CODA - Communication diagnosis

H. Kühnle¹⁾, S. Mertens²⁾

¹⁾Fraunhofer Institute for Factory Operation and Automation

IFF, Sandtorstraße 22, D-39106 Magdeburg, Germany

Tel: +49(0)391 4090-100

Fax: +49(0)391 4090-102

e-mail: kuehnle@iff.fhg.de

²⁾Institute for Manufacturing Strategies IMS GmbH

Steinfeldstraße 3, D-39179 Barleben, Germany

Tel: +49(0)39203 81706

Fax: +49(0)39203 81700

e-mail: mertens@ims-gmbh.server.de

Abstract

The implementation of a requirement-oriented communication structure in an enterprise is gaining an increasing importance. Success can be reached now, and even more in the future, through mastering the complexity of information and communication. This makes the organizational, social, and technical design of optimum communication networks indispensable.

The method CODA holistically examines the information and communication processes and optimizes them on the basis of examination results. This method can be used for a variety of tasks, ranging from optimizing of information systems to structural redesign. CODA comprises several method components implemented by the use of software instruments.

Keywords:

Business Process Reengineering, Communication optimization, Information systems

CODA - COMMUNICATION DIAGNOSIS

Approach

Today you will find a permanent increase in the complexity of enterprise relevant factors caused by external factors, e.g. fast changing market conditions as well as

by internal factors like e.g. rigid organizational structures and low competencies on work flow level. The change from hierarchical organizational structures towards process and goal oriented leads to advantages concerning higher flexibility and transparency. On the other side the loss of information and knowledge in hierarchical departments which cumulate specific knowledge need to be compensated.

For this reason an efficient and effective information and communication structure is needed to define the interfaces between organizational units and between the enterprise and its environment. This becomes a permanent task with a high strategic significance for an enterprise.

One possible approach to face this challenge is the Business Process Management. It demands a consequent orientation of all enterprise activities in form of customer oriented business processes.

A methodical approach for successful Business Process Management and which enables a high performance of the information and communication structure is represented by the method and software CODA – Communication Diagnosis.

Procedure

The method CODA is a combination of top down and bottom up approach and consists of four main components:

- Setting goals
- Communication modeling using the COPA software
- Communication optimization using the COSI and COBE software
- Communication design

One of the main conditions for the modeling of business processes is to reduce the complexity of the real world. This is done by the forming of different hierarchical levels and the clustering of the basic modeling data. Thus it is possible to examine the organizational structure of an enterprise on a rough level as well as very detailed (Figure 1).

Clustering the basic information means for example to summarize the employees to areas of responsibility (departments), sub-process (activities) to business processes and information to information cluster.

By building up different hierarchy levels the management as well as the staff get the possibility to see "their" organization and learn where they are in "their" process.

One basic principle of the method is the participation of the employees working in the business process. So all components are worked on by the participation of staff members. The transfer of methods thus implemented and the integration of your staff during project realization form the necessary basis of confidence for designing accepted organizational structures and their realization and make the whole process more transparent.

Figure 1 Hierarchy level of area of responsibility and employee

Setting goals

By setting goals, the area of investigation and the qualitative efficiencies aimed at are determined in the form of goals. These goals are weighted in a goal pyramid and transformed into a goal system. This goal system can be used later for controlling tasks.

Using the method CODA it is possible to meet the following aspects:

- reduction of processing time of information cluster
- decrease of the number of internal and external interfaces
- increase in the quality of products and business processes
- increase in the efficiency of business processes by making their inside-interaction more transparent

Communication modeling

The key component for all software tools used within the method CODA is the relational database CODB - Communication Database. The structure of the database CODB represents a general communication model. It is used for mutually connecting the applied software instruments COPA – Communication Process Analysis for modeling the communication process, COSI – Communication Views and COBE – Communication Evaluation for optimizing and redesigning the communication processes.

The acquisition of data for the communication model is interactively done using the COPA software. Data gathering is realized by a structured interview, lasting about one hour, carried out with all staff members of the examined department or process. The data are directly written into the relational database CODB, thus enabling the output in the form of an informatory job description for direct data verification. By the use of the software tool COPA, the acquired data are interrelated. Doing it this way, statements made by employees and data stored previously are checked for plausibility during the interview.

Thus communication processes are mapped step by step. Based on the involvement of all employees in the data acquisition, a high data quality and therefore acceptance of results of analyses is ensured. These are essential prerequisites to guarantee the agreement of employees on the method and its results.

communication relations (thin and bold lines). A thin line means weak and a bold line strong communication intensity. In order to go for example from one area of responsibility to another area of responsibility in one business process or from one business process to another business process you have to overcome an interface.

For an evaluation of the interface you have to go into detail. For that purpose the software tool COBE provides different evaluation functions in form of reports. By selecting a special task or process you will get information about e.g.:

- processing time
- number of internal and external interfaces
- number of areas of responsibility
- number of employees
- number of sub-processes
- capacities
- weak points

etc.

With these information the user is able to evaluate, optimize and redesign the business process.

Communication design

This method component covers the structural design of areas of responsibilities and jobs regarding responsibility, competence, task and information, including technical aspects, such as the use of forms regulations.

The conceptions worked out are assessed by interdisciplinary and inter-hierarchical teams. The assessment is based on agreed goals. The resulting concept serves as the basis for decision making process on management level and creates the starting point for the redesign of more efficient communication structures.

Here the software tool COBE enables the user to build new relations between employees and areas of responsibility, sub-processes and business processes and information and information clusters. In that way the software provides the possibility to realize different scenarios in order to check the optimum way for a successful restructuring.

Figure 3 Harmonization of process and responsibility

Results

One goal of the method CODA concerning the restructuring of business processes is to define for each business process exactly one area of responsibility as a measure of the seclusion of processes.

In figure 3 the harmonization of process and responsibility at different hierarchy levels is shown. The different combinations between business process and areas of responsibility are linked with each other. The thickness of the lines means the communication intensity and the arrows the communication direction.

With that clear relation you will get more transparent and dynamic enterprise structures. That speeds up the enterprise processes and communication.

The research activities have led

- to an increased planning security through partizipative redesign in drawing up communication structures,
- to the possibility of matching information supply and demand,
- to robust communication structures through the integration of organizational, social, and technical aspects,
- to the possibility of performance evaluation of administration,
- to a reduction of business process time of approximately 20-30 % through reduction and/or elimination of interfaces,

- to a reduction of the transaction cost of approximately 10-20 % through requirement oriented information supply and
- an increase in productivity of approximately 30 %.
- Reduce the time of "normal" organisation developement projects by the factor 3 by realising the parallel analysis, evaluation and optimization of the enterprise