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Effective Integration of Knowledge Management into the Business Starts with a Top-down Knowledge Strategy

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Abstract: A cornerstone in the integration of Knowledge Management (KM) in the business is the extension of the business strategy with a knowledge strategy. The Knowledge Strategy Process (KSP) at Siemens follows a top-down approach and helps the management to integrate knowledge strategy effectively in their business strategy. Furthermore, it brings the decision makers of a business unit on one table to draw up an action plan for their respective business unit. In six consequent steps, this action plan is generated to improve the way of working and learning by focusing on knowledge areas with highest impact on the major business ambitions. With a knowledge strategy, the pressure on impact measurements for KM is released, since sense and need for the KM program is understood and it is driven by the management. Only very reasonable cost-benefit checks will be required for larger investment plans by the business owner. An overview on diagnostics and mesurements for knowledge and KM as well as a list of open KM research issues is given for the full integration of KM into the business.

Key words: knowledge strategy, KM strategy, integration of KM into business, diagnostics and measurements for KM, cost-benefit check for KM projects
Category: A

1 Introduction

The importance of knowledge continues to grow owing to the spread of global networks, accelerated product cycles and changing market conditions. Since decades, the knowledge intensity in work processes increases compared to manual work. Knowledge serves as a resource as well as product of knowledge-based business. As a result, the significance of (systematic) Knowledge Management (KM) is continuously growing, and due to further improvements in KM the race for competitive edge through knowledge will become even faster. Siemens is meeting these challenges through enterprise-wide and systematic KM to better share existing business and process-related knowledge and to generate new knowledge even faster.

Siemens has initiated and successfully implemented numerous KM projects driven by the corporate KM Team and KM organizations in groups and regions. Important for the speed of progress has always been and still is “KM for KM” provided by the global Community of Practice Knowledge Management (CoP KM), which started in 1997 and currently, has about 300 members across all Siemens units and regions.

Knowledge and KM have so many different aspects that it is recommended for each organization to make definitions for a useful joint understanding and collaboration in that area:

- Knowledge is considered to be the "capability for effective action". Knowledge manifests itself as the expertise, know-how and professionalism of the individual, as the distributed and diffusing ability of organizational entities, teams or communities to act and as codifications of knowledge, e.g. in a document, process or system. Thus our basic model of a knowledge space has the three dimensions proficiency, diffusion and codification (adapted from [Boisot (99)]).

- Knowledge Management covers all systematic activities involved in the creation and sharing of knowledge across the organization and in relations with customers, partners and other knowledge stakeholders, and thus contributes to the achievement of our goals and the creation of value added by Siemens. In the knowledge space, KM can be described as any systematic action adapting proficiency, diffusion and codification according to the organization’s objectives. Examples are building the right proficiencies with employees and business partners, care for appropriate knowledge networking and collaboration and keep information about knowledge or other manifestations in a useful and affordable form. Combining such actions often results in the most powerful KM activities.

Knowledge work has always been supported by a kind of intuitive KM. Systematic KM on the other hand means a coordinated business transformation or improvement, which changes the way of working and the way of the learning. The smooth integration of a KM initiative into the business is therefore a key success factor. The major issues are to integrate:

- Knowledge communities, which drive knowledge sharing and creation, with the formal organization, Knowledge marketplaces, which serve to offer, find/take knowledge, with the existing infrastructure for information and communication,
- Knowledge processes and KM processes, e.g. diffusion or organizational learning and community facilitation or quality improvements on documented knowledge, with the existing business processes,
- A knowledge-friendly culture, which gives clear knowledge objectives and is supporting open knowledge sharing and creation, with the company’s principles and its culture of leadership and collaboration
- Content structures and quality, which support context-driven knowledge sharing, combination and extension, with the existing approaches to information and content management,
- A KM organization, which lets all management functions related to a knowledge issue collaborate jointly and in an orchestrated manner, with the formal organization, especially the organization of support functions like HR, IT, Organization/Process/ Quality and Strategy/Planning, and
- Knowledge Strategy, KM Strategy and related metrics, which drive knowledge improvement actions and KM system building and operation, with the business strategy and its measurements.

The following section will focus on the integration of the knowledge perspective into the business strategy, i.e. the generation and execution of a Knowledge Strategy as an add-on to the business strategy driven top-down by the business owner and the management team. This leads in eliminating a major barrier mainly in way of most of the KM initiatives: the missing understanding, support and backing of the top management which is especially critical in times of economic turbulences. In section 3 an overview is given on diagnostics and measurements in a business with a Knowledge Strategy. Conclusions and an outlook on future research areas are the final part of this paper.

2 The Siemens CIBIT Knowledge Strategy Process

Business owners and their management team have or should have clear objectives and ambitions on knowledge in their business, e.g. for those knowledge areas with high impact on the business key performance indicators today as well in future. The Knowledge Strategy defines the needs, way and actions to achieve these objectives and ambitions in terms of means and language of business owner and management team.

The management team should have a *knowledge strategy* how to drive knowledge issues, as it has, e.g. a product strategy to drive product decisions. A knowledge strategy is different to a *KM strategy*, which is the strategy or roadmap of the organization(s) responsible for KM and other knowledge relevant issues, to enable for KM, e.g. to drive the rollout of instruments, systems or initiatives for KM. This is accordingly to the fact, that, e.g. product managers drive their plans by a *product management strategy*. Both strategies are necessary and have to be aligned continuously.

Without a business-driven knowledge strategy often various staff functions execute different KM strategies, i.e. drive in many cases different knowledge-related actions and measurements without a joint goal or coordination resulting in more organizational friction than business transformation speed. Thus really powerful interdisciplinary KM solutions are often missed.

The Siemens CIBIT Knowledge Strategy Process (KSP)[1,2,3] is a strategic instrument for business owners and their management team to generate a Knowledge Strategy for the current ambitions in their business [Hofer-Alfeis and van der Spek (01)]. KSP is jointly developed by Siemens AG and CIBIT, Utrecht, NL[7].

The KSP has to be integrated in the business strategy process and revisited regularly. A knowledge strategy for any kind of business transformation is defined in six steps as demonstrated in Figure 1.

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[1] more details in [Davenport and Probst (02)]
[2] more details in [Bellmann. et.al (02)]
[3] more details in [Holsapple (02)]
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A business owner starts by focusing on the most relevant business perspective (s) for the next x months or years followed by defining the related knowledge areas. The further specification of the key performance indicators leads in achieving a knowledge portfolio. The resulting action plan leads to improvements for the way of working in a knowledge-intensive business as well as the way of learning in many ways. It is a guideline for an interdisciplinary KM team, which refines the action plan by state-of-the-art KM solutions according to its KM strategy. The execution of the knowledge strategy is strengthened by the buy-in of the management team, since it has defined it based on its profound knowledge about the business itself.

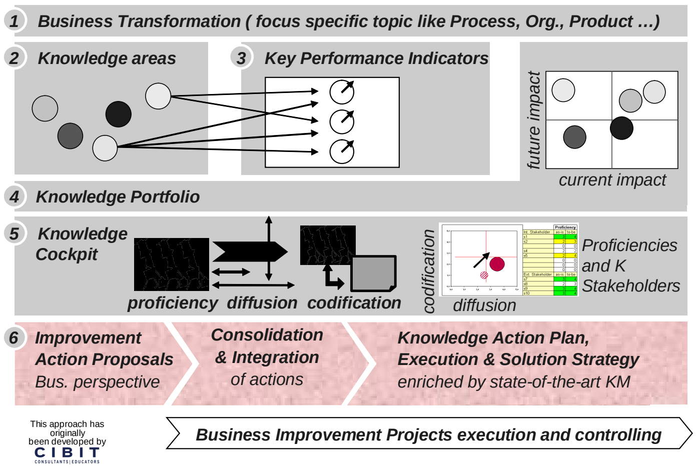

Figure 1: The Siemens – CIBIT Knowledge Strategy Process: The six steps and the results

2.1 Results and Benefits

The implementation of KSP has the following results and advantages for any business:

Results

- joint portfolio of business impact knowledge (Knowledge Portfolio),
- needs/deficits in fundamental knowledge fitness dimensions proficiency, diffusion and codification (Knowledge Status Guide), and
- focused and guided KM action plan - jointly derived (KM Action Plan).

Benefits

- actions are generated from the management team in their own language as well as perspectives, which are enriched by an interdisciplinary KM team and its bottom-up experience,

- resources and energy on all knowledge issues are focused by their respective business impact,
- initiatives of the various functions acting on the knowledge issues (HR, IT, Process & Org, …) are coordinated, and eventually execute the resulting program from the action plan jointly, and
- knowledge-related measurements are directly linked to the business strategy.

Overall effects

- highly increased efficiency of efforts in KM and knowledge-related disciplines,
- reduced risks and friction arising due to unfocused and low coordinated activities,
- faster business transformation based on joint planning instruments, and
- extended strategic thinking leading into the Knowledge Economy.

2.2 Knowledge Strategy and KM Strategy or KM Roadmap

What is sometimes reported as knowledge strategies or KM strategies is not useful for business owners and management teams: it is for support function people or KM enabling teams. Those functions drive in some cases different knowledge-related actions and measurements without a joint goal or coordination resulting in more organizational friction than business transformation speed. Thus often really powerful interdisciplinary KM solutions are missed, e.g. building proficiency by connecting the right experts, which diffuse their results in appropriate codification, e.g. an e-learning module, to the right audience in the company, which can direct feedback to the experts about application success.

A KM strategy or roadmap is addressed to the enablers for KM, e.g. the KM Team or equivalent functions, and illustrates the planning, implementation, operation and standardization of KM solutions, thereby, ensuring its smooth integration and efficient operation within the organization. The KM strategy gets valuable input from the business' knowledge strategies: it should anticipate and react to the focused needs from the operational perspective of the business owners. For example, the Corporate KM Team of Siemens is providing in co-operation with the Community of Practice KM, a KM roadmap on corporate level, various KM tools, solutions and standards or recommendations as well as various instruments for diagnostics and measurements.

2.3 Business Cases

Knowledge Strategy Process (KSP) results and experiences have been drawn from successful business cases from various business units within Siemens, e.g. an R&D organization with about 600 developers, an account management organization for most complex knowledge flows between very large accounts and several Siemens groups and for a central information and operations unit with about 200 project and topic managers. To quote the impressions of a business owner and a participant after the workshop:

Business Owner: “We defined the issues, which should be dealt by the team in this workshop and worked through them in a structured way- this would not be possible without KSP… now we should also implement them straightforward!”

Participant: “I was skeptical – it seemed to be a tiresome, formal process but now in the end I have to admit we landed on the right ground – a very effective process”.

In one business case, e.g. a portfolio of 11 key knowledge areas has been identified by the management team. For each knowledge area a separate KSP has been run with an according workshop group of subject matter experts and management team members resulting in over 100 highly prioritized improvement action proposals to change the way of knowledge-related working and the way of learning. Some examples without the business-specific details: Define, install, operate, create or promote …

- regular Experience Synchronization Meetings across org units with fixed topics …
- Knowledge Transfer Workshops with external Knowledge Stakeholders for …
- Best Practice Sharing on …
- role and career model for certain subject matter experts, e.g. Project Managers
- Expert Networks or Communities of Practice for …
- a methodology framework for …
- a Training and Cookbook for …
- learning from projects with clients on …
- the Process for …, e.g. Value Selling in that business

The knowledge action plan is now executed by the cooperation of three players for each knowledge area:

- the knowledge area coach, being part of the management team and related to the business impact of the knowledge area, who aligns the execution to current business needs and strategic movements
- the subject matter experts and managers, who are able to execute that specific action
- the KM Team, who takes care that solutions according to state-of-the-art KM will be built and operated. This team also has to drive actions, which are common to many knowledge areas, e.g. collaboration platform issues, joint content structures or a knowledge culture initiative.

3 Diagnostics and Measurements in a Business with a Knowledge Strategy

Diagnostics and Measurements are hot topics in KM, especially in times of shrinking economies. The focus today is often on cost-benefit calculation for KM projects to prove for further invest and care. If an explicit Knowledge Strategy is defined, the requirements on measurement are quite different.

3.1 Measuring the impact of KM in case of a Knowledge Strategy

If a business owner and his management team have a top-down knowledge strategy derived via the KSP, the whole issue of impact measurements for KM is put headover-feet again, since sense and need for the focused KM actions program is understood and derived from the business ambitions, the impact of knowledge on key performance drivers and the deficiencies in the major knowledge dimensions proficiency, knowledge networking and codification. Therefore only very reasonable cost-benefit checks will be demanded by management team in case of larger investments and operational long-term costs. The KSP supports effectively that knowledge-related measurements are directly linked to business strategy.

Using the KSP also means a long-term engagement of the management for knowledge programs. Various solutions are available to link KSP with the Balanced Score Card (BSC) process; the most advanced one is an additional functional scorecard, the "Knowledge Scorecard" [Deking (03)].

3.2 Measuring Quality and Value of Knowledge

Measuring quality and value of knowledge, e.g. for knowledge assets like a kowledge area, a Community of Practice, a Lesson Learnt, a KM system content is still not solved completely. But this is basically necessary to enhance KM processes or knowledge businesses with market forces.

There are many approaches to deal comprehensively with the intellectual capital of an enterprise [Deking (03)] [Skyrme (03)], e.g. by a kind of balance sheet comprising all knowledge assets. Such approaches can give directives for KM planning and in fact, the results of the first five steps of the KSP are also an intellectual capital overview, but strongly focused on the major current business ambition of the management team.

3.3 Cost-Benefit Calculation for KM Projects

There are many approaches to measure and proove the benefits of KM. In case of operating socio-techical KM systems successful measures are e.g. the time/cost saving effects of urgent request processes in knowledge communities or the growth value in additional business by sharing customer solutions. These numbers are generally only aspects of the comprehensive effect of a KM initiative and they are not very useful in promoting new KM projects. In most cases, KM success stories are too specific or too complex to be easily reused for cost-benefit argumentation. Therefore, the corporate KM team has started to jointly build a catalog of proven cost and benefit argumentation modules based on a standardized content form and a related guideline for business cases of basic cost-benefit calculation for KM projects.

KM means in its essence a business transformation. KM systems are socio-technical, holistic or multi-dimensional systems (people and organisation, business environment, processes, infrastructure and knowledge/content). Therefore, only equivalent comprehensive metrics (hardly practically afforded) can comprise cost and benefit effects. Additionaly, since generally several business transformation initiatives compete in a corporation, the calculation of ROI is often just a game with artificially restricted perspectives. In the end anyway the conviction of the business owner is needed, who has to invest the resources for the KM projects. Therefore, it is better to help him and his team to fully link knowledge issues to his business ambitions, e.g. via the KSP, and to take the lead in major knowledge issues.

3.4 Measuring the Status of KM in an Organization

Performance measurements are useful to check the status of each element of a socio-technical KM system. Sets of measurements are available to assess, e.g. activites and acceptance in knowledge communities [Schoen (00)] or knowledge marketplaces. For larger KM systems or landscapes of KM systems a KM Maturity assessment [Langen and Ehms (03)] can provide a comprehensive overview on status and deficiencies. For engaging the business owner and his team to take the lead in knowledge issues, such assessments can be appropriate in combination with the Knowledge Strategy Process. They are a profound and comprehensive approach to give directions in all major KM aspects to the KM team. Thus the team is able to make the KM strategy accordingly and be better prepared for requirements from the business owners' knowledge strategies.

3.5 Framework for Diagnostics and Measurements for Knowledge and KM

The Framework for Diagnostics and Measurements for Knowledge and KM helps knowledge mangers to

- get an overview of the various types of measurements and instruments,
- apply the right measures and identify good practices, and
- position and share approaches and instruments as well as needs for further development.

The framework deals with four types of measurements: value and state of knowledge and value and state of KM respectively. It is part of the "Siemens KM Implementation Guide" (only for internal use) which has been jointly written by over 20 Siemens KM experts from KM initiatives and KM Consulting, thus giving, for the first time the corporation a joint set of basic concepts, processes, system models, KM solutions elements and proven cases to integrate the various KM activities in Siemens.

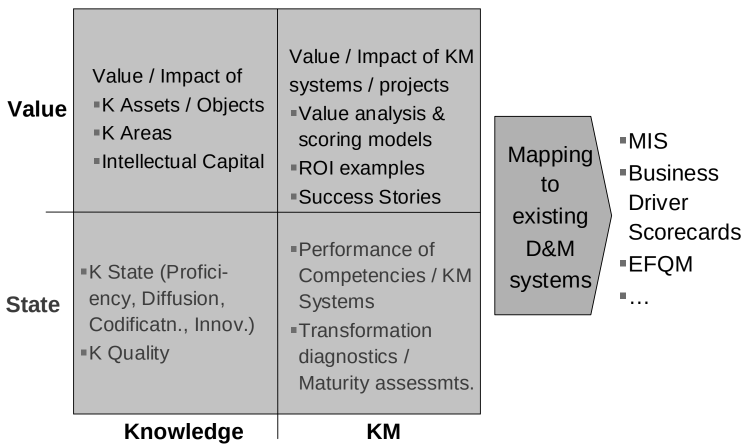

Figure 2: Framework for Diagnostics and Measurements for Knowledge and KM

The procedure of measuring by a business owner with a Knowledge Strategy and by a KM responsible manager planning and operating KM systems (KMS) can be projected into the framework as shown in Figure 3.

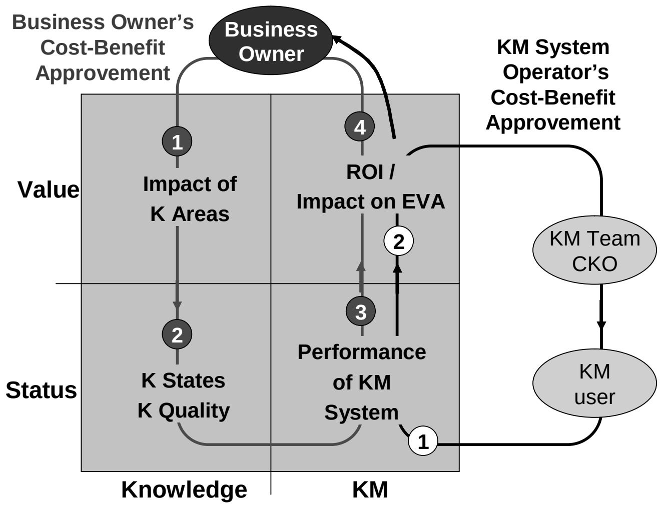

Figure 3: The two KM measuring cycles from business and staff perspective

4 Conclusions and Outlook

A cornerstone in the integration of KM into the business is the extension of the business strategy by a knowledge strategy, which drives the major knowledge-related management actions from the KM team and various other staff functions, e.g. HR, IT and Organization/Process/Quality. It means that business owner and his management team take the lead in major knowledge issues (and not just a commitment to let KM happen).

If a business owner and his management team have a knowledge strategy as derived with the Siemens CIBIT Knowledge Strategy Process, the whole pressure on impact measurements for KM is released, since sense and need for the KM program is better understood and it is focused and measured according to the business ambitions. Only very reasonable cost-benefit checks then will be required for larger investments or long-term operational cost by the business owner. Knowledge Strategy measures can be linked into the business measurement systems, e.g. the Balanced Scorecard to investigate the execution of the strategy. Cost-benefit calculations for KM projects are essential but still not appropriately solved according to the fact, that KM means a business transformation in its essence. A framework for diagnostics and mesurement is helpful to apply the appropriate metrics and mesurements.

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