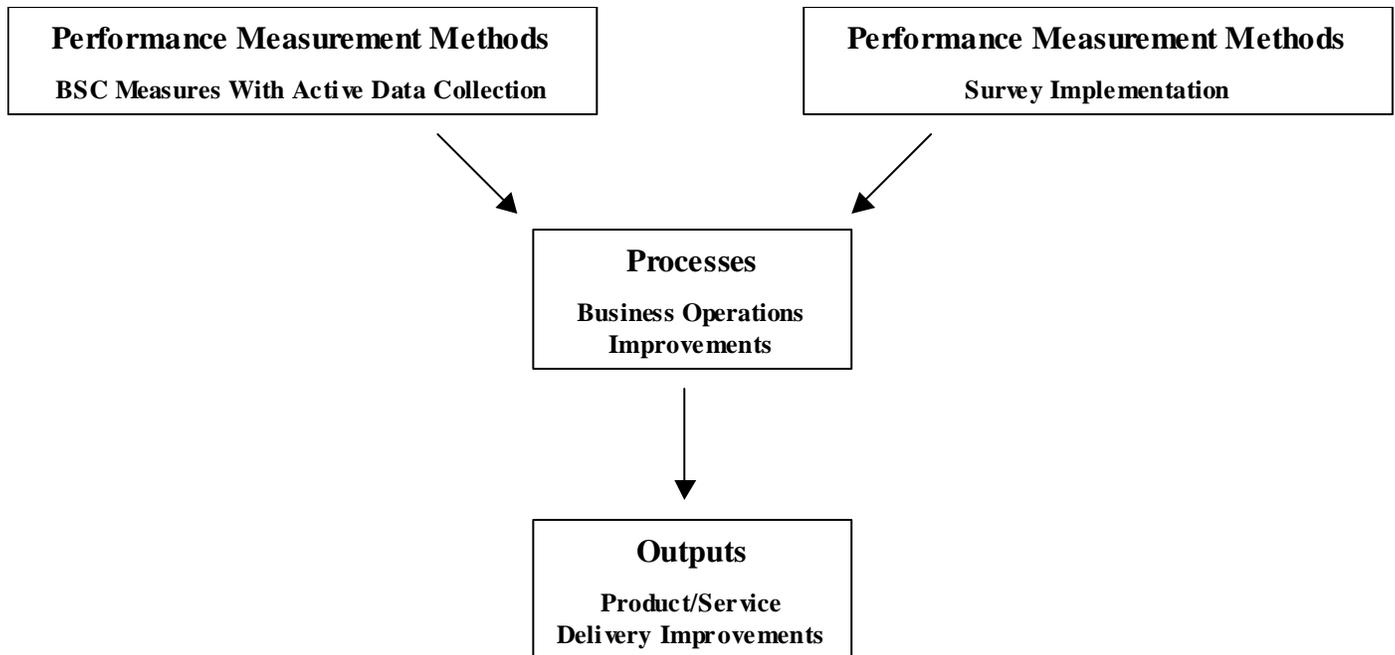
- Active BSC Measures (Measuring Performance)
- Implementing Customer Surveys
- Business Operations Improvements (Internal Business Process Improvements)

The outputs component consists of improvements made to Service Group products and service delivery:

- Product/Service Delivery Improvements (Output Improvements)

The proposed relationships among the model components are shown in Figure 7.

**Figure 7: Active BSC Measures, Customer Surveys, Business Operations Improvements, and Product/Service Delivery Improvements**

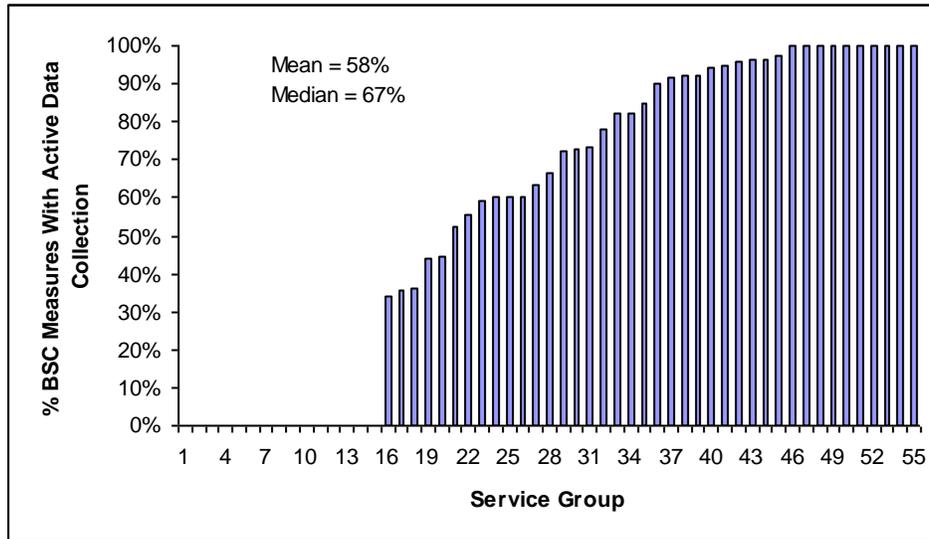


### 6.3.2 Measures With Active Data Collection

As discussed in section 5.4, the OQM required each Service Group to define measures related to each of the BSC Perspectives and collect data for each measure. The percentage of BSC measures with active data collection is used to define this component. It is thought that Service Groups that are measuring and analyzing measures representing their BSC perspectives will be more likely to realize business operation improvements.

Chart 20 shows the percentage of BSC measures with active data collection for each Service Group as of FY04. Chart 20 shows that the percentage of measures with active data collection ranges from a low of 0 to a high of 100% by FY04.

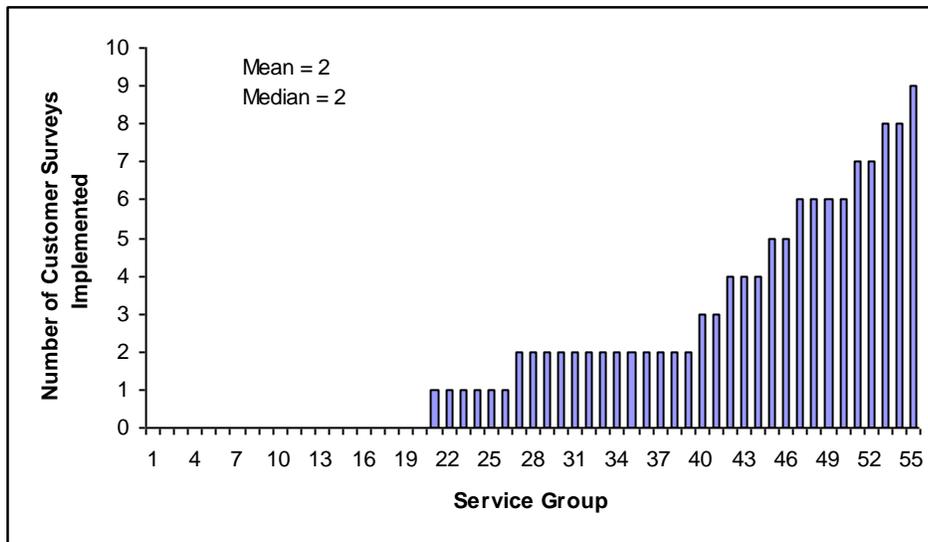
**Chart 20: Percentage BSC Measures With Active Data Collection**



**6.3.3 Customer Survey Implementation**

Chart 21 shows the number of customer surveys (both ORS/ORF Customer Scorecards and other types of customer surveys) conducted by each Service Group as of FY04. Chart 21 shows that the number of surveys conducted ranges from a low of 0 to a high of 9 by FY04. The mean number of customer surveys conducted is 2.

**Chart 21: Number of Customer Surveys Conducted by Service Groups as of FY04**



**6.3.4 Business Operations Improvements**

Business operations improvements are shown in Chart 17, used in an earlier model. Chart 17 shows that the number of business operation improvements made by Service Groups range from a low of 0 to a high of 14 over the course of the past 2 fiscal years.

### 6.3.5 Product and Service Delivery Improvements

Product and service delivery improvements are shown in Chart 18, used in an earlier model. Chart 18 shows that the number of product and service delivery improvements made by Service Groups range from a low of 0 to a high of 10 over the course of the past 2 fiscal years.

### 6.3.6 Relationship Among Components

Data obtained on each of the individual model components shown in Figure 7 are used to examine the relationships among the components. Path analysis using multiple regression is used to test the proposed model. Thirty-five Service Groups are used to test the model.

The model can be described in terms of 2 equations:

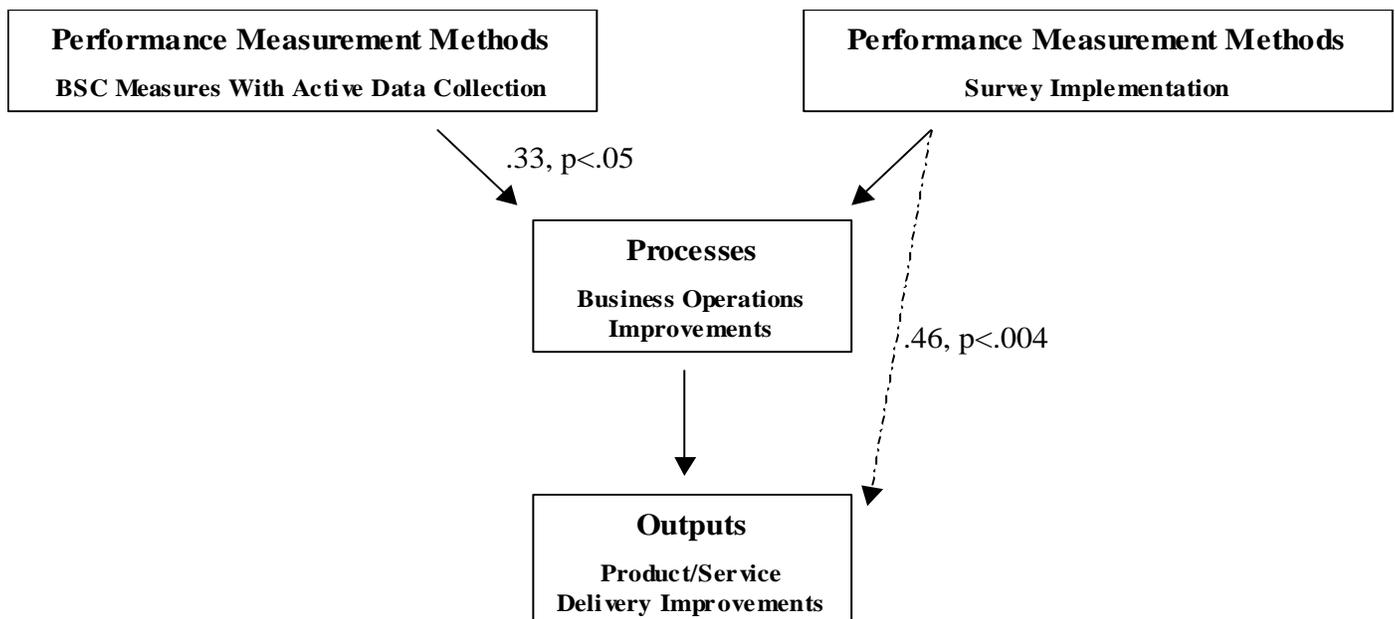
Equation 1: Business Operations Improvements is a positive function of the percentage of BSC measures with active data collection and the extent of customer survey implementation (plus random error).

Equation 2: Product and Service Delivery Improvements is a positive function of Business Operations Improvements (plus random error).

Equations 1 and 2 are based on the Performance Measurement Model depicted in Figure 2. It is thought that greater amounts of BSC measurement and survey implementation will increase the number of business operation improvements realized by Service Groups. Increased numbers of business operation improvements will, in turn, increase the number of product and service delivery improvements achieved by Service Groups. The further implications of the model suggest that the percentage of BSC measurement and survey implementation improve product and service delivery indirectly (i.e., through business operations improvement).

The results are shown in Figure 8. Details are provided in Appendix I.

**Figure 8: Active BSC Measures, Customer Surveys, Business Operations Improvements, and Product/Service Delivery Improvements Results**



Equation 1 was supported in that business operations improvement was significantly predicted by BSC measures with active data collection. However, survey implementation did not predict business operations improvements. It appears that data obtained from customer surveys is not related to business operation improvements.

Equation 2 was not supported. Business process improvement does not predict product/service delivery improvement. However, survey implementation is significantly related to product/service delivery improvement. It appears that data obtained from customer surveys is related to product and service delivery improvements realized by Service Groups.

***BSC measurement appears to be a critical factor in driving business operation improvement and survey implementation appears to be a critical factor in driving product and service delivery improvement.***

## **6.4 Have ORS/ORF customer satisfaction ratings improved with the implementation of performance measurement methods?**

### **6.4.1 Overview**

The answer to this question is related to the Processes, Outputs, and Outcomes components of the Performance Measurement Model described in Figure 2. Products and service delivery are typically viewed as outputs created by business operations (processes). Customer satisfaction (outcomes) occurs when the organization's products and services (outputs) are delivered to customers.

The processes component consists of 2 performance measurement methods deemed important to outcomes improvement as well as making improvements to internal business processes:

- Active BSC Measures (Measuring Performance)
- Implementing Customer Surveys
- Business Operations Improvements (Internal Business Process Improvements)

The outputs component consists of improvements made to Service Group products and service delivery:

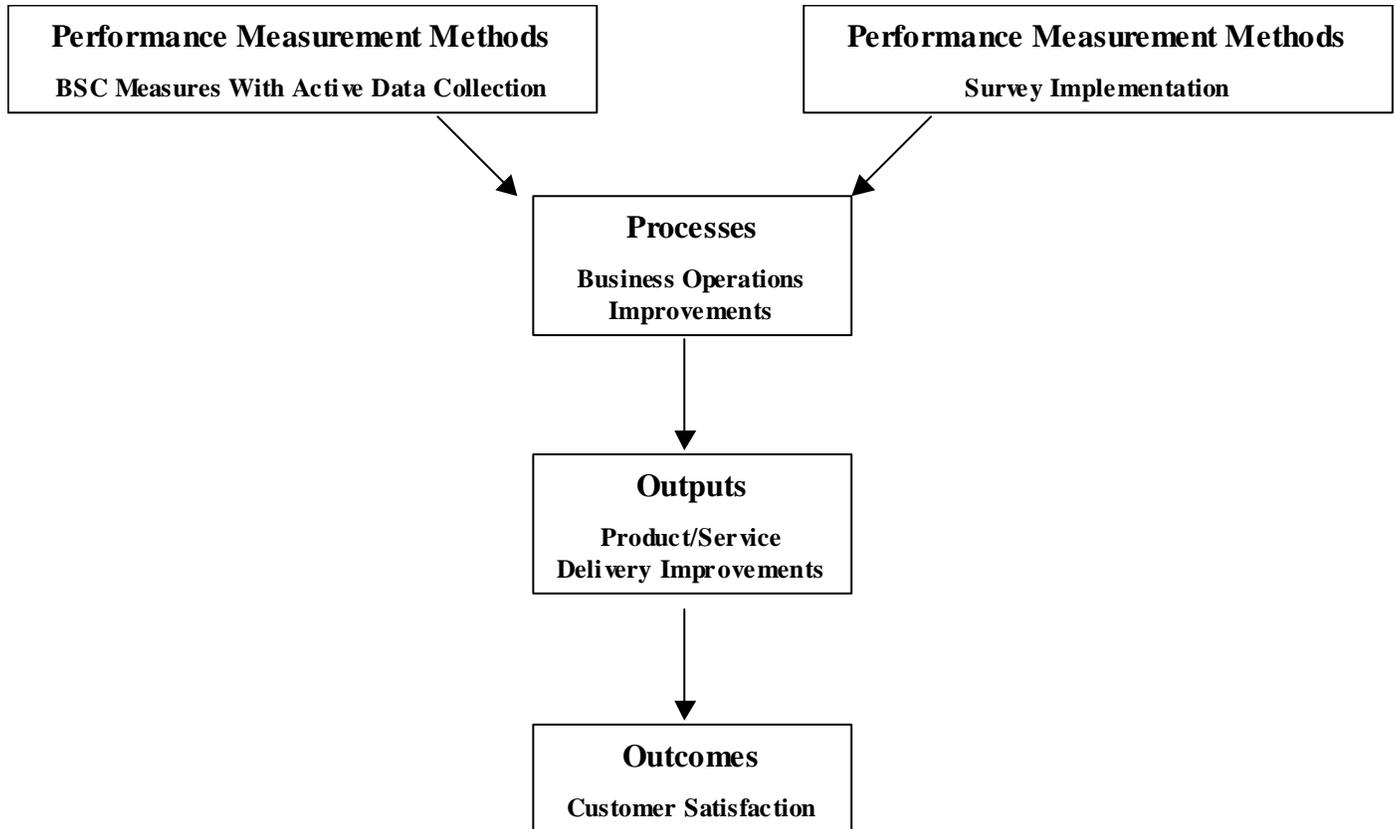
- Product/Service Delivery Improvements (Output Improvements)

The outcomes component consists of improvements in Service Group outcomes.

- Outcomes Improvements (Customer Satisfaction)

The proposed relationships among the model components are shown in Figure 9.

**Figure 9: Active BSC Measures, Customer Surveys, Process Improvements, Output Improvements, Customer Satisfaction**



It is not possible to use path analysis to statistically determine the relationship between these components. In order to examine whether customer satisfaction has improved, a comparable set of customer satisfaction ratings by Service Group would need to be available over time. As discussed in section 5.1, most of the customer satisfaction ratings obtained represent a variety of Discrete Service survey participation and customers across the years. Thus, for any given Service Group conducting more than 1 customer survey, it is likely that a different Discrete Service was measured. There are only a handful of Service Groups that conducted the same survey with the same customers at more than one point in time ( $n = 17$ ). Among these 17 Service Groups, only 15 have data related to each of the components. Of the 15 Service Groups with data related to each component, 4 conducted multiple surveys over time. Thus, it is not possible to test the relationships since the data are not independent.

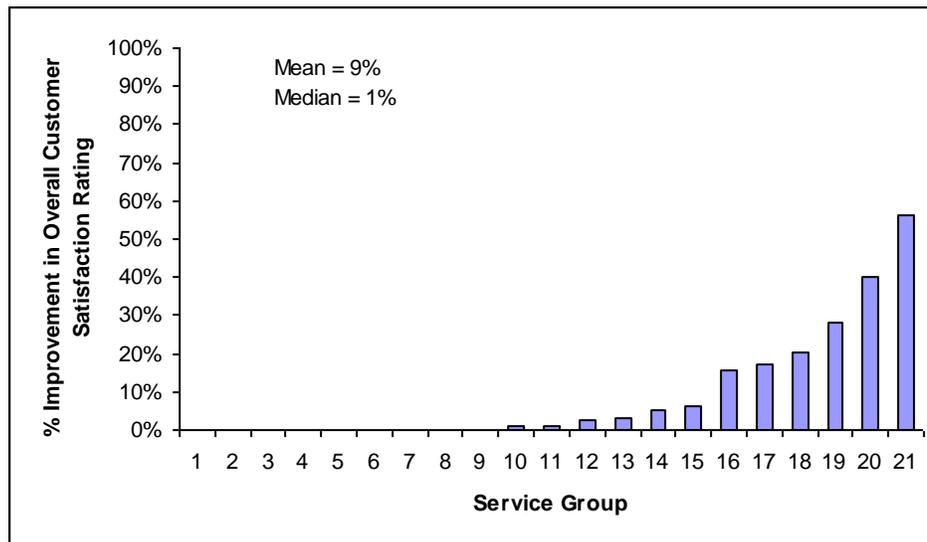
#### **6.4.2 Customer Satisfaction Ratings Over Time**

Though no attribution of cause can be made, it is possible to view customer satisfaction rating improvement for those Service Groups that conducted customer surveys using the ORS/ORF Customer Scorecard over time. Of the 21 comparable customer surveys conducted, there were 9 that yielded insignificant results (e.g., the increase or decrease in the overall customer satisfaction rating was not significantly different from the previous rating). These surveys were assigned a 0 percentage

improvement. None of the surveys showed significant decreases in customer satisfaction. Twelve surveys showed significant increases in overall customer satisfaction ratings.

Chart 22 shows the percentage increase in the overall customer satisfaction rating for each comparable customer survey. The percentage increases range from a low of 0% to a high of 56%. The mean percentage improvement is 9%.

**Chart 22: Percentage Significant Increase in Overall Customer Satisfaction Rating**



*In summary, for the 21 comparable surveys conducted, there were no instances of significant decreases in customer satisfaction since FY02. Fifty-seven percent of the surveys showed significant increases over time and 43% showed no differences.*

## 6.5 Has ORS/ORF outcomes improved with the implementation of performance measurement methods?

### 6.5.1 Overview

The answer to this question is related to the Processes, Outputs, and Outcomes components of the Performance Measurement Model described in Figure 2. Products and service delivery are typically viewed as outputs created by business operations (processes). Outcomes occur when the organization’s products and services (outputs) are delivered to customers.

The processes component consists of 2 performance measurement methods deemed important to outcomes improvement as well as making improvements to internal business processes:

- Active BSC Measures (Measuring Performance)
- Implementing Customer Surveys
- Business Operations Improvements (Internal Business Process Improvements)

The outputs component consists of improvements made to Service Group products and service delivery:

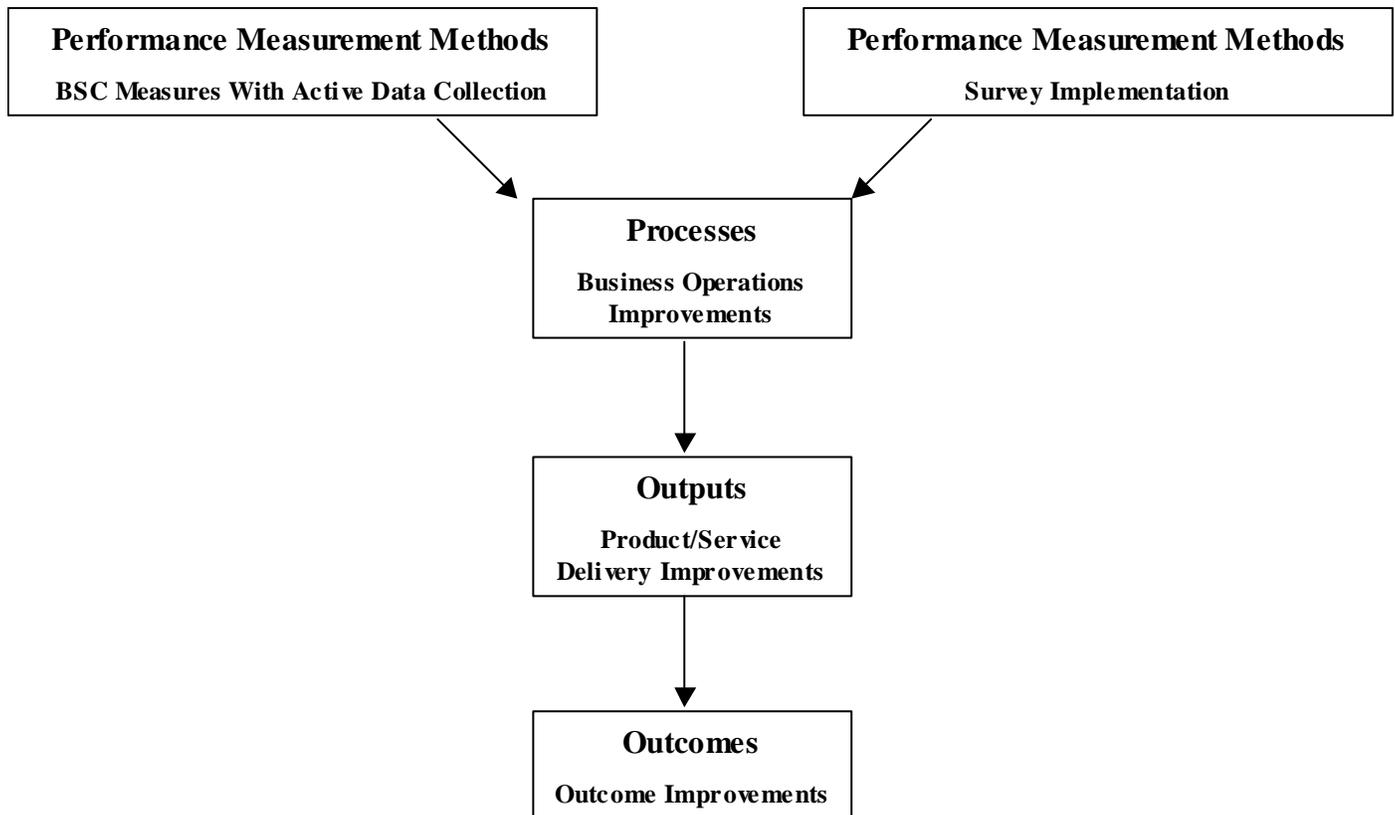
- Product/Service Delivery Improvements (Output Improvements)

The outcomes component consists of improvements in Service Group outcomes.

- Outcomes Improvements

The proposed relationships among the model components are shown in Figure 10.

**Figure 10: Active BSC Measures, Customer Surveys, Process Improvements, Output Improvements, Outcome Improvements**



### **6.5.2 BSC Measures With Active Data Collection**

BSC Measures With Active Data Collection is shown in Chart 20, used in an earlier model. Chart 20 shows the percentage of BSC measures with active data collection for each Service Group as of FY04. Chart 20 shows that the percentage of measures with active data collection ranges from a low of 0 to a high of 100% by FY04.

### **6.5.3 Survey Implementation**

Survey Implementation is shown in Chart 21, used in an earlier model. Chart 21 shows the number of customer surveys (both ORS/ORF Customer Scorecards and other types of customer surveys) conducted by each Service Group as of FY04. Chart 21 shows that the number of surveys conducted ranges from a low of 0 to a high of 9 by FY04.

#### 6.5.4 Business Operations Improvements

Business operations improvements are shown in Chart 17, used in an earlier model. Chart 17 shows that the number of business operation improvements made by Service Groups range from a low of 0 to a high of 14 over the course of the past 2 fiscal years.

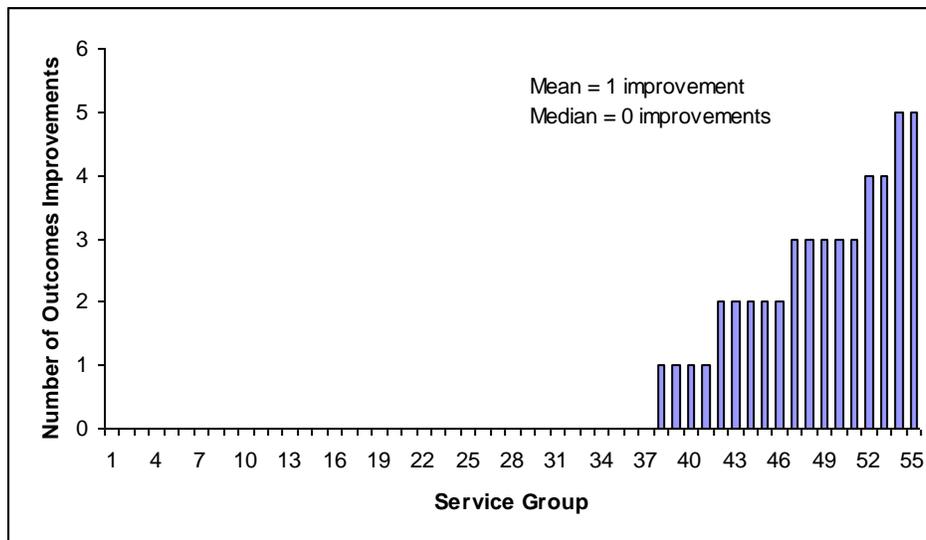
#### 6.5.5 Product and Service Delivery Improvements

Product and service delivery improvements are shown in Chart 18, used in an earlier model. Chart 18 shows that the number of product and service delivery improvements made by Service Groups range from a low of 0 to a high of 10 over the course of the past 2 fiscal years.

#### 6.5.6 Outcome Improvements

In order to obtain comparable outcomes improvement data, in FY03 the OQM developed a template, shown in Appendix J, for Service Groups to use to capture these data. Chart 23 shows the number of outcome improvements realized by each Service Group as of FY04. Chart 23 shows that the number of outcome improvements realized by Service Groups range from a low of 0 to a high of 5 over the course of the past 2 fiscal years.

**Chart 23: Cumulative Number of Product and Service Delivery Improvements as of FY04**



#### 6.5.7 Relationship Among Components

Data obtained on each of the individual model components shown in Figure 10 are used to examine the relationships among the components. Path analysis using multiple regression is used to test the proposed model. Thirty-five Service Groups are used to test the model.

The model can be described in terms of 3 equations:

Equation 1: Business Operations Improvement is a positive function of the percentage of BSC measures with active data collection and the extent of customer survey implementation (plus random error).

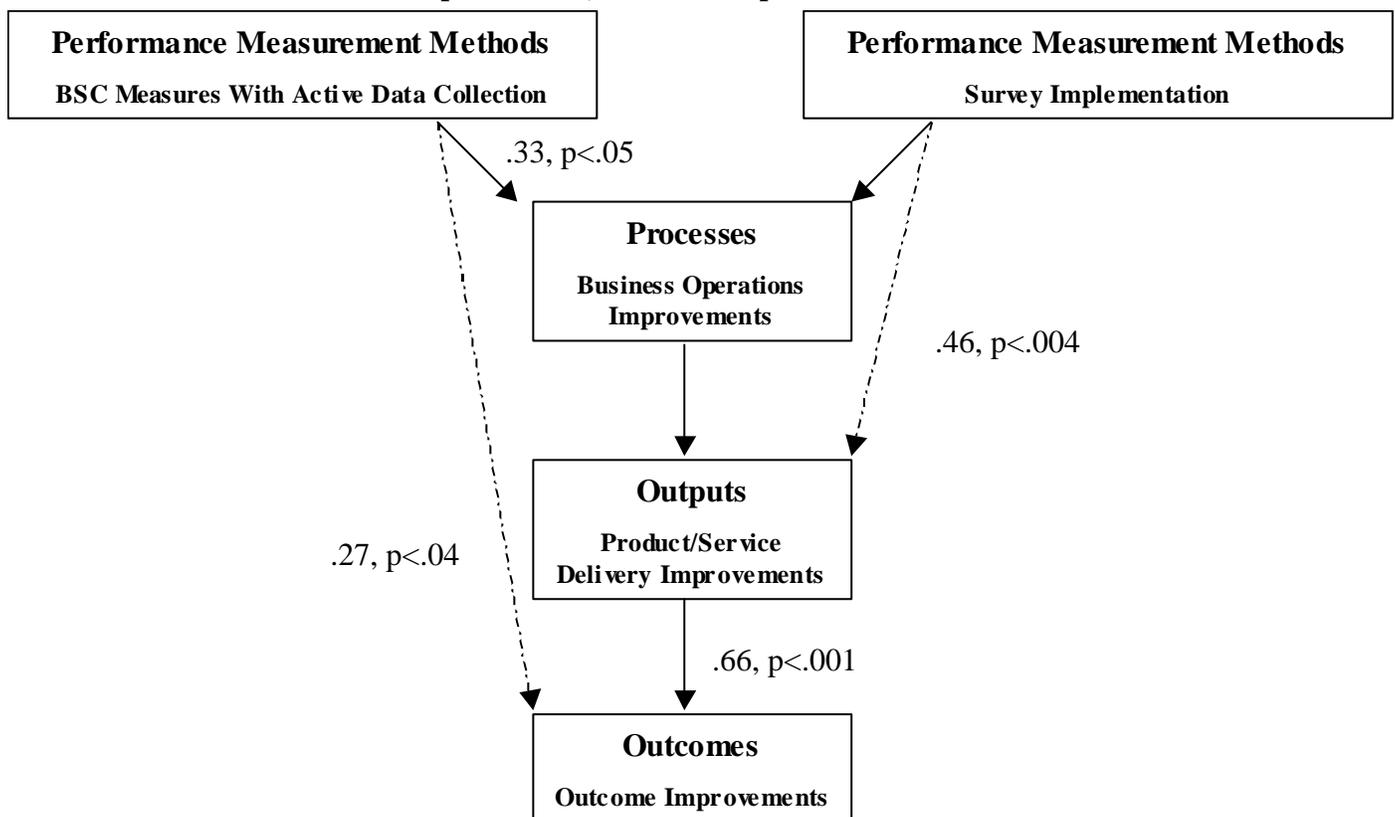
Equation 2: Product and Service Delivery Improvement is a positive function of Business Operations Improvement (plus random error).

Equation 3: Outcomes Improvement is a positive function of Product and Service Delivery Improvement (plus random error).

Equations 1, 2, and 3 are based on the Performance Measurement Model depicted in Figure 2. It is thought that greater amounts of BSC measurement and survey implementation will increase the number of business operation improvements realized by Service Groups. Increased numbers of business operation improvements will, in turn, increase the number of product and service delivery improvements achieved by Service Groups. Product and service delivery improvements will, in turn, increase the number of outcome improvements achieved by Service Groups. The further implications of the model suggest that the percentage of BSC measurement and survey implementation improve product/service delivery improvement indirectly (i.e., through) business operations improvement.

The results are shown in Figure 11. Details are provided in Appendix K.

**Figure 11: Active BSC Measures, Customer Surveys, Process Improvements, Output Improvements, Outcome Improvements Results**



Equation 1 was supported in that business operations improvement was significantly predicted by BSC measures with active data collection. However, survey implementation did not predict business operations improvements. It appears that data obtained from customer surveys is not related to business operation improvements.

Equation 2 was not supported. Business process improvement does not predict product/service delivery improvement. However, survey implementation is significantly related to product/service delivery improvement. It appears that data obtained from customer surveys is related to product and service delivery improvements realized by Service Groups.

Equation 3 was supported in that outcomes improvement was significantly predicted by product/service delivery improvement. However, BSC measurement is also directly related to outcomes improvement

*BSC measurement appears to be a critical factor in directly driving business operation improvements and outcome improvements. BSC measurement does not appear to be related to output improvements either directly or indirectly.*

*Survey implementation appears to be a critical factor in driving product and service delivery improvement. Survey implementation also appears to drive outcome improvement indirectly through product and service delivery improvement.*

**6.6 Overall, what have been the organizational effects of implementing the PM process? Have these effects been positive or negative?**

**6.6.1 Overview**

The answer to these questions is related to the Outcomes component of the Performance Measurement Model described in Figure 2. In order to obtain comparable data that could be used to answer these questions, the OQM used the ORS/ORF Customer Scorecard to gather satisfaction data from their customers. The OQM modified the scorecard to obtain additional data that provide insight into the organizational effects of the PM process implementation. The scorecard was used each fiscal year since FY02, though additional questions were added in subsequent fiscal years. The FY04 OQM modified Customer Scorecard is shown in Appendix L.

The OQM Scorecard obtained customer data on the following areas:

- Respondent Characteristics
- FY04 PM Implementation
- FY05 PM Implementation Needs
- PM Climate
- Customer Satisfaction

Results on all areas but customer satisfaction are provided. Customer satisfaction results are useful to OQM but not particularly useful in examining overall organizational effects on PM process implementation.

**6.6.2 OQM Scorecard Results**

OQM Customer Scorecard distribution and response rates are shown in Table 8. The response rates are all over 20% and are well above the average customer survey response rate of about 11%.

**Table 8: OQM Survey Distribution and Response Rates**

FY04 Administration	Number of Surveys Distributed	186
	Number of Respondents	41
	Response Rate	22%
FY03 Administration	Number of Surveys Distributed	196
	Number of Respondents	70
	Response Rate	36%
FY02 Administration	Number of Surveys Distributed	227
	Number of Respondents	85

	Response Rate	37%
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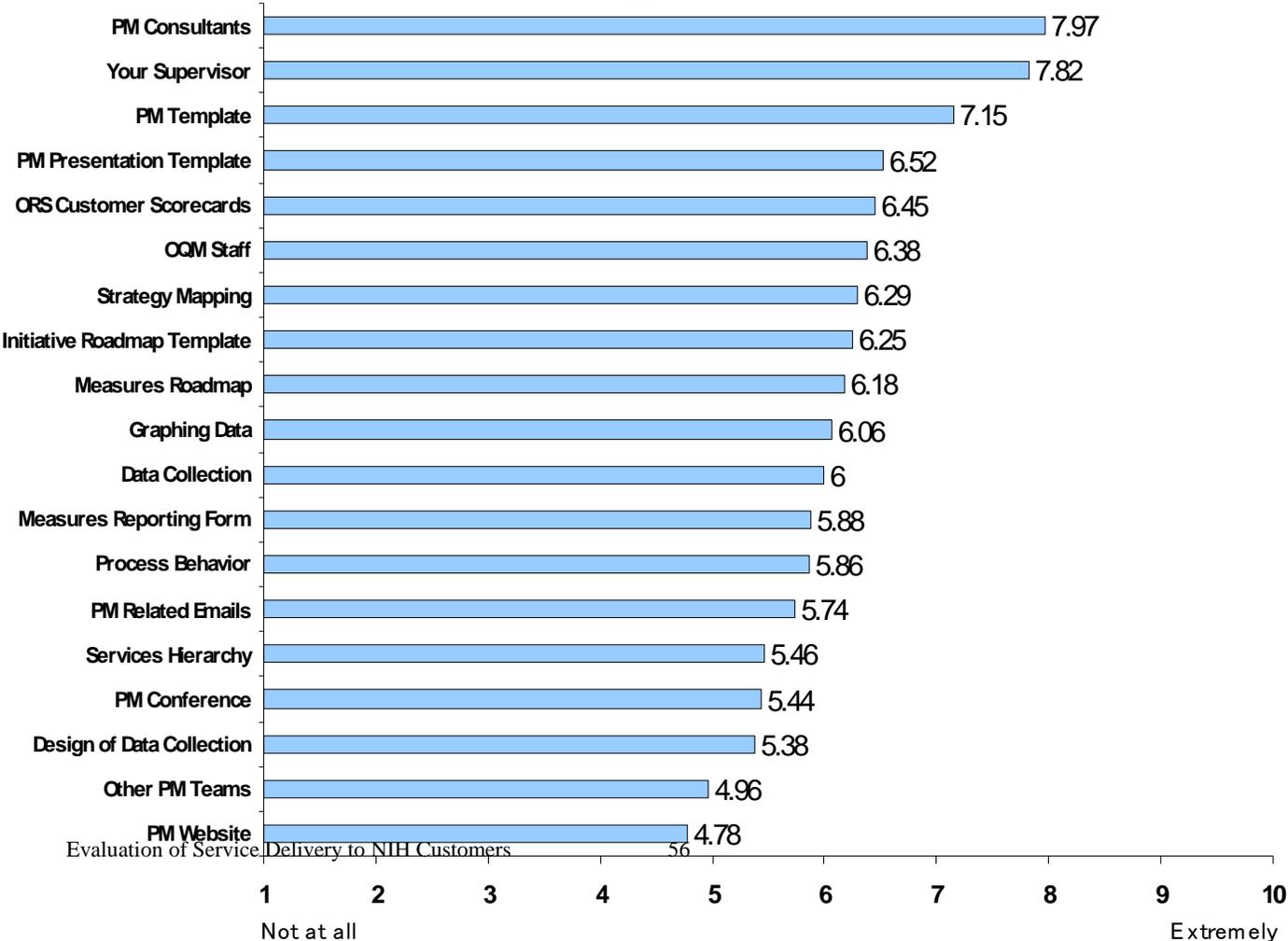
6.6.2.1 Respondent Characteristics

Respondents were asked to indicate their role in performance management (i.e., Office/Associate/Division Director, Service Group Team Leader, Service Group Team Member, OQM Consultant, Management Council Member, and Other), their organization (ORS, ORF, Other), and their program area (Program and Employee Services, Scientific Resources, Security and Emergency Response, Management Services, Real Estate and Facilities, and Other). Respondents were not asked to identify their Service Group in order to ensure anonymity. Since response categories changed from fiscal year to fiscal year, it is not possible to provide a chart summarizing characteristics across all fiscal years. However, in all fiscal years, respondents appear to represent a good cross-section of respondent types in all categories.

6.6.2.2 FY04 PM Implementation

Figure 11 shows the mean ratings on OQM-provided tool, service, communication vehicles, and support dimensions in FY04 across 41 respondents. For each dimension respondents are asked to rate their perceptions on a scale that ranges from (1) Not at all Helpful to (10) Extremely Helpful. Mean ratings range from a high of 7.97 on PM Consultants (i.e., OQM-provided external consultants) to a low of 4.78 on the PM Website. Notice that the lowest mean rating (4.78) is around the midpoint of a 10-point scale. In general, respondent perceptions are that all OQM-provided tools, services, communication vehicles, and support are at least somewhat helpful and many are very helpful.

**Figure 11: FY04 Perceptions of OQM-Provided Tools, Services, Communication Vehicles, and Support**

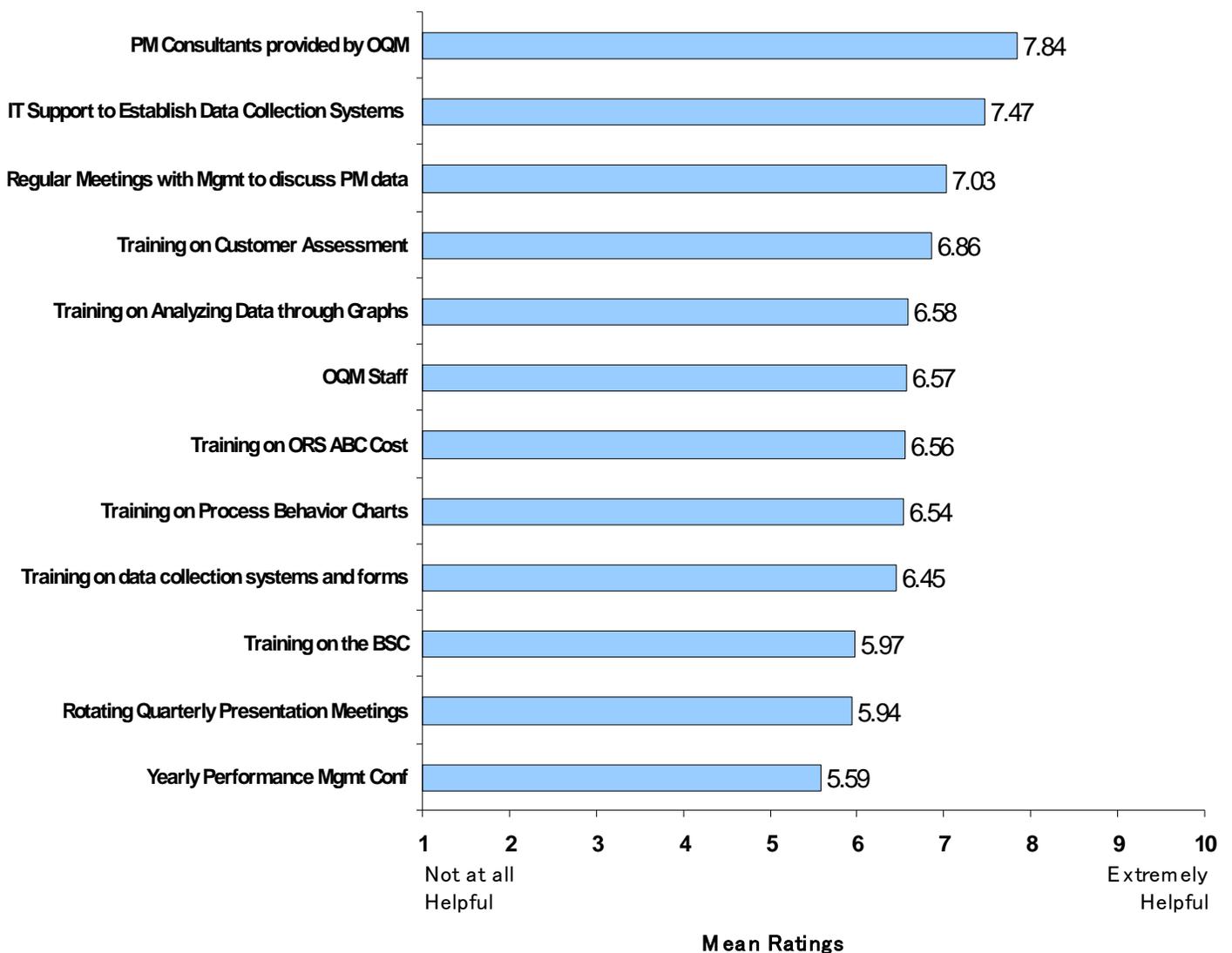


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### 6.6.2.3 FY05 PM Implementation Needs

Figure 12 shows the mean ratings on proposed OQM-provided tools/resources and training for the FY05 PM implementation across 41 respondents. For each proposed resource respondents are asked to rate their perceptions on a scale that ranges from (1) Not at all Helpful to (10) Extremely Helpful. Mean ratings range from a high of 7.84 on PM Consultants (i.e., OQM-provided external consultants) to a low of 5.59 on a yearly PM conference. Notice that the lowest mean rating (5.59) is around the midpoint of a 10-point scale. In general, respondent perceptions are that all proposed OQM-provided tools/resources and training will be at least somewhat helpful and many will be very helpful.

**Figure 12: Perceptions of Proposed FY05 OQM-Provided Tools/Resources and Training**

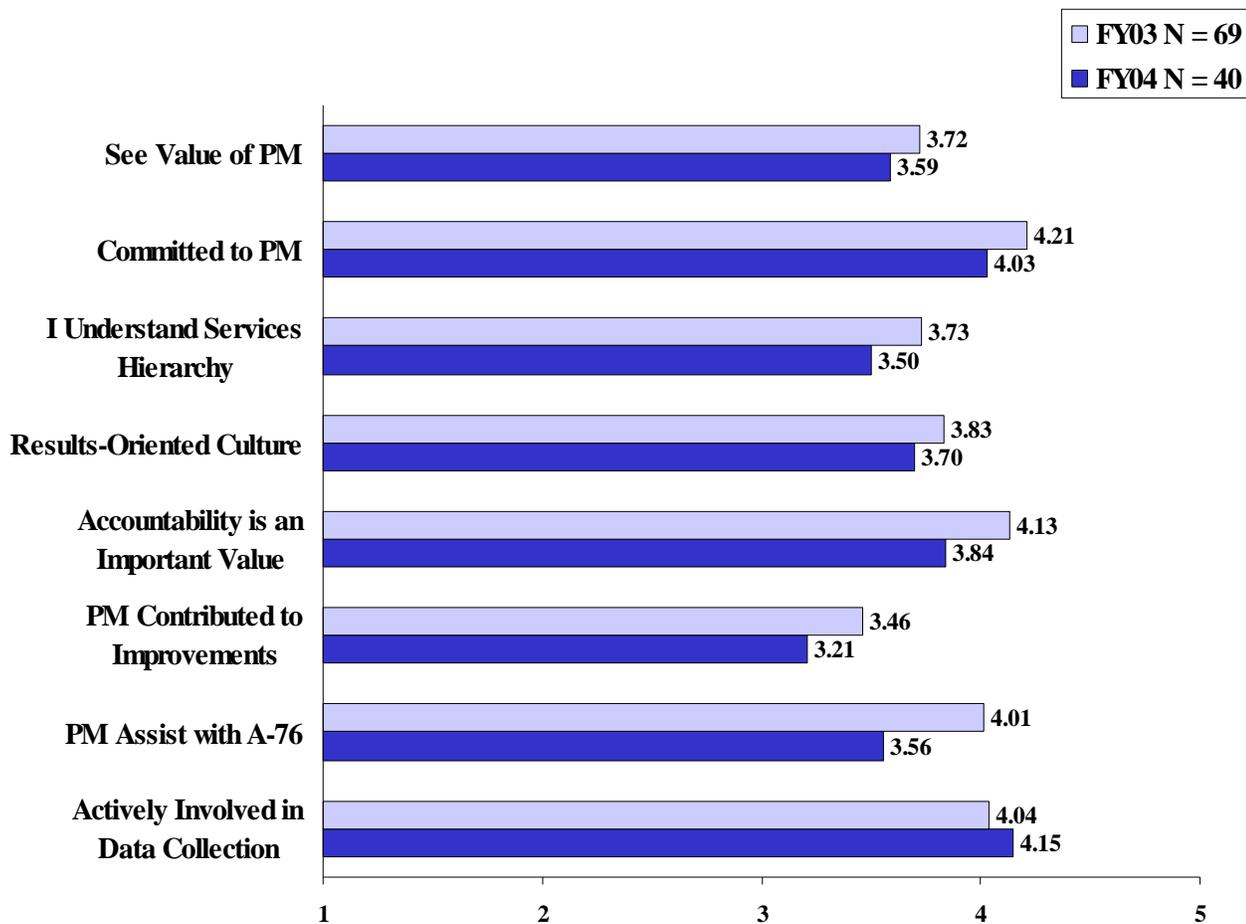


#### 6.6.2.4 PM Climate

Climate is an important factor in promoting a variety of desired organizational outcomes. Climate is defined as the practices and procedures in an organization that connote or signal to people what is important (Schneider, 1975). The PM climate measure used by the OQM is designed to measure respondent’s perceptions of the extent to which important practices and procedures related to PM implementation exist in their organizations. The PM climate measure was added to the OQM Scorecard in FY03. Data are available for FY03 and FY04 so that judgments may be made as to implementation effects of the PM process on PM climate.

Figure 13 shows the mean ratings on PM climate dimensions in FY03 and FY04. For each dimension respondents are asked to rate their perceptions on a scale that ranges from (1) Strongly Disagree to (5) Strongly Agree. Mean ratings range from a high of 4.21 on PM Commitment in FY03 to a low of 3.21 on PM Contribution to Improvements in FY04. Notice that the lowest mean rating (3.21) is around the midpoint of a 5-point scale. In general, respondent perceptions are that most PM climate dimensions have been impacted positively by the implementation of the PM process. Note also that while the ratings are different on dimensions by fiscal year, none of the ratings are statistically significantly different.

**Figure 13: PM Climate Perceptions by Fiscal Year**



Note: There is no significant difference between fiscal year ratings on any dimension

*All FY04 mean ratings on OQM-provided tools, services, communication vehicles, and support are at or well above the midpoint of a 10-point scale. The tools, services, communication vehicles, and support that achieved ratings of 6.5 or above include external consultants, supervisor support, PM Template, and PM Presentation Template.*

*All FY04 mean ratings on proposed FY05 OQM-provided tools/resources and training are at or well above the midpoint of a 10-point scale. The proposed FY05 tools/resources and training that achieved ratings of 6.5 or above include external consultants, IT support to establish data collection systems, regular meetings with management to discuss results, and training on customer assessment.*

*All FY03 and FY04 mean ratings on PM climate are at or well above the midpoint of a 5-point scale. There are no significant differences in ratings by fiscal year. Climate dimensions that achieved ratings of 4.0 or above include commitment to PM, accountability as important value, PM assistance with A-76 directive, and ability to actively participate in data collection.*

### **6.6.3 Summary**

Implementation of the PM process appears to have had a positive effect on ORS/ORF organizations. Earlier sections have presented data showing the extent to which ORS/ORF organizations and Service Groups are implementing PM, conducting customer surveys, defining performance measures, collecting and analyzing data, making improvements to their internal business processes, and achieving improvements in their outputs and outcomes.

In addition to these important activities, ORS/ORF staff members have indicated that OQM-provided tools, services, communication vehicles, and support are helpful to them as they move forward with PM implementation. Finally, implementation of the PM process has resulted in positive climate perceptions in ORS/ORF organizations.

## **6.7 How do ORS/ORF's efforts to measure performance through the Balanced Scorecard approach compare to those of other Federal Government agencies?**

### **6.7.1 Overview**

With the enactment of legislation such as the Government Performance and Results Act (GPRA) in 1993 and the Klinger-Cohen Act in 1996, federal agencies began searching for performance management systems, such as the BSC, to help them implement a standardized approach to performance measurement. The BSC was developed with private industry in mind and implementation most often occurred using a "Top Down" approach (i.e., implementation begins with organization's highest level of leadership and spreads down throughout the organization). The BSC made its first appearance in government with the Naval Undersea Warfare Center in 1996 and is now being used by several federal agencies.

As discussed earlier, ORS/ORF adopted the BSC as its performance management model in 2001. As with most other federal agencies, ORS/ORF implemented the BSC using a "Middle-Cascade" approach where the first scorecards are created in operational organizations. Ideally, the implementation will then spread both up and down throughout the organization.

### **6.7.2 BSC Scorecards and Active Measures**

The majority of federal agencies do not display their BSC performance measures so it is difficult to determine with any certainty where on the spectrum ORS/ORF falls. Based on interviews conducted with representatives of "The Balanced Scorecard for Government, Inc." (i.e., a consulting firm that works

with Federal Government agencies to implement the BSC), it is believed that ORS/ORF with over 40 scorecards, as shown in Chart 2, is the second largest implementer of the BSC in the US Federal Government next to the US Army with 320 scorecards. In comparison to other BSC federal agencies, ORS/ORF is estimated to be in the “middle of the pack” with respect to formulating performance measures. ORS/ORF lags somewhat behind in the actual collecting and analyzing of data but strides have been made in this area. As shown in Chart 11, approximately 55% of ORS/ORF measures have data associated with them.

### **6.7.3 Program Assessment Rating Tool**

The OMB developed a diagnostic tool to evaluate federal agencies on performance and determine future funding levels of agencies based on the results. The tool is called the Program Assessment Rating Tool (PART). Results from the FY04 PART reviews indicate that 7 of the 593 federal organizations reviewed name the BSC as their performance management system. While it is most likely the case that more than 7 organizations used the BSC but didn't list it on the PART, this small sample is instructive. An analysis of PART ratings yielded the following:

- For organizations that did not cite using the BSC
  - 35.1 % received low PART ratings (either as Ineffective or Results Not Demonstrated)
  - 39.4 % received high PART ratings (either Effective or Moderately Effective)
- For organizations that cited using the BSC
  - 0% received low PART ratings (either as Ineffective or Results Not Demonstrated)
  - 71.5% received high PART ratings (either Effective or Moderately Effective)

The lowest score that any BSC organization received was an “Adequate” which would indicate that any organization using the BSC would most likely get a rating equal to or better than 60% of the organizations that were rated.

***It is believed that ORS/ORF is the second largest implementer of the BSC in the US Federal Government with over 40 scorecards. Based on PART ratings, over 70% of organizations that report using the BSC receive high performance ratings (effective or moderately effective performance).***

## **7 Summary**

- In FY04, 100% of organizations and service clusters participated in PM implementation. ***Over 75% of Service Groups and Discrete Services participated in FY04.***
- ***By FY04 64% of Service Groups conducted some type of customer survey*** for a total of 105 customer surveys. Also by FY04, 55% of Service Groups conducted a customer survey using the ORS/ORF Customer Scorecard for a total of 85 surveys.
- For surveys using the ORS/ORF Customer Scorecard, all satisfaction ratings across all fiscal years are well above the midpoint of a 10-point scale. Satisfaction rating dimensions with FY04 mean ratings above 8.0 include ***Reliability*** of Product/Service, ***Quality*** of Product/Service, ***Competence*** of Staff, ***Convenience*** of Service, ***Responsiveness*** of Staff, and ***Availability*** of Staff.

- Service Groups obtain data on customer needs through use of the ORS/ORF Customer Scorecard and other types of customer surveys (e.g., Needs Assessment). Customer needs are specific to Service Groups and Discrete Services and are not amenable to consolidation across Service Groups.
- By FY04, 69% of Service Groups and 57% of Discrete Services developed process maps depicting the process flow of their respective services producing a total of 148 process maps.
- By FY04, 73% of Service Groups and 63% of Discrete Services have defined at least one measure. ***By FY04, Service Groups have collectively defined a total of 821 measures and are actively collecting data on 452 measures, representing 55% of the defined measures.***
- Turnover does not appear to be related to customer satisfaction. However, it is impossible to draw conclusions from the limited FY02 data set available.
- Service Groups obtain data on employee quality of work life through use of Quality of Work Life surveys. Results are specific to Service Groups and are not amenable to consolidation.
- It appears that there is no relationship between customer demand, actual budget, and resulting unit cost at the Discrete Service level. Government organizations are not often at liberty to react to customer demand due to budget constraints imposed on them by congress. Conversely, budgets often drive customer service levels associated with products and services that must be provided regardless of budget.
- ***Training attendance*** appears to be a critical factor in promoting both improvements made to business operations processes and to improvements achieved in product/service delivery.
- ***Active internal business process data collection*** appears to be a critical factor in driving business operations improvement.
- ***Business operations improvement*** appears to be a critical factor in driving product/service delivery improvement. Further, active internal business process data collection improves product/service delivery indirectly, through business operations improvement.
- ***BSC measurement and data collection*** appears to be a critical factor in driving business operation improvement and ***survey implementation*** appears to be a critical factor in driving product and service delivery improvement.

- For the 21 comparable surveys using the ORS/ORF Customer Scorecard conducted, there were no instances of significant decreases in customer satisfaction since FY02. Fifty-seven percent of the surveys showed significant increases over time and 43% showed no differences.
- **BSC measurement and data collection** appears to be a critical factor in directly driving business operation improvements and outcome improvements. BSC measurement and data collection does not appear to be related to output improvements either directly or indirectly.
- **Survey implementation** appears to be a critical factor in driving product and service delivery improvement. Survey implementation also appears to drive outcome improvement indirectly through product and service delivery improvement.
- ORS/ORF PM participants indicate that OQM-provided tools, services, communication vehicles, and support are helpful to them in PM implementation. Particularly helpful are **external consultants, supervisor support, the PM Template, and the PM Presentation Template.**
- ORS/ORF PM participants indicate that all proposed OQM-provided tools/resources and training will be helpful to them in PM implementation. Among the highest rated proposed tools/resources and training are **external consultants, IT support to establish data collection systems, regular meetings with management to discuss results, and training on customer assessment.**
- ORS/ORF PM participants indicate that the implementation of the PM process has had a positive impact on their **commitment to PM, accountability as important value, PM assistance with A-76 directive, and ability to actively participate in data collection.**
- In reviewing data available on federal agency use of the BSC approach and through interviews with knowledgeable consultants, **it is believed that ORS/ORF is the second largest implementer of the BSC in the Federal Government.** Results from the FY04 PART review suggest that organizations using the BSC approach receive ratings equal to or higher than 60% of organizations that use some other approach. Over 70% of organizations that report using the BSC receive ratings of Effective or Moderately Effective on performance.

## 8 Recommendations

Recommendations are based on the results of the evaluation and include:

- Continue the PM implementation effort in ORS and ORF organizations.
- Continue to gather data from Service Groups to evaluate the progress of the implementation.
- Continue to provide ORS/ORF Customer Scorecard implementation and data analysis assistance to Service Groups.
- Continue to develop and deliver training to Service Group members particularly in the areas of process mapping, measures definition, data analysis, and customer assessment. Encourage

service team members to take previously offered training courses if they have not already done so. In particular, it appears that Process Mapping Training should be provided in FY05. There are many Service Groups that have not yet mapped all of their Discrete Services. For those Service Groups that have completed all process maps, it would be useful to re-visit the maps, as changes in process flow are likely to have occurred.

- Continue to develop and provide templates that Service Groups can use to develop their BSC scorecard, define measures, collect and report data, and present their results
- Continue to provide consultation services to Service Group team members. Encourage consultants (both internal and external to OQM) to provide their services to Service Groups when it is possible for all service team members to be present.
- Continue to encourage ORS/ORF senior management involvement in the PM process. Continue to sponsor a quarterly PM conference to promote discussion and to share results among Service Groups.
- Continue to work closely with Service Group team members and the Manage Information Technology Service Group to help Service Groups develop databases they can use for data collection and analysis.
- Continue to require regular performance measure reporting by Service Groups.
- Continue to require regular identification of improvements made to inputs, processes, outputs, and outcomes by Service Groups.

## Appendix A: ORS/ORF Service Hierarchy

<b>ORS (1)</b>		
<b>Service Cluster/ Office</b>	<b>Service Group</b>	<b>Discrete Service</b>
Program and Employee Services (1)	Provide comprehensive medical arts services (1)	Perform photography services (1)
		Provide multimedia digital output services (2)
		Provide graphic design services (3)
	Provide comprehensive print and digital media services (2)	Provide printing procurement services (4)
		Provide document conversion / management and print services (5)
	Provide library services (3)	Provide custom research assistance (6)
		Provide copies of publications (7)
		Translate documents (8)
		Provide primary library services (9)
		Provide self service copiers (10)
		Provide library services to HHS (11)
	Provide NIH events management services (4)	Provide conference services (12)
		Provide multimedia services (13)
	Provide scientific equipment and instrumentation services (5)	Lease scientific equipment (14)
		Maintain scientific equipment and workstations (15)
		Sell scientific equipment (16)
		Stock and sell repair parts and fabrication materials (17)
		Design and fabricate custom instruments (18)
	Support foreign staff exchange program (6)	Develop Policy and Procedures for foreign visiting Staff (Process IC immigrant petition requests) (19)
		Process employment-based visas (Process IC non-immigrant visa requests) (20)
		Train ICs in immigration formalities (21)
		Orient visiting staff and NIH on rules and regulations (22)
	Manage and administer worksite	Manage child care services, programs, contracts and use agreements (23)
		Manage food services programs, contracts and use agreements (24)

## Appendix A: ORS/ORF Service Hierarchy

ORS (1)			
Service Cluster/ Office	Service Group	Discrete Service	
	enrichment programs (7)	Manage retail and fitness services, programs, contracts and use agreements (25)	
		Manage interpreting services, programs, and contracts (26)	
	Provide mail, courier, and package screening services (8)	Manage postal accounting system (27)	
		Process and deliver incoming mail (28)	
		Process and dispatch outgoing mail (MF) (29)	
		Process and dispatch outgoing mail (SSF-MS) (30)	
		Provide courier services (31)	
		Scan incoming packages (32)	
		Postal Charges (pass-through) (33)	
		Manage travel, transportation and parking programs and services (9)	Provide parking services on campus (34)
	Provide satellite parking facilities off campus (35)		
	Provide shuttle services (36)		
	Administer and coordinate use of alternative transportation (MF) (37)		
	Administer and coordinate use of alternative transportation (SSF) (38)		
	Issue and track parking permits (39)		
	Manage travel management services, programs, contracts and use agreements (40)		
	Scientific Resources Services (2)	Conduct collaborative research (10)	Conduct collaborative bioengineering and physical science research (41)
		Provide animal research services (11)	Conduct animal diagnostic services (42)
			Conduct animal health surveillance (43)
			Perform animal model preservation and characterization (44)
Provide clinical animal research services (SSF-MS) (45)			
Provide clinical animal research services (SSF-FFS) (46)			
Procure and deliver animal product (12)		Provide animal product delivery (47)	
		Procure research animals (48)	
		Animal payments (pass-through) (49)	
Provide basic animal life		Provide animal husbandry services (50)	
		Perform clinical veterinary and technical services (51)	

## Appendix A: ORS/ORF Service Hierarchy

ORS (1)		
Service Cluster/ Office	Service Group	Discrete Service
	support (13)	Control special environmental factors for animals (52)
	Maintain safe working environment (14)	Provide technical assistance in laboratory and worksite safety (53)
		Provide occupational medical services (54)
		Provide integrated pest management services (55)
		Support biodefense initiatives (56)
	Provide Radiation Safety (15)	Provide technical assistance in and analytical support for radiation safety (57)
		Manage acquisition, distribution, and disposal of radionuclides (58)
	Security and Emergency Response Services (3)	Provide police services (16)
Conduct criminal investigations (60)		
Provide security guard services (17)		Provide building security guard service on campus (61)
		Provide building security guard services off campus (62)
		Provide perimeter security services (police and guards) (63)
		Perform perimeter vehicle security inspections (64)
		Perform underground vehicle security inspections – parking garages (65)
		Provide security for special events (66)
Provide support services to security, fire, police, and emergency management (18)		Operate Emergency Communications Center (67)
		Conduct personal security checks (68)
		Provide community policing (69)
Provide readiness and respond to medical, fire, and hazardous incidents (19)		Provide fire, rescue, and hazardous incident readiness and response services (70)
Conduct fire prevention services (20)		Conduct fire-safety reviews and inspections for NIH design and construction projects (71)
		Conduct fire-safety surveys of existing NIH facilities (72)

## Appendix A: ORS/ORF Service Hierarchy

<b>ORS (1)</b>			
<b>Service Cluster/ Office</b>	<b>Service Group</b>	<b>Discrete Service</b>	
		Provide fire-safety awareness training and information for the NIH community (73)	
		Develop fire-safety policies, guidelines and specifications for the NIH (74)	
	Plan emergency preparedness strategies (21)	Plan emergency preparedness strategies (75)	
	Provide physical security for the NIH (22)	Provide physical security awareness training and information for the NIH community (76)	
		Conduct physical security reviews and inspections for NIH design and construction projects (77)	
		Conduct physical security surveys of existing NIH facilities (78)	
		Develop physical security policies and guidelines for the NIH (79)	
	Provide access control and manage identification badges for the NIH (23)	Issue and manage access/IC cards (80)	
		Install and maintain building entry and security systems (81)	
		Manage and operate building entry and security systems (82)	
	Manage personnel security for the NIH (24)	Manage personnel security process (83)	
		Adjudicate full background investigations (84)	
	Management Services (4)	Lead ORS (25)	Lead and manage ORS (85)
			Support ORS Communications and Outreach Initiatives (86)
Provide Division support (87)			
Support the ORS Advisory Committee (88)			
Support the Competitive Sourcing initiatives (89)			
Manage ORS/ORF space (90)			
Support the restructuring initiative (91)			
Manage ORS budget and finance (26)		Manage ORS Business Plan formulation (92)	
		Coordinate B&F budget formulation (93)	
		Coordinate NIH central services budget activities and reporting (94)	
		Assist with development and review of ORS rate studies (95)	

## Appendix A: ORS/ORF Service Hierarchy

ORS (1)		
Service Cluster/ Office	Service Group	Discrete Service
		Provide budget execution services (96)
		Provide financial analyses to support ORS/ORF business decisions (97)
	Manage property management finances (27)	Process lease payments (98)
		Manage and consult on rent program finance (99)
		Manage the Consolidated Statement of Services (CSS) (100)
	Manage information technology (28)	Provide and manage desktop services and support (101)
		Provide and manage hosting services and support (102)
		Provide and manage internet and intranet services and support (103)
		Provide and manage solutions for the collection, analysis, and dissemination of information (104)
		Provide and manage customer care operations and support (105)
	Provide administrative support (29)	Coordinate administrative processes and procedures (106)
		Implement new administrative systems (107)
		Manage ORS/ORF property (108)
		Administer awards programs (109)
	Perform Management Analysis and review (30)	Develop ORS Policies and Procedures (110)
		Handle Ethics Issues (111)
		Conduct and Coordinate Administrative Reviews (112)
		Respond to FOIA and Privacy Act Requests (113)
		Coordinate/implement ORS organizational changes (114)
		Perform ORS records management and other initiatives (Telework, employee suggestions, plain language) (115)
	Provide strategic human capital planning and management (31)	Provide career transition/development resources (116)
		Support the competitive sourcing initiatives (117)
		Support organizational change (118)
		Support the customer service initiative (119)
		Lead ORS human capital strategy (120)
		Provide employee development and training (121)

## Appendix A: ORS/ORF Service Hierarchy

<b>ORS (1)</b>			
<b>Service Cluster/ Office</b>	<b>Service Group</b>	<b>Discrete Service</b>	
	Manage the EEO Program (32)	Manage EEO Program (122)	
	Operate ADR services (33)	Operate ADR service (123)	
	Provide quality, performance and organizational improvement services (34)		Provide performance measurement and improvement services to ORS/ORF service providers (124)
			Provide technical assistance to ORS/ORF service providers on performance-based service contracts (PBSC) (125)
			Provide consultation and support for strategic initiatives to NIH/ORS/ORF organizations (126)
	Special program support (35)		Fund patent prosecution activities (127)
			Fund environmental remediation projects (128)
			Manage UT Chimps contract (129)
			Provide other special program support (130)
			Provide centralized HR services (131)
	Operate ORS risk management fund (36)		Operate ORS risk management fund (MF) (132)
			Operate ORS risk management fund (SSF) (133)

<b>ORF (2)</b>		
<b>Service Cluster/ Office</b>	<b>Service Group</b>	<b>Discrete Service</b>
Program Management (5)	Lead ORF (37)	Provide ORF operational and strategic leadership (134)
		Provide NIH real estate asset management (135)
		Coordinate external communication and reporting (136)
		Coordinate internal communication and reporting (137)
	Support performance	Develop suitable performance management methods to evaluate, improve, and enhance delivery of facilities (138)

## Appendix A: ORS/ORF Service Hierarchy

ORF (2)		
Service Cluster/ Office	Service Group	Discrete Service
	management and assessment of the delivery and operations of NIH –owned and leased facilities (38)	Prepare the facilities section of the NIH Government Performance and Results Act (GPRA) Plan (139)
	Provide simplified acquisition services (39)	Provide acquisition support services for simplified acquisition and other non-simplified acquisitions (140)
		Administer ORS credit card program (141)
	Operate the ORF risk management fund (budgetary pass-through item) (40)	Operate the ORF risk management fund (MF) (142)
		Operate the ORF risk management fund (SSF) (143)
	Planning (6)	Plan campus repairs, extensions and improvements (41)
Plan extension and improvement of the utility systems on NIH campuses (145)		
Perform master and facilities planning (42)		Develop master plans for NIH facilities (146)
		Develop strategic facilities plans (147)
		Plan and manage space allocations (MF) (148)
		Plan and manage space allocations (SSF) (149)
		Formulate the B&F budget plan and request (150)
		Coordinate agency and community planning input (151)
		Perform environmental planning (152)
		Perform transportation planning (153)
		Provide site coordination (154)
Manage NIH facilities inventory and space assignments (43)		Manage the real property data system (155)
		Manage the census data system (156)

## Appendix A: ORS/ORF Service Hierarchy

ORF (2)			
Service Cluster/ Office	Service Group	Discrete Service	
Development (7)	Manage the design and construction of major capital projects (44)	Direct and monitor performance of the NIH capital project management program (157)	
		Manage the design and construction of designated capital projects (158)	
		Cost of SP provided construction management (PWS scope 5.1) (SSF) (159)	
		Ensure ORF operations conform to applicable regulations, codes, standards and guidelines (160)	
	Manage the design and construction of non-capital projects (45)	Manage the design and construction of non-capital projects (161)	
	Purchase, lease, and dispose of real estate (46)	Purchase and dispose of NIH-owned real estate (162)	
		Perform lease administration (163)	
		Manage the lease acquisition process for all leased facilities (164)	
		Negotiate licenses, permits and easements (165)	
	Provide construction acquisition services (47)	Direct and execute the NIH construction acquisition strategy (166)	
		Conduct solicitation and award services for A&E and construction contracts (167)	
		Provide acquisition and administration management for A&E, services and construction contracts (168)	
	Installation Operations (8)	Administer the property management service provider's performance (48)	Perform contract oversight of MEO (CGA) (169)
			Implement the quality assurance surveillance plan (QASP) (CGA) (170)
Review/receive invoices (CGA) (171)			
Direct and approve repairs to be done (CGA) (172)			
Review/accept alteration proposals (CGA) (173)			
Manage the IC budget commitment (CGA) (174)			
Cost of SP provided property management and operations (PWS scope 5.2) (SSF) (175)			
Cost of SP provided central utilities operations (PWS scope 5.3) (176)			
MEO Performance (177)			

## Appendix A: ORS/ORF Service Hierarchy

ORF (2)		
Service Cluster/ Office	Service Group	Discrete Service
	Perform facilities maintenance and operation (49).	Manage loading dock services (178)
		Maintain eng drawings/equip op & maint doc/specification (179)
	Perform utilities support services (50)	Audit and process utility bills (180)
		Acquire electricity (181)
		Acquire water (182)
		Acquire natural gas (183)
		Acquire fuel oil (184)
	Manage Waste stream (51)	Manage solid waste streams (185)
		Manage hazardous waste streams (186)
	Lease Payments (52)	Lease Payments (187)
	Stewardship (9)	Plan and implement long term facility stewardship (53)
Manage the accreditation process (189)		
Manage policy and program assessment for the delivery and operations of NIH-owned and leased facilities (54)		Provide policies, standards, and guidelines for NIH owned and leased facilities (190)
		Review ORF operations for compliance with applicable regulations, codes, standards, and guidelines (191)
		Develop suitable performance management methods to evaluate, improve and enhance the delivery of facilities. (192)
		Provide ORF staff training to ensure effective implementation of policies and procedures to deliver quality facilities (193)
		Prepare the facilities section of the NIH Government Performance and Results Act (GPRA) Plan (194)
Improve environmental quality (55)		Develop and manage Environmental Management System (EMS) (195)
		Ensure [environmental] regulatory compliance (196)
		Administer the NIH NEPA process (197)
		Manage environmental remediation projects (198)

## Appendix B: ORS/ORF Customer Scorecard

March 2004

### ORF/ORS Customer Scorecard

List appropriate introduction (varies depending on if hard copy survey, email survey, or web survey)

Add demographic questions here relevant to your survey effort.

Please rate your **SATISFACTION** with the \_\_\_\_\_ on the following:

Product/Service	Unsatisfactory										Outstanding	Don't Know	Not Applicable
Cost	1	2	3	4	5	6	7	8	9	10		DK	NA
Quality	1	2	3	4	5	6	7	8	9	10		DK	NA
Timeliness	1	2	3	4	5	6	7	8	9	10		DK	NA
Reliability	1	2	3	4	5	6	7	8	9	10		DK	NA
Customer Service	Unsatisfactory										Outstanding	Don't Know	Not Applicable
Availability	1	2	3	4	5	6	7	8	9	10		DK	NA
Responsiveness	1	2	3	4	5	6	7	8	9	10		DK	NA
Convenience	1	2	3	4	5	6	7	8	9	10		DK	NA
Competence	1	2	3	4	5	6	7	8	9	10		DK	NA
Handling of problems	1	2	3	4	5	6	7	8	9	10		DK	NA

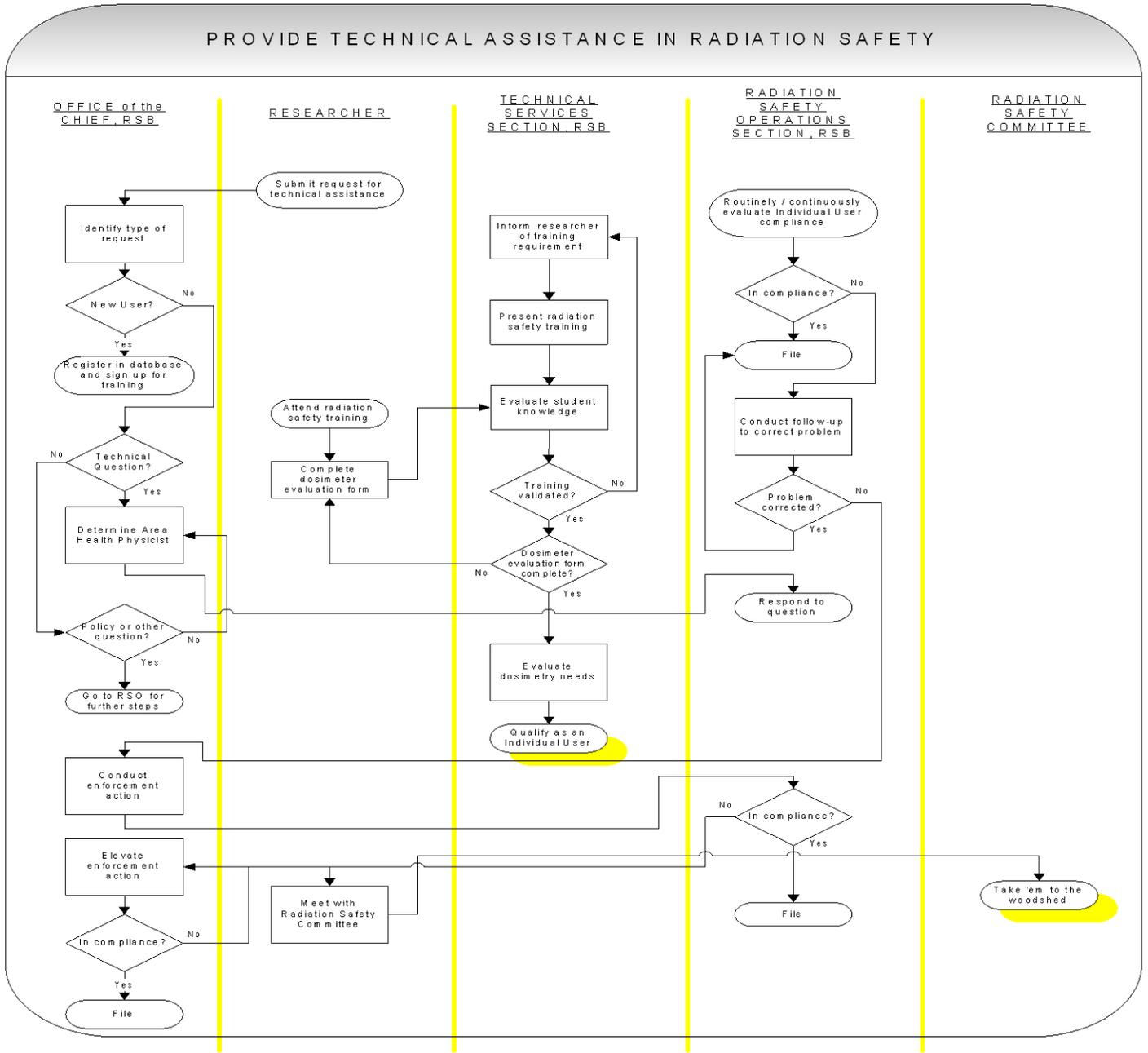
**What was done particularly well?**

**What needs to be improved?**

**Other comments?**

**Change directions here depending on distribution method.**

# Appendix C: Process Map Example



## Appendix D: Measures Definition Example

	Objective	Measure	FY 04 Target	FY05 Target	FY06 Target	Initiative	Owner
Customer	C1: Provide integrated transparent access to the most relevant information via the most effective information sources for NIH researchers and staff	C1a. Percent of current print journals in electronic format C1b. Percentage of license agreements that cover all NIH customers C1c. Percentage of document requests filled in-house C1d. Words per hour translated by in-house translators	≥ 81% ≥ 62% ≥ 80% ≥ 150 words/hour	≥ 81% ≥ 62% ≥ 80% > 150 words/hour	≥ 81% ≥ 62% ≥ 80% ≥ 150 words/hour	C1a. Convert all journals to e-format - data collected annually. C1b. Negotiate all e-license agreements for access by all of NIH - data collected annually C1c. Data collected monthly C1d. Meet or exceed standard set by State Dept and Voice of America translation services - data collected monthly	C1a: BL C1b: BL C1c: RS C1d: TC
	C2: Enhance researchers referencing knowledge and skills to support their contribution to advancing medical research and patient care	C2a. Percent of courses that are web-based C2b1 and 2: Training attendance by type (classes, tutorials, etc. versus web-based) C2c: Training evaluation scores	C2a. ≥ 50% C2b. C2c. ≥ 4 on 5 pt. Scale	C2a. ≥ 50% C2b. C2c. ≥ 4 on 5 pt. Scale	C2a. ≥ 50% C2b. C2c. ≥ 4 on 5 pt. Scale	C2a. Develop web-based instruction modules for all training classes, if feasible - data collected monthly C2b. Develop classes and viewlets for new resources; drop classes if attendance is consistently low - data collected monthly C2c. Data collected monthly	Instruction Team/SW
	C3: Increase customer/stakeholder satisfaction with overall service	C3a. Customer Scorecard ratings of user satisfaction C3b: Tri-annual telephone survey ratings of user satisfaction C3c: Digital reference service evaluation ratings	C3a. Baseline C3c. ≥ 80% agree or strongly agree	C3a. Baseline C3b. ≥ 90% approval rating C3c. ≥ 80% agree or strongly agree	C3a. Baseline C3c. ≥ 80% agree or strongly agree	C3a. Use scorecard to evaluate provide copies of publications and reference services delivered at the information desk in FY04 - data collected for 1 month period C3b. Data collected once every 3 years C3c. Data collected monthly	C3a: RS & JV C3b: NA C3c: SW
	C4: Increase understanding of customer base	C4. Customer segmentation data	IC usage of services proportional to census	IC usage of services proportional to census	IC usage of services proportional to census	Data collected annually	C4: RS, TC, SW

## Appendix E: OQM Improvements Summary: Process Improvements

PROGRAM AREA: SERVICE GROUP:							
PERSPECTIVE	OBJECTIVE	IMPROVEMENT	PROCESS				
Indicate PMP perspective to which improvement applies	List performance objective in PMP to which improvement applies	Provide short description of improvement implemented	Reduce Cycle (Time)	Reduce Re-work (Percent)	Streamline Process (# of processes)	Improve reliability (Percent)	Other
Customer	Provide a fire safe work environment for all NIH facilities.	Implemented permit process that covers all construction and renovation.					Increased % of design projects reviewed; 10 pilot projects are now subject to 100% review
Internal Business Process	Promote value added custom service projects	Goal is to increase the number of informationist assignments to 8 in FY04. We achieved 9 assignments in FY04 which represents an increase of 13% over our goal.					13% over goal
Internal Business Process	Adopt best practices and infuse new technology	Goal is to implement 2 new IT systems or software solutions in FY04. In FY04 we implemented 7 new IT systems or software solutions which represents an increase of 250% over our goal			250% over goal		
Internal Business Process	Increase timeliness of service (histopathology)	There was an increase in demand for histopathologies (up 11%). However turnaround time improved despite the increase in demand.	8 days average reduction in turnaround time				
Internal Business Process	Increase timeliness of service (comprehensive full panels)	There was an increase in demand for comprehensive full panels (up 31%). However turnaround time improved despite the increase in demand.	2.5 days average reduction in turnaround time				
Internal Business Process	Improve accuracy in order and fulfillment	Set up a QA process for reviewing qualified jobs specs before executing final print orders as part of overall customer service training in FY03.		40% reduction in re-work			

## Appendix F: OQM Improvements Summary: Output Improvements

PROGRAM AREA: SERVICE GROUP:						
PERSPECTIVE	OBJECTIVE	IMPROVEMENT	OUTPUTS			
Indicate PMP perspective to which improvement applies	List performance objective in PMP to which improvement applies	Provide short description of improvement implemented	Improve Productivity (\$ Change in Unit Costs)	Asset Utilization (Percent)	Reduce Complaints (Percent)	Other
Customer	Provide integrated transparent access to the most relevant information via the most effective information sources for NIH researchers and staff	Goal is to meet or exceed translation standard set by State Department and Voice of America translation services of 150 words translated per hour. Currently we are translating 253 words per hour which represents a 69% increase over the standard and an increase of 13% over our personal best of 223 words per hour last year (FY03).				69% over standard and 13% increase over last year in words translated per hour.
Customer	Enhance researchers referencing knowledge and skills to support their contribution to advancing medical research and patient care	Goal is to provide at least 30% of our courses as web-based in order to respond to our customers' expressed desire for such courses. In FY04, 56% of our courses are web-based which represents a 14% increase over FY03.				14% increase in the number of web-based course offerings
Customer	Demonstrate Value of Unique Support Services to Customers and Stakeholders	Goal is to increase number of consultations, presentations, and trainings offered to NIH customers in order to increase their awareness of (and ultimately their use of) our unique services.				327% increase in number of consultations and 157% increase in number of trainings
Internal Business Process	Stay consistent on ethics, FOIA and policy response	FOIA training was initiated in FY03 including what material should be collected, how it should be packaged (includes index of contents), and time limits for submission to requester.				Improved FOIA processing time by 50%
Financial	Minimize unit cost of providing copies of publications at a defined level of service	Goal is to maintain or decrease unit costs.	2% decrease in unit cost			
Financial	Minimize unit cost of each discrete service (clinical veterinary and technical services)	Our goal is to decrease unit cost for this discrete service.	\$102 decrease per unit (21% reduction in unit cost)			
Financial	Maximize utilization of assets (surgery utilization)	Our goal is to increase asset utilization for surgery.		7% increase in surgery service utilization (now at 86% utilization)		

## Appendix G: Results of Test of Model (Consultation, Training, Process Improvements, and Output Improvements)

Variables	Correlation Coefficients			
	(1)	(2)	(3)	(4)
(1) Consultation Hours	1.00			
(2) Training Attendance	.25 p = .132	1.00		
(3) Business Operation Improvements	.05 p = .773	.39 p = .019	1.00	
(4) Product/Service Delivery Improvements	.36 p = .03	.49 p = .002	.40 p = .017	1.00

### Equation 1: Predicting Business Operations Improvement

Variable	Beta	T	Significance
Consultation Hours	-0.053	-0.322	0.750
Training Attendance	0.404	2.440	0.020
$F_{(2, 33)} = 3.024; p < .062$			
Multiple $R = .39$			
$R^2 = .16$			

### Equation 2: Predicting Product/Service Delivery Improvement

Variable	Beta	T	Significance
Business Operation Improvement	0.255	1.653	0.108
Consultation Hours	0.266	1.814	0.079
Training Attendance	0.325	2.041	0.050
$F_{(3, 32)} = 5.926; p < .002$			
Multiple $R = .60$			
$R^2 = .36$			

**Appendix H: Results of Test of Model (Internal Business Process Measures With Active Data Collection, Process Improvements, and Output Improvements)**

Variables	Correlation Coefficients		
	(1)	(2)	(3)
(1) IB Process Measures With Active Data Collection	1.00		
(2) Business Operation Improvements	.34 p = .04	1.00	
(3) Product/Service Delivery Improvements Business Operation Improvements	.22 p = .199	.40 p = .017	1.00

**Equation 1: Predicting Business Operations Improvement**

Variable	Beta	T	Significance
IB Process Measures With Active Data Collection	0.344	2.133	0.040
$F_{(1, 34)} = 4.549$ $p < .04$			
Multiple $R = .34$			
$R^2 = .12$			

**Equation 2: Predicting Product/Service Delivery Improvement**

Variable	Beta	T	Significance
Business Operation Improvements	0.362	2.138	0.040
IB Process Measures With Active Data Collection	0.095	0.560	0.579
$F_{(2, 33)} = 3.236$ ; $p < .052$			
Multiple $R = .41$			
$R^2 = .16$			

## Appendix I: Results of Test of Model (BSC Measures With Active Data Collection, Survey Implementation, Process Improvements, and Output Improvements)

Variables	Correlation Coefficients			
	(1)	(2)	(3)	(4)
(1) BSC Measures With Active Data Collection	1.00			
(2) Survey Implementation	.16 p = .348	1.00		
(3) Business Operation Improvements	.36 p = .029	.24 p = .165	1.00	
(4) Product/Service Delivery Improvements	.14 p = .42	.52 p = .001	.40 p = .017	1.00

### Equation 1: Predicting Business Operations Improvement

Variable	Beta	T	Significance
BSC Measures With Active Data Collection	0.334	2.071	0.046
Survey Implementation	0.182	1.132	0.266
$F_{(2, 33)} = 3.246; p < .052$			
Multiple $R = .41$			
$R^2 = .16$			

### Equation 2: Predicting Product/Service Delivery Improvement

Variable	Beta	T	Significance
Business Operation Improvement	0.304	1.950	0.060
BSC Measures With Active Data Collection	-0.045	-0.294	0.770
Survey Implementation	0.455	3.096	0.004
$F_{(3, 32)} = 5.758; p < .003$			
Multiple $R = .59$			
$R^2 = .35$			

## Appendix J: OQM Improvement Summary: Outcome Improvements

PROGRAM AREA:							
SERVICE GROUP:							
PERSPECTIVE	OBJECTIVE	IMPROVEMENT	OUTCOMES				
Indicate PMP perspective to which improvement applies	List performance objective in PMP to which improvement applies	Provide short description of improvement implemented	Cost Savings (Dollars)	Services Added /Deleted (#)	Cost Avoidance (Dollars)	Improve Customer Satisfaction (Avg. Improvement)	Other
Customer	Enhance researchers referencing knowledge and skills to support their contribution to advancing medical research and patient care	Goal is to achieve a mean overall rating of at least 4.0 on a 5-point scale with respect to course satisfaction. In FY04, the overall mean rating was 4.5 which represents an increase of 2% over FY03 (4.4).				2% increase in overall mean satisfaction rating on training courses	
Customer	Increase customer/stakeholder satisfaction with overall service	Goal is to maintain at least 80% of customer responses of agree or strongly agree on all categories of this measure. Average percentage in FY04 is 88% which represents a 2% increase over FY03.				2% increase in overall percentage over FY03	
Customer	Increase customer satisfaction (animal procurement service)	Goal is to increase customer satisfaction with animal procurement service.				Mean overall rating on ORS Customer Scorecard increased from 5.6 in FY03 to 6.74 in FY04	
Internal Business Process	Maintain up-to-date fire safety policies, guidelines, and specifications.	The Fire Marshal now has full control of fire protection policy development.		1 service added			
Learning and Growth	Improve Adoption of best business practices	Consolidated print procurement activities and customer service and outsourced in house impressions and conversion business FTE's from 23 in FY 02 to 9 in FY 03	\$500,000 saved				
Financial	Maximize cost-effectiveness of purchases	Instituted bulk purchasing of caging which was a strategy identified to reduce supplier costs.	\$229,174 saved in FY02, \$108,687 saved in FY03, and \$89,000 saved in FY04				
Financial	Minimize unit cost of each discrete service at a defined service level	Transportation runs increased by 7% in FY03. Unit Cost increased by 4.6% in FY03. A vacancy occurred in Quarter 4 and was not (will not) be replaced. Additional work handled and overall service ratings not significantly different from FY02.	\$67,000 dollars saved in FY03				

## Appendix K: Results of Test of Model (BSC Measures With Active Data Collection, Survey Implementation, Process Improvements, Output Improvements, and Outcome Improvements)

Variables	Correlation Coefficients			
	(1)	(2)	(3)	(4)
(1) BSC Measures With Active Data Collection	1.00			
(2) Survey Implementation	.16 p = .348	1.00		
(3) Business Operation Improvements	.36 p = .029	.24 p = .165	1.00	
(4) Product/Service Delivery Improvements	.14 p = .42	.52 p = .001	.40 p = .017	1.00
(5) Outcome Improvements				

### Equation 1: Predicting Business Operations Improvement

Variable	Beta	t	Significance
BSC Measures With Active Data Collection	0.334	2.071	0.046
Survey Implementation	0.182	1.132	0.266
$F_{(2, 33)} = 3.246; p < .052$			
Multiple $R = .41$			
$R^2 = .16$			

### Equation 2: Predicting Product/Service Delivery Improvement

Variable	Beta	t	Significance
Business Operation Improvement	0.304	1.950	0.060
BSC Measures With Active Data Collection	-0.045	-0.294	0.770
Survey Implementation	0.455	3.096	0.004
$F_{(3, 32)} = 5.758; p < .003$			
Multiple $R = .59$			
$R^2 = .35$			

**Appendix K: Results of Test of Model (BSC Measures With Active Data Collection, Survey Implementation, Process Improvements, Output Improvements, and Outcome Improvements)**

**Equation 3: Predicting Outcome Improvement**

<b>Variable</b>	<b>Beta</b>	<b>t</b>	<b>Significance</b>
Product/Service Delivery Improvement	0.664	4.492	0.000
Business Operation Improvement	0.145	1.053	0.300
BSC Measures With Active Data Collection	0.274	2.132	0.041
Survey Implementation	-0.204	-1.454	0.156
$F_{(4, 31)} = 9.887; p < .001$			
Multiple $R = .75$			
$R^2 = .56$			

## Appendix L: FY04 OQM Scorecard

### Demographics

**Are you: (Check all that apply)**

- Office Director/Associate Director/Division Director
- PM Team Leader
- PM Team Member
- PM Consultant
- Management Council
- Other

**What is your organization?**

#### Office of Research Services (ORS)

- Management Services
- Program and Employee Services
- Security and Emergency Response
- Scientific Resources

#### Office of Research Facilities (ORF)

- Division of Facilities Planning
- Division of Capital Projects Management
- Division of Property Management
- Division of Environmental Protection
- Division of Real Property Acquisition Services
- Division of Policy and Program Assessment
- Other
- Don't Know

### PM Participation

**Indicate your participation in each of the following:**

Attended the FY04 "Performance Management Using the Balanced Scorecard Approach" training in May, June or July 2004

Attended the FY04 "Managing with Measures" training in May, June, or July 2004

Part of a PMP Team in FY04

Part of an ASA Team in FY02

Part of an ASA Team in FY01

Yes	No	Don't know

## Appendix L: FY04 OQM Scorecard

**Approximately what percent of time did you spend on performance management related activities during FY04?**

- |                 |                  |
|-----------------|------------------|
| _____ 0 to 10%  | _____ 11 to 20%  |
| _____ 21 to 30% | _____ 31 to 40%  |
| _____ 41 to 50% | _____ 51 to 60%  |
| _____ 61 to 70% | _____ 71 to 80%  |
| _____ 81 to 90% | _____ 91 to 100% |

**On average, how often did your Performance Management Team meet FY04?**

- \_\_\_\_\_ Several times a week
- \_\_\_\_\_ Once a week
- \_\_\_\_\_ Biweekly
- \_\_\_\_\_ Once a month
- \_\_\_\_\_ Once a quarter
- \_\_\_\_\_ Less than once a quarter

**To what extent did your team members work between meetings to implement performance management?**

To No Extent										To a Great Extent		Don't Know	Not Applicable
1	2	3	4	5	6	7	8	9	10	DK	NA		

### Perceptions of PM Implementation

**How helpful did you find the following tools to implementing performance management?**

	Not at all Helpful										Extremely Helpful		Don't Know	Not Applicable
	1	2	3	4	5	6	7	8	9	10	DK	NA		
Listings of the Services Hierarchy														
Performance Management Plan (PMP) template														
Strategy Mapping														

## Appendix L: FY04 OQM Scorecard

	Not at all Helpful										Extremely Helpful	Don't Know	Not Applicable
	1	2	3	4	5	6	7	8	9	10			
Measures Roadmap Template													
Initiative Roadmap Template													
Measures Reporting Form													
PM presentation template for conference													

**How helpful did you find the following data analysis services to implementing performance management?**

	Not at all Helpful										Extremely Helpful	Don't Know	Not Applicable
	1	2	3	4	5	6	7	8	9	10			
Design of data collection forms													
Establishing data collection methodologies													
Graphing data													
Process behavior chart analyses													
ORS Customer Scorecards (survey design, survey collection, data analysis, and reporting)													

## Appendix L: FY04 OQM Scorecard

**How helpful did you find the following communication vehicles to implementing performance management?**

	Not at all Helpful										Extremely Helpful										Don't Know	Not Applicable	
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10			DK
Performance Management web site																							
PM related emails from OQM																							
PM Conference																							

**How helpful did you find the assistance from the following groups to implementing performance management?**

	Not at all Helpful										Extremely Helpful										Don't Know	Not Applicable	
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10			DK
OQM Staff																							
PM Consultants																							
Other PM teams																							
Your Supervisor																							

**To what extent was your immediate supervisor involved in your performance management process during this performance management cycle?**

To No Extent										To a Great Extent										Don't Know	Not Applicable		
1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10			DK	NA

**How helpful was the involvement of your immediate supervisor in performance management-related matters during this cycle?**

Not at all Helpful										Extremely Helpful										Don't Know	Not Applicable		
1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10			DK	NA

## Appendix L: FY04 OQM Scorecard

To what extent has your knowledge/skills/abilities improved in the following areas during this performance management cycle?

	To No Extent										To a Great Extent	Don't Know	Not Applicable
	1	2	3	4	5	6	7	8	9	10			
Balanced Scorecard approach to performance management													
Methods to gather data													
Methods to analyze data													
Presentation preparation and delivery													
Working in a team													
Using Excel													
Using PowerPoint													
Using Visio													

### Perceptions of PM Needs for FY05

In planning for the next performance management cycle, how helpful would each of the following tools/resources be to your Performance Management Team?

	Not at all Helpful										Extremely Helpful	Don't Know	Not Applicable
	1	2	3	4	5	6	7	8	9	10			
PM Consultants provided by OQM													
OQM Staff													

## Appendix L: FY04 OQM Scorecard

	Not at all Helpful										Extremely Helpful	Don't Know	Not Applicable
	1	2	3	4	5	6	7	8	9	10			
Regular meetings with your Management to discuss PM data													
Rotating Quarterly Presentation Meetings													
Yearly Performance Management conference													
IT support to establish data collection systems													

**In planning for the next performance management cycle, how helpful would each of the following tools/resources be to your Performance Management Team?**

	Not at all Helpful										Extremely Helpful	Don't Know	Not Applicable
	1	2	3	4	5	6	7	8	9	10			
Training on the Balanced Scorecard (BSC) methodology													
Training on setting up data collection systems and forms													
Training on analyzing data through graphs													

## Appendix L: FY04 OQM Scorecard

	Not at all Helpful										Extremely Helpful	Don't Know	Not Applicable
	1	2	3	4	5	6	7	8	9	10			
Training on analyzing processes with process behavior charts													
Training on customer assessment through interviews, focus groups, and surveys													
Training on ORS/ORF ABC Cost Accounting Model													

### Organizational Climate

Indicate the extent that you agree or disagree with the following:

	Strongly Agree		Agree		Neither Agree nor Disagree		Don't Know	Not Applicable
	1	2	3	4	5	DK		
I see the value of performance management for improving business operations in my area.								
My organization (ORS or ORF) is committed to the performance management effort.								

## Appendix L: FY04 OQM Scorecard

	Strongly Agree		Agree	Neither Agree nor Disagree		Don't Know	Not Applicable
	1	2	3	4	5	DK	NA
I understand what the Services Hierarchy is and its purpose.							
The culture of my organization (ORS or ORF) is changing to be more results-oriented..							
Managers in my organization (ORS or ORF) believe accountability is an important organizational value.							
Performance management has contributed to improvements in my area.							
Performance management will assist my organization if we have to go through an A-76 competition							
My PM team (or the groups I am responsible for) is/are actively involved in data collection and analysis.							

## Appendix L: FY04 OQM Scorecard

### Customer Satisfaction

Please rate your **SATISFACTION** with OQM's job of **MANAGING THE PERFORMANCE MANAGEMENT INITIATIVE** on the following dimensions:

	Unsatisfactory										Outstanding		Don't Know	Not Applicable
Product/Service	1	2	3	4	5	6	7	8	9	10	DK	NA		
Cost														
Quality														
Timeliness														
Reliability														
	Unsatisfactory										Outstanding		Don't Know	Not Applicable
Customer Service	1	2	3	4	5	6	7	8	9	10	DK	NA		
Availability														
Responsiveness														
Convenience														
Competence														
Handling of problems														

### Comments

**What did you value most about this cycle of performance management?**

**What obstacles were most challenging for you during this cycle of performance management?**

**How can we help you to integrate performance management into your daily business activities?**

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