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## Effective Benchmarking

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I. RATIONALE
The long-term viability of any organization—whether in the competitive or not-for-profit sectors—depends largely upon how well it understands and how effectively it meets its customers’ requirements. Most organizations still have a long way to go, but some have begun embracing Total Quality Management (TQM) to meet customer requirements. Yet TQM is only the first step in the restructuring of institutions; productivity management and business process reengineering are also essential. Benchmarking is a tool to help companies with these two steps.

Benchmarking involves evaluating the other company’s business processes and adopting them to incorporate best practices to improve performance, search for innovative ideas, and gain a competitive advantage. The corporate world recognized the benchmarking process in the 1970s. At first, it was used primarily by manufacturing companies to improve their products. Benchmarking techniques are now commonly used by service companies and applied to customer service and staff departments.

Starting in the 1980s, service companies sought data about the internal workings of companies in their own industry. Now companies are looking beyond their own industry to benchmark against the best in any given function as long as the lessons can be applied to their circumstances. They may also benchmark against their own customers and vendors.

Benchmarking provides a rational method for setting performance goals and gaining market leadership and a broader, more accurate organizational management perspective. Since it is based on what the best are doing, it takes the emotion out of arguments about the need to change.

II. SCOPE
This Statement of Management Accounting describes tools and techniques that improve the effectiveness of benchmarking studies, with special emphasis on their practical applications.

It is addressed to management accountants and others who are already familiar with the basic benchmarking process. This tools and techniques statement will provide guidance to those who want to effectively conduct a benchmarking study and accelerate the introduction of benchmarking into their organizations.

If you are not already familiar with the basic benchmarking process you need to become familiar with the types of benchmarking (internal, competitive, functional, and generic) as well as the differences between a strategic and an operational focus. The best sources of information on benchmarking types and focus can be found in Robert Camp’s *Benchmarking: The Search for Industry Best Practices that Lead to Superior Performance* and *Business Process Benchmarking: Finding and Implementing Best Practices*, and Gregory Watson’s *Strategic Benchmarking* which demonstrates how to conduct each type of benchmarking project.

The recommendations above will furnish the reader with the essential background necessary to effectively utilize the tools and techniques presented in this statement.

The tools, techniques, and case study included in the guideline are structured to apply to:

- all levels of an enterprise;
- all functions in an enterprise;
- enterprises in all business sectors;
- the public and private sectors; and
- small and large organizations.
This SMA will be useful to benchmarking team leaders, facilitators, and individuals who act as liaisons between benchmarking teams and upper management. It will help these benchmarkers understand how to:

- identify benchmarking projects that are consistent with senior management’s strategic plans;
- analyze a process flowing across functional areas;
- structure an approach to effectively gather “best-in-class” information;
- develop a framework for identifying, organizing, and analyzing process performance; and
- analyze benchmarking data effectively to compare performance measures and underlying causes and enablers.

III. DEFINING BENCHMARKING
Benchmarking involves continuously evaluating the practices of best-in-class organizations and adapting company processes to incorporate the best of these practices. Webster's (unabridged) Dictionary defines benchmarking as: “A standard or point of reference in measuring or judging...” According to Robert Camp: “Benchmarking is the search for industry best practices that lead to superior performance.” D.T. Kearns, former CEO of Xerox, states, “Benchmarking is the continuous systematic process of measuring products, services, and practices of companies that are recognized as industry leaders for the purpose of achieving superior performance.” Gregory J. Balm of IBM has a similar definition: “(Benchmarking is) the ongoing activity of comparing one’s own process, product, or service against the best known similar activity, so that challenging but attainable goals can be set and a realistic course of action implemented to efficiently become and remain best of the best in a reasonable time.”

Common to all of these definitions is a process designed to allow both an internal and external assessment to develop and implement a plan for leadership in the marketplace. The key items stressed in these definitions are:

- **Products, services, and practices**: Benchmarking today is much broader than the competitive analysis that traditionally focused on product features or price comparisons. Benchmarking analyzes and measures the key outputs of a business process or function against the best and also identifies the underlying key actions and root causes that contribute to the performance difference.
- **Ongoing process**: Since the external environment is continually changing, benchmarking has to be a continuous process as well. It cannot be this year’s management slogan or a fad. Competitive market forces tend to drive performance to ever higher levels.
- **Measuring**: Measuring involves both quantitative and qualitative analysis. It includes measuring the difference in business processes with the benchmark company. The quantitative component could define the gap between “as is” and the “desired state,” such as a nine-month-longer product development cycle. The qualitative component can include specific practices, such as early vendor involvement in the product development cycle.
- **Industry leaders**: Achieving parity against the best in the industry may not always guarantee success. The goal of benchmarking should be to compare one’s performance with the best in the world. The best may be a non-competitor in another industry.
Benchmarking should not be confused with competitive analysis. Benchmarking focuses on process and “best-in-class” comparisons. Competitive analysis is an investigation of the competitor without the help of the competitor. With benchmarking, the “best-in-class” openly share information with those conducting the study. The goal of benchmarking is to learn from others, adapt, implement, and improve.

IV. THE ROLE OF THE MANAGEMENT ACCOUNTANT

Benchmarking was initially the domain of the marketing, product design, and business strategy functions. These functions are generally staffed and operated by non-accountants. Today, benchmarking is seen as a company-wide function that includes management accountants. Because management accountants are trained to gather, analyze, measure, and report information, they can easily adopt the tools and techniques described in this guideline. The management accountant can serve as an advocate, promoting the value of benchmarking and actively helping people to implement it. This will help make management accountants become valuable members of the cross-functional teams to implement specific benchmarking projects and systems.

The management accountant should be well versed in benchmarking tools and techniques in order to:

- make the benchmarking process more effective;
- ensure that the benchmarking projects are prioritized, and based upon strategic criteria, to support company objectives;
- ensure that benchmarking team members and benchmarking partners are selected to identify the greatest areas of opportunity to close the competitive gap;
- ensure that internal and external performance data are normalized and analyzed using the correct data analysis tools to identify gaps and their root causes;
- ensure that benchmark performance is projected into the future and periodically recalibrated;
- create a system of financial and performance measures to monitor ongoing progress against internal and external benchmark-based standards; and
- incorporate benchmarking as a key ingredient in the strategic planning process and the enterprise’s TQM efforts.

V. THE BENCHMARKING PROCESS

The benchmarking process has been formalized by the leading practitioners into several phases. All of the practitioners use an integrated, systematic, and measured approach to benchmarking reflected in the following five general phases: planning; data gathering; analysis and integration; implementation/execution; and recalibration. In each of these phases there are specific activities to be completed. Exhibit 1 portrays the essential phases and activities in this structured process. While organizations can modify them to meet a particular situation, these activities are recommended as a guide for implementing benchmarking.
EXHIBIT 1: BENCHMARKING PHASES AND ACTIVITIES

**Benchmarking Phases**
- Selecting and prioritizing benchmarking projects
- Organizing benchmarking teams
- Documenting own work processes
- Researching and identifying “best-in-class” performance
- Analyzing benchmarking data and identifying enablers
- Implementing benchmarking study recommendations
- Recalibrating benchmarks

**Activities**
- Identify and Prioritize areas to be benchmarked
- Establish benchmarking teams
- Determine relevant benchmarking measurements
- Determine data gathering method
- Determine current performance gap
- Gain management acceptance of conclusions and actions to close gap

- Identify customers of benchmarking and their requirements
- Study proposed internal benchmark process(es)
- Identify organizations to be benchmarked
- Identify causes for current and future gaps
- Establish performance goals and objectives
- Implement actions
- Assess progress toward goals

- Recalibrating benchmarks
- Validate/update benchmarks
- Establish performance goals

- Recalibrating benchmarks

- Validate/update benchmarks
This structured benchmarking process is the sole focus of Robert Camp’s *Benchmarking: The Search for Industry Best Practices that Lead to Superior Performance*. Camp also includes a complete set of management presentation charts in the Appendix for a clear and comprehensive understanding of the benchmarking process.

Benchmarking is deliberate, time consuming, and at times, difficult. It requires organizational discipline to be sustained in the face of day-to-day pressures. Benchmarking has significant resource requirements that need to be focused during implementation. These are often drawn from other areas in the organization and these areas may suffer. There are two critical elements that need to be present to ensure a successful benchmarking activity: 1) direct involvement of the CEO, senior managers, and process owners and 2) a willingness to adapt and learn from others. Bogan and English describe these two critical elements including an in-depth case study in Chapter 4 of *Benchmarking for Best Practices: Winning Through Innovative Adaptation*.

### Selecting and Prioritizing Benchmarking Projects

Benchmarking will be doomed to frustration and failure if the subject is not chosen carefully. In order to appropriately select and prioritize benchmarking projects, organizations need first to understand their critical success factors and business environment. This helps them identify their key business processes and drivers. It also helps them develop the parameters that define what processes to benchmark. The criteria for selecting what to benchmark are related to the reasons for the processes’ existence and their overall importance to the organization’s business mission, values, and strategy.

The reasons for the existence of a business process can be judged by the practices associated with customer satisfaction. How important is it in the internal supplier-customer chain or in satisfying end users’ or customers’ needs? Ultimately, a process exists for this purpose only and whether it should be benchmarked depends heavily on answering this question.

Further criteria would determine how important the decision for improving a practice is and how applicable benchmarking is to the decision. The importance of plans and strategy also is a relevant criterion.

Once the decision criteria are selected, organizations can use one or more of the following tools to prioritize benchmarking projects:

- criteria testing;
- the analytical hierarchical process;
- maturity analysis; and
- key business process assessment.

Since many of the benchmarking tasks may not be feasible due to high costs and the detailed...
analysis required, smaller organizations will most likely purchase benchmarking information rather than develop in-house programs.

**Criteria Testing**
Since resources are usually limited for extensive benchmarking studies, it is important to have agreement on which business processes should receive this degree of analytical attention. When several benchmarking opportunities are available for consideration, a decision matrix may be used to weigh improvement opportunities against various criteria for success. The criteria used in the example in Exhibit 2 are: market share, gross margin, customer satisfaction, new business opportunities, and defensive strategies.

Criteria testing includes:

- criteria and their relative weights with respect to each other; and
- key processes and their relative ability to influence the selected criteria.

Some subjectivity may be required in the prioritization process. It is, therefore, necessary to have the subject matter experts involved in the development of the relative weights and priorities.

Criteria testing begins by assigning relative weights to the selected criteria. In the example in Exhibit 2, these weights are:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer satisfaction</td>
<td>3 (High)</td>
</tr>
<tr>
<td>Defensive strategy</td>
<td>3 (High)</td>
</tr>
<tr>
<td>Market share</td>
<td>2 (Medium)</td>
</tr>
<tr>
<td>New business opportunities</td>
<td>2 (Medium)</td>
</tr>
<tr>
<td>Gross margin</td>
<td>1 (Low)</td>
</tr>
</tbody>
</table>

Similarly, the key business processes to be prioritized for benchmarking in this example, are:

- new product/market development;
- customer acquisition;
- supply chain management; and
- manufacturing.

**EXHIBIT 2. CRITERIA TESTING**

<table>
<thead>
<tr>
<th>Key business processes</th>
<th>Criteria</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Market share</td>
<td>Gross margin</td>
</tr>
<tr>
<td>New product/market development</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Customer acquisition</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Supply chain management</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

**Weights**
1 = low
2 = medium
3 = high
Using available facts and judgments, a relative priority is assigned to each key business process on a scale of 1 to 5 (with increments of 0.5) relating to its ability to influence the criteria. For example, in Exhibit 2, the new product/market development process is rated 4.5 in its ability to deliver market share.

The resulting product (that is weight x relative priority) is entered for each process. For new product/market development the entry under market share is 9 (i.e., 4.5 x 2). Similarly, the new product/market development process is rated 2 in its ability to affect gross margin (weight of 1) and therefore its entry is 2.

In this example then, the process priorities for benchmarking, based upon the scores in the total column, would be as follows:

i) new product/market development;
ii) customer acquisition;
iii) manufacturing; and
iv) supply chain management.

The Analytical Hierarchical Process
The Analytical Hierarchical Process (AHP) is an excellent tool for establishing benchmarking priorities based on agreed-upon decision criteria. It is a structured way to use a consensus of subject matter experts to build a prioritized list of characteristics of the process being analyzed. It can be used at any level of detail, from prioritizing process goals to defining important characteristics of a process. It has a wide variety of uses in business analysis where a number of complex alternatives need to be evaluated at the crucial subprocess level.

It begins by the subject matter experts building a hierarchy of defined characteristics of the business process. The group starts with creating consensus on an overall (level 0) goal for the process and then dividing the goal into a few (level 1) subgoals in support of the overall objectives. These subgoals are then further subdivided at (level 2). The hierarchy can be quite detailed, though most applications need no more than three levels, as shown in Exhibit 3.

Once the levels and elements are determined, the subject matter experts assign relative weights to each defined characteristic within each hierarchy level using a consensus method, as shown in Exhibit 4. For example, gross margin is considered nine times more important than market share. This places a value of 9 in column 1, row 2. This naturally puts a value of 1/9 in row 1, column 2. Similarly, customer satisfaction is deemed by the team to be seven times more important than market share, placing a seven in row 3, column 1 and 1/7 in row 1, column 3. Each objective is considered simply to be as important as itself, thereby placing 1 in the diagonal column.

The paired comparisons are determined using the values scale shown below:

1 = equal importance to both elements in the matrix
3 = moderate importance of one element compared with another
5 = strong importance of one element compared with another
7 = very strong importance of one element compared with another
9 = extreme importance of one element compared with another
EXHIBIT 3. HIERARCHY OF DEFINED CHARACTERISTICS

Goal

Level 0

Market share
Gross margin

Level 1

Customer satisfaction
New business

Level 2

Delighted customers
Old customers retained
New customers

Options

Defensive strategy
New business revenue continued

Objectives

Market share customer base maintained
Product performance
Reduction in complaints

EXHIBIT 3: HIERARCHY OF DEFINED CHARACTERISTICS
The resulting numbers are added horizontally in the total column. Exhibit 4 shows that gross margin is likely to yield 41% of the goal as compared to 17% for the other two nearest (level 1) goals, i.e., customer satisfaction and new business. These weights can be used for pair comparisons to arrive at the normalized averages (that is, the sum of all relative weightings equals 1.0) as shown on the last column.

Recently, several types of PC-based AHP software tools have come onto the market that convert such a pairwise comparisons matrix into normalized averages or relative weightings.

Performance Maturity Analysis
A simpler benchmarking prioritization tool is Performance Maturity Analysis. A maturity matrix provides an overview and a look at the strengths of work processes relative to the organization’s objectives.

### EXHIBIT 4. COMPARING CRITERIA

<table>
<thead>
<tr>
<th></th>
<th>Market share</th>
<th>Gross margin</th>
<th>Customer satisfaction</th>
<th>New business enabled</th>
<th>Defensive strategy</th>
<th>Total</th>
<th>Normalized average²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market share</td>
<td>1</td>
<td>1/9</td>
<td>1/7</td>
<td>2</td>
<td>5</td>
<td>8.25</td>
<td>0.15</td>
</tr>
<tr>
<td>Gross margin</td>
<td>9</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>22.00</td>
<td>0.41</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>7</td>
<td>1/5</td>
<td>1</td>
<td>1/3</td>
<td>1/4</td>
<td>8.78</td>
<td>0.17</td>
</tr>
<tr>
<td>New business enabled</td>
<td>1/2</td>
<td>1/3</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>8.80</td>
<td>0.17</td>
</tr>
<tr>
<td>Defensive strategy</td>
<td>1/5</td>
<td>1/4</td>
<td>4</td>
<td>1/4</td>
<td>1</td>
<td>5.70</td>
<td>0.10</td>
</tr>
</tbody>
</table>

**Total Weighting Scale Interpretation**

- 0-10: average importance of criteria
- 11-20: important
- 21-30: very important

1 Normalized averages are calculated by dividing the row totals by the aggregate. For example, the market share criteria total of 8.25 ÷ 53.53 = a normalized average of 0.15 and the gross margin criteria of 22.0 ÷ 53.53 = a normalized average of 0.41.
A uniform set of characteristics for each work process is created. As shown in Exhibit 5, these characteristics are listed down the left side to define the rows in the maturity matrix. Across the top (column headers), a few maturity (or achievement) levels are defined. There are five levels, starting with absent and proceeding through low, medium, high, and mature. Values are assigned based upon available facts and judgments. A critical business process with low maturity signals an immediate area in which to initiate benchmarking. Conversely, a lower performance may mean lack of strategic interest due to changes in focus.

**Key Business Process Assessment**

Another way to assess key processes is to analyze their influence across major business functions, such as production, product design, and marketing. Senior management may need to focus a benchmarking study on the processes that have the most influence on the company. A key business process assessment is shown in Exhibit 6.
Organizing Benchmarking Teams

The planning, organization, and execution of a well-designed benchmarking study involves a considerable amount of time and energy. Engaging individuals to share the workload and developing an equitable division of labor are not only practical considerations, in most cases they are required.

However, there are other reasons why benchmarking is an appropriate team activity. For example, those employees responsible for implementing changes based on the results of the benchmarking study are usually motivated to participate in the study and to make it a thorough and meaningful exercise. Another good reason for the use of teams is the level of functional expertise and work experience a team represents. Different perspectives, special skills, variety of business connections, and physical location are some of the dimensions that individual team members bring to the benchmarking process.

There are two basic types of benchmarking teams, defined by their structure and reporting relationships. They are:

- **Intact work groups:** They are usually situated in a single location with all members of the group reporting to a common manager. Typically, all members of the work group participate as a benchmarking team member. Intact work groups are often the customers for their own benchmarking studies.

- **Cross-functional, interdepartmental, and interorganizational teams:** These are often structured as task teams or task forces with specific charters and definite sets of customers. The individuals selected for these teams are chosen for their specific knowledge or skill levels, but they also act as representatives of their respective departments, locations, or divisions. In many cases, these types of teams are brought together to work on one issue or problem. Once their benchmarking study is complete, the team disbands. These teams often produce recommendations or reports and present those findings to their sponsors or to senior management.

It’s often convenient to put together a benchmarking team based on nominations or easy availability of potential participants. However, organizations need to select their team carefully to organize a team of motivated and skilled individuals who can effect change.

The team selection criteria should include such appropriate elements as:

- **Knowledge of the function:** Effective benchmarkers should represent the best and the brightest in an organization in terms of the process being benchmarked. Not only should they know the right questions, but they should be able to interpret the responses from benchmark partners.

- **Credibility/respect:** Since the recommendations resulting from the benchmarking study could significantly change the status quo, the persons suggesting change should be well respected within the organization.

- **Communication skills:** Effective speaking skills ensure that questions are presented clearly and succinctly to benchmarking partners. Effective benchmarkers must also be good listeners, because the typical benchmarking interview is about 25% speaking and 75% listening.

- **Team player:** Benchmarkers need to be able to interact as team members for many months, often in locations removed from their normal work environment.
**Interest/motivation:** Benchmarkers must want to expand their learning, be innovative, and support cross-functional problem solving.

**Project management skills:** The team leader and the team facilitator must have good project management skills, because the benchmarking effort may cut across many functional boundaries and span several months.

These team selection criteria are shown in the following table. According to this example, Peter, Kathy, and Nancy would be considered as potential participants in the study.

In putting together a benchmarking team, it is also important to consider team dynamics. For example, the following roles may be allocated to the various team members:

- **Team leader:** to provide overall project direction and liaison with the management;
- **Facilitator:** for such functions as project coordination, scheduling, and meeting facilitation;
- **Data collector/analyst:** to identify data needs, normalize the data collected, and analyze it using the techniques described later; and
- **Interviewer:** to conduct on-site interviews, telephone, or mail surveys.

The size of benchmarking teams varies. However, for many organizations, the average size seems to be about six persons. When teams get too large, the level of qualitative review and analysis by individual team members can decrease proportionately. (For more information on managing teams, see SMA 5C, “Managing Cross-Functional Teams.”)

**Benchmarking Team Selection Template**

<table>
<thead>
<tr>
<th>Potential member</th>
<th>Functional knowledge</th>
<th>Credibility/respect</th>
<th>Communication skills</th>
<th>Teaming skills</th>
<th>Interest/motivation</th>
<th>Project management skills</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Kathy</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Paul</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Peter</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Nancy</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

**Scale:** 1 = Lowest, 5 = Highest
Documenting Own Work Processes
Documenting own business processes involves self-study of the proposed benchmark process and examining those factors that influence business process performance.

Without a thorough investigation of its internal processes, an organization may not realize the extent of its improvement opportunities. For example, without an accurate understanding of itself, an organization cannot calculate the potential gap that exists between its outcomes or activities and those of the best-practices organization it has investigated. Furthermore, benchmarking is always an exchange of information. Organizations cannot exchange information they do not have.

In addition, organizations may be bypassing some important internal benchmarking opportunities without a thorough internal analysis. They may never discover the possible sources of information and assistance available to them internally.

Seeing an organization as a series of business processes rather than as a fixed structure is particularly useful, because, to improve performance, senior management must optimize the organization as a whole. As used in this guideline, a business process is a network of related and interdependent activities linked by the outputs they exchange. Product creation, for example, cuts across research, engineering, manufacturing, and marketing, while supply chain management cuts across a variety of organizations: the firm’s suppliers, their suppliers, the company itself, and its customers.

Some of the tools that benchmarkers use to document business processes are:
- cross-functional maps;
- family of measures; and
- process taxonomy.

Cross-Functional Maps
In organizations with complex activity chains, it can be quite difficult to identify the primary characteristics of a process. One way to solve this problem is by tracing the path a product or service request takes through the organization. The path is a flow of work that leads to some final output or product that is valued by the customer; it is a value chain that knits the organization together.

Cross-functional maps help benchmarking teams to identify the business process output and the customers for that output, to examine individual activities, and to collect and analyze process performance data.

In detailing the flow, a series of questions need to be asked in order to help unravel the complex sequence of events that results in the delivery of a product or service to an internal or an external customer. Some of the preliminary questions that need to be addressed are the following:
- Who is involved in delivering the product or service?
- Why are they involved?
- Why are they doing it?
- Is what they are doing adding value in the customers eyes?

Cross-functional maps help to focus the business processes down to the few essential interactions, as shown in Exhibit 7 for a typical materials acquisition function for vendor deliveries. This helps explain:
- **Process flow** (for example, Procurement order entry as it progresses from Procurement to Vendor, Receiving, Quality Inspection, Inventory, and the processing of invoices by Accounts Payable);
- **Hand-offs** and organizational seams as the work elements flow from one internal functional organization to another (for example, the incoming materials require hand-offs between Receiving, Quality Inspection, Inventory, and Accounts Payable);
- **Cycle times** or completion time associated with each of the above work elements;
- **Baseline transaction volumes** for the business process (for example, the expected, maximum, and minimum number of incoming materials daily, expressed both in different part numbers as well as the absolute volume for all materials);
- **Defect rates** for each key element of the process (for example, frequency of miscoded invoices);
- Cost for each key element of the process; and
- Other relevant characteristics for each step of the business process flow.

### Exhibit 7. Materials Acquisition Functional Map

<table>
<thead>
<tr>
<th>Function</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement</td>
<td>Order generated</td>
</tr>
<tr>
<td>Vendor</td>
<td>Copy to vendor (Also to: receiving, quality control, and accounts payable)</td>
</tr>
<tr>
<td>Quality inspection</td>
<td>Vendor delivery received</td>
</tr>
<tr>
<td></td>
<td>Parts inspected, Matched part number, units, price with purchase order?</td>
</tr>
<tr>
<td></td>
<td>Quality OK? No Yes</td>
</tr>
<tr>
<td></td>
<td>Vendor contacted for appropriate action</td>
</tr>
<tr>
<td>Inventory</td>
<td>Parts inventoried</td>
</tr>
<tr>
<td></td>
<td>The invoice + goods received notice sent to accounts payable</td>
</tr>
<tr>
<td>Accounts payable</td>
<td>Authorize payments</td>
</tr>
<tr>
<td></td>
<td>Check issued</td>
</tr>
</tbody>
</table>

---
The mapping process usually begins as a very general flow diagram, showing the main business processes. The general, high-level maps can then be broken down into more detailed ones, until a very fine level of detail is obtained for all tasks in the process. Generally, reengineering business processes requires less detailed information than continuous improvement efforts, which require a much finer detail. At detailed levels, more numerical data are included. Adding levels of detail is not difficult, but it does require discipline and the involvement of the staff who actually perform the work.

The mapping process itself may show improvement opportunities that can be acted on immediately. These may be critical to gaining the acceptance of all involved in making the other fundamental changes.

Family of Measures
Generally, the benchmarking team would want to develop a balanced set of measures or family of measures that look at the process performance from the perspectives of the customers, employees, and shareholders, keeping in mind the need for continuous improvement. A family of measures provides a conceptual framework for identifying process measures.

The units of measure, expressed as ratios or percentages, are the key gauges that the benchmarking study will want to uncover for any new best practice. Knowing these in advance allows preparation of a questionnaire to incorporate them and ensures their documentation. They will be used later on to determine the size of the benchmark gap.

The measures selected should be true indicators of the process performance. For example, most TQM programs consider the basic categories of process performance measurement to be quality, cost, and cycle time. Using a generally accepted set of measures is much better than using company-specific measures that may not match another company’s measurement system.

Examples for process performance measures of quality, cost, and cycle time are:

- **First-pass yield (quality):** the measure of effectiveness for a process in performing its transaction for the first time without defects;
- **Value-to-cost ratio (cost):** a measure of process economy in terms of its ability to produce higher value of output for lower levels of process cost; and
- **Cycle time:** a measure of process efficiency in terms of the amount of time consumed for each transaction.

Other process performance indicators provide detail that supports the measurement of these goals. For instance, work-in-process inventory, process changeover time, and process down-time all influence the cycle-time efficiency of the process.

Effective process performance measures should fit the following criteria:

- are driven by the external and internal customer;
- support organizational goals and critical success factors;
- provide a good basis for comparison with external and internal benchmarks; and
- are easy to collect, reliable, and achievable.

These may be the same measures used by the organization today or redefined measures that comprehend the true performance differences. The actual process of benchmarking may change some of these measures if a significant re-engineering of the business process is desired.
While most business activities are measurable, it is sometimes not possible to develop an appropriate measure. Examples of this are organizational philosophy and strategic planning processes. In these cases, the team can use a case study approach to identify important lessons for the organization. (For more information on performance measures, see SMA 4U, “Developing Comprehensive Performance Indicators.”)

**Process Taxonomy**

Because the internal business processes, accounting practices, and measurement systems are likely to vary from one organization to the next, a process taxonomy, accompanying the family of measures, is desirable. A process taxonomy is a set of work process elements, measures, and phrases, with their definitions, that describes the process to be benchmarked. It ensures a common language with the benchmark partners so that like elements can be grouped, measured, and compared.

**EXHIBIT 8. PROCESS CLASSIFICATION SCHEME: OVERVIEW**

Source: American Productivity & Quality Centres
The act of creating a process taxonomy is sometimes referred to as business system decomposition. This approach looks at organizations according to their various levels of performance: work and support processes, activities, and steps. For example, an organization begins by defining its work and supporting processes, as shown in Exhibit 8. It then decomposes each of these work and supporting processes to the level of activities and steps, as illustrated in Exhibit 9.

**Researching and Identifying “Best-in-Class” Performance**

The researching and identifying “best-in-class” phase of the benchmarking study as described in “Implementing Benchmarking” is often the most difficult for organizations. During this phase, the benchmarking team needs to use the knowledge gained in its internal work process study to determine which organizations are most appropriate for external process comparisons.
Data and information cost money to obtain and analyze. Care should be taken to access the best benchmarking method to derive the required data at a reasonable cost. In many instances, it may be necessary to confirm the data from several independent sources to ensure valid results. These steps take time.

The following critical techniques support researching and identifying “best-in-class” performance:

- setting up databases;
- information gathering methods;
- formatting questionnaires; and
- selecting benchmarking partners.

### Setting Up Databases

A database is a useful tool for organizing information for analysis. Databases are particularly useful for coordinating multipartner benchmarking studies. They can be used during the actual process of collecting data. There are two types of databases:

- numeric (measures); and
- descriptive (practices and enablers).

Numeric databases can be developed with any standard spreadsheet or database software. Computerized databases allow for easy manipulation of numbers, which comes in handy during data normalization and gap analysis. Descriptive databases are less rigid. These usually are broken down into summaries of best practices and their supporting enablers.

Creating a database involves compiling the fragments of information found in a variety of sources, so that a coherent picture of the target benchmark companies can be formulated. One way to organize this information is to create a chart of relevant performance measurements and process steps for each of the companies under consideration.

Exhibit 10 is an example of a typical database. Part 1 records information collected from four organizations on the subject of factors affecting developing in-house training material. The columns of the matrices list the four organizations that participated in the benchmarking study, beginning with information from Company A conducting the study. The remainder of the companies are recorded as letters B through D. This is an example of what is called a blind study, in which the organizations participating in the investigation are not identified.

Also, as the members of the benchmarking team record their responses on these types of matrices, the information can easily be summarized and tabulated in the form of tables.

The five rows of the table record information about the topics measured. A simple review of the information in the columns allows the benchmarker to identify trends or numbers that indicate potential for further investigation. In addition to the trends, Part 2 also includes practices and enablers (shown for Company B) that contribute to that organization’s performance.

### Information Gathering Methods

Not all benchmarking requires site visit interviews with benchmarking partners. The benchmarking team will need to decide on the best method for information gathering based upon:

- amount and accuracy of information required;
- cost of obtaining the desired information;
- how the information will be used;
- time available to perform the benchmarking study; and
- sources of data and ease of their access.
Based upon this, the benchmarking team may decide on one or more of the following approaches:

- internal information sources;
- external information sources; and
- original benchmarking research.

It is good practice to explore the internal and external public domain sources before conducting an original study. For example, several people inside the organization may have access to the desired benchmark company performance information. Some general sources of information are shown in Exhibit 11.

Information in some of these sources, such as Dun and Bradstreet, Value Line, ABI Inform, and Standard and Poor’s, can be accessed easily with the help of personal computers through keyword searches.

In recent years, national and international benchmarking clearinghouses have been set up to share generic benchmarks among a variety of users. The Society of Management Accountants of Canada’s booklet entitled “Benchmarking Information Referral Service,” which lists over 40 clearinghouses worldwide, can help organizations to quickly and efficiently track down clearinghouses for benchmarking.
If these sources do not meet the organization’s requirements, an original study may be required. This will generally require more time, money, and special skills but may be justified if more complex information or a higher level of accuracy is desired.

In some cases a combination of two or more information gathering methods may be necessary (such as a telephone follow-up after a site visit, to clarify key points).

The relative pros and cons of some of the more popular methods of information gathering are summarized by Robert Camp of Xerox in Exhibit 12.

For original benchmarking research, the following techniques may be useful:

- **Survey**: If a mail or telephone survey is the preferred method of benchmarking, the benchmarking team will need to pay particular attention to:
  - selecting the appropriate target population;
  - obtaining mailing/telephone lists;
  - validating the quality of the survey list; and
  - providing an incentive for the target audience to respond.

- **Consulting firms**: If a consulting firm needs to be hired to assist in information gathering and analysis, the team can look at several sources, such as: professional associations, consulting associations, and directories of consultants. For the selected consultant, the team will need to define the:

---

**EXHIBIT 11. SOURCES OF BENCHMARK PERFORMANCE INFORMATION**

<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
<th>Original Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Sales representatives</td>
<td>· Industry publications</td>
<td>· Mailings</td>
</tr>
<tr>
<td>· Surveys</td>
<td>· Professional associations</td>
<td>· Phone interviews</td>
</tr>
<tr>
<td>· Tech representatives</td>
<td>· Seminars</td>
<td>· Consultants</td>
</tr>
<tr>
<td>· Procurement office</td>
<td>· Industry experts</td>
<td>· Benchmarking</td>
</tr>
<tr>
<td>· Customer visits</td>
<td>· University sources</td>
<td>site visit</td>
</tr>
<tr>
<td>· Library databases</td>
<td>· Newsletters</td>
<td></td>
</tr>
<tr>
<td>· Recent hires</td>
<td>· Consultants</td>
<td></td>
</tr>
<tr>
<td>· Competitive analysis</td>
<td>· Financial analysts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· National/international clearinghouses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· User groups</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Security analysts reports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Annual reports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Patent records</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Newspapers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Buyers guides</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Government documents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· On-line services or exchanges</td>
<td></td>
</tr>
</tbody>
</table>

---

BUSINESS PERFORMANCE MANAGEMENT
benchmarking project objectives;
key performance measures and their associated enablers;
desired industry or "best-in-class" benchmarking partners; and
administrative requirements, such as overall project schedule, checkpoint reviews, payment terms, and the respective roles of the consulting firm members and the benchmarking team.

Site visit and interview: This is the most credible benchmarking method and will require work before, during, and after the benchmarking visit:

Before the visit, the benchmarking team should:
- review all relevant data about the organization;
- prepare the visit objectives;
- prepare a list of interview questions;
- ensure that the internal process is well documented and understood;
- identify the appropriate contacts and request a visit; and
- select the team members who will conduct the site visit (the recommended site visit team size is two to four).

During the interview, the site visit team members should:
- represent themselves honestly and clearly state the objectives of their visit;
- be prepared to answer why a particular question is being asked and also be willing to share their own organization’s performance if asked;
- follow up responses for clarification, if necessary, and ensure that the enablers or best practices are understood;
- take notes; and
- thank the benchmarking partner and offer a reciprocal visit.

<table>
<thead>
<tr>
<th>Excitement</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Site visits</td>
<td></td>
</tr>
<tr>
<td>Database searches for best practices</td>
<td></td>
</tr>
<tr>
<td>Secondary research/public domain information</td>
<td></td>
</tr>
<tr>
<td>International information/reports</td>
<td></td>
</tr>
<tr>
<td>Scanning and monitoring through journals/magazines/newspapers/conferences</td>
<td></td>
</tr>
</tbody>
</table>
After the interview, the team should:
- debrief the site visit team members; and
- document the site visit findings.

The benchmarking team should be aware of the legal and ethical considerations in data gathering. For example, covert photography is illegal. Most companies have written policies regarding such information sharing. In general, the following practices should be observed:
- Do not misrepresent yourself, your company, or the purpose of your research.
- Do not entice others to divulge information through illegal means.
- Do not ask for or obtain data on proprietary products or processes.

A good guideline is “not to do to your benchmarking partner what you wouldn’t want them to do to you.”

An excellent guide on accepted moral standard is the Professional Code of Conduct jointly approved by The Strategic Planning Institute’s Council on Benchmarking and The American Productivity and Quality Center’s International Benchmarking Clearing House; it is included in Appendix A. The code summarizes the protocol of benchmarking. There are similar guidelines developed by Xerox, AT&T and other companies.

In addition to these guidelines, there are legal considerations that may govern the relationship between benchmarking partners such as antitrust laws, industrial espionage, and restrictive clauses related to intellectual property. When in doubt, the benchmarking team should consult their company’s legal department.

Formatting Questionnaires
Regardless of the data gathering methods employed, they all require the benchmarking team to prepare a list of questions in advance to ensure a productive outcome.

A questionnaire serves several important purposes. It ensures that all questions of interest are documented. It permits more extensive data gathering, which may not be readily available during a site visit. It can also be used to ensure anonymity. Where confidentiality of the organization’s sources of information is necessary, questionnaires may be the only method of obtaining cooperative data gathering.

The questions will typically be about the following:
- problem definition;
- process measurement;
- process problems;
- process improvements; and
- process enablers.

For each of these areas, the team may select one or more of the following types of questions:
- open-ended;
- multiple choice;
- forced choice; and
- scaled.

For the selected type of questions, the phrasing can also dictate the responses. For example, for an open-ended questionnaire; balanced phrasing may elicit different responses than extreme phrasing:
- How satisfied are you with the response time from your service vendor? (balanced)
- What is the best response time you can expect from your service vendor? (extreme)
Each has its merits and should be reviewed for applicability to the data and information being gathered. The company’s market research department can be an additional resource to the team in structuring and conducting the questionnaire, survey, and interview.

A mailed survey should be easy to fill out and should communicate to the recipient exactly the type of information sought. Fowler identifies four practical standards that all questions should meet:

- Can this question be asked exactly the way it is written?
- Will this question mean the same thing to everyone?
- Can people answer this question?
- Will people be willing to answer this question, given the data collection procedures?

One way to ensure this is to pretest the questionnaire by administering it to the internal process being benchmarked. This will help sequence and polish the questions. The sequence and appearance of the questions in a survey can affect the responses given. Many design guides suggest starting with the easy questions first to ease the respondents into the study. A second approach is to put the least sensitive questions first, gaining commitment from the respondent before asking for the hard facts.

In deciding upon the sequence of questions, one should sort them into logical groupings (based upon querying the same subject), and then arrange them so that early questions lead naturally to the mindset needed to understand and respond appropriately to later ones. Simple questions are those that are immediately understood and have no trace of ambiguity around them. An example of a simple question is “What is the number of employees in your accounts payable function?” A not so simple question may be, “What is the relationship between the accounts payable and the procurement organizations?” The ideal is to make every question “simple.” Failing that, it is important to ensure that the question, even though complex, can be easily understood and answered.

In addition to the questionnaire, providing a skeletal process flowchart can help give the recipient a graphic reference.

Selecting Benchmarking Partners

Once it has been determined if the output is a benchmark against internal, competitive, or world-class organizations, the organizations to include in the benchmarking study need to be identified. For example, if the output is world-class benchmarking in the area of consistent and timely service, the benchmarking team may consider companies in the express delivery industry.

In order to identify potential benchmarking partners, it will be necessary to define:

- “the best” for the performance to be benchmarked;
- trends in the key performance measures selected; and
- trade-offs between key measures, if applicable.

Based upon this, the team should develop a profile for each of the potential benchmarking partners, as shown in Exhibit 13.

A potential partners profile enables an assessment of potential partners across the operational and business variables that affect the implementation of best practices. While the
ideal is a partner similar in size and structure, the team can also use the profile to normalize data from organizations that aren’t exact matches. For the prioritized benchmarking partners, the team can then develop a best-practices matrix, as shown in Exhibit 14. The best-practices matrix is a second-stage screening tool for narrowing down the list of potential partners. It shares the team judgment on the selected practices for each partner. In Exhibit 14, Company D is likely to be a better benchmarking partner. Partners can be rated on any criteria that the team considers to be best practice.

### Exhibit 13: Potential Partners Profile

<table>
<thead>
<tr>
<th>Business Measure</th>
<th>Partner A</th>
<th>Partner B</th>
<th>Partner C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of business</td>
<td>manufacturing</td>
<td>holding company</td>
<td>manufacturing</td>
</tr>
<tr>
<td>Business size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– revenue</td>
<td>$210 M</td>
<td>$1,800 M</td>
<td>$900 M</td>
</tr>
<tr>
<td>– # of employees</td>
<td>2,000</td>
<td>18,000</td>
<td>8,900</td>
</tr>
<tr>
<td>Ownership of business</td>
<td>public</td>
<td>public</td>
<td>family</td>
</tr>
<tr>
<td>Organizational structure</td>
<td>single site,</td>
<td>multinational,</td>
<td>multi site,</td>
</tr>
<tr>
<td>single business</td>
<td></td>
<td>multi site</td>
<td>single business</td>
</tr>
<tr>
<td>Geographic representation</td>
<td>Canada</td>
<td>Europe, North America, Asia</td>
<td>North America</td>
</tr>
<tr>
<td>Product array and complexity</td>
<td>high-end products,</td>
<td>complete product array</td>
<td>low and mid range products, low cost</td>
</tr>
<tr>
<td>high functionality</td>
<td></td>
<td></td>
<td>and complexity</td>
</tr>
<tr>
<td>Product technology</td>
<td>state of the art</td>
<td>mixed</td>
<td>mixed</td>
</tr>
<tr>
<td>Company culture</td>
<td>open, TQM based</td>
<td>centrally controlled</td>
<td>TQM based</td>
</tr>
<tr>
<td>Key performance indicators</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– R&amp;D/revenue</td>
<td>10%</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>– ROS</td>
<td>11%</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>– Market share</td>
<td>21%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>– Debt/equity</td>
<td>40%</td>
<td>33%</td>
<td>30%</td>
</tr>
<tr>
<td>Distribution channels</td>
<td>mostly dealers</td>
<td>company and stores</td>
<td>dealers and OEMs</td>
</tr>
</tbody>
</table>
When all sources of external information have been exhausted, the benchmarking team is ready to propose the companies for the site visits. To determine which companies should be visited, the benchmarking team should compare the information it has gathered to decide which companies exceed its own organization’s performance in the chosen process. The following questions are usually addressed during this stage:

- Is there sufficient information to indicate that a performance difference exists?
- How recent and reliable is the information?
- Are the companies sufficiently similar to warrant a comparison?
- Is the proposed company likely to be willing to share the details of its process?

To help prepare a list of companies that are considered to be industry leaders or “best-in-class,” the team should consult:

- customers;
- members of professional or trade associations;
- securities analysts;
- business directories; and
- people within the organization.

It should be recognized that no company, however successful, is best at everything it does. Even a company with market share or quality advantage is unlikely to be the best at everything. The team should, therefore, resist benchmarking companies just because some other organization found that company to be the benchmark for that functional area.

If unable to find the best performer, the benchmarking team should consider the help of a business consultant who understands the enterprise’s business. This may especially be necessary if the company being sought is outside the industry.
Analyzing Benchmarking Data and Identifying Enablers

After the data have been collected and summarized, teams are ready for the next step in the benchmarking study data analysis. The underlying objectives in data analysis are to identify performance gaps, understand the reasons for the performance differences, and prioritize these key causals and enablers for implementation.

Truly sophisticated benchmarking studies take performance analysis beyond the realm of the average benchmarking team and into the world of statistics and business analysis, using such tools as:

- statistical analysis;
- data stratification techniques;
- data normalization techniques;
- radar charts;
- force field analysis;
- performance gap analysis tools; and
- identifying process enablers.

One or more of these tools may be needed when the study involves:

- a large number of variables;
- testing of assumptions; or
- presenting objective, quantitative results.

Statistical Analysis

Graphical or numerical methods can assist the benchmarking team to analyze a process or population of events. Often these tools use a sampling of the population to make a judgment about the entire population.

Listed below are the six most commonly used statistical tools for analytical problem solving:

- **Check sheet**: A check sheet is used to record data. It is useful in the data collection stage of benchmarking studies. The best check sheets are simple to use, make use of the organization’s operational definitions (describes what something is and how it is measured), and display the data in a format that can reveal underlying patterns.

- **Histogram**: A graphical representation of data as a frequency distribution, this tool is valuable in evaluating both attribute (pass/fail) and variable (measurement) data. Histograms offer a quick look at the data at a point in time; they do not display variance or trends over time. A histogram displays how the cumulative data look today. It is useful in understanding the relative frequencies (percentages) or frequency (numbers) of the data and how those data are distributed.

- **Pareto diagram**: This is a type of histogram that helps to identify and prioritize problem areas. Pareto analysis consists of five steps:
  - identifying the occurrence, measurement, or non-conformity for analysis;
  - determining the frequencies of the data;
  - calculating the frequency percentages and listing the frequencies in descending order;
  - determining the scale for the Pareto diagram; and
  - plotting the results on a histogram.

Pareto charts are useful throughout a benchmarking study: early on to identify which problem should be studied, and later to narrow down which causes of the problem to address first. Since they draw everyone’s attention to the “vital few” important factors where the payback is likely to be greatest, Pareto charts can be used to build consensus in a group.
Control chart: This provides a graphic depiction of the quantified characteristics of a process, process element, or work activity. Control charts display the plotted values of the process and indicate if the process is approaching an established limit. For benchmarking studies, control charts can determine if a process is trending and determine if a process is in control.

Scatter diagram: A scatter diagram organizes data using two variables: an independent variable and a dependent variable. These data are then recorded on a simple graph with x and y coordinates showing the relationship between variables.

Linear graph: This is a series of numbered lines and data with a one-to-one correspondence to the columns of a related matrix of numbers arranged in rows and columns.

Data Stratification Techniques
Data stratification is the process of classifying data into two or more subgroups based upon categories or characteristics. This is a powerful and frequently used tool in benchmarking studies. When the data are stratified according to the variables that are thought to cause variation, the causes of variation can be detected more easily by the benchmarking team.

One technique that is easy, as well as helpful for stratifying data, is a root cause analysis, or fishbone, as it is sometimes called. An application is illustrated in Exhibit 15. The effect is usually indicated at the head of the diagram and the potential causes are listed on the fishbones on the left. This method can help the benchmarking team build an intuitive understanding of the many interrelational possibilities and it also provides strong visual clues to interrelationship possibilities.

EXHIBIT 15. ROOT CAUSE ANALYSIS

![Exhibit 15: Root Cause Analysis Diagram]

- Market understanding
- Pricing
- Number of sales reps
- Relative product quality and functionality
- Advertising budget
- Market share (effect)
If the root cause analysis shows a large number of variables for which the precise impact on the effect is desired, the team should follow up this analysis with more sophisticated analysis using design of experiments, analysis of variance, regression analysis, or some other form of multivariate analysis.

Normalizing Data for Comparison
Operations must be comparable in scope to obtain valid benchmark data. There is a tendency to accept data and information that are believed to be comparable, especially from external visits. This could lead to the acceptance of an observed performance as a correct statement of the benchmark. This measure may be closely tied to the internal processes but may be inappropriate for benchmarking comparison with other groups who deploy different internal processes. This is shown below.

<table>
<thead>
<tr>
<th>Company X</th>
<th>Company Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor cost</td>
<td>$200 m</td>
</tr>
<tr>
<td>Overhead rate</td>
<td>15%</td>
</tr>
</tbody>
</table>

In this example, Company X appears to be twice as efficient as Company Y based upon the labor overhead rates. However, if Company Y has invested in automation to reduce labor content, then the overhead rate may be the direct result of depreciation of capital investments that is allocated to a smaller direct labor cost pool. The overall manufacturing cost for Company Y may be indeed lower.

If performance measures are not comparable, benchmarking teams should normalize the performance data so that they can make accurate assessments. Normalization factors are often used to normalize performance data on a ratio basis to avoid “apples to oranges” comparisons. The common normalization factors are:

- size (for example, revenue/employee, sales/sq.ft., maintenance calls/technician, sales calls closed/rep);
- age (for example, plant age, generation of technology); and
- working environment (for example, number of shifts, make vs buy, amount of competition, general economy, access to raw material, degree of vertical integration, regulatory differences, tax treatments, exchange rates).

In addition, normalization factors such as accounting methods and calculation methodology will also need to be considered.

Radar Charts
Radar charts can help assess an organization’s relative competitive position across the key performance measures. It is an excellent comparison and communication tool.

Typically, it consists of various spokes within a circle. Each spoke represents a key measure. Assessment criteria are represented by circular grades that gradually improve as the radius gets smaller, the centre signifying “best-in-class” performance. The relative value of a competitor’s strength is measured on each spoke, as shown in Exhibit 16. It shows the survey results of a company’s service performance, on a scale of 1 to 5 for the five measures listed. For example, Organization A scores 1 (excellent) on response time compared to Organization B, which scores 3 (average).
Identify Performance Gaps

The basic tool for analyzing performance and process gaps is a matrix chart with a list of performance measures for each company examined as well as the internal performance. Using this format, many performance and process gaps are immediately evident, as illustrated in Exhibit 17 for a manufacturing process.

In evaluating the performance gaps, the benchmarking team should consider all enablers or factors that influence the process, such as material movement, data, and resource flows. Determining the current level of performance is less important than understanding the trend in that performance. Instead of aiming at today’s target, teams should project the benchmark into the future to understand what level of performance will be required and what enablers may help them attain that level.
Benchmarking teams can use a Z chart to display historical trend information and to project the historical information estimates of future performance levels required to achieve competitive parity.

Exhibit 18 shows an example of a gap analysis. As can be seen from the exhibit, the Z chart is made up of three parts:

1. The historical productivity trend for the performance measure being benchmarked;
2. The benchmark performance gap, which is shown as a step function (these may require strategic actions to close the gap); and
3. The projected future productivity to either maintain or retain superior performance.
**Identifying Process Enablers**

Having analyzed process performance measures in the benchmarking gap analysis, the team must also identify the key process enablers. Key process enablers are those activities that facilitate the key behavioral or process changes; those activities in the root cause analysis identified as the stimulants of the performance change. This task of identifying enablers is actually a simple ranking of the enablers, assigning priority based on information received during the site visits.

Enablers are helpful in the implementation of benchmarking practices, but they should not be confused with the practices themselves. The benchmark practices are specific new methods or practices that require a change to meet a stated goal. Enablers are a broad set of activities that enhance implementability. In sequence of priority they can be shown below:

- **Reduced clerical documentation workload**
- **Use of bar coding for automatic data capture**
- **Training in use of scanners**

**Force Field Analysis**

This approach identifies those forces that both help and hinder an organization in closing the gap between where it currently is and where it wants to be. This method enables the organization of perceptions together with impacts so that the benchmarking team can uncover important relationships between drivers and barriers.

The steps to carrying out a force-field analysis are as follows. A line is drawn down the centre of a flip chart page. This represents the present situation. At the right edge of the sheet, a second vertical line parallel to the first is drawn. This represents the situation as it should be—the desired state. After using one or more of the tools for generating and collecting information, the benchmarking team lists the helping forces to the left of the centre line and the hindering forces to the right. These forces are often shown as arrows, with the helping forces pushing toward the “should be” state and the hindering forces pushing away from it, as shown in Exhibit 19. It is often helpful to assess the relative strengths of both helping and hindering forces. Some teams use a scale (for example, 5 = very strong, 4 = strong, 3 = medium, 2 = low, 1 = weak) to evaluate the relative impact of the forces. For graphic representation, proportionately sized arrows show relative strengths.

**EXHIBIT 19. FORCE FIELD DIAGRAM**
Exhibit 20 shows an assessment of a product line versus its competitors. The analysis graphically details the helping and hindering forces that will affect the implementation of “best practices.” The organization can capitalize on its strengths in product features, quality, reliability, marketing, distribution channels, and after-sales support. It needs to overcome its disadvantages in price and product costs compared to its competitors.

Once the force field analysis is complete, the team can use this information to generate potential solutions. For example:

- how to increase the number or strengths of the helping forces; and
- how to decrease the number or strengths of the hindering forces.

### Implementing Benchmarking Study Recommendations

This final phase of the benchmarking process is where leadership abilities are most crucial. The team must be able to justify its recommended approach for improvement to senior management. As well, process improvement teams must be able to manage change implementation and track their progress.

#### Obtaining Management Buy-in

As critical as the preceding benchmarking phases are, so too is the need to effectively structure the project findings and recommendations to ensure management sponsorship. Generally, the magnitude of the changes will determine the extent of education of and communication to all those directly involved. Common to all project communications, however, are the following elements:

- the current internal performance and situation;
- the benchmarking project objectives;
- the team profile;
- the benchmarking partners and the rationale for their selection;
- basic findings and their causal factors;
- the benchmark gaps between the current and desired state;
- interim and long-term goals leading to the desired state and their implications;

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**EXHIBIT 20. FORCE FIELD ANALYSIS**

<table>
<thead>
<tr>
<th>(+) helping forces</th>
<th>(-) hindering forces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product features</td>
<td>Uncompetitive price</td>
</tr>
<tr>
<td>Product quality, reliability</td>
<td>Product cost</td>
</tr>
<tr>
<td>Product marketing campaign</td>
<td></td>
</tr>
<tr>
<td>Number of outlets selling products</td>
<td></td>
</tr>
<tr>
<td>After-sales support</td>
<td></td>
</tr>
</tbody>
</table>
comparison of costs associated with the present state and the desired state (savings), including the cost of change;
- action plans, investments, schedules, and responsibilities; and
- feedback and monitoring systems.

**Organizing Process Improvement Teams (PITs)**

The benchmarking team recommendations may require a different team structure for implementation. In these cases, the benchmarking team, working with senior management, should:

- identify criteria for selecting team members consistent with the recommendations. This could include the recommended team members and their roles in the implementation phase;
- define the team mission, objectives, and any constraints, such as time and costs; and
- hold a kick-off meeting with the process improvement team to share benchmarking findings and formulate the basis for recommendations.

The process owner of the PIT will need then to develop a structured approach to implementation with applicable schedules, key tasks, resources, and investments.

**Implementing Improvements**

There are basically three alternative approaches to improving high-priority processes: incremental improvement, redesign, and reengineering. The specific approach will depend upon the cost/benefit justification.

- *Incremental improvement* consists of small, often sequential improvements in current work processes, often in response to problems identified by self-empowered work teams.

- *Redesign* of the process is a higher level of improvement in which management examines the process as a whole to determine if it can be done better. Redesigning must be done by mid-level management who collectively own the entire process.

- *Reengineering* is a still-higher level of improvement in which organizations need to reconceive the entire way of doing business. This is particularly useful when stakeholders are extremely dissatisfied, when there are conflicts one cannot resolve within the current way of running the business, or when the process simply doesn’t exist.

**Tracking and Reporting Progress**

After the implementation phase begins, it is important that the benchmarking team, or the process owner, monitor progress against the mileposts established in the action plans and take corrective actions if necessary. Management should be kept apprised of the status to ensure continual involvement and commitment.

**VII. MANAGEMENT ACCOUNTING CHALLENGES**

Management accountants have a significant role in ensuring that “best practices” are institutionalized throughout the organization. In this role, the management accountant will find challenges in several areas:

- *Strategic planning:* Since the evolving role of management accountants takes them into the realm of strategic planning, they need to fully understand the processes being benchmarked, and not just from a financial perspective. They will need to be fully conversant with the company’s strategic intent, core competencies, process capability, product and R&D portfolio, key environmental and industry trends,
customer expectations, and the long-range vision of the organization.

- **Benchmarking training:** The management accountant will need to participate in and be a champion for training the various levels of the organization in benchmarking concepts, tools, and techniques to create a common knowledge base. Training should be from the top down: managers who participate in staff training reinforce the importance the organization attaches to benchmarking. The training program should also identify contacts for further information and training and, if applicable, explain the company-wide benchmarking database.

- **Business practices:** Different companies, and different functions within the same companies, are likely to use different accounting practices. If not understood, the benchmark results could be very misleading. The management accountant will need to know how these figures were derived and normalize them for comparison. In addition to financial practices, the management accountant will need to normalize for business practices, such as number of shifts, regulatory climate, exchange rates, make vs. buys, competition, and degree of verticalization.

- **Performance reporting:** As the benchmarking process begins to be institutionalized, the management accountant will need to use the tools and techniques described in the guideline to modify the existing costing and reporting systems to create a system of benchmark gap analysis and to evaluate exactly what is required by each organization to meet the benchmark performance. As well, the management accountant will need to integrate the benchmark information with other competitive information to provide a complete picture of options, and to establish reasonable goals and implementation strategies to achieve these goals.

- **Measurement systems:** Crucial to the success of benchmarking is the ability of management accountants to develop a better understanding of their internal and external customer needs and expectations, and to develop measures that truly reflect these expectations. Frequently, companies find that traditional measures are not only inadequate, but misleading and must be overhauled and discarded. They should ensure that the organization performance measures are based upon the viewpoints of customers, employees, and shareholders, and upon the need for continuous improvement.

- **Performance gap analysis:** Management accountants will need to facilitate the performance gap analysis activity to determine what the organization lacks to move from one point to the other, or to leapfrog the competition to become the new industry leader. To close the performance gap, they should ensure that the organization’s goals, mission, and objectives are tied to the benchmarking process.

- **Other skills:** To meet the above challenges, management accountants will also need to enhance their proficiency in several areas, such as project management, problem solving skills, meeting management, communication, TQM principles and methods, and interviewing skills.

**VIII. CONCLUSION**

Benchmarking, if applied properly, is a powerful tool with which to keep an organization competitive. The tools and techniques described in this SMA enable an organization to effectively benchmark and transform themselves to meet the challenges of today’s competitive environment.

The organizations that understand, embrace, and implement benchmarking and the related tools and techniques will be able to celebrate the turn of the millennium.
APPENDIX

THE BENCHMARKING CODE OF CONDUCT

To contribute to efficient, effective and ethical benchmarking, individuals agree for themselves and their organization to abide by the following principles for benchmarking with other organizations.

**Principle of Legality.** Avoid discussions or actions that might lead to or imply an interest in restraint of trade: market or customer allocations schemes, price fixing, dealing arrangements, bid rigging, bribery, or misappropriation. Do not discuss costs with competitors if costs are an element of pricing.

**Principle of Exchange.** Be willing to provide the same level of information that you request in any benchmarking exchange.

**Principle of Confidentiality.** Treat benchmarking interchange as something confidential to the individuals and organizations involved. Information obtained must not be communicated outside the partnering organizations without prior consent of participating benchmarking partners. An organization’s participation in a study should not be communicated externally without their permission.

**Principle of Use.** Use information obtained through benchmarking partnering only for the purpose of improvement of operations within the partnering companies themselves. External use or communication of a benchmarking partner’s name with the data or observed practices requires permission of that partner. Do not, as a consultant or client, extend one company’s benchmarking study findings to another without the first company’s permission.

**Principle of First Party Contact.** Initiate contacts, wherever possible, through a benchmarking contact designated by the partner company. Obtain mutual agreement with the contact on any hand-off of communication or responsibility to other parties.

**Principle of Third Party Contact.** Obtain an individual’s permission before providing their name in response to a contact request.

**Principle of Preparation.** Demonstrate commitment to the efficiency and effectiveness of the benchmarking process with adequate preparation at each process step, particularly at initial partnering contact.

ETIQUETTE AND ETHICS

In actions between benchmarking partners, the emphasis is on openness and trust. The following guidelines apply to both partners in a benchmarking encounter:

- In benchmarking with competitors, establish specific ground rules up front, e.g., “We don’t want to talk about those things that will give either of us a competitive advantage, rather, we want to see where we both can mutually improve or gain benefit.”
- Do not ask competitors for sensitive data or cause the benchmarking partner to feel that sensitive data must be provided to keep the process going.
- Use an ethical third party to assemble and blind competitive data, with inputs from legal counsel, for direct competitor comparisons.
- Consult with legal counsel if any information-gathering procedure is in doubt, e.g., before contacting a direct competitor.
- Any information obtained from a benchmarking partner should be treated as internal, privileged information.
Do not:
- Disparage a competitor’s business or operations to a third party.
- Attempt to limit competition or gain business through the benchmarking relationship.
- Misrepresent oneself as working for another employer.

BENCHMARKING EXCHANGE PROTOCOL
As the benchmarking process proceeds to the exchange of information, benchmarkers are expected to:

- Know and abide by The Benchmarking Code of Conduct.
- Have basic knowledge of benchmarking and follow a benchmarking process.
- Have determined what to benchmark, identified key performance variables, recognized superior performing companies, and completed a rigorous self-assessment.
- Have developed a questionnaire and interview guide, and will share these in advance if requested.
- Have the authority to share information.
- Work through a specified host and mutually agree on scheduling and meeting arrangements.
- Follow these guidelines in face-to-face site visits:
  - Provide a meeting agenda in advance.
  - Be professional, honest, courteous and prompt.
  - Introduce all attendees and explain why they are present.
  - Adhere to the agenda: maintain focus on benchmarking issues.
  - Use language that is universal, not one’s own jargon.
  - Do not share proprietary information without prior approval from the proper authority, of both parties.
  - Share information about your process, if asked, and consider sharing study results.
  - Offer to set up a reciprocal visit.
  - Conclude meetings and visits on schedule.
  - Thank the benchmarking partner for the time and for the sharing.

This code of conduct was co-authored by The American Productivity and Quality Centers International Benchmarking Clearinghouse and The Strategic Planning Institute’s Council on Benchmarking, 3/1/92.
GLOSSARY

**Baselining** – This is a fully systematic approach to mapping the current business process. It begins by gathering information about the current business operations and creating a model of the business processes being studied. The mapping process describes the work process flow, cycle times or completion time associated with each work element, baseline transaction volume, and cost for each key element of the work process.

**Competitive benchmarks** – These are the best products, services, and work processes of an organization’s strongest direct competitors in the industry. Competitive Benchmarking is useful in positioning an organization’s products and services relative to the marketplace.

**Critical success factors** – These are the critical variables that have a direct influence on achieving the organization’s objectives. They are, therefore, critical to the success of the entire organization.

**Hand-offs** – These are the passing of a work process across the organizational boundaries as the work elements flow from one internal functional organization to the other (e.g., the incoming parts may require hand-offs between receiving, quality, storage, and accounts payable). The product development process requires hand-offs between marketing, design, and manufacturing.

**Internal benchmarks** – These are the best of an organization’s own similar processes, products, or services. This is perhaps the easiest form of benchmarking, since the potential benchmarking partners can be easily identified and are usually willing to share the information.

**Organizational seams** – Similar to the hand-offs concept, the organizational seams are the white spaces between the vertical functional organizations requiring hand-offs.

**World-class benchmarks** – These are most difficult types of benchmarks because they compare performance to the world-class organizations that may be in a different industry but perform a similar process. However, these can provide breakthrough opportunities.
BIBLIOGRAPHY


