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## Paper Session I-A - Benchmarking: A Tool For Sharing and Cooperation

Sara Morrison  
*United Space Alliance*

Denise Devito  
*Boeing*

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# Benchmarking: A Tool For Sharing and Cooperation

Sara Morrison, United Space Alliance

Denise DeVito, The Boeing Company

## A. Introduction and Background

Kennedy Space Center, America's gateway to the universe, leads the world in preparing and launching missions from earth to the frontiers of space. NASA's mission is to advance and communicate scientific knowledge and understanding; explore, use, and develop space; and research, develop, and transfer aerospace technologies. Like any private or public organization, NASA and its contractors are faced with the challenge of performing work better, faster, and cheaper, while maintaining world-class levels of safety and quality. To meet this challenge, the KSC team is using benchmarking as one tool to achieve the goal of improving the "bottom-line."

Benchmarking is a disciplined approach for comparing and measuring work processes against best-in-class organizations. One outcome of performing a benchmarking study is the identification of "best practices" that enable superior performance. These "best practices" can then be adapted and incorporated to achieve improvements in cost, quality, schedule, and cycle time.

Driven by NASA and its KSC contractors' commitment to face the challenges of the current fiscal environment, a pioneering benchmarking consortium was chartered at the Kennedy Space Center in January 1994. The Kennedy Benchmarking Clearinghouse was formed as a collaborative effort between NASA and all major KSC contractors to facilitate effective benchmarking, optimize efficiencies, and leverage quality improvements across the Center. The Benchmarking Clearinghouse team provides direction for KSC to facilitate effective agency-wide benchmarking initiatives.

In conjunction with this year's Space Congress theme, "Global Competition and Cooperation," our unique approach to benchmarking is a technique any organization – public or private can use. Consortium benchmarking can help organizations gain a thorough understanding of a process and provide an environment to share best practices. These best practices have the potential to produce desired strategic business results. Consider the following examples of consortium benchmarking:

- Local area hospitals can engage in consortium benchmarking to determine the best method for scheduling surgical suites.
- Municipalities can work together to determine the most effective way in selecting a public works consultant.
- Business units within a company can cooperatively benchmark to determine the most optimal accounting system.

At the Kennedy Space Center, our experience with consortium benchmarking has resulted in cooperation among contractors, and has led the way to incorporate the synergy of the ideas from multiple organizations toward the common goal of mission success.

## **B. Consortium Approach to Benchmarking**

### **Approach Development**

To address the special needs for conducting a benchmarking study with several organizations combined to function as one, the Kennedy Benchmarking Clearinghouse team developed an original approach to benchmarking which integrates the best features of proven benchmarking models (e.g., Camp, Spendolini, Watson, and Balm). This consortium approach is a collaborative team effort by diverse organizations to benchmark processes common to NASA and/or its major contractors.

The collaboration of NASA and its contractors on a common process promotes an understanding among the participants of their common process, the differences as well as best practices which can be adapted. Consortium benchmarking spreads the cost of benchmarking among the participant organizations with all participants realizing the benefits of the study. With the diverse contractors working toward a common goal, communication and cooperation are greatly enhanced. The Kennedy Benchmarking Clearinghouse, which developed the consortium approach, received the Silver Award for applied benchmarking research from the International Benchmarking Clearinghouse (IBC).

### **Drivers of Consortium Benchmarking**

Partners . . .

- ... have limited resources to do benchmarking
- ... have minimal training or experience in benchmarking
- ... share the same culture
- ... may share the same measurement system
- ... use similar technologies, processes, systems
- ... meet on a regular basis or have an existing forum

### **How Consortium Benchmarking Differs From Traditional Benchmarking**

The traditional benchmarking steps have been adapted to account for the diverse organizations at Kennedy Space Center. Many of the participant organizations are in competition with each other, yet collaborate on many processes. The most significant difference from the traditional steps is that benchmarking within the participant group occurs prior to benchmarking with an external partner. After this initial exchange of ideas, each participant may select best practices to be adapted to his own organization. When conducting the benchmarking study with the external partner, the consortium group presents itself as an integrated group.

### **Concept Tested**

This unique approach to benchmarking was developed with the first “pathfinder” consortium benchmarking project conducted in 1995 with the Government Property Management process. Government Property Management is a process done by the contractors at Kennedy Space Center for NASA. Each contractor had different methods for accomplishing the same task with varying degrees of success. Through the consortium project, each contractor representatives shared their process steps and performance measures to compare with each other. By adapting and implementing best practices contractors realized a combined savings of \$41,000 and reduced cycle time by 57%. These results benefited each participant organization as well as their common customer, NASA.

## C. Benchmarking Methodology Overview

The Benchmarking process follows the plan-do-study-act quality improvement cycle. The initial steps involve planning the study and selecting benchmarking process participants. The process to be benchmarked is thoroughly documented and pertinent measures are identified. Potential partners are identified; data and information are collected from the partners and evaluated to determine the “benchmark”. Best practices are adapted for implementation with specific actions to improve the benchmarked process. Use of “The Benchmarking Code of Conduct,” published by the International Benchmarking Clearinghouse (IBC), insures commitment to recognized standards of confidentiality, preparation, and legality during the study.

### Roadmap

The development of the “Benchmarking Roadmap” added a level of detail to the consortium approach methodology to lead teams through a successful benchmarking study. The Roadmap provides a suggested step-by-step process to use for any benchmarking study project. It is written to address the special considerations of a consortium benchmarking project, to provide the specific tools and techniques for successful benchmarking, to provide a detailed sequence of activity, and to be adaptable to both internal and external benchmarking studies. The “Roadmap” is a vehicle for transferring the collective knowledge and experience of the KBC team to benchmarking study participants, and for promoting effective and cost-efficient benchmarking.

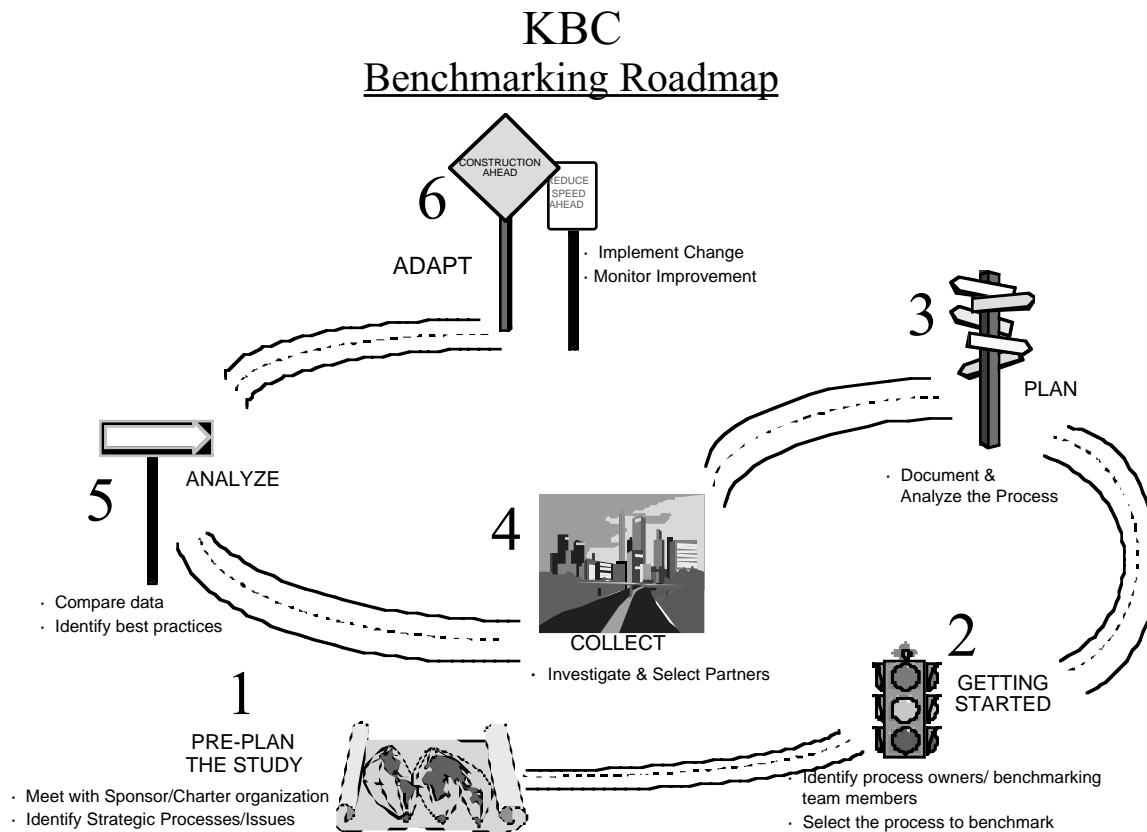


Figure 1

# “Roadmap” Steps for Consortium Benchmarking

## Selection Of Benchmarking Projects

Potential processes for consortium benchmarking are identified through the NASA strategic plan, the strategic plans of the major KSC contractors, and through the collective experience of the KBC participants. The owners of the identified potential processes are contacted to ensure their receptivity to a benchmarking project. The final selection is based on the following criteria and on approval of the IWG.

### Required Criteria

- Benchmark a Work Process  
KSC Integrated Process - process steps integrated among NASA and/or most or all contractors, or a Consortium - contractors each do a similar process
- Well-documented with established metrics
- Potential Return on Investment
- Amenable to a Six-month Study
- Non-Proprietary Process

### Other Possible Criteria

- Unique considerations depending on the study and/or the participants

## Preparation

The specific focus for the benchmarking project is identified by the process owners. Participants thoroughly document their organization’s process steps and significant performance measures. In a consortium study this information is used to benchmark among the participant organizations before benchmarking with an external partner. This serves the dual function of providing practice in the benchmarking process as well as help define the process aspects the group will focus on with its external partner.

## External Benchmarking

It is recognized that there are different types of comparative studies (figure 2); the use of a particular type is evaluated relative to the process being compared. Research is conducted on potential partners using specific criteria to evaluate both the value of the identified partner and the information later gathered from the partner(s). The consortium benchmarking team works with the selected partner(s) as a single unit with representatives identified from the participating organizations. The data and information gathered from partners is analyzed and best practices identified. In the consortium group, each participant may identify different best practices to adapt and implement in his organization. Changes to the process are monitored by the process owners to verify improvement.

# Types of Comparative Studies

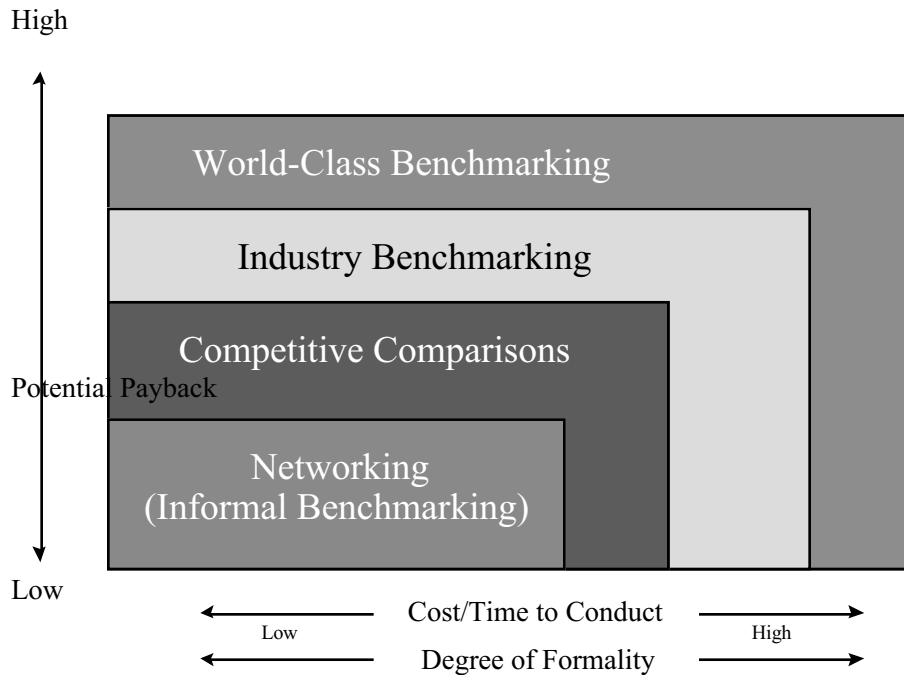


Figure 2

## D. Benefits of Consortium Approach

### Cost

This cost-effective alternative to conventional benchmarking approaches has provided a foundation for continued benchmarking at KSC. By joining forces the cost to each participant is generally less than it would be for each contractor to conduct a study individually. It also tends to increase the willingness of best-in-class companies to become study partners with KSC organizations.

### Process Improvement Synergy

Continued informal benchmarking among the consortium process owners has a synergistic benefit. In addition to enhancing benchmarking skills among participant members, the approach strengthens a culture that values continual improvement and teamwork to achieve excellence. It builds a foundation for continued benchmarking, formal and/or informal, through the use of common terminology, tools, and techniques.

## E. Lessons Learned

Benchmarking requires the expenditure of resources. It is possible to tie up resources in a benchmarking study and receive little in return for this effort. To avoid this pitfall, it is crucial to evaluate the following:

- Has the management team selected the right process to study (i.e., is the study tied to a strategic need?).
- Does the benchmarking study have the potential to result in a return on investment?
- Do the affected process owners thoroughly understand the process to be benchmarked?
- Is the organization prepared/committed to drive the implementation of the best practices and continue to monitor performance following the completion of the benchmarking study?

## F. Summary

A component of developing world class space partnerships for global cooperation is to be an open and willing partner in an effective benchmarking study. A structured approach prevents “industrial tourism,” plant visits just to see what is out there. Benchmarking can provide a wealth of ideas on which to build significant improvement. The commitment of resources to participate in a benchmarking study is typically well worth the effort involved due to the insights that result from learning from others.

## Submitted by:

### Kennedy Benchmarking Clearinghouse

#### Contacts:

	<u>Mail</u>	<u>Phone</u>
Sara Morrison, United Space Alliance sara.c.morrison@usago.ksc.nasa.gov	USK-049	861-7942
Denise DeVito, The Boeing Company denise.m.devito@boeing.com	T844	867-3705