A KNOWLEDGE-ORIENTED CHANGE OF ORGANISATIONS - MODEL AND PRACTICAL EXAMPLES

Erich Hartlieb[a]
Josef Tuppinger[b]
Reinhard Willfort[c]

[a,b,c]isn – innovation service network, Austria,
[a] erich.hartlieb@isn.at
[b] josef.tuppinger@isn.at
[c] reinhard.willfort@isn.at

Session A-3

Abstract

Organisational learning can be seen in analogy to individual learning. It is based on individual learning processes and means a change of organisational structure and/or culture with the goal to survive in the dynamic environment. Organisational learning could be done systematically if you consider the inclusion of the concerned persons. Managers, in particular, have the potential to change an organisation and therefore have to act in an exemplary way.

Keywords: organisational learning, knowledge management, change management, organisational culture, organisational structure.

A knowledge-oriented Change of Organisations

Model and practical examples

Erich Hartlieb ; Josef Tuppinger; Reinhard Willfort
isn – innovation service network, Austria,
erich.hartlieb@isn.at, josef.tuppinger@isn.at, reinhard.willfort@isn.at

Abstract

Organisational learning can be seen in analogy to individual learning. It is based on individual learning processes and means a change of organisational structure and/or culture with the goal to survive in the dynamic environment. Organisational learning could be done systematically if you consider the inclusion of the concerned persons. Managers, in particular, have the potential to change an organisation and therefore have to act in an exemplary way.

Key words

organisational learning; knowledge management; change management; organisational culture, organisational structure

1. Introduction

Today business is marked by rapid technological developments, intensified terms of competition and self-changing values. Organisations can only remain competitive in this dynamic field if they change. Therefore, organisational learning, knowledge and the systematic interaction of both – known as knowledge management – have become important matters for organisations. During the conversion of these tasks, it can be seen again and again that the existing structures and prevailing organisation cultures, in particular, have an essential influence on the success of these efforts. This article shows that organisational learning can be undertaken in a deliberate way and that people are a model and the leading part for this learning. A case study illustrates and improves the theoretical comments and gives a lot of tips for real use.

2. From Individual to Organisational Learning

A learning model for humans (Fig. 2) shows the learning process as a four-phase cycle, with different types of knowledge created in each phase. This new knowledge then forms the starting point and object of the next learning activity.

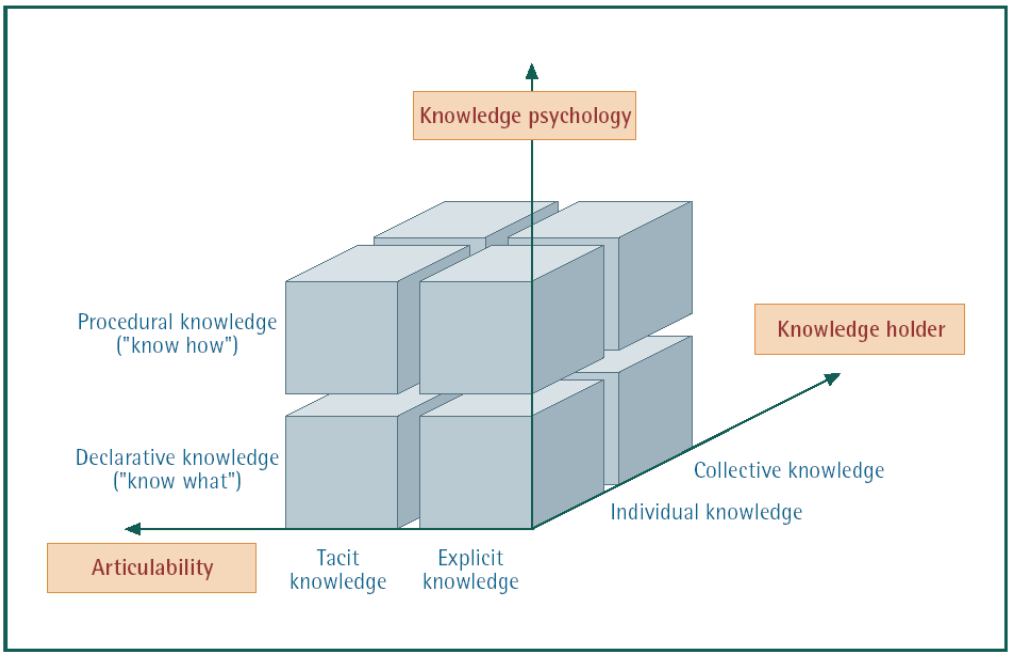

Fig. 1: Types of knowledge

Knowledge psychology differentiates between declarative and procedural knowledge (Fig. 1). Whilst **declarative knowledge** refers to facts (issues, processes, etc.) and objects (persons, things, etc.), **procedural knowledge** concerns the way cognitive processes and actions are performed. Declarative knowledge is also described as knowledge of something (knowing) or "know what". Procedural knowledge is also described as process knowledge or "know-how".

Procedural learning in humans involves the perception of stimuli and the initiation of appropriate behaviour (action). The analysis of prior experiences (contextual placement) and the development of behavioural guidelines (cognitive association) are known as declarative learning. However, this dichotomy should not be misinterpreted: Both levels of learning (and types of knowledge) are in fact activated in, and interact with, the learning process, even if one of them assumes a more prominent role.

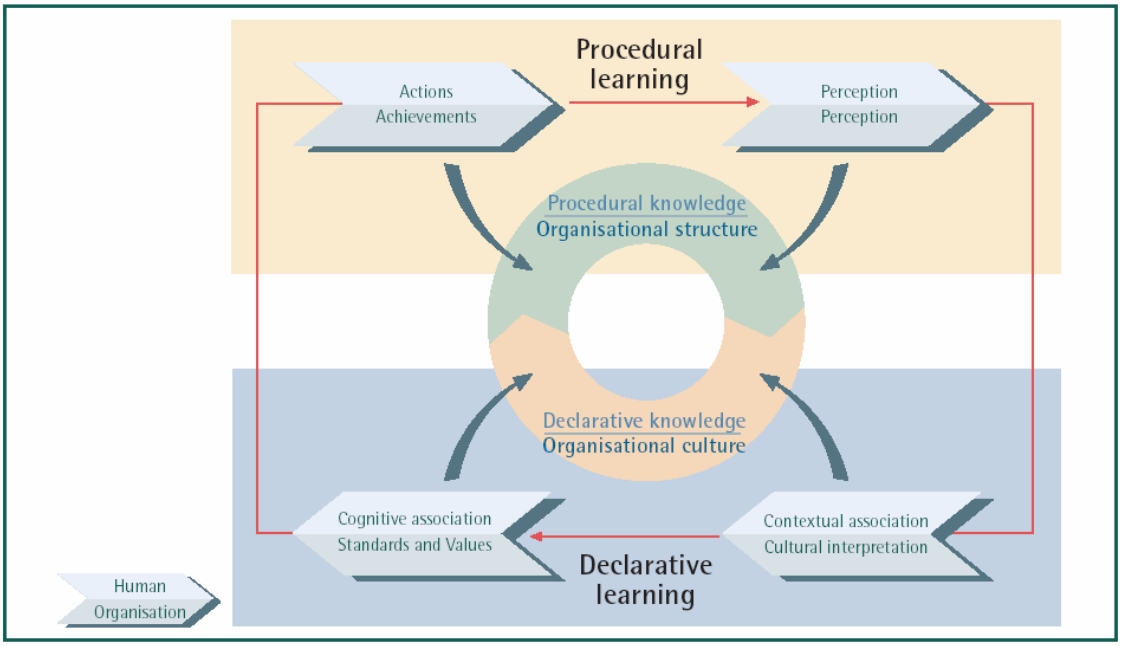

Fig. 2: Human/organisational learning model

A comparison of analogies between humans and organisations (Fig. 3) shows organisational structure as a procedural element and organisational culture as a declarative element in organisations. These analogies are based on the following assumptions:

- People use procedural knowledge (know-how) to interact with their environment through action. In comparison, organisations use appropriate structures (procedures, processes) to generate activities and interact with their environment.
- In humans, declarative knowledge (know-what) is the starting point for procedural knowledge and any subsequent actions. Correspondingly, culture can be described as the declarative knowledge of an organisation, since it provides the meaning and guidelines for behaviour and thus forms the basis of all actions.

Consequently, the organisational learning process follows comparable phases to its human counterpart, whereby in an organisation any changes in structure can be seen as **procedural learning** and changes in culture as **declarative learning**. Although it is possible that one particular learning process will assume a more prominent role, in practice they will always interact.

Individual learning processes form the starting point for organisational learning. It is individual learning that provides the impetus for organisational change. The implementation of any such change also requires individual learning processes, which can involve all members of the organisation or smaller groups, depending on the scope of the actual change.

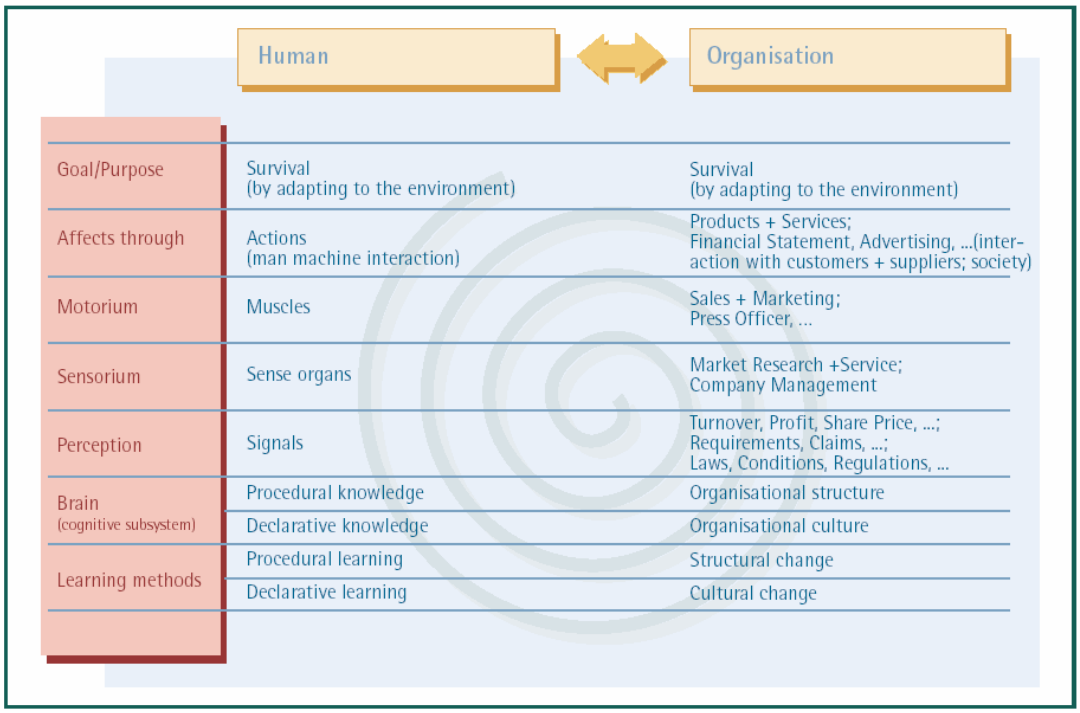

Fig. 3: Comparison/analogy between humans and organisations

3. Organisational Learning – Procedure

A general, three-step (analysis, design and development) sequential model (Fig. 4) can be applied to organisational learning. Once the impetus for organisational learning has been given, i.e. a need for organisational change recognised in reactions from the environment, the analysis phase can begin. In this phase, goals should be defined and the actual situation (structure and/or culture) established and processed.

Any research methods used will depend strongly on the resources available and should consider content, human resources and economic factors. Questionnaires are a quick and easy way of establishing a general picture of the current climate, whilst semi-standardised interviews take a more detailed look at the interviewee's individual situation. Observation methods are used primarily to support and/or verify other research methods.

The next stage in the design process is to define a desired target situation, compare this with the actual situation and derive appropriate interventions from the results of this comparison. An appropriate strategy should now be defined to address these shortfalls. This will depend on the degree of deviation between the target and actual situations and the urgency of any identified issues.

The process then moves into the development stage, where any proposed interventions are implemented, i.e. suitable measures are developed, introduced and evaluated to ascertain how effective they have been for the goals set.

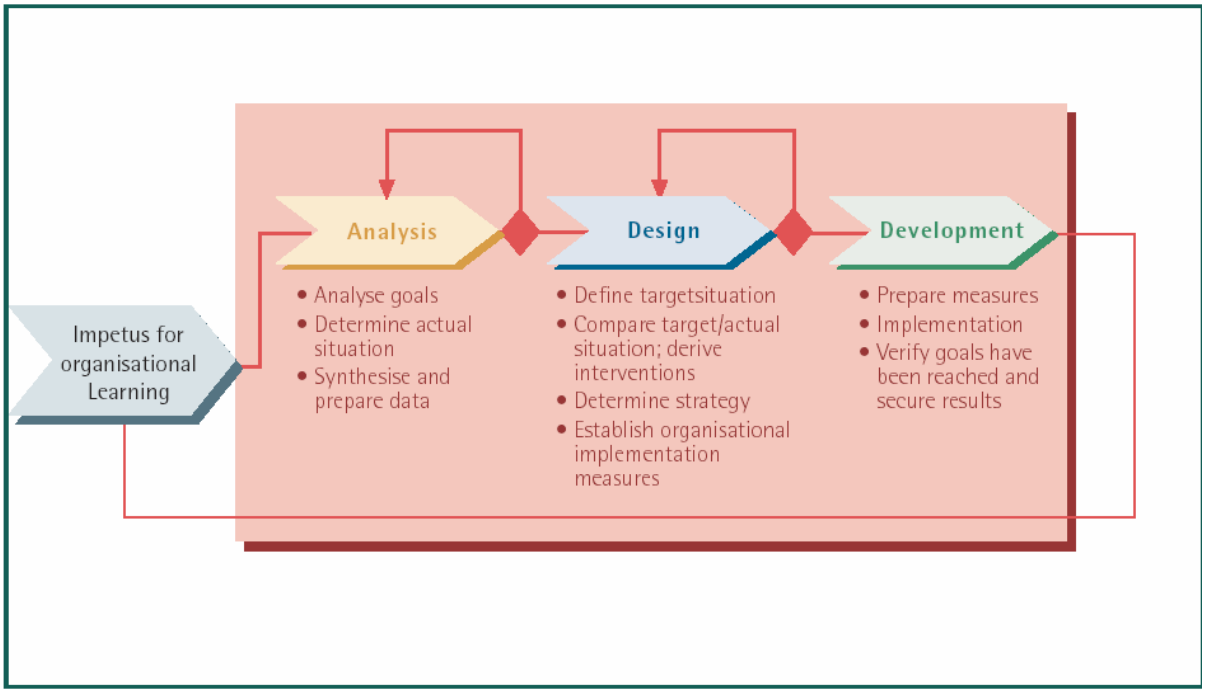

Fig. 4: Towards oganisational learning

The following dimensions and their characteristics can be used as the basis for the analysis and design of the **organisational structure**:

- Specialisation (specialised – generalised)
- Coordination (impersonal – personal)
- Configuration (hierarchical – heterarchical)
- Delegation of decisions (centralised – decentralised)
- Formalisation (bureaucratic – unbureaucratic)

The analysis and design of the **organisational culture** can be based on the basic elements of corporate culture according to Edgar Schein (Fig. 5). These include views on and attitudes to:

- Environment (threat – opportunity)
- Reality (facts – creativity)

- Human nature (independent – dependent)
- Human action (control – trust)
- Interpersonal relationships (competition – cooperation)

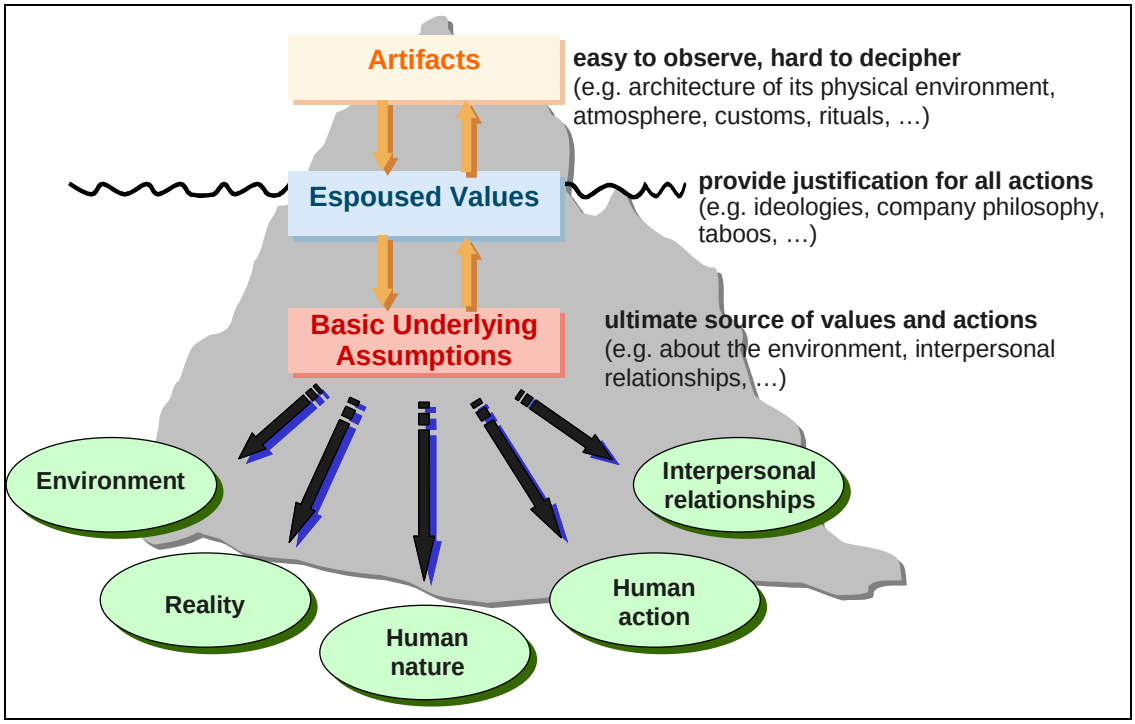

Fig. 5: Basic elements of corporate culture according to E. Schein

Graphical representations are an excellent way of presenting the results of the situational analysis and/or a target/actual comparison (e.g. Fig. 4) since managers often think and act “in numbers” and show greater interest in dealing with any shortfalls presented to them in this form. Due to their more (active) communication and more knowledge, managers were given the role of opinion leaders and upholders of the organisational culture, which is essential for an effective and efficient change in the organization.

4. Case study – automotive industry

This case study describes the application of the model in an enterprise in the automotive industry. The observed organization has worked on the topic of knowledge management for several years. A project team was established to institutionalise this topic in the organisation. The team started some small pilot projects. Their first experiences showed that the members were not very willing to contribute. This condition could be due to several points:

- low acceptance of “foreign” knowledge (the so-called „not invented here“ syndrome)
- lack of consciousness of the importance of the member’s own knowledge for the organisation
- little identification with work and lack of motivation for the realization of ideas
- the necessary technical facilities (I&K technology) were not available and/or used incorrectly

As in many knowledge management projects, some symptoms could be traced back to organisational culture. To ensure that future efforts in the area of knowledge management are more effective, the team first decides to analyse the culture and introduce appropriate measures for a knowledge management-oriented culture. Accordingly, the tasks defined for this project were:

- To describe and evaluate the organisational culture
- To point out problems and weaknesses
- To derive and conceive measures

The superordinated goal for this project was to increase the acceptance for knowledge management and intensify the willingness for cooperation on this topic. The approach used in this project was similar to the general procedural model (Fig. 4).

4.1 Culture Analysis

The partial goals for the analysis step were the description and preparation of the current culture using justifiable resources.

The following methods were used to make a description of the current culture:

- written questioning – questionnaire,
- verbal questioning – interview and

– participating observation

The description of the current culture was undertaken according to a model which is based on basic underlying assumptions (Fig. 5). The **questionnaire** was used due to its advantages (little required time and low costs) and because the team wanted to get a general impression of the mood in the company as quickly as possible. The questionnaires were distributed personally by the heads of the departments, whereby a very good return ratio from approximately 40% could be reached.

Environment

- Does the organisation dominate its environment?
- Is the environment considered a challenge for XY?
- Does everyone know the organisation's goals?
- Are the goals clear, and do they match the organisational environment?

Reality (Truth, Time and Space)

- Are tried and tested solutions preferred to new (creative) ones?
- Will consideration be given to external solutions or only to internal possibilities?
- What is the general approach to time? Is the focus more on the past, the present or the future?
- Is enough time allowed for asking/answering questions?
- Is there sufficient opportunity/space for informal knowledge transfer?

Human nature

- Who makes decisions? How are decisions made?
  Do people make use of any freedom they might have to take decisions?
- How is work/performance checked? (self-assessment, trust, milestones, etc.)
- How does the organisation approach responsibility? Who has responsibility?
  Is this consistent throughout the organisation?

Human action

- Is this focus more on completing tasks (routine processes) or on active learning (knowledge creation)?
- Does the organisation tolerate and how does it react to mistakes?
- Relationship between work and leisure: totally separate or a way of life?

Interpersonal relationships

- Attitude to knowledge sharing: "knowledge is power" vs. cooperative knowledge exchange?
- What is the relationship like between colleagues? How do they communicate with each other?
- How does interdepartmental communication work?

Fig. 6: Interview guidelines for culture survey (excerpt)

The **verbal questioning** took place in the form of half-standardised interviews with 7 executives and another 15 employees (heads of departments and groups as well as other opinion leaders). With the use of half-standardised interviews the team pursued two goals: On the one hand the team wanted to obtain comparative answers, on the other hand it asked specific questions about the individual situation of the interviewee to get more de-

tails. Because of their special position regarding the organisational culture, the executives were asked first. The team wanted to inform about the project and refer it in time. Figure 6 shows an excerpt from the used interview manual for the verbal questioning.

The **participating observation** served particularly for the support and/or verification of the other inquiry methods. Members of the project team participated in meetings and discussions involving the executives and the other leading staff. Beyond that the project team spent a lot of time in the organisation during the project and so they gained a lot of experience with the organisation culture.

4.2 Culture Design

The definition of the target culture and the derivation of measures took place in workshops with executives and other opinion leaders. The following section shows the comparison of nominal and actual culture and the derivation of interventions given on the basis of the dimension “interpersonal relationships” (Fig. 7).

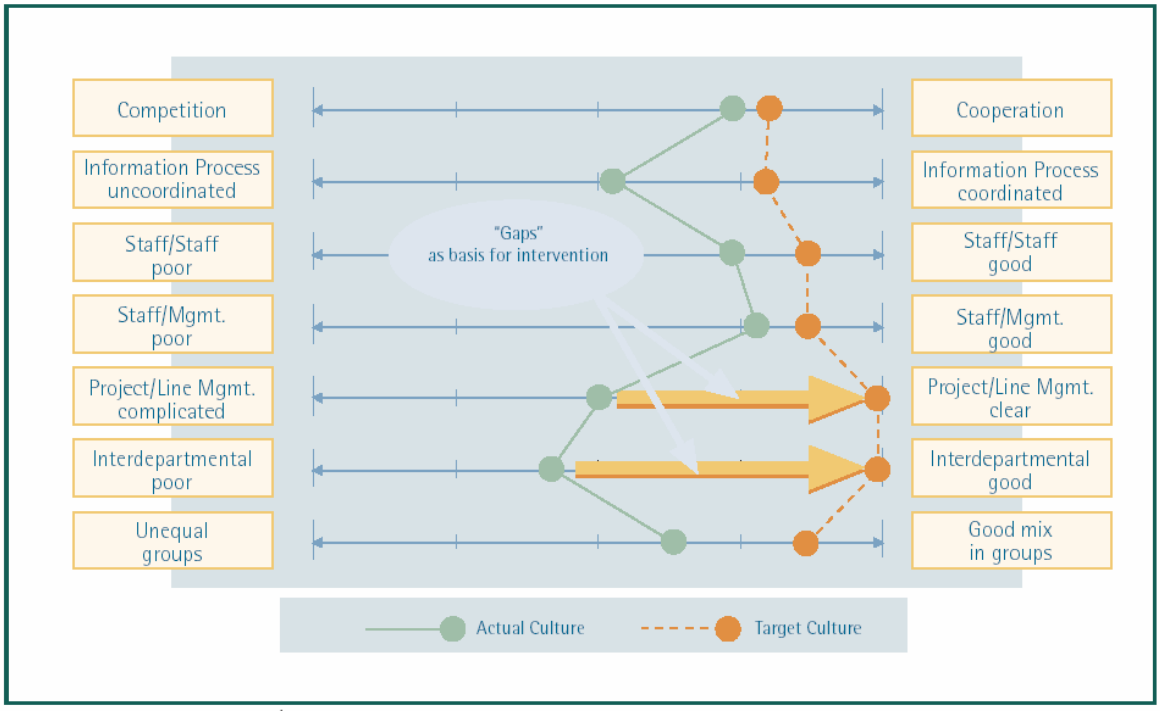

Fig. 7: Example target/actual culture comparison for "interpersonal relationships"

According to the largest identified gaps, measures for all dimensions were derived. As the individual dimensions and/or basic assumptions represent a coherent system, the measures always have an effect on other variables. The extent of this effect could be evaluated

in a simple way to determine the most effective measures. Figure 8 shows an overview of the improvement suggestions and their effect on the individual dimensions.

● Large effect ○ Small effect		Environment	Truth	Time	Space	Human nature	Human action	Interpersonal relationships	Total
Environment	Methods to communicate organisation's goals (e.g. BSC, autonomous working groups)	◕	◑	◔	◔	◕	◑	◑	●●●◑
Time	Time account	○	◔	◑	◔	○	◔	◑	●◕
	Presentations of projects, „knowledge-transfer days"	◑	◕	◑	◑	◔	◑	◕	●●●◕
Space	Social corners	◔	◔	◔	◕	○	◔	◑	●●◔
	Info corners	◑	◑	◑	●	◔	◑	◕	●●●●
	Cafeteria	◔	◔	◔	◑	○	◕	◕	●●◕
Human nature	Incentive systems	◔	○	◑	◔	◕	◕	◑	●●●
Human action	Office outings, company events	◔	◑	◑	◑	◔	◑	◑	●●●
Interpersonal relationships	Daily intranet news	◔	◔	◔	◔	○	◔	◑	●◕
	Discussion platforms	◑	◑	◑	◑	◑	◔	◕	●●●◑
	Incentive tours	○	◑	◔	◑	◔	◑	◑	●●◑
	Project platforms	◑	◑	◕	◔	◑	◔	◑	●●●◔
	Coaching for young fellows	◑	◑	◔	◑	◕	◑	◑	●●●◑
	T-shaped manager	◑	◕	◑	◑	◑	◔	◑	●●●◑

Fig. 8: Overview and scoring of measures

A detailed representation of all improvement suggestions cannot be given here and so only some interesting examples are presented.

Info corners should be established as a central meeting place for the employees. Apart from general news and facts about the organisation, the place could also be used as a central location for idea management. This means that suggestions can be delivered and inspected there and/or the best ideas presented there to encourage the creativity of the employees. Altogether these info corners represent a formal and informal communication centre which can be established and operated with little expense. The other spatial measures (social corners within the open-plan offices, snack corners for non-smokers, cafeterias) aim at fostering informal communication.

A common communication basis for the heads of the departments can be guaranteed by implementing a kind of **incentive tour** for executives (e.g. one weekend per year) which

focuses on the maintenance and development of social and interpersonal relationships. This can be carried top down and department-spreading communication would improve.

A further contribution would be the installation of regular **discussion platforms** (e.g. monthly) between groups and/or departments. These should not only be established for units which co-operate closely but also for others which cooperate less often. The goal of these moderated discussions is the elimination of interface problems and creation of a structure of a mutual understanding.

Within competent departments there should be time for the **presentation of project** experiences. These presentations should not focus on the project itself, but the positive and negative experiences made during the course of the project (e.g. presentation of the three largest errors and the three best ideas).

The execution of **knowledge transfer days** at which current and final projects from all fields are presented has several interesting aspects. On the one hand, the different units are informed about which projects are running in other fields; on the other hand, the presented contents can lead to new ideas and/or to new knowledge in another context.

A **coaching for young** employees increases their ability to act quickly. This requires the training of coaches, but they can be seen as the future generation of executives.

This can lead to the development of so-called “human portals” (= employees who have a very close-meshed relations net in the organisation and possess a wealth of experience) or T-shaped managers (= employees who give assistance crosswise over special fields whilst continuing to work in their own area at the same time).

Altogether some interesting measures were suggested which were put into action in the development step.

4.3 Culture development

After a selection of the most promising measures, the competencies for the execution of the individual measures were defined and the strategy of change (evolutionary vs. revolutionary) was fixed. In the last step – culture development – the external project workers departed gradually so that the change of culture is now carried fully and completely by the employees and the leading staff.

An effective examination of the achievement of objectives would require a second evaluation of the organisational culture and/or individual dimensions to confirm the success of the interventions in this way. In order to secure the results of this cultural learning, it needs

to be carried out continuously and not regarded as a unique act. In this context we speak of a culture-conscious management and mean that the values and standards of an organisation must be maintained and developed consciously.

References:

Hartlieb, E.; Tuppinger, J.; Willfort, R. u.a.: Praxishandbuch Wissensmanagement, Graz 2000

Hartlieb, E.; Tuppinger, J.; Willfort, R. u.a.: Praxishandbuch Wissensmanagement Teil 2, Graz 2002

Hartlieb, E.; Tuppinger, J.; Willfort, R. u.a.: An Illustrated Guide to Knowledge Management, Graz 2003

Hartlieb, E.: Wissenslogistik – Effektives und effizientes Management von Wissensressourcen, Wiesbaden 2002

Schein, Edgar H. (1997): Organizational culture and leadership. 2nd edn; San Francisco

Tuppinger, J.: Wissensorientierter Organisationswandel – Ein Ansatz zur Veränderung von Struktur und Kultur, Wiesbaden 2003

Willfort, R.: Wissensmanagement mit Innovationsdienstleistungen – Externe Leistungspotenziale zur Stärkung der Wissensbasis, Wiesbaden 2001

About the authors:

Dipl.-Ing. Dr.techn. **Erich Hartlieb**; 1969
Studies in Mechanical and Industrial Engineering at the University of Technology in Graz; during this time, work as a construction designer at Binder&Co AG, doctoral thesis on knowledge logistics in operational knowledge management; Assistant Professor at the University of Technology in Graz, Department of Industrial Engineering and Innovation Research until 08/2001; project manager in numerous industrial projects for the knowledge-oriented organisation of innovation processes and in strategic innovation management, managing director of the Austrian Association of Business Engineers from 1997 to 1999, joint founder of the Knowledge Management Association Graz, visiting lecturer at the Danube University of Krems and Technical College Joanneum on the subject of information and knowledge management. As of 2001 managing director of the isn - innovation service network; numerous publications and lectures on knowledge and innovation management.

Dipl.-Ing. Dr.techn. **Josef Tuppinger**; 1970
Final examination at the Graduate School for Mechanical Engineering in Klagenfurt in 1989; completed his studies in the field of Mechanical and Industrial Engineering at the University of Technology in Graz in 1998; 1998 to 1999 trainee with Semperit technical products GmbH; 1999 to 2003 Assistant Professor at the Universtity of Technology Graz, Department of Industrial Engineering and Innovation Research (doctoral thesis in the field of knowledge management); senior researcher at the competence centre “The virtual vehicle research association” in the field of “knowledge management in virtual organisations”; employed at the isn – innovation service network since 01/2004.

Dipl.-Ing. Dr.techn. **Reinhard Willfort**; 1966
Educated as a „communication engineer“ by Siemens Austria in Fohnsdorf.
Beside following his profession he additionally attended the „Higher technical educational establishment“ in Graz Gösting and afterwards studied Telematics and Economy at the University of Technology Graz. After finishing his studies he worked as a quality manager at Spengle, a company specialized in “high-performance plastics”.
In 1997 he took up the career of an Assistant professor at the Institute of Industrial Economics and Management at the Technical University Graz. In 2000 he took his doctor’s degree in the special fields of “knowledge management” and “innovation management”.
Dr. Willfort is co-founder of the “knowledge management forum” in Austria and has been managing director of isn - innovation service network since 2001; numerous publications and lectures on knowledge and innovation management.