

## Implementation of an Intellectual Capital Management System: Evaluation of a "Bottom-Up" Approach

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**Abstract:** In this paper the advantages of a bottom-up implementation of a knowledge-related measurement and monitoring system is presented. On the level of **organizational learning** processes it is shown, that the initial idea not to focus on a strategic implementation of the IC system is advantageous and that the development of project related measures provides the context for involvement, commitment, and long-term success. On the **individual learning level** it becomes clear that the focus on agreed goals and an adequate environment for self organization are key to the occurrence of higher-level learning or transformational learning processes; and that co-operation, trust and willingness of the others affect such a transformational learning processes in a positive way.

**Key Words:** Evaluation, Intellectual Capital, Knowledge Process Measurement

**Category:** A, H, K

### 1 Aim of the paper

The implementation of intellectual capital accounts often follows a "top-down" philosophy. This perspective highlights the strategic dimension of such a knowledge-related measuring and monitoring system. Unfortunately, this "top-down" approach also shows some inherent deficits that can be explained by a less than optimal implementation process.

In this context, the following main problems – parallel to the well known problems regarding the implementation of a balanced scorecard system – can be identified:

- lack of alignment between measurement system and operational needs
- lack of involvement and thus commitment of middle management levels
- lack of communication of the benefits of the system
- lack of experience or expectations regarding "quick wins" of the system

Based on this experience, the present author developed an IC related "bottom-up" implementation concept, which is capable of minimizing the problem areas outlined above [Reinhardt/Flicker 2004, 2005]. This "bottom-up" approach has been implemented at the end of 2003, and has been evaluated one year later.

Hence, the major aim of this paper is to show the key issues of this concept, the realization and evaluation of this concept, and to show the major lessons learned from this approach.

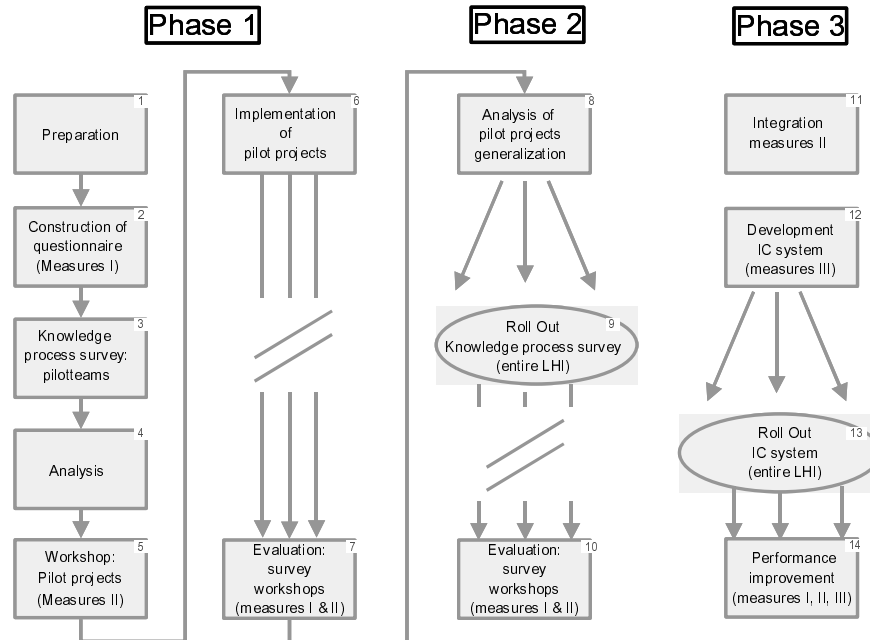


Figure 1: Project phases and steps

## 2 Implementation concept

Figure 1 gives an overview of the specific project phases and steps. The three core phases can be described briefly as follows:

- **Phase 1 – Piloting of measuring knowledge processes:** Preparation, conceptualisation, and implementation of a method to measure knowledge processes (measures I); design and conducting of feedback workshops in order to identify improvement opportunities. Such projects are defined, planned and additionally controlled by project-related success indicators (measures II).
- **Phase 2 – Generalization of measuring knowledge processes:** Critical analysis of experiences during the pilot phase, possibly improvement of the measurement method and the workshop design. Roll out of the measurement system into the entire company with the aim of identifying improvement opportunities as in phase 1. Hence, here again two different sets of measures are applied: knowledge-process-related measures (measures I) and project-related measures (measures II).

- **Phase 3 – Conceptualisation and implementation of the intellectual capital audit:** Based on the project experiences during phase 2 and the accepted measures II of this phase, on the one hand, an aggregation of these measures takes place. On the other hand, critical measures from a top-down perspective will be identified or developed. Finally, the intellectual capital measurement system is built into the integration of these top-down and bottom-up measures (measures III).

### 3 Case study

#### 3.1 Implementation of the approach

One of the Knowledge Manager 2002 award winners, the leasing company LHI in Munich, has decided to invest their prize money in the improvement of their own knowledge management capabilities.

The main focus of the new project has been to develop a scientifically sound method that enables the company to measure and monitor the benefits of their own knowledge management activities. Hence, the following three objectives have been defined:

1. Development and implementation of a knowledge-related measurement system on the basis of pilot studies.
2. Roll out of an improved version of this method in the complete company.
3. Further development of this bottom-up approach into an intellectual capital management system.

From an economic as well as from a learning perspective, it was decided to pilot this approach in two departments.

#### 3.2 Evaluation of the approach

##### 3.2.1 Business projects (measures II)

The first evaluation phase is related to step #7 and can be described as follows: After having accomplished the pilot project, both pilot teams go through an evaluation phase, including 2<sup>nd</sup> measurement of the quality of the knowledge management process (measures I) comparison between actual and targeted goals regarding measures II (project performance).

Figure 2 shows the relation between the first and the second survey (2003 vs. 2004), the most important gaps in 2003 (knowledge-generation and -diffusion) as well as some examples of the projects having been identified and implemented.

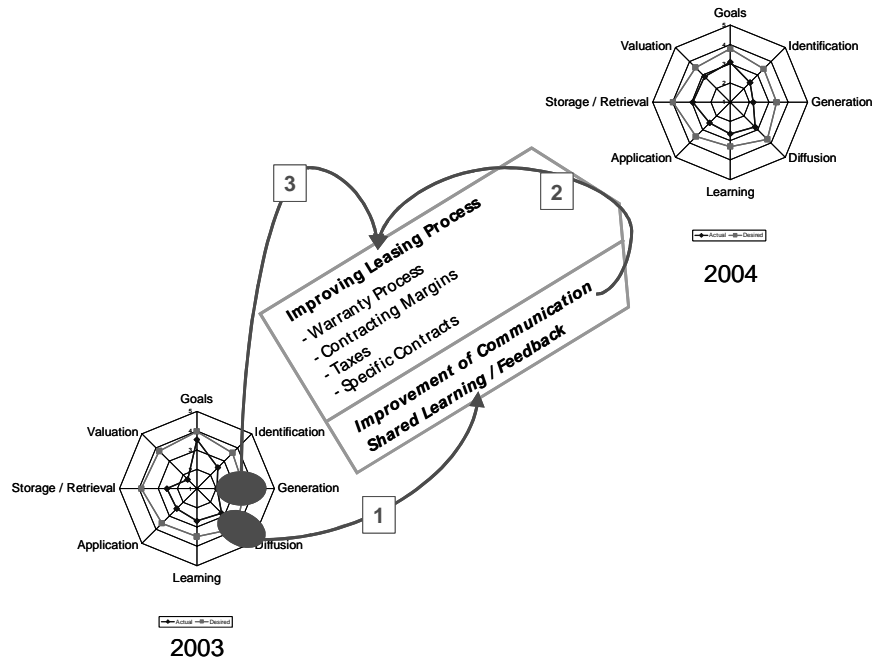


Figure 2: Overview – Activities and evaluation

Figure 2 can be described as follows:

- On the basis of the 2003 workshop (measures I), 10 business projects were identified that jointly can be described in terms of “increasing customer satisfaction“ by “improving processes & quality“. For all of these projects, type II measures were also identified.
- Additionally, there has also been a high level of shared understanding that internal communication should be improved in order to achieve the business projects‘ goals. Unfortunately, there was no shared understanding on how to improve internal communication.
- The department (the manager and her employees) started lots of attempts to improve the formal and informal communication style. They did not ask for any team development activities, and suffered from their lack of communication competence as well as from the increasing time pressure regarding business projects 1-10 until ..... the manager and the team learned that the success of the projects – and therefore the level of achievement of level II goals – strongly depends on the quality of the learning processes within the projects. The manager of the pilot team I puts it as follows: “*The beginning of the project has been very*

difficult. The conflict intensity decreased and the level of co-operation started to increase from that point, as I was able to redefine my own role as manager: Normally I saw myself “above the department”. Having accepted that I am a member of the team, this attitudinal change lead to behavioural changes of my own as well as to behavioural changes of the complete team”.

- Having solved the communication problems, all 10 business projects achieved the goals.

### 3.2.2 Knowledge processes (measures I)

In the previous section it was made clear that the two knowledge-related processes “creation of new knowledge” and “diffusion of knowledge” changed between 2003 and 2004. In figure 3 a more detailed overview of the changes between 2004 and 2003 level I-measures of the knowledge process “creation of new knowledge” is given:

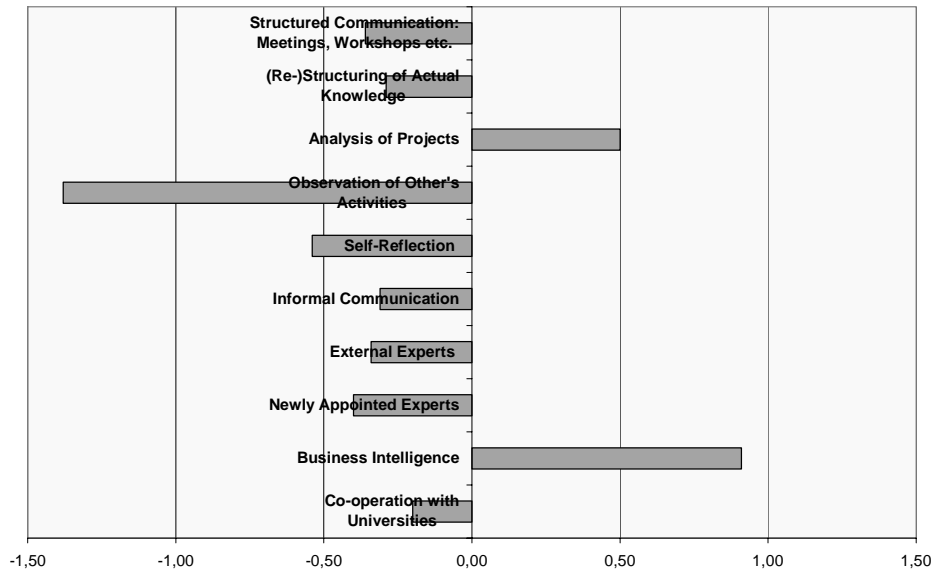


Figure 3: Creation of new knowledge (2004 vs. 2003)

Figure 3 can be interpreted as follows:

- For eight out of ten activities the difference between desired and actual level of knowledge-related performance decreased: structured communication, restructuring of actual knowledge, observations of other’s activities, self-reflection, external experts, newly appointed experts, business intelligence, co-operation with universities.
- Regarding two out of ten activities an increasing difference between desired and actual level be observed: analysis of projects, business intelligence.

Hence, these data indicate on one hand that the business projects that were implemented between 2003 and 2004 helped to close the gap between desired and actual level of knowledge creation. On the other hand the data also show that more emphasis should be laid on the analyses of projects and business intelligence, if the full potential of knowledge creation should be realized within this specific department.

## 4 Discussion

If we look at the lessons learned from the implementation perspective, it becomes clear, that the achievement of the goals of the business projects were strongly linked with the improvement of the communication process that can also be understood as the basis of shared learning processes.

If we interpret this statement from a theoretical perspective, it becomes clear that there seems to be a close relation between **double-loop** and **deutero-loop** learning processes [Argyris, Schön 1978] of the manager and the performance of the team. This “shared learning platform” was key for the successful improvement of the leasing process from the department’s perspective.

If we apply Sackmann’s theory of knowledge [Sackmann, 1991], the results show evidence that the bottom-up approach leads to changes regarding the **axiomatic knowledge** of an organization. Axiomatic knowledge consists of causes, assumptions, and beliefs; it can be elicited by ‘**why-are-things-done-the-way-they-are?**’ questions: There occurred a high level of demand from other departments to share the tools and methods that helped this department to improve its own communication.

If we finally look at the well known problems of IC or BSC implementation (e.g. [Bornemann, Reinhardt 2006], it can be concluded, that such implementation activities should be realised differently: There is a need for transformation in IC system implementation that can be described by creating a fundamental shift in the way organizations do business, and by creating cultures that support that change;

- by making sure that the organization's purpose is clear, and that goals and values are consistent with reality;
- by ensuring that employees are valued in an inclusive culture, and that they are committed to their company's success;
- by designing processes that get the work done, and are monitored and managed for quality.
- by cementing structures that support new, IC-related behaviours.

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