

B2PCOE Best Practices & Benchmarking Plan Guidance

Executive Summary

This Benchmarking and Best Practices Center of Excellence's (B2PCOE) mission is to identify, validate, and disseminate best in-class practices, processes, methodologies, systems, and best practice technologies with the end objective of improving the level of competitiveness of the defense industrial base and the affordability of performance of defense platforms and weapons systems.

The B2PCOE Plan has been developed based on the Navy vision and when implemented will significantly increase affordability and performance of Navy/DoD weapon systems. Increased efficiency within process methodology, resource allocation, procedures and products will enable the Navy to streamline production costs, as well as, meet life cycle analysis goals established at facilities that are recognized as best-in-class.

B2PCOE Plan fully recognizes that any improvements to the efficiency of Navy weapon systems are completed in a manner that ultimately benefits the war fighter in the performance of his/her mission. With that stated, the B2PCOE benchmarking facilitation team has established 6-categories for facilitating the benchmarking process to help establish best-in-class processes, products and procedures for Navy weapon systems. The 6-categories are as follows:

- **Navy/DoD Stakeholder Coordination** - Prior to implementing the benchmarking process for a Naval weapon system, "buy-in" to the benchmarking plan by the Navy and DoD Stakeholders is necessary. As the primary customer for all B2PCOE benchmarking activities, it is essential that the benchmarking plan be coordinated and found acceptable by the Navy/DoD prior to visiting a customer's organization.
- **Customer Agreement & Participation Plan** – At this stage, the B2PCOE team will interface with a customer key point of contact (POC) who will work closely with the B2PCOE team throughout the entire benchmarking process. The Key POC will, among other things, serve as intermediaries among the B2POCE teams, senior management, and the Executive Steering Board that is composed of senior managers. In addition, the Key POC will serve as the "socialization agent" to the workforce from which the B2PCOE team will need information, support and assistance from, as well as, serve as a member of the benchmarking Integrated Process Action Team (IPAT).
- **Integrated Process Action Team (IPAT)** - The IPAT's membership consists of a facilitator from the B2PCOE team, Navy COEs (see Endnotes), the customers' Key POC, a technical advisor, a process expert and practitioners within the customer who are process, product, and procedure owners. The IPAT is responsible for several tasks including: (1) identifying targets to be benchmarked, (2) conducting in-house interviews, (3) gathering established and new data, (4) conducting lessons-learned research encompassing literature and computer reviews and visiting best-in-class processes and methods, (5) working closely with the Executive Steering Committee, (6) developing

benchmarking metrics, (7) gathering, assessing and analyzing data and publishing benchmarking findings in a report and (8) briefing senior management on recommended actions to achieve best-in-class status.

- **Best Practices** – Once the report’s findings are finalized, the IPAT will work closely with senior management to provide guidance and assistance in implementing changes to processes, products, and procedures within a customer’s organization to achieve best-in-class reorganization. This includes helping senior management develop an action plan and implementing benchmarking best practices for the customer.
- **Communicate & Share Findings** – Communication forums will be established to provide Navy customers the opportunity to receive benchmarking lessons learned so they can adopt best-in-class practices for their organization. Conferences, workshops and symposiums will be created by the B2PCOE team to help ensure a wide distribution of benchmarking lessons-learned experiences. Computer networking systems, such as Wikipedia, will be also be established and used for sharing benchmarking information. Presentations of benchmarking lessons-learned will be given at professional societies. The incorporation of these best practices will also be written into appropriate school-house curriculums with the assistance of the B2PCOE team.
- **Conduct Annual Assessments** – Benchmarking and best practices is an iterative process. The successful implementation of best practice processes and methods does not conclude the benchmarking process. The B2PCOE teams, with the appropriate customer representatives, will annually review the changes made, and revise any change to functions as necessary and document these changes in the benchmarking report.

The benchmarking activities as conducted by the B2PCOE team will help improve the affordability of Naval weapon systems across the Navy community by ensuring quality performance in a timely and efficient manner with minimal overhead expenses. In addition, benchmarking activities will reduce the need for regulatory policy and guidance within the Navy by helping to create a culture of continuous process improvement in which all participants are involved. The adoption of best-in-class practices by the Navy will lead to efficiencies in the critical development processes that allow for the rapid fielding of improved weapon systems and equipment.

Introduction

General Benchmarking Plan

This benchmarking endeavor involves both strategic and analytical approaches in the benchmarking development process. It is designed to continuously measure an organization’s products, services and practices. These practices are often evaluated against recognized leaders in the field. Benchmarking is about acquiring knowledge through a comparative study and applying it to improve an organization’s processes, products, procedures and services. The benchmarking process established by the B2PCOE team will greatly improve the performance and efficiency of processes, products, procedures, and methods for building Navy systems.

There are various types of benchmarking. They include internal, competitive, functional and generic benchmarking. They differ with respect to processes and partners selected. Internal benchmarking examines ways within an organization to improve its functions. Competitive benchmarking compares key customer functions to a leading organization in the field, which is frequently a recognized leading competitor, while functional benchmarking focuses upon similar functions within the same industry. Generic benchmarking compares processes across dissimilar organizations.

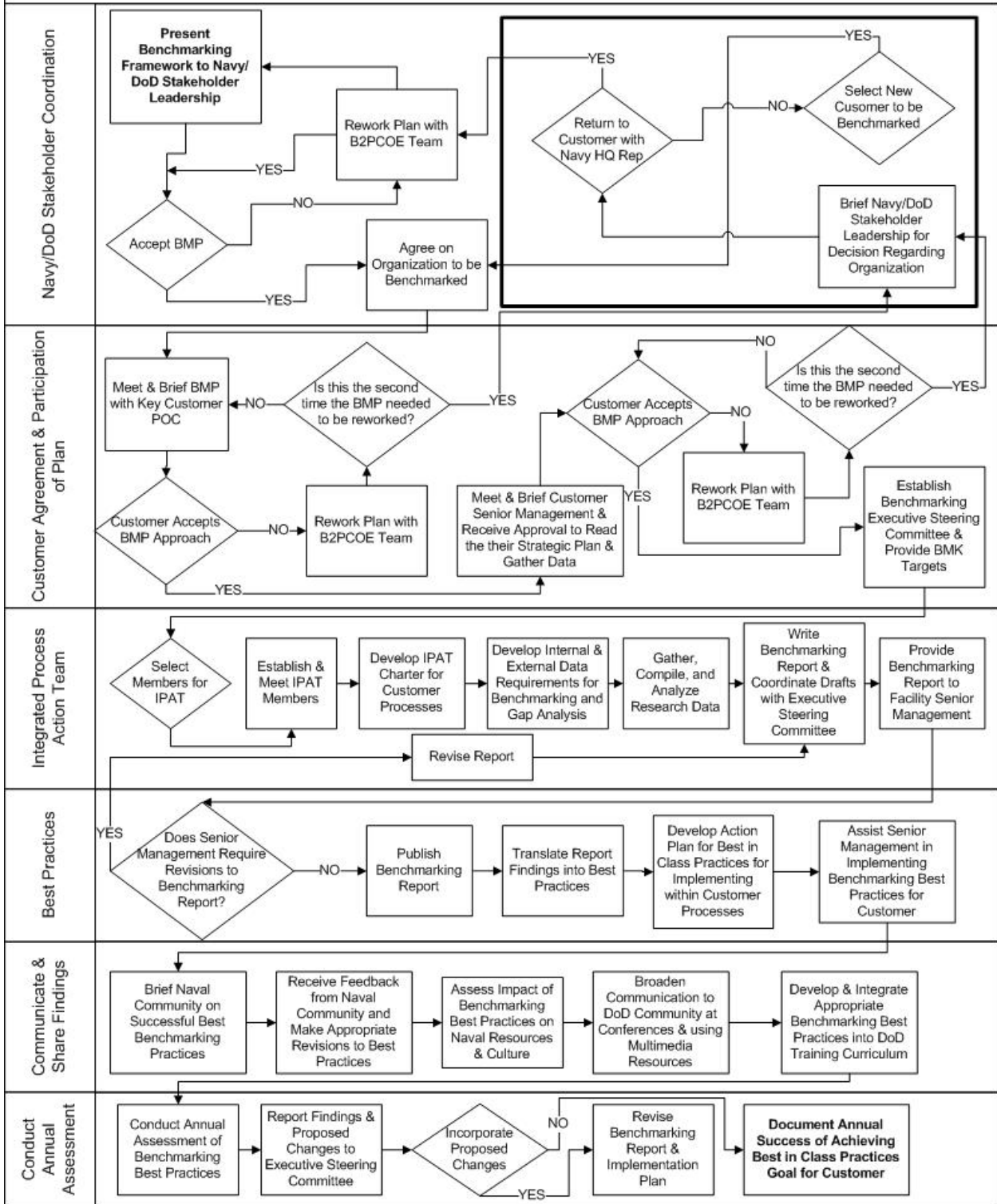
This is a functional benchmarking plan. It is designed to serve as general guidance for improving processes and methods that are used to build Navy/DoD weapon systems. This benchmarking plan serves as a template that can be tailored for the study of individual weapon systems. Each weapon system's benchmarking plan will take into consideration process variations necessary to evaluate appropriate best-in-class changes for greater efficiency for the customer.

Importance of Strategic Planning

One of the most important components required for the B2PCOE team to conduct a successful benchmarking effort, regardless of the type of benchmarking plan used, is access to and understanding of the customer's strategic plan. For maximum return on investment, the entire benchmarking process should begin and end with the organization's strategic plan. The strategic plan helps leaders to provide a framework and focus for an organization's improvement efforts (Wells and Doherty, 1994). The strategic plan will provide insight into the goals and objectives of the customer. It is a first step to achieving improvements. When the initial benchmarking process is concluded, the vision, goals, strategies, and objectives of the strategic plan may need to be recalibrated based on the data collected and analyzed in the study of best practices.

Below is the methodology for processing benchmarking initiatives within the context of the Navy Program. The six major categories that are included in this methodology are segmented to include appropriate personnel resources and initiatives to facilitate best-in-class efficiency for customer's processes and methods. These major categories include: (1) Navy/DoD Stakeholder Coordination, (2) Customer Agreement & Participation of Plan, (3) Integrated Process Action Team (IPAT), (4) Best Practices, (5) Communicate & Share Findings and (6) Conduct Annual Assessment. A cross functional flow chart that maps the process in detail follows on the proceeding page.

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Benchmarking Plan: Six Major Categories

Detail Benchmarking Plan

1. Navy/DoD Stakeholder Coordination

Gain Navy Acceptance of Plan

The B2PCOE team, prior to visiting a customer, will coordinate the benchmarking plan with the Navy/DoD stakeholders. Specifically, it is necessary to:

- acquire top-level support from the Navy customer for benchmarking plan and activities
- suggest possible involvement of Navy leadership in the benchmarking process
- establish lines of communication and key points of contact within the Navy leadership that the B2PCOE team can turn to for advice, guidance and questions

2. Customer Agreement & Participation of Plan

Socialize Plan with Organization's POC

Working closely and cooperatively with the customer's key point of contact (POC) is critical to acquiring access to personnel, information and data, and an understanding of an organization's culture. The take-aways from this meeting should include, but not be limited to, the following:

- meet with key customer's POC to gain acceptance of plan & gain support
- acquire information on organization and how to best interface with senior management which POC identifies during an entrance briefing/interview session
- discuss role of key POC as a member of the benchmarking team

Briefing & Meeting with Senior Management

B2PCOE team members need to have an entrance interview with senior management to inform them about the purpose of the team, team composition and organization, working environment and schedules, expectations and results (see Appendix A). The team needs to walk away from the entrance interview with the following tasks accomplished:

- inform senior management of BM team goals and objectives
- identify 3-5 processes to be benchmarked by senior management
- request senior management is part of an executive benchmarking committee and get names and contact information of senior management representatives to an executive steering committee
- request overall support of benchmarking activities to include socialization with folks within their customer, access to organization's strategic plan, approval to gather data and conduct interviews with employees, and observe target processes and procedures

Establish Executive Steering Committee

An Executive Steering Committee (ESC) should be composed of the top leaders and senior management of an organization. This Committee will prove to be an instrumental asset in reviewing the strategic plan and identifying the processes that support the organization's mission. The ESC looks at strategic goals, strategies, and objectives that are identified as both necessary and sufficient to bridge the gap and achieve the desired vision of the organization. The ESC should:

- include senior management and organizational leaders willing to work closely with the B2PCOE team
- identify the goals and objectives of the benchmarking process and design a potential benchmarking project(s)
- identify and nominate members of an integrated process team from their organization to be part of the benchmarking effort
- schedule initial meeting with IPAT to explain goals and objectives

3. Integrated Process Action Team

Establish an Integrated Process Action Team (IPAT)

The IPAT should identify the function and scope of the process to be benchmarked, develop a standard methodology and timeline for major phases of work, develop a team structure and identify roles and responsibilities, develop standard definitions and data collection guidelines such as number of resources or costs involved and accessible to such resources within the organization. In addition, the IPAT should determine the level at which to collect data for a particular benchmarking project and decide on data to gather and questions to be asked to minimize the complexity and define the scope of the benchmarking task. The IPAT should address the following issues in a thorough manner:

- review and assess the goals, objectives and benchmarking plan suggested by the Executive Committee
- assign initial roles and responsibilities to IPAT
- establish scheduled on-site meetings and channels of communications for those involved in the benchmarking process
- initiate measures for gap analysis and integrate them into the action plan
- develop IPAT action plan and review and assess the 3-5 benchmarking processes initially identified by senior management during entrance interview
- train members in IPAT process and procedures as necessary to include ethical guidelines
- discuss and establish methods of data collection
- establish cost parameters for achieving the best-in-class goals

IPAT Selects Process(s) to be Benchmarked

With the assistance of the Executive Steering Committee team members the IPAT, in addition to the items listed below, will prepare a list of the organization's significant business processes, discuss the strategic implications of each, select a product or process for improvement, examine current performance levels, and determine how the improvement and success of its benchmarking findings will be measured. The B2PCOE team will report the value added of the

benchmarking process in terms of efficiencies gained or cost savings to the Navy and the customer's senior management. Related tasks include:

- assessing with the organization's key POC team members and team the 3-5 benchmarking advocated by senior management
- advising and discussing with the Executive Committee suggested changes to the benchmarking process targets
- establishing benchmarking targets for a customer

Gather internal and external (when possible) data for assessment and analysis to achieve best-in-class goal

It is important that the IPAT:

- identify potential obstacles to gathering internal benchmarking information and data and develop a problem solving approach(es)
- identify metrics to be used in the benchmarking process (see Appendix B)
- establish an on-going review or quality check process for each step of the benchmarking process
- conduct internal benchmarking research and collect best practices for the purpose of acquiring lessons-learned necessary to achieve best-in-class
- visit organizations that have similar process and methods for weapon systems and are recognized as best-in-class
- extract best practices/lessons-learned from research and document findings for analysis and potential adaption
- identify possible gaps and impact on the entire organization

4. Best Practices

IPAT communicates findings and gets feedback internally to Executive Steering Committee

Benchmarking is an iterative process. Early revisions are to be invited and expected. The Executive Steering Committee team members should serve as members of an on-going review team until the benchmarking report is finalized by the IPAT.

- brief Executive Committee and B2PCOE Director, and ONR Program Officer on IPAT findings, gain input and adjust as necessary
- ***write benchmarking report***
- conduct a review process with the Executive Committee and the Director, and ONR Program Officer
- acquire senior management acceptance of report (anticipate possible refinement prior to finalizing)

Translate findings into organization best-in-class functions/procedures

For facilities to achieve best-in-class status organizational cultural resistance must be overcome. If those opposing improvements cannot be persuaded to become a team player, re-organization may necessary to prevent them from thwarting the facilities best-in-class goals. Prior to the Executive Committee advocating for such drastic measures the IPAT will:

- communicate findings and implementation to all in the benchmarking organization, receive input and make adjustments to implementation plan as necessary
- develop an action plan to implement, in part, as the result of feedback received and brief the Executive Committee
- establish training classes when necessary regarding possible functional changes within the organization
- assist the organization in implementing results (which may include changes to its strategic plan)

5. Communicate & Share Findings

Brief to larger Navy community, receive feedback and make possible adjustment to BM findings

- reinforce top cover for additional benchmarking projects
- discuss the impact on overall Navy resources and culture
- confirm support for participation in communicating Best-in-Class across all Navy organizations

Communicate Best Practices to the Navy and DoD community to include subcontractors and school houses (see Appendix C)

- use multi-media communications as necessary
- conduct on-site and off-site workshops
- conduct an annual benchmarking conference
- make presentations at professional societies
- develop and incorporate lessons in DAU curriculum
- identify other organizations to be benchmarked

6. Conduct Annual Assessment

Assess annually and make necessary adjustments to findings and implementation plan. Communicate all possible change to the executive team, other senior managers, and members of organization as necessary.

Conclusion

The ultimate goal of this benchmarking effort is to establish more efficient methods and processes that will intern make the building of Navy weapon systems more affordable. To achieve this goal, the Navy and its customers need to develop and implement a benchmarking plan for their individual weapon systems. This benchmarking plan serves as a template which enables the Navy's processes and methods to be recognized best-in-class. The B2PCOE team maintains strategic partnerships with academic organizations, industry, and government across all technology disciplines that impact Navy and DoD platforms and weapon systems.

APPENDIX A

Commitment of Senior Management

It is important that senior management not feel threatened or greatly inconvenienced by members of the B2PCOE team and the benchmarking work they need to perform. In order to proceed successfully with their benchmarking tasks, the B2PCOE team needs the support and the unwavering “buy-in” of senior management. At the tactical level there are steps we can take to help ensure the support of senior management and the successful launching of benchmarking activities. They are as follows:

1. **Pre-Senior Management Meeting Preparation** - Prior to conducting entrance interviews with senior management the benchmarking team needs to acquire as much information as possible about the organization. This includes information concerning their organizational structure, formal and informal chains of leadership, mission, tasks performed by personnel at various staffing levels, customer base and technical expertise and capabilities. The B2PCOE team may have to do some preliminarily computer research and have discussion meetings to ensure that everyone is in agreement with and has a full understanding of the organization to be benchmarked.

2. **Meeting with Organization’s IPAT Representative** - Prior to meeting with the senior management team the benchmarking team facilitator and B2PCOE Business Manager will meet with the organization’s IPAT representative who serves as the primary point of contact. Among the subjects to be discussed during this meeting are the benchmarking planning documents, the expectations of the representatives and senior management members of the organization, critical challenges, technologies, and the cultural disposition of the organization. Meeting with the organization’s IPAT representative will be the first on-site visit conducted by the B2PCOE team for each of the Navy facilities.

3. **Entrance Interviews/Meetings with Senior Management** – The IPAT benchmarking team will provide an entrance briefing that addresses matters such as the purpose of the team, team composition and organization, working environment and schedules and expected accomplishment/results.

The second phase of the meeting with the senior management is for members of the B2POCE team to intensely listen to and understand the expectations and concerns of the organization’s senior management. The type of information that the benchmarking IPAT is interested in includes:

- a. Senior managements understanding of the goals and objectives of the benchmarking process (what needs to be benchmarked)
- b. Identifying individuals from the organization that are both knowledgeable and interested in joining an IPAT benchmarking team. (The B2PCOE team should ask senior management when and where initial contact with potential IPAT members from the organization can occur)
- c. How to “socialize” the efforts of the IPAT among the employees within the customer
- d. The top three to five targets to be measured

- e. Acceptance by senior management to conducting various data collection methods such as (1) interviews with employees (2) observations and recordings of processes and procedures (3) employee participation in the IPAT benchmarking team and (4) metrics the senior managers believe to be important to the benchmarking-best practice study
- f. Senior management refusal to participate in the benchmarking process itself

It is also necessary to determine what steps should be taken if senior management (1) limits access to data or the customer (2) denies access to employees for interviews (3) will not provide members to the benchmarking Executive Board or (4) impedes efforts to socialize benchmarking among members of the organization.

APPENDIX B

Data Gathering Methods & Tools

Data gathering methodologies and techniques will be explored and initially determined. The data method gathering process will have to be assessed and evaluated for each Navy organization independently since their goals, mission, objectives and functions may vary from one organization to another. Some of the problem solving tools to be used by the benchmarking IPAT includes graphical techniques such as flow charts, check sheets, Pareto Charts and Cause and Effect Diagrams (Fishbone Diagram). Others are statistical tools to include histograms, scatter diagrams, designed experiments, control charts pie charts and bar charts.

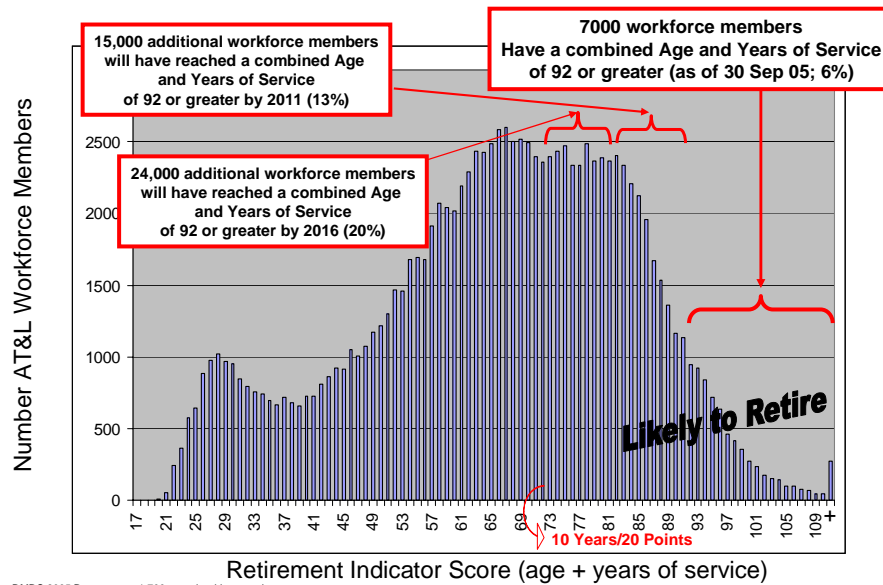
Not all tools will be applied equally to all situations or facilities to be benchmarked. For example, a Pareto Chart is used to display in bar graph form the frequency with which certain events occur—commonly referred to as frequency distribution. However, when the benchmarking IPAT wants to study the amount of variation that a process has within it the tool to be use is a histogram: histograms display the distribution of measurement data, such as, scores, size and temperature.

Prior to using the problem solving tools mentioned above the benchmarking IPAT will have to engage in a brainstorming session. Brainstorming is an important tool to facilitate the team building process and generate ideas. Most IPATs begin the process of collecting reliable data to expose underlying problems with a brainstorming session. Brainstorming helps provide a wide range of ideas around many topics. The IPAT's use of brainstorming will assist them in producing many ideas or solutions in a short time, stimulate creative thinking, help ensure that all group members' ideas are considered. Brainstorming is a good tool to use when the group wants to, for example, identify customers to be included in the research, identify potential causes to investigate, identify types of data to be collected and identify solution ideas. Once the ideas have been generated facts have to be organized into groups to help identify a theme or complex situation. An Affinity Diagram is an appropriate tool to use for this purpose. It will help organize ideas, create central themes, organize problems that are not well organized and help create a breakthrough beyond traditional thinking.

Now let's now briefly discuss a couple of the benchmarking tools mentioned above and their relationship to each other. A Pareto chart is a specialized bar chart that helps you focus on a few vital sources of trouble. Pareto charts are a type of bar chart in which the horizontal axis represents categories rather than a continuous scale. The categories are often defects, errors or sources (causes) of defects/errors. The height of the bars can represent a count or a percentage of errors/defects or their impact in terms of delays, rework and cost. By arranging the bars from largest to smallest, a Pareto chart can help you determine which categories yield the biggest gains, if addressed, and which are only minor contributors to the problem.



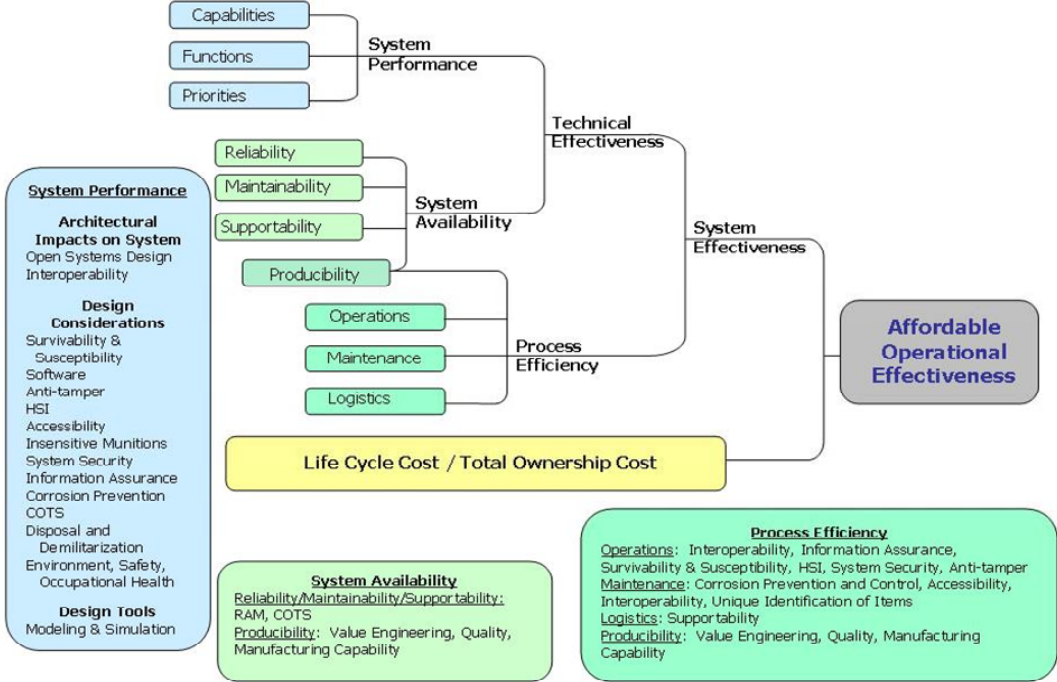
Retirement Indicator: Workforce Rule of "92"



The chart above demonstrates a “continuous scale of events” that is indicative of a Pareto chart. It also provides vital information for human capital resource planners who are attempting to better understand Government workforce trends as they apply to retirement and hiring. Among other things, this chart indicates that there will be a substantial human capital shortfall in the period from 2011 to 2016.

Developing a Cause-and Effect diagram (fishbone or Ishikawa diagram) would be a subsequent step. The fishbone diagram helps teams push beyond symptoms to uncover root causes, provides structure to the cause identification effort and ensures that a balanced list of ideas has been generated during brainstorming or that major causes are not overlooked. The fishbone diagram can be used for cause identification once the team has a focused definition of the problem and/or it can be used as a cause prevention tool by brainstorming ways to maintain or prevent future problems.

Important Design Considerations “The Fishbone”



The fishbone diagram above is an excellent example how to determine system effectiveness and total ownership cost by examining the critical factors or components as it relates to affordable operational effectiveness. The application of a fishbone diagram to the energy efficiency studies at Navy facilities will prove to be an important problem solving tool to be used by the benchmarking IPAT.

APPENDIX C

Training & the Use of Simulation Training Modules

Integrating the Best Practices across the Navy and possibly other Government agencies will require best practice standards to be published in handbooks and on designated “best-practice” web sites such as that currently in use by the Defense Acquisition University. Support and coordination with the DLA’s standardization office is anticipated as well as presentations by IPAT members at professional society conferences and at other professional forums. In addition, the development and implementation of simulation training modules to be used by Navy practitioners will provide insight into how to implement best practices. The use of simulation training modules will help bring about a “cultural change” by exposing employees to the elements of change through a non-threatening environment.



As depicted in the illustration above simulation training is already being used in various ways within the Services. Simulation training is precision training. It can be tailored so the learner acquires the right knowledge and skills. It can be customized learning based on learner needs and aptitudes and allows the learning to be delivered when, where and how required. Most importantly, it can be tailored to achieve desired learning outcomes.

ENDNOTES

1. **Commitment of Senior Management – Appendix A**
2. **Data Gathering Methods & Tools – Appendix B**
3. **Training & the Use of Simulation Training Modules – Appendix C**
4. **Navy Centers of Excellence**
 - a. **The Electronics Manufacturing Productivity Facility (EMPF)**
 - b. **The Center for Naval Shipbuilding Technology (CNST)**
 - c. **The Composites Manufacturing Technology Center (CMTC)**
 - d. **The Penn State University Electro-Optics Center (EOC)**
 - e. **The Institute for Manufacturing and Sustainment Technologies (iMAST)**
 - f. **The Energetics Manufacturing Technology Center (EMTC)**
 - g. **Edison Welding Institute (EWI)**
 - h. **The Navy Metalworking Center (NMC)**
 - i. **Benchmarking & Best Practices Center of Excellence (B2PCOE)**