

# Experiences in Benchmarking Distributed Projects

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## **Abstract:**

This paper presents the CoDisCo research project, Connecting Distributed Competencies. The CoDisCo project is aimed at identifying and describing best practices, both managerial and tool-related, for projects that are geographically and/or organizationally distributed, a very common and challenging reality. The paper puts special emphasis on the benchmarking study of project management processes, an essential part of the project. The paper comprises a general description of the method used to accomplish the benchmarking study and a short review of the first experiences and findings from it.

Keywords: benchmarking, project management, product data management, Internet, distributed product development.

## **1 Introduction**

Nowadays, decentralized operations and projects are a reality in industrial and business environments. One-of-a-kind and make-to-order companies have been concentrating on their core businesses, which has increased the number of parties involved in the product delivery process. This trend toward resources dispersed across several geographical locations or organizations creates new challenges and constraints in project management, in addition to increasing the demands for better project management (Hameri, Høimyr, and Kilde, 1998).

Projects that are geographically and/or organizationally distributed display some inherited special characteristics that make them particularly challenging to plan, manage, and execute. New project management approaches are constantly appearing in these geographically and/or organizationally distributed environments. The CoDisCo project is aimed at finding the best of these project management practices. The results of the project, the descriptions of these best practices, are intended to serve as inspiration to those that are interested in improving the management of distributed projects.

The following sections will provide a more detailed description of the CoDisCo project.

## **2 The CoDisCo project**

CoDisCo, an acronym for the title Connecting Distributed Competencies, is itself a distributed research project aimed at identifying and describing best practices, both managerial and tool-related, in connecting distributed competencies in such a way that the end-product is delivered on time, with the right quality, with reliable documentation, and within the planned budget frame.

The CoDisCo project is going to benchmark, develop, and implement methods and tools for managing distributed design processes involving, in addition to project management, product data management and Internet based solutions.

CoDisCo is a joint Nordic project with world-leading companies as participants. The consortium of the project consists of IGP/NSP (N), Aker Finnyards (FIN), Logimatic AS (DK), Hönnun og Ráðgjöf (IS), Kockums Computer Systems (SWE), Helsinki Institute of Physics-HIP (FIN), CERN European Laboratory for Particle Physics (CH) and SINTEF Industrial Management (N).

The CoDisCo project is financed by the Nordic Industrial Fund and by the respective contributions of the participants, with a duration of 2 years (September 1998 - September 2000).

The CoDisCo project has the following main goals:

- Benchmarking best practices of distributed design processes and project management.
- Establishing managerial guidelines and documenting the configuration management processes needed to manage distributed projects, with special emphasis on the specification of the user requirements for distributed product data management.
- Testing of the Internet and WWW based applications in industrial pilot projects to fulfil communication and information sharing needs in distributed projects.
- Industrial follow-up to redefine the processes and to document the feedback from companies, together with the dissemination of the project result to other Nordic companies.

### **3 Benchmarking of Project Management processes**

One of the work packages of the CoDisCo project is concerned with a benchmarking study of a number of distributed projects in order to identify best practices in project management processes. This work package commenced in the fall of 1998 and will run till the middle of the year 2000.

### 3.1 Introduction to the benchmarking concept and process

The following operational definition of benchmarking can briefly enlighten the concept: “Benchmarking is the process of continuously measuring and comparing one’s business processes against comparable processes in leading organizations to obtain information that will help the organization identify and implement improvements” (Andersen and Pettersen, 1995). In other words, benchmarking is about learning from others in order to improve the results of one’s own company. However, in this case, the purpose is to identify overall best practices in managing distributed projects.

There exist a number of different benchmarking models, most of which are quite similar in approach. The Benchmarking Wheel has been selected as the benchmarking model to be used in CoDisCo, see Fig. 1 (Andersen, 1995). This figure describes the five phases to be performed in a standard benchmarking study.

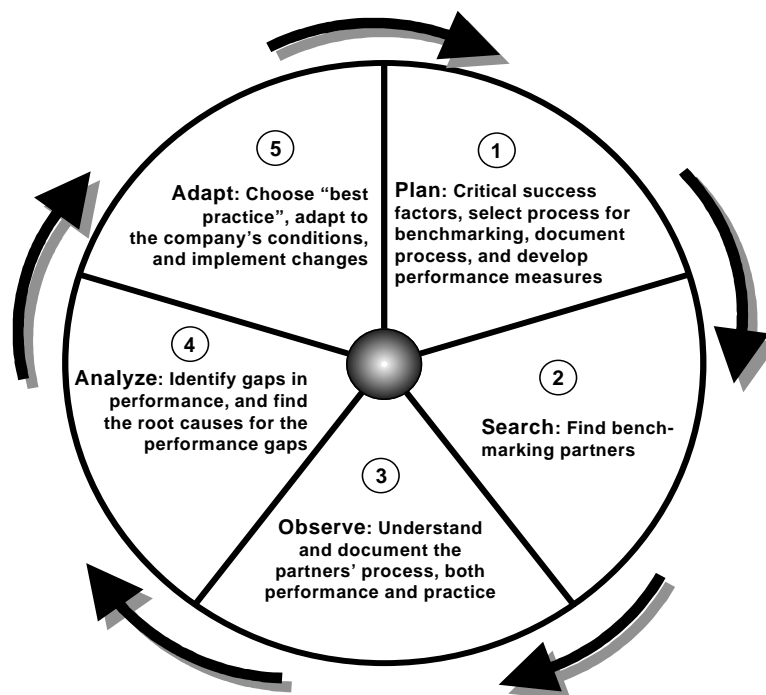


Figure 1. The benchmarking wheel

### 3.2 Benchmarking applied to project management processes

The following sections provide an overview of the benchmarking study of distributed project management processes that is being carried out in the CoDisCo project.

### 3.2.1 The first phase: planning

Five project management areas or processes that determine much of the project's performance and success are; project schedule planning and control, project budgeting and cost control, project risk management, project quality management, and project design management. Since these areas also require a strong degree of co-ordination among involved project participants and across geographic locations, they are even more important in distributed projects than in uni-locational or uni-organizational projects and therefore are the processes being benchmarked in CoDisCo.

### 3.2.2 The second phase: searching for benchmarking partners

The identification of relevant and suitable benchmarking partners was carried out through the connections of the consortium and general literature search. In this way, best practice projects and companies have been identified. Up to now, a number of leading companies has been involved, but the search is still open and more benchmarking partners are expected to appear. Three or four benchmarking partners are involved for each project management process that is being benchmarked. This number gives a good balance between cost and quality of the information.

### 3.2.3 The third phase: observing

The purpose of the observation phase is to study and understand the practices of the benchmarking partners when performing the five project management processes. For this purpose, a benchmarking methodology based on the benchmarking wheel has been developed. The methodology consists of methods for data acquisition and analysis techniques that have also been adapted to each of the five selected processes.

Following the guidelines from the benchmarking methodology, thorough face-to-face interviews are performed as the main method to collect the information. A questionnaire including both qualitative and quantitative question has been designed for this purpose. The benchmarking partners received an advance a copy of this questionnaire together with relevant information regarding benchmarking. Some information collection

through in situ visits of 2-3 days' duration has already occurred and will continue during the coming months.

#### 3.2.4 The fourth phase: analyzing

The analysis of the collected information to identify gaps in performance among the projects, in addition to the practices that contribute to the gaps, is being executed in parallel with the data collection. The analysis is really only starting now, but some intermediate conclusions are presented later in the paper.

#### 3.2.5 The fifth phase: adapting

The benchmarking study's output will be a benchmarking report that describes the identified best practices. The report will feed the other work packages in the CoDisCo project with the purpose of improving the general management of distributed projects.

### **3.3 Experiences from the benchmarking study**

The experiences from the use of the developed benchmarking methodology are positive. Benchmarking seems to be a suitable tool for improving the management of distributed projects. There are, however, some crucial issues to be aware of. First, the search for willing, relevant, well-performing benchmarking partners is difficult and time-consuming. The key to success seems to be in preparations and personal contact. Second, collecting data from projects require a solid basis in the form of pre-prepared questions. In this phase, confidentiality is also a key aspect. The ensuing data analysis must be based on a suitable analysis tool, e.g., gap analysis, cause-and-effect chart, or a comparison matrix.

All in all, identifying projects displaying best practice and being willing to share it is perhaps the stumbling block in benchmarking distributed projects.

### **3.4 Identified best practice**

Up to now, only a small number of projects have been studied, and therefore these are preliminary findings. However, the following elements related to schedule and risk management are common for those distributed projects displaying good performance (Gilhuus-Moe and Andersen, 1999):

- Clearly defining the scope of the total project and the contributions from each participant before defining detailed activities.
- When sequencing and scheduling the resulting activities, special attention must be paid to geographic constraints.
- Those participants that will actually perform each task are best equipped to estimate its duration.
- Web-based tools are ideal for distributing project plans and especially for changes in these.
- Even if being time and resource intensive, progress control must often be handled through on-site visits.
- Risk identification must be handled jointly by the project consortium.
- Each risk element must be allocated to the partner best equipped to absorb and mitigate it.

Best practices for the other processes are also under way, but not available at this stage. Furthermore, the above descriptions will naturally be made much more detailed later on in the project.

## **4 Conclusions**

From the benchmarking study accomplished in a small number of companies, some best practices seem to emerge. The benchmarking study is not finished and will extend over the next year. Important findings about what practices are employed in the best performing distributed projects across Europe are expected to emerge in the decisive

processes of project schedule planning and control, project budgeting and cost control, risk management, quality management, and design management. These findings will be presented in a benchmarking report that will be publicly available in some version.

The experience so far is that benchmarking is suitable for improving the management of distributed projects. What seems to present most difficulties is the identification of relevant and willing projects.

## **Biography**

Bjørn Andersen, Ph.D., is an associate professor at NTNU in Norway and also holds a position of scientific advisor at SINTEF Industrial Management. He has spent eight months at Rochester Institute of Technology, has co-authored several books and papers, and has been involved in several research and implementation projects on project management, benchmarking, productivity and material and production management during the last years.

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