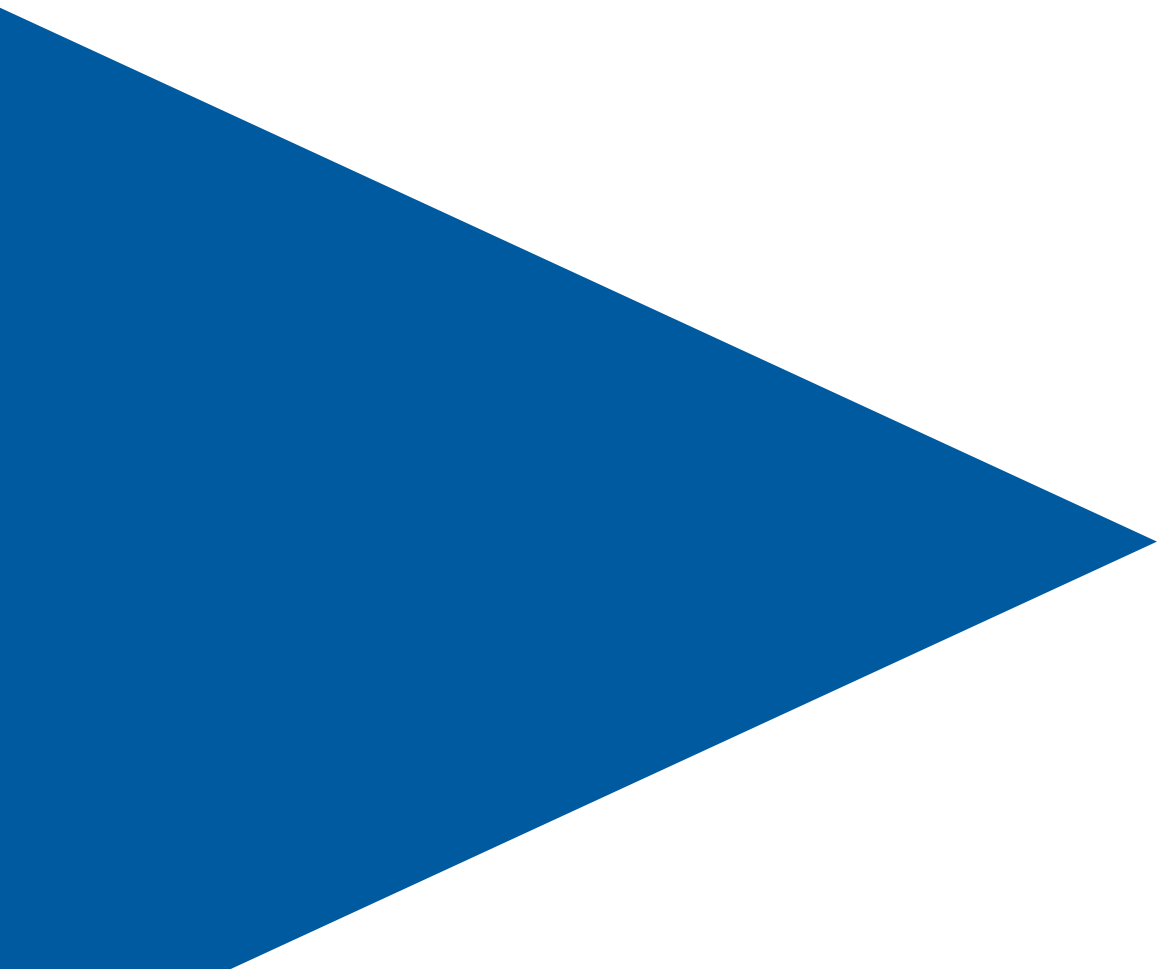
THE HIDDEN TREASURE OF KNOWLEDGE

DISCOVER THE KNOWLEDGE IN YOUR COMPANY

knowME



knowME

THE HIDDEN TREASURE OF KNOWLEDGE

DISCOVER THE KNOWLEDGE IN YOUR COMPANY

IMPRESS

The hidden treasure of knowledge
Discover the knowledge
in your company

1. Edition 2013

Fachhochschule des Mittelstandes (FHM)
Ravensberger Straße 10G
33602 Bielefeld, Germany

EDITORIAL
Mag. Grit Ackermann (Chamber of Commerce and Industry Slovenia)
Dipl.-Kffr. Marianna Gevorski (Fachhochschule des Mittelstands, Bielefeld)
Prof. Bernd Seel (Fachhochschule des Mittelstands, Bielefeld)
Mag. Olga Zubikova (Fachhochschule des Mittelstands, Bielefeld)

LAYOUT
Michael Schiblon (untermbaum, Bielefeld)

www.fhm-bielefeld.de

DISCLAIMER
This book is published in the framework of the project „Skills and Knowledge Management in the Metal and Electro Industry", which is funded by the European Commission.

CONTENTS

INTRODUCTION

Knowledge plays a very important part in today's society. Effective utilization of knowledge "resources" is important; not only for large corporations, but for small and mid-sized businesses as well. Thus, the goal-oriented use and manipulation of knowledge constitutes a competitive advantage over the competition.

This handbook deals with essential aspects, which are meant to answer the following questions:

- What is knowledge management and how can the company profit from it?
- Which requirements must be fulfilled in order to successfully implement knowledge management in the company?
- How can knowledge management be implemented in the company?
- What role do sectoral partners play?

This handbook is meant to assist decision makers in attaining a short overview of "knowledge management", and to provide them with information pertaining to the reasons why the implementation of such a system makes sense for small to mid-sized companies.

WHAT IS KNOWLEDGE MANAGEMENT AND HOW CAN THE COMPANY PROFIT FROM IT?

Due to technological development, new market players such as China and India, as well as through the international division of labor, the global economy is decidedly different than it was 20 years ago. The pace is faster, competition more intense and tougher. Standardized mass-production is relocated to wherever production costs are the lowest. Conversely, activities with high added value are carried out where sufficient qualified experts are available. Thanks to modern communications technology, knowledge has become "common property". It is simultaneously available in many parts of the world. A country's capacity for innovation, the speed at which they can transform knowledge into products and processes suited to the market will always be bound to the location. Qualified employee therefore, are the key factor for a country's (or a company's)competitive capacity. Well qualified employee are especially significant for mid-sized companies. They know best which products are in demand on the globalized market and how to advance product and process innovations. This applies to the local market, but even more so for foreign markets at hand. [1]

To deal with the increasing pressure of competition, and to offer innovative products and services more quickly, more flexibly, and more efficiently, every company resource (to which knowledge most certainly belongs) must be developed effectively; and this includes the resource knowledge to the same extent. This refers not only to knowledge which has been documented, but also which is to be found in the minds of the employee. This is where the company's ability to manage and organize the available knowledge can contribute to its success.

GOOD TO KNOW

Knowledge denotes the entirety of expertise and skills that humans apply to the solution of problems.

(Probst et al. 2006, S.22).

The successes that can be attained in this manner are impressive and reach nearly every area of the company, from improvement of business processes to the development of new products and services. Knowledge management can also be effectively used to solve problems such as production quality problems, that is, the threat of losing knowledge gained from experience through employee loss, low innovation capacity, insufficient development of new market access, etc.

Knowledge of the external environment such as competitors, customers, and markets is increasingly important for small to mid-sized companies according to the ProWis-Project study #2 done by the Fraunhofer Institute (2006).

COMPETITORS Knowledge relating to the competition's sales folder and area of operations, their strategies and objectives; market position of the competitors; their strengths and weaknesses – delivery capacity, client base, cost structure, revenue.

CUSTOMERS Knowledge concerning various customer groups: this covers on the one hand the financial side, such as payment morale, credit-worthiness, economic status in general, the market environment, and the competitive situation; and on the other hand, general outline data such as strategic customer objectives, structures, and the relevant people.

GOOD TO KNOW

EXPLICIT KNOWLEDGE **Is outside the minds of employees / people and can be stored in media devices (operating figures, regulations, processes, etc.). Data/ knowledge can be processed, transmitted and stored.**

IMPLICIT KNOWLEDGE **is in the minds of employees/people and is obtained through experience, evaluation patterns, subjective insights and intuition. Implicit knowledge is deeply rooted in the actions and experiences of the individuals, as well as in the ideals, values and emotions. This type of knowledge is hard to formalize, communicate, and distribute.**

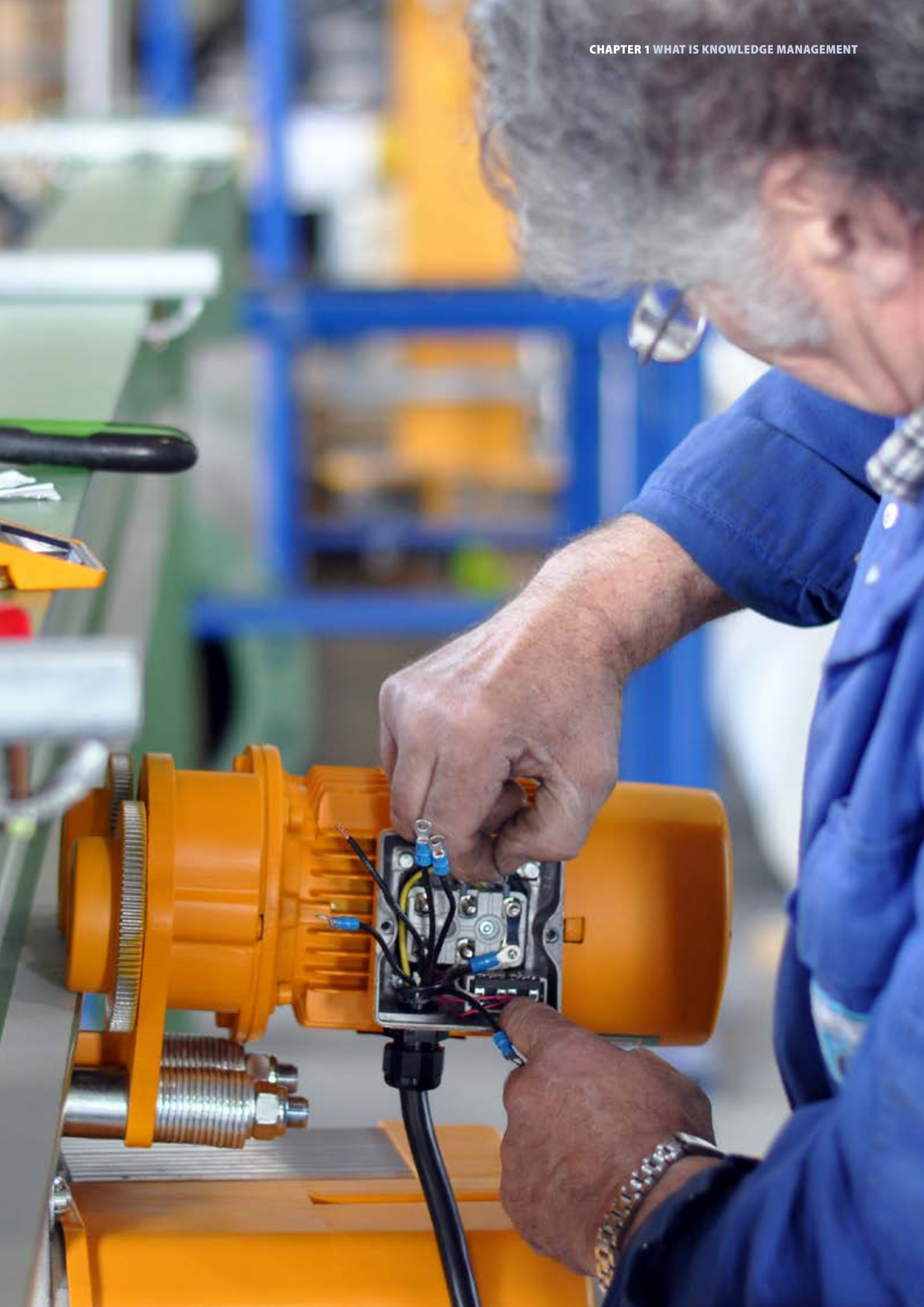
PRODUCTS Knowledge of products includes expertise and information concerning the product and services portfolio of the company or organization, as well as knowledge of their technical properties and utility for the customer, or in solving the customers' problems. Knowledge of the prices, corresponding production and delivery times of particular products or services, as well as their strengths and weaknesses also belong under the heading of product knowledge. Knowledge of the facilities and procedures employed take on an essential role if one intends to examine the area of product development or production.

MARKETS In this area, key markets, trends, and market shares, as well as the access barriers to new markets come to the fore.

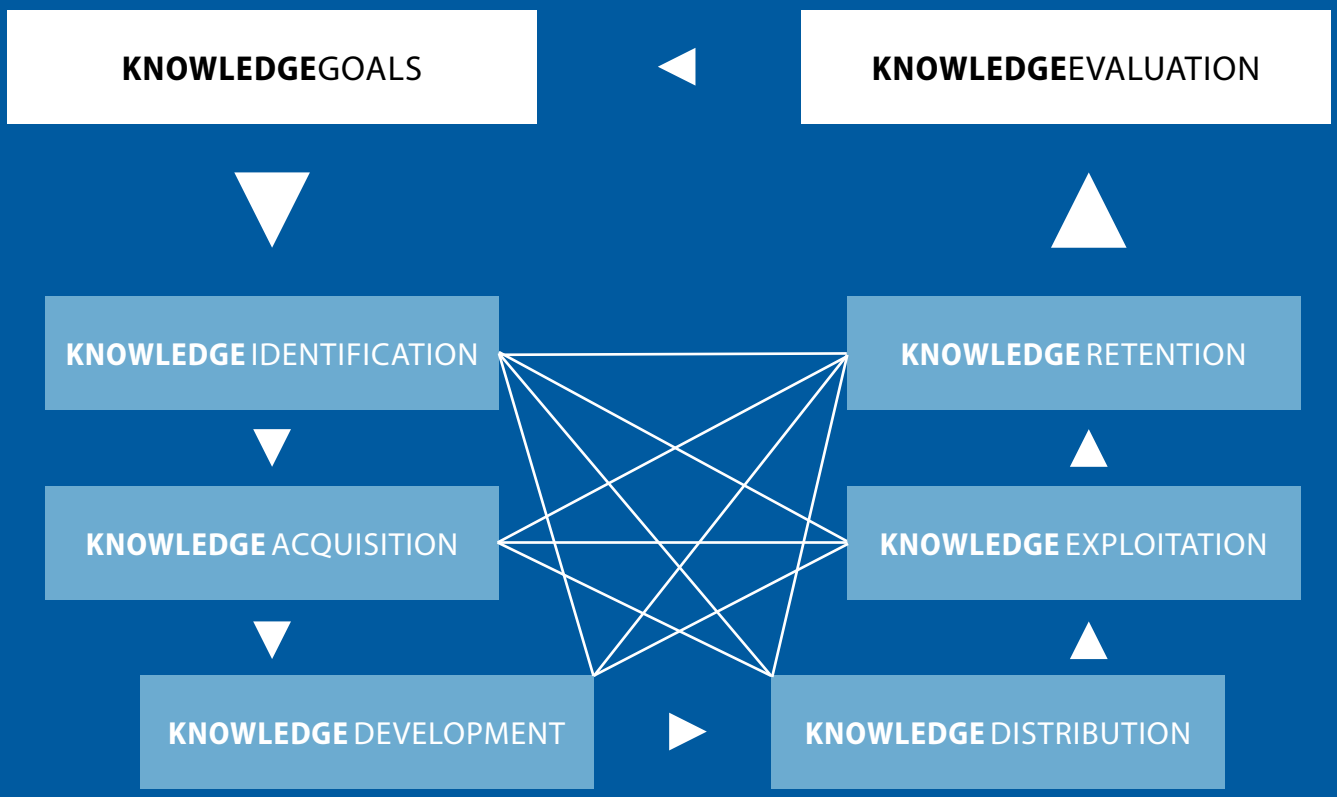
EXPERTISE AND METHOD KNOWLEDGE Is knowledge used in solving specific problems of day to day work or tasks. Thereby, a content assessment of the work tasks is made possible. Special areas should be covered, i.e. specific technologies, methods, techniques and procedures, and their ability to be usefully implemented in the appropriate situations.

This applies especially for small to mid-sized companies: The use of knowledge management is always comprehensive. The introduced measures and methods should contribute to solving concrete problems, and thus increase the competitiveness. Knowledge management is therefore never a goal in itself, but always only a means to an end.

> BY HEARING THE NOISES OF THE MACHINE I CAN IMMEDIATELY DETERMINE WHETHER EVERYTHING IS RUNNING SMOOTHLY OR IF I NEED TO INTERFERE. WITH TIME, YOU GET A FEELING FOR IT. METAL WORKER



KNOWLEDGE MANAGEMENT COMPONENTS



REFERENCE Probst et al. 2003, S.32

STRATEGIC KNOWLEDGE COMPONENTS

OPERATIVE KNOWLEDGE COMPONENTS

KNOWLEDGE MANAGEMENT PROCESSES
MEASURES AND TOOLS

If one assumes that knowledge is a resource in itself, it follows that a management system for planning, directing, organizing, and controlling must be created and implemented. [2] Probst's [3] model is depicted in order to clearly illustrate such a knowledge management system on the left. This consists of eight essential interacting components:

Knowledge management is to be understood as all personnel, technical, cultural and organizational activities which a company implements in order to enable efficient utilization of knowledge. Knowledge management includes the design, direction, and development of knowledge and serves primarily to enable the attainment of company objectives [4]. Thus, the primary task of knowledge management is developing and implementing those tools, filters and mechanisms which make working with the knowledge relevant to the company possible.

The following will give an overview of the individual components of knowledge management which deal with the main issues and serve to shed light on concrete measures and tools.

KNOWLEDGE OBJECTIVES

The first step is determining the knowledge objectives. Here it is important to decide which knowledge is important for the successful development of the company. In which direction must the company expand its know-how in order to remain competitive or even get a head start on the competition? Knowledge objectives are determined by management, and orientate themselves to the relevant company objectives.

KNOWLEDGE IDENTIFICATION

The first step here is to ascertain which knowledge is already present in the company and where or with whom this is and following that, which knowledge gaps exist.

Task	Measures / Tools
What does my company know, which knowledge is there in the documents, databases or brains of the employee? **Which knowledge is needed?**	• Conversations with employee • Job description • Expert lists and networks • Competency atlas • Inter-department events and information exchange • Employee opinions education/training conversations

KNOWLEDGE ACQUISITION

Once an overview of the stock of knowledge has been attained, it is to be used to determine which areas require ***additional external knowledge***.

Task	Measures / Tools
Which measures are appropriate for effectively reducing deficits in available knowledge?	• External education/training programs • Cooperation with experts (Chambers, professional associations, colleges, research projects, etc.) • External IT experts • Collaboration with key partners • Collaboration with expert manufacturers / providers • New recruitments • Customer surveys • Granting funds for bachelor - / master thesis • Conferences, trade events

KNOWLEDGE DEVELOPMENT

Contrary to knowledge acquisition, the objective of knowledge development is the creation and further development of the ***internal knowledge base***- "organizational learning". This can be created within the company or developed internally using outside influences.

Task	Measures / Tools
How can the available know-how or knowledge be developed further: From whom/where can one acquire new impulses? Which target groups can be included in this process (customers, suppliers, consultants, etc.)	• Taking suggestions and wishes from discussions with customers • Mentoring und Coaching • Company networks • In-house trainings • Team work (inter-department) • E-Learning platforms • Quality circles

KNOWLEDGE DISTRIBUTION

The central task of knowledge distribution is to direct and distribute streams of knowledge so that employee receive the right knowledge in the appropriate form in order to make use of it.

Crucial for the success of this step is an open knowledge culture which is deeply rooted and fully lived in the company. The creation or existence of a foundation of trust promotes readiness to distribute knowledge.

Task	Measures / Tools
Which are the appropriate measures and information /communication /documentation systems which distribute knowledge to the appropriate users /departments? **Are there differences between departments?**	• Regular team meetings • Intranet • Information boards / notice boards / newsletter • Product information systems • Absence management • Workshops for colleagues by internal experts s • Exchange programs between departments • Documentation in accordance with the quality management system • Knowledge sharing is deeply rooted in the company's values and culture • E-learning platform • Quality circle

KNOWLEDGE EXPLOITATION

Making knowledge available is not sufficient to ensure utilization of knowledge. For this reason the primary task here is to motivate employee to do this by including them and their tools and concepts into the development of knowledge management at an early stage by considering their suggestions and by implementing adequate communication measures.

Task	Measures / Tools
What possibilities, particularly regarding inter-employee communication, can be created in order to force/implement knowledge utilization? **How can employee be included in knowledge management at an early stage?**	• Informal networks • Ideas management Database • Wikis • Quality management

KNOWLEDGE RETENTION

Knowledge retention is intended to secure knowledge, particularly in relation to retirement of employees, in order to ensure that accumulated knowledge is not lost. The focus here is on the development of strategies for where and how knowledge can be stored and renewed.

Task	Measures / Tools
Which strategies lead to success? **What comes to the fore in regards of maintenance of knowledge: documentation of knowledge of personal handover?** **How can we enable this?** **What conditions must be created in order to promote the readiness to share knowledge?**	• Handover: tandem process • Employee commitment; low staff turnover • Project documentation • Long notice periods • Team work • Fair severance culture • Informal networks • Ideas management Database • Wikis • Quality management

KNOWLEDGE EVALUATION

The final step is an evaluation of the steps and measures that have been implemented. For this purpose, specific evaluation criteria must be determined. The criteria are used as basis for the evaluation and shall provide information on whether or not the measures are expedient and to what extent.

Task	Measures / Tools
Were the intended objectives reached? **Was the right direction chosen?** **Was knowledge management worth it?** **What has to be improved?**	• Observation • Employees' survey • Customers' survey • Balanced scorecard

WHAT BENEFIT DO SMALL AND MID-SIZED COMPANIES DERIVE FROMT IT?

Knowledge often forms the foundation for innovation and the company's innovation capacity is, in turn, decisive in determining how competitive it can be. For many companies, particularly large corporations, this was the decisive factor in institutionalizing and systematizing knowledge "resources". For many small to mid-sized companies however, knowledge management is not yet a matter of course.

Small to mid-sized company's knowledge management structures, as well as their plans of action differ from those of large corporations. Studies conducted in Germany such as „Wissen als Wettbewerbsvorteil in kleinen und mittelständischen Unternehmen" (2006) (Knowledge as competitive advantage in small and mid-sized companies) prove that the branch that they belong to is less relevant to the configuration of knowledge management than their size. An additional influential factor is the company's strategic positioning.

With regard to knowledge management in many small to mid-sized companies the following particular characteristics can be found [5]:

- The knowledge base is almost exclusively in the possession of a few employees [6]
- The knowledge is communicated as little as possible
- The knowledge is, in many cases, indescribable and becomes visible only when an operation is performed
- In most cases, a department which analyses the operational procedures of the company does not exist
  - the evaluation is undertaken by the owner or general manager

  ⚠ ***DANGER*** of knowledge loss through retirement of employees in possession of the knowledge (knowledge bearer).

  ⚠ ***DANGER*** that the knowledge bearer is not conscious of the importance of the information and knowledge that he has.

On the contrary there are advantages which the structures of small and mid-sized companies present, and which can provide a head start in exploiting weak market signals:

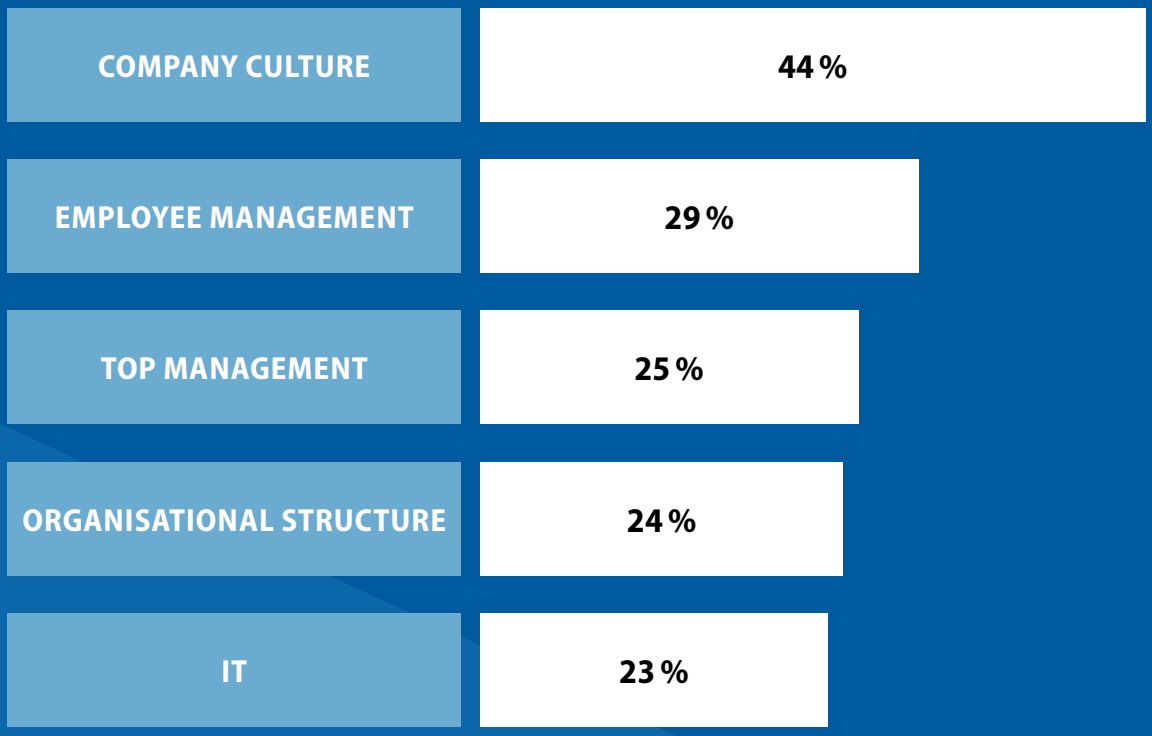
- Better recognition of market opportunities as the knowledge is concentrated in a few employees.
- Short decision-making process
- More flexibility
- Lower degree of division of labour allowing one employee to fulfil various functions which makes him a more varied knowledge bearer
- Closer social ties

Knowledge management tools used in large corporations such as Yellow Pages, etc. are largely superfluous in small to mid-sized companies. The social ties in small to mid-sized companies are relatively close so that employee competencies are sufficiently familiar to all.

REQUIREMENTS FOR SUCCESSFUL IMPLEMENTATION OF KNOWLEDGE MANAGEMENT

In theory and in practice we can identify several areas which are essential to the success of knowledge management. Taking a look at the illustration, it can be noted that the company's corporate culture is mainly responsible for success. The company's culture as well as information technologies are briefly discussed below.

SUCCESS FACTORS OF KNOWLEDGE MANAGEMENT:



COMPANY'S PERSPECTIVE
INFORMATION IN %

REFERENCE A.Kleinfeld 7

CRITICAL AREAS FOR SUCCESS
CORPORATE CULTURE

In order to introduce knowledge management into a company, preparations should be made to create favourable conditions and an appropriate framework. A key success factor is a corporate culture in which values, norms and attitudes support organisational learning and the transfer of knowledge, and for these to be promoted and insisted upon. Corporate culture is regarded as a normative behaviour by the company's management [8]. "Corporate culture is externally visible especially in the behaviour of company members (e.g. dress code), in their relation to the other employees (e.g. readiness to help others) Behaviour or conversation topics alone don't build a corporate culture. A corporate culture is based rather on common values (tolerance, sport patterns, etc.) shared by the majority of the company members. The special culture of a company (…) is the result of the historical development (life cycle) of the company. The corporate culture, therefore, has a strong emotional component and cannot be easily enacted by the management. It is rather, developed more implicitly and informally over time. [9]

Before knowledge management is implemented, it is necessary to establish whether the company is culturally determined and if its current characteristics even fit the concept. In the case of limited communication or the use of knowledge as a power resource, knowledge management cannot be implemented successfully.

For the development of knowledge management in a company, the following cultural orientations seem to be quite central: PROACTIVITY, OPENESS, TRUST, READINESS TO LEARN AND CONSTRUCTIVE USE OF POWER.

KNOWLEDGE MANAGEMENT ALSO REQUIRES THE PROMOTION OF COMMUNICATION AND COOPERATION.

The opportunities for the design of knowledge cultures in mid-sized companies are often, due to their distinctive corporate culture, much more successful than in a "large company". This is often seen in the organization style (e.g. abandonment of status symbols and parking hierarchies) or simply in the lived corporate culture, which is characterized by trust, respect, openness, honesty, recognition, etc. These values are a part of the performance evaluation.

The same applies to practical management style. Managers must set an example in knowledge transfer since every behaviour carries a symbolic meaning. The same applies to practical management style. Managers must set an example in knowledge transfer since every behaviour carries a symbolic meaning, also or especially the acceptance of their own knowledge deficits. A knowledge-based company management is, among other things, an essential condition for securing innovation and competitiveness.

A certain change in the company's way of thinking and working, as well as in corporate culture is often required to enable a successful introduction of knowledge management concepts. Employees must be introduced, guided and supported through it.

Knowledge, and its handling, are central to a successfully and strategically managed company and thus a starting point for successful management.

GOOD TO KNOW

CORPORATE CULTURE
Universe of shared values, norms and attitudes that shape the decisions, actions and behaviour of the organisation members.

These can be, for example, fairness, customer orientation, partnership, "going it alone" or team spirit. Corporate culture shapes the behaviour of employees and therefore influences the image of the company as a whole.

CRITICAL AREAS FOR SUCCESS
INFORMATION TECHNOLOGY

In addition to corporate culture, information technology (IT) also plays a key role in knowledge management. It becomes more important the more the company deals with explicit knowledge (e.g. data, codes, documents, etc.).

To a great extent the increased possibilities of knowledge transfer are attributed to the development of information technologies. Through the use of IT, company members are provided with important knowledge and information assets that can be applied to problem solving. A technical platform can be installed in the company, which can be used for the transfer of knowledge.

The technical infrastructure can be further differentiated into three distinct system classes [10]:

COMMUNICATION SYSTEMS are used for the communication between employees. E-mail, chat, groupware, discussion forums, or video conferences are examples of communication systems.

STORAGE SYSTEMS are used for the storage / archiving of knowledge. This can be variably structured and systemised:

- Document management systems: are used, for example, for the storage of documents / documentation and follow a defined pattern.
- Knowledge data bases can contain ideas, solutions to problems, articles, processes, white papers, user manuals, and the quality management manual for authorised employee. These should have a structured classification, content formatting and a user-friendly search function. In general, a knowledge data base describes a part of an expert's system, which contains facts and rules needed to solve company problems.
- Experience data bases serve an organisation's administration, analysis, processing and dissemination of experiences and results.
- Skills data bases gather data/information about work-related skills/abilities of employees and eventual partners. They can be equipped with search functions;
- Content management systems are used for the creation, processing and organization of contents.

IDENTIFICATION SYSTEMS serve the discovery of knowledge. For identification systems, it does not matter where the knowledge is stored; this turns employees, for example, into direct knowledge sources. The central functions of identification systems are the creation, finding, indexing, and visualization of knowledge. Knowledge portals, search engines, knowledge maps, data mining, or "yellow pages" (directories of employees' profiles) of employees are examples of identification systems.

Information technology primarily serves as support for knowledge distribution and storage, but it can`t stimulate knowledge exploitation and creation. For this, it is necessary to create appropriate cultural and organisational conditions.

In order to handle knowledge and utilise information technology successfully, there are several rules and limits that must be respected. Information technology "offers" an infrastructure for the exchange of knowledge and information relevant to knowledge. Without information technology infrastructure, the comprehensive transfer of knowledge in a large global company is unthinkable, but in the end it is the valid values, norms, and behaviour of company culture which are critical to the success or failure of the transfer of knowledge.

One important way information technology contributes to knowledge management is by extending the range and speed of the transfer of knowledge. It enables individual and collective knowledge to be identified, structured and then utilized worldwide by members of the organization and customers.

It is important to maintain an expedient structure, comfortable search mechanisms, appropriate language and form of expression as well as the constant maintenance and updating of the database.

HOW CAN KNOWLEDGE MANAGEMENT BE IMPLEMENTED IN A COMPANY?

Due to the variety of approaches one cannot assume that there is an ideal knowledge management concept which can be implemented in any organization with the same degree of success. For this reason no universally valid actions can be suggested. Every organization which plans to develop a knowledge management concept must orient itself to the conditions, objectives and strategic position of the company. Knowledge management must relate to the concrete needs of the company and to its existing organizational framework.

1 **ASSESSMENT OF THE INITIAL SITUATION**
2 **DEVELOPMENT OF A KNOWLEDGE MANAGEMENT CONCEPT**
3 **IMPLEMENTATION OF THE KNOWLEDGE MANAGEMENT PLAN**
4 **EVALUATION OF THE KNOWLEDGE MANAGEMENT PLAN**

GENERAL APPROACH

STEP 1

ASSESSMENT OF THE INITIAL SITUATION

Firstly, an analysis of the current situation should be undertaken in order to examine the business and work processes in terms of knowledge utilization, application, development, etc. For this purpose, the following questions can be useful:

1. What knowledge is used now and can be used in the future in which areas?
2. Where is new and relevant knowledge developed?
3. In what form is knowledge stored/secured/discarded? Technology application?
4. What tasks are done by whom and with what results?

It is very important to involve employees in the ascertainment of the necessities and analysis of the current state of affairs, since the knowledge gaps can be perceived differently by them and they can provide valuable practical improvement ideas.

The results obtained are to be documented and evaluated.

STEP 2

DEVELOPMENT OF A KNOWLEDGE MANAGEMENT CONCEPT

Based on the analysis of the current state, solution concepts and knowledge management ideas are to be found and the introduction of the measures is to be planned. At this point it is important to pay attention to the adjustment and development of the plan, which is tailor-made for the organisation. Here, opportunities for the development of corporate culture are to be considered. The following questions can be useful in developing and implementing the appropriate ideas and measures:

1. What measures, instruments and mechanisms can be implemented in order to attain the missing knowledge of a suitable quality?
2. How can it be guaranteed that the users/employees have access to the relevant knowledge?

STEP 3

IMPLEMENTATION OF THE KNOWLEDGE MANAGEMENT PLAN

In the implementation phase, several aspects can be discussed, which will help with the introduction of the knowledge management plan.
The following guidelines can be useful:

- Organisational arrangement
  ... Organisational details must be specified
  ... Responsibilities and tasks are to be defined
  ... Organisational rules for dealing with knowledge management solutions have to be agreed upon

- Employee motivation
  ... Employees must be confident in knowledge management and motivated to participate
  ... Employee involvement at an early stage
  ... Possible realisation of trainings, information sessions, etc.

- Strong technical system:
  ... If the information management plan includes the use of information technologies, it is important to ensure that the technical system is functional and stable.
  ... The transmission and collection of data must work

- Further measures
  ... Dissemination of positive results within the company with the development of appropriate measures to ensure this;
  ... Commitment of company directors to the knowledge management plan
  ... Establishment of an advisory body for questions related to knowledge management

STEP 4

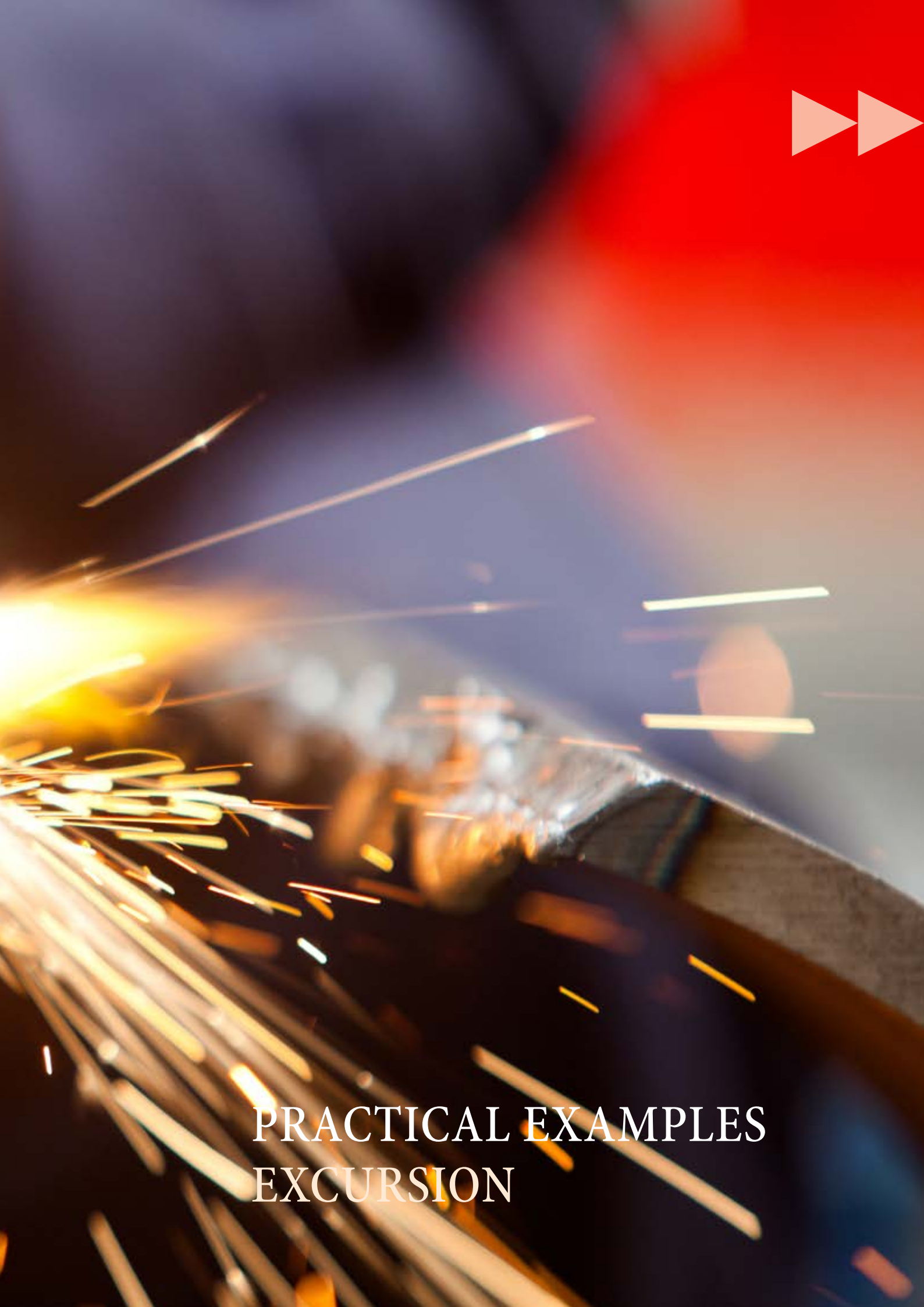
EVALUATION OF THE KNOWLEDGE MANAGEMENT PLAN

After the implementation of the first steps, the evaluation of the knowledge management plan and of its measures can begin. It is necessary to determine at an early stage whether and to what extent the plan is successful. This includes considering whether there are difficulties in the implementation that can jeopardise the process and introduction.

Therefore, at the beginning of the knowledge management introduction process, it would be ideal to think about:

- The criteria based on which success is going to be measured – definition of standards and indicators, etc.
- Measures to be undertaken for the purpose of data collection (surveys, interviews, reviews, statistics, indicators, etc.)
- The people involved in the evaluation process
- The regularity and the intervals at which any assessment / evaluation should take place
- The documentation and dissemination of information

These steps should help identifying the discrepancies in the implementation at an early stage and taking the appropriate measures. These improvements have a positive effect on the success and are decisive for the perpetuation of knowledge management in the company.



PRACTICAL EXAMPLES EXCURSION

COMPANY 1

INDUSTRY

Industry/Metal processing (Springs)

SITUATION

The company does not produce in batches, but is characterised by the development of innovative custom solutions. The creative potential of the employee plays an important role. Therefore, it is the task of the management to promote employee creativity and to encourage the exchange of ideas.

MEASURES:

IMPLEMENTATION OF IDEA MANAGEMENT

Creation of an idea team: An internal team made up of representatives from the entire company was formed. The idea team was given the task of developing theoretical and practical solutions (supported by IT if necessary) for the implementation of idea management:

- Idea rooms: The design and colour of the room can stimulate creativity. For this reason the walls of the room were painted yellow and yellow flip charts were obtained. Another idea room was conceptualised as an open island in the middle of the production hall. It is open to staff at any time and offers an inviting creative atmosphere through free drinks and diverse info material. The advantage of such idea rooms is that many innovative thoughts spontaneously develop in teams.
- Idea managers: Particularly committed employee from each company department are appointed idea managers. All idea managers form the so called "ID force team" and are responsible for the evaluation, execution and awarding of the ideas presented. Feedback regarding the idea is carried out via software within a 14 day period.
- Idea meetings: Idea managers organise and moderate idea rounds. Every idea meeting is dedicated to a specific idea (for example, what makes a good spring?) which are presented by the idea mangers, discussed with employee and mutually approved.
    - How can one contribute ideas? – this is done using either idea management software of by filling out idea cards
        - Why software? – This way no suggestion gets lost. Feedback concerning each submitted idea is mandatory. The feeling of acceptance increases.
    - Reward: There is a cash reward for a good idea. Alternatively, one can collect points and trade them in for gift certificates at a later date.

RESULTS AND BENEFITS

- Essential increase of implemented ideas in a year´s time
- The level of competency of employee increased
- The transfer and quality of knowledge improved
- High savings were achieved

COMPANY 2

INDUSTRY

Electronic device manufacturing

SITUATION

Research and development plays a crucial role in the electronic device manufacturing industry. For this reason the company faces the challenge of strengthening this area. The following concrete objectives were pursued:

- Systematic knowledge dissemination and further development
- Early involvement of end consumers in order to optimize product development
- Practical application of scientific expertise
- Broad qualification of employee to ensure reciprocal representation.
- Expansion of network contacts

MEASURES:

THE ACADEMY CONCEPT IS BASED ON THREE PILLARS

- Personal initiative: The training offered is characterised by tailor-made content, goal-oriented transfer of knowledge and openness for employee from all departments as well as customers and partners. The principle here is: learn and let learn. Employee themselves serve as the speakers. Attendance of (almost) all courses is free. This has the advantage that employee become better acquainted with the company's range of products and acquire additional skills, which can be used in other production areas. This way production is not endangered by the resignation of an employee.
- Cooperation with educational institutions with the objective of combining theory and practice. (Symposia, expert groups)
- Range of resources and services: Arrangement of academy resources (rooms, speakers) for interested parties in order to expand network contacts.

The exchange with external educational institutions is also very important:

- Workshops with end consumers to identify the needs of the target group at an early stage and adapt the product accordingly (for example: a workshop with the visually impaired)

RESULTS AND BENEFITS

- Less downtime in case of employee absence
- Long-term cooperation with science and research
- Generation of additional profits
- Long-term customer loyalty

COMPANY 3

INDUSTRY

Electronics industry / printed circuit board (PCB) industry

SITUATION

The PCB market is strongly characterised by highly competitive mass-production. For this reason the company was forced to reorient itself and shift its focus to customer-specific fabrication of high-tech products as well as sophisticated solutions. Requirements for this are innovation capacity and problem solving competency. The latter is not possible without knowledge of customer needs. This means: acquiring external knowledge and converting it into internal knowledge! For this reason, knowledge of the customer's needs must be made available to all employee. This involves innovation management and employee HR development.

MEASURES: DEVELOPMENT AND IMPLEMENTATION OF THE "INTEGRATED MULTI-LEVEL QUALIFICATION" MODEL

Objective: Creation of inter-area competencies along the theoretical and practical innovation chain. Employee should be able to grasp the most important relationships: Customer needs ▶ Transfer to the company ▶ account manager ▶ interface between technical development and the operative levels. Tight integration of these interfaces enables the realization of customer needs on all levels of the company, which increases company competitiveness.

How does the qualification take place? – Three modules are to be completed:

1. Project management
2. Production oriented innovation assessment
3. Sales oriented innovation assessment

The three modules are interconnected. Each module includes so-called junction competencies such as:

- Project work
- Labour time models
- Optimal configuration of run-up phases
- Sales and production figures
- Price policy
- Complaint management

Thus, the employees develop a comprehensive understanding of innovation processes.

External participants including customers and competitors are allowed. Objective: to serve as a benchmark and provide the company with the opportunity to evaluate itself, to enhance knowledge and to bring customers directly into the company.

RESULTS AND BENEFITS

- The knowledge level of employee from different departments has increased
- Employees are continuously raised to a common level of knowledge
- Awareness of neighbouring areas in the company has increased
- Employee qualifications are continuously and purposefully expanded
- The transfer of knowledge along the production line has been optimised
- A knowledge network has developed in which one learns from the experience and problems of others
- Additional profits have been made (external participants pay a course fee)

COMPANY 4

INDUSTRY

Machine engineering (development and manufacture of special machinery, integration of laser technology in assembly sites).

SITUATION

The unique feature of the company is the integration of various technologies at assembly sites, especially laser technology. Firstly, this requires a high degree of innovative capacity. Secondly, existing knowledge must be secured with regards to greater specialization and fluctuation. This is precisely where we see the company's largest problem:

- The company's knowledge bearers are of above average age and will soon retire from the company.
- Nearly all the knowledge bearers in the company are academics and are characterised by their independent acquisition of knowledge. Therefore, they are bearers of specialised knowledge, which is not generally available and is lost when they retire.

For this reason, the company set the goal of retaining the existing knowledge and make it useable and to acquire new knowledge into the company.

MEASURES: DEVELOPMENT AND IMPLEMENTATION OF THE "ORGANISED EXPERIENCE EXCHANGE" STRATEGY.

Components of the strategy:

- Conducting regular ***project manager meetings*** with the objective of promoting knowledge transfer from projects
- ***Supervision of junior staff***: each new employee is given a mentor for instruction in work processes. The thought behind this: to retain knowledge by impart that of older employee to newer employee.
- Conducting a two day conference with the objective of exchanging views on the company's strategy and vision. Participants are managers and experts. As a rule, most project ideas arise during the conference and are immediately discussed.
- Creation of a company ***thesaurus*** with the objective of gathering and systemising new knowledge contents. Department heads defined the most important topics and broke these down into the 50 most important terms.
- Creation of a company ***info centre***: relevant industry journals were picked out and their knowledge contributions evaluated with the help of the thesaurus. The collected contributions were transferred to a Word document and placed in a public folder ("info centre"). This is constantly updated by the responsible employee.

RESULTS AND BENEFITS

- Awareness of the use of knowledge resources has increased significantly
- Reduction of effort from internal research
- Knowledge utilization was made possible for all employees
- Knowledge management has become a part of the quality management culture

SECTORAL ORGANISATIONS

With constant developments in innovation and technology, changing consumer demands and global competition, companies in the manufacturing industry are experiencing rapidly changing competence needs, invariably requiring greater levels of individual achievement. Taken together with economic and demographic trends, as well as a current skills gap and insufficient commitment towards investment in science, technology, engineering and mathematics subjects, sourcing the right competence has become a pressing challenge for many companies. One of the most important challenges we face in Europe today is equipping our current and future workforce with the skills to compete in the global market place. Responding to the challenges from the emerging economies European industry cannot improve its position simply through wage competition. Our strength must lie in skills, quality and innovation. It is vital that our workforce is equipped to meet the needs of companies and the challenges pointed out before. The ability of companies and individuals to adapt to future competence needs, as well as the education and training systems' ability to provide services that match labour market needs will be central to European manufacturing companies' competitiveness and individual employability. Manufacturing continued to invest massive resources in cooperating with initial Vocational Education and Training (iVET) systems as well as in Continuous Education and Training (CET) as is highlighted for example in the 2012 CEEMET study "Shaping Talents".

UWE COMBÜCHEN, DIRECTOR GENERAL, CEEMET

CEEMET

Council of European Employers of the Metal, Engineering and Technology-based industries

CEEMET is the European employers' organisation representing the interests of the metal, engineering and technology-based industries with a particular focus on social policy and industrial relations issues . Based in Brussels, Belgium, CEEMET is a recognised consultation body and discussion partner of the European Institutions. [11]

SECTORAL ORGANISATIONS PLAY AN IMPORTANT ROLE WHEN PREPARING FOR FUTURE SKILL AND LABOUR NEEDS

Currently, there are around 2 million job vacancies across the EU, despite high levels of unemployment. Bridging the gap between skills supply and demand is one important element for solve the problems in the current EU labour market and ensure future competitiveness.

Sectoral employers organisation at regional, national and European level represent companies' interests in various institutions in social and labour market policy including the field of initial and continuous vocational education and training. They strive to coordinate the views and opinions of enterprises of various sizes and form common positions in order to effectively represent companies' interests with the ultimate goals to create the best conditions to meet current and future skill needs.

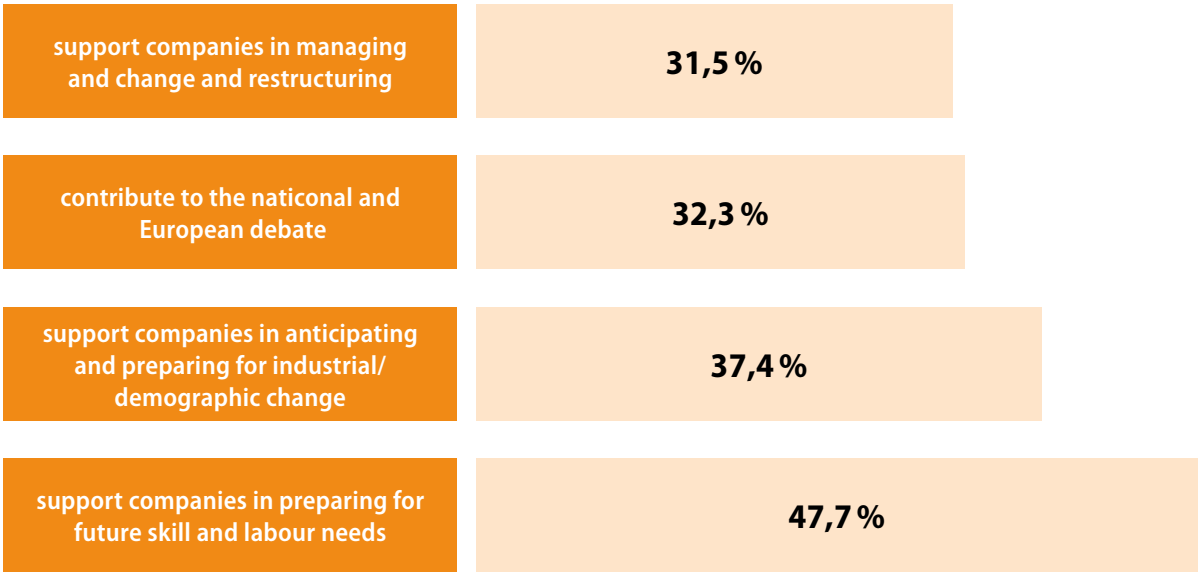
High quality vocational and occupational training tailored to the needs of the sector requires a close cooperation of education and training institutions and business. Business organizations have sector-specific knowledge and monitor sectoral skill needs, thus they are expert partners for initial and continuous VET institutions who can point out needs and challenges, especially faced by SME. The Shaping Talents Survey 2012 identified some common obstacles that face companies in the Metal, Engineering and Technology-based Industries in Europe in continuous education and training:

- Shortage of basic skills together with decrease of competences in science, technology, engineering and mathematics-related subjects
- Slow responsiveness of education and training providers to labour market needs
- Need for more strategic business and competence development and effective tools to assess training needs, efficiency and impact of training in companies
- Lack of culture of motivation for continuous training and investment for learning, both from employee and company
- Lack of information about funds for training and lack of training funds

Social partner organisations (employers' organisations and trade unions) too can play a crucial role in providing information and supporting both companies and individuals in managing their skills, knowledge and competence development. They must work together to pool resources among stakeholders and ensure that the general framework conditions for a competitive industry are in place. In their sectoral social dialogue, CEEMET and industriAll have achieved some positive outcome in the area of education and training which recently has led to the adoption of a common statement "Rethink education but do it together with industry".

COMPANIES EXPECT THE MOST SUPPORT FROM THEIR REPRESENTATIVE ORGANISATIONS TO PREPARE FOR FUTURE SKILL AND LABOUR NEEDS

Support from sectoral organisations is needed to:



Source: Survey among 409 companies in the Metal and Electro industry from Latvia, Lithuania, Slovakia and Slovenia in January and February 2013

FOOTNOTES

1 Published by the German Association of Employee Management (Deutschen Gesellschaft für Personalführung e.V.) Düsseldorf 2007, Globalisierung von mittleren und kleinen Company

2 Rehäuser/Krcmar, S.10. http://www.krcmar.informatik.tu-muenchen.de/lehrstuhl%5Cpublikat.nsf/intern01/FC0F0EC41403EF3D412566500029C4A5/$FILE/96-14.pdf

3 Probst et al. 2003, S.32

4 vgl. PAS 1063: 2006-07.

5 Pawlowsky 2006, S. 4-5

6 Lutz, 2005

7 Anette Kleinfeld, Knowledge management, 2001

8 Gabler Wirtschaftslexikon, - Companyskultur S. 2013

9 Gablers Wirtschaftslexikon- Mitarbeitermotivation, 2013, WEB

10 http://www.haufe.de/personal/personal-office-premium/knowledge management-gewinnbringend-einfuehren-31-technische-infrastruktur-als-voraussetzung-fuer-knowledge management_idesk_PI10413_HI1780555.html

11 Council of European Employers of the Metal, Engeneering and Technology-based industries (CEMEET): SHAPING TALENTS New business prospects, competitiveness and improved employability through lifelong learning (2012).

REFERENCES

Gabler Wirtschaftslexikon (2013) Companyskultur

Gablers Wirtschaftslexikon (2013) Mitarbeitermotivation, (web)

Haufe http://www.haufe.de/personal/personal-office-premium/knowledge management-gewinnbringend-einfuehren-31-technische-infrastruktur-als-voraussetzung-fuer-knowledge management_idesk_PI10413_HI1780555.html

Globalisierung von mittleren und kleinen Company (2007) Düsseldorf: Deutschen Gesellschaft für Personalführung e.V.

Kleinfeld, A. (2001) Knowledge management

Lutz, B. (2005) Personalmanagement und Innovationsfähigkeit in kleinen und mittelständischen Company – Quintessenzen eines Ladenburger Diskurses der Gottlieb Daimler- und Karl Benz-Stiftung, Ladenburg/Halle: Gottlieb Daimler- und Karl Benz-Stiftung

PAS 1063: 2006-07

Pawlowlsky, P., Gerlach, L., Hauptmann, S., Puggel, A. (2006) Wissen als Wettbewerbsvorteil in kleinen und mittelständischen Company – Empirische Typologisierungen auf Grundalge einer bundesweiten Befragung. FOKUS prints 09/06. Lehrstuhl "Personal und Führung", TU Chemnitz

Probst G. J. B., Raub S., Romhardt K., (2006) Wissen managen – Wie Company ihre wertvollste Ressource optimal nutzen, Frankfurt/Main: 5. Aufl. Gabler

Probst G. J. B., Raub S., Romhardt K., (2003) Wissen managen – Wie Company ihre wertvollste Ressource optimal nutzen, Frankfurt/Main: 4. Aufl. Gabler

Council of European Employers of the Metal, Engeneering and Technology-based industries (CEMEET): SHAPING TALENTS New business prospects, competitiveness and improved employability through lifelong learning (2012).

knowME

knowME