

# Learn and Change Faster by Leveraging and Capitalizing Knowledge in Siemens: The 'Com ShareNet' Case Study

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## ABSTRACT

'Com ShareNet' is the global knowledge sharing network for Sales, Marketing, Service, Research, and Development of Siemens Communications. The basic idea is that knowledge created somewhere in the world should be made available for global reuse. Com ShareNet intends to network all local solution efforts to facilitate cooperative global learning, local reuse of global best practices, and the creation of global solution competences. Com ShareNet realizes considerable and measurable business impact through time and cost savings and through the creation of new business opportunities.

Siemens Communications (Com) came into being from the unification of the previous Siemens groups Information and Communication Mobile (ICM) and Information and Communication Networks (ICN) on October 1st, 2004. Com is one of the largest players in the global telecommunications industry and is the only provider in the market that offers its customers a full-range portfolio, from devices for end users to complex network infrastructures for enterprises and carriers as well as related services. Com is the world's innovation leader in convergent technologies, products and services for wireless, fixed and enterprise networks. It is the largest group within Siemens and operates in more than 160 countries around the world. Its 60,000-strong workforce posted sales of about €17 billion in the fiscal year 2002/03 [Sie04].

## 1 HISTORY

In an increasingly challenging market, characterized by deregulation, increasing complexity of the business, and disintegration of traditional value chains, the executive management of Siemens recognized the importance of international cooperation in cooperation with competence management and knowledge management in early 1995. The central function 'Culture Change' was established to facilitate a shift towards knowledge sharing versus knowledge hoarding and proactively seeking and offering knowledge [Sie99]. Heinrich von Pierer, Siemens' president and CEO, demanded that Siemens should exploit its expertise more systematically and intensely than before. "Our first priority – and this will be vital for our future effectiveness – is the electronic networking and management of our internal knowledge, in order to make us even more efficient and to bring our customers greater benefits. Our ultimate goal is to ensure that all of our people can access the company's unequaled pool of knowledge at the right time – and to do this systematically and not just by accident."

Until the 1980s, telecommunications equipment customers around the globe were mostly monopolistic, vertically integrated, and government-owned telephone companies. The range of activities included providing wireline analogue voice service to the end-user in well-defined regional markets. The service operators' technical staff planned networks, purchased switches, transport and access equipment from suppliers, installed and maintained the equipment, and ran billing and service operations. Suppliers resembled their few stable customers, who were vertically integrated and less sensitive to costs and time to market.

Times changed. Over the past two decades, governments deregulated the telecommunications market in order to provide more competitive pricing and services to customers. Moreover, technological advances in electronics and computer science led to an explosion of new products and specialized service offerings. New business opportunities arose as well. The new entrants were "profit rather than

service"-oriented, often lean organizations without technical expertise. Thus, customers demanded from a supplier a package of all the services involved in running a telecommunications services business, including financing, business planning, engineering, and operations. Shifting from a "box selling" to a service focus and solutions approach enhanced the complexity and knowledge intensity of ICN's business [Ger00]. Leveraging local knowledge and refining it into global competencies and capacities became mandatory. [Hei04].

In May 1999, 'ICN ShareNet' came into existence. Administered and rolled-out by ICN's 'Business Transformation Partners' department, the 'ICN ShareNet' community quickly grew to several thousand users world-wide. Due to the synergies between ICN and ICM, many employees at ICM wanted to join ICN ShareNet as well. As a consequence, the system was renamed to 'ICN/ICM ShareNet' in 2001. With the merger of the two Siemens groups ICM and ICN to Siemens Communications (Com) in 2004, the name was again adjusted to 'Com ShareNet'. Today and more than five years after its introduction, Com ShareNet counts about 17,500 users located in about 70 countries. The common language used in Com ShareNet is English.

## **2 WHY IS COM SHARENET NECESSARY?**

Whereas still some years ago, customers expected only reliable products from their supplier, today more and more system integration skills are demanded for complex solutions often comprising advanced service offerings that go beyond the traditional product-related services. The business units provide the physical components of a sales project, and the local companies are responsible for customizing and integration into the customer's network. To optimize the collaboration between all involved departments and business partners, Com ShareNet intends to network the globally dispersed innovators and experts by providing e.g. reference projects, integration concepts, pricing/financing schemes, etc.

At the same time the individual employee faces new challenges: How can an employee find experts to help him/her prepare an innovative solution? Where can he or she find context and action oriented knowledge of other teams together with presentation material, methods, etc.? In an ever more complex business environment an individual cannot have all required knowledge in his/her brain. These competencies and skills cannot be simply provided by a central unit, nor does it make sense to try to build them up in each unit individually. We have to "leverage our local knowledge globally" in order to have the same level of competencies everywhere and any time. To support this is the purpose and mission of ShareNet.

## **3 KNOWLEDGE MANAGEMENT WITHIN COM SHARENET**

The backbone of ShareNet is an intranet that facilitates knowledge transfer by allowing for three processes: capturing, developing, and reusing of knowledge. The system covers two types of knowledge: codified knowledge and personalized knowledge (see chap. 5). Codified knowledge provides the user with structured knowledge about everything needed to create a solution. Examples include sales projects, technical solutions, functional solutions, customer information, market information and competitor information. Personalized knowledge includes urgent requests, discussion groups and news. The system supports global co-operation and human networks and is designed to provide quick help for employees throughout the organization [Nie03].

### *3.1 Value Creation Chain*

Creating a customized solution for any customer requires several value-creating steps, including business development, implementation and after-sales service. The competitive environment, the market conditions, and individual customer needs and capabilities must be taken into consideration. Technical and functional knowledge has to be applied to reach a solution. ShareNet enables e.g. sales people working at Com to access the necessary knowledge at the right time. Updating and improving the knowledge base involves a continuous self-assessment and conscious focus on the process. Hence, these employees are encouraged to reflect on the sales process afterwards and ask "which knowledge

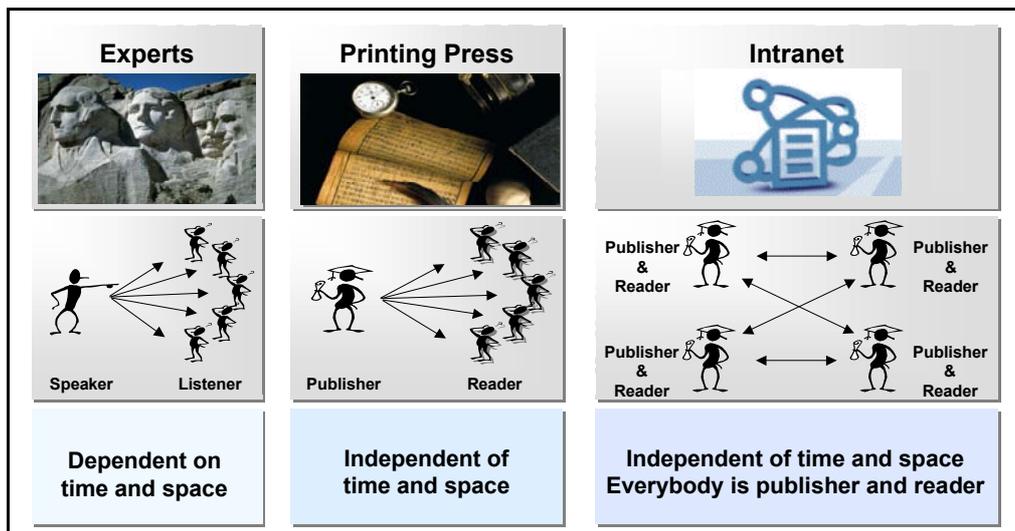


Figure 1: Typical knowledge flows

would have been useful at the beginning?" and "what source materials would I have needed?" [Nie03] The answers to these questions can be used to ensure re-use of necessary and valuable knowledge. However, the system is only as good as the information contained within, thus one of the main tasks is to assure the reliability and value of the content in ShareNet. Another task is to motivate people to actively share their knowledge. These problems needed to be dealt with to achieve the main goals of ShareNet (see chap. 7): Saving time, avoiding double work, reducing costs, increasing quality and customer satisfaction, increasing sales and profit, and finding new business opportunities.

### 3.2 What Knowledge can be found in Com ShareNet?

As opposed to classical information management systems, Com ShareNet does not only provide data, technical product information, telephone numbers, etc. Com ShareNet covers all relevant context- and action-oriented knowledge an employee requires to effectively do his/her job. This comprises the knowledge about the business environment (e.g. customers, markets, competitors, technologies), technical or functional solution components (e.g. network architectures, service concepts, pricing schemes, financing concepts) and project-related knowledge (e.g. reference projects, project management).

The knowledge in ShareNet spans the whole range from basic information (e.g. organization chart of a competitor), via methodologies (e.g. "how to approach a new venture financed carrier?") to expert know-how. Its purpose is to support e.g. a sales person in a concrete decision making process by providing context and practical help as well as experienced contact partners.

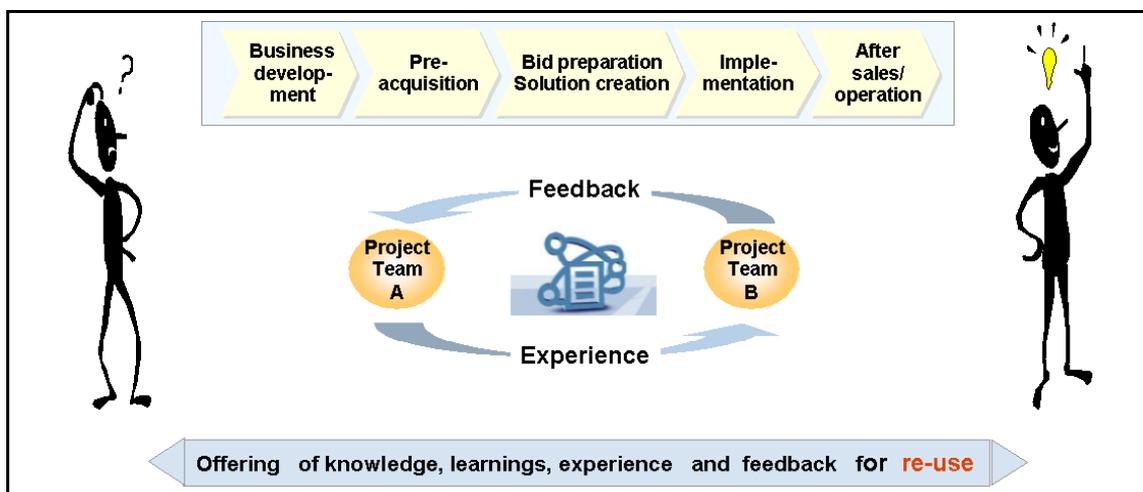


Figure 2: Benefit due to re-use of captured and offered knowledge

It isn't theoretical knowledge developed "on the green-field". It is mainly experiences and best practices from successful and unsuccessful projects from all over the world. ShareNet reflects diverse views of different users, providing a huge learning opportunity for all members. Furthermore, useful files can be attached and references to other content and/or other ShareNet users can be added. Each contribution is clearly marked with the author's name, being linked to his/her 'Yellow Page' containing all contact details, and the author's portrait.

#### 4 ORGANIZATION

Any knowledge management system is only as good as the knowledge contained within. Siemens developed an organization around Com ShareNet to ensure that the right knowledge was captured, stored and made available for re-use in an efficient and effective way. The following figure 3 shows the ShareNet organization. At the core is the Munich ShareNet Team, which includes the User Hotline, the IT management (Alexander Mueller), the Consultants (Felix Baumann and Andreas Manuth) and the Global Editor (Johannes Mueller).

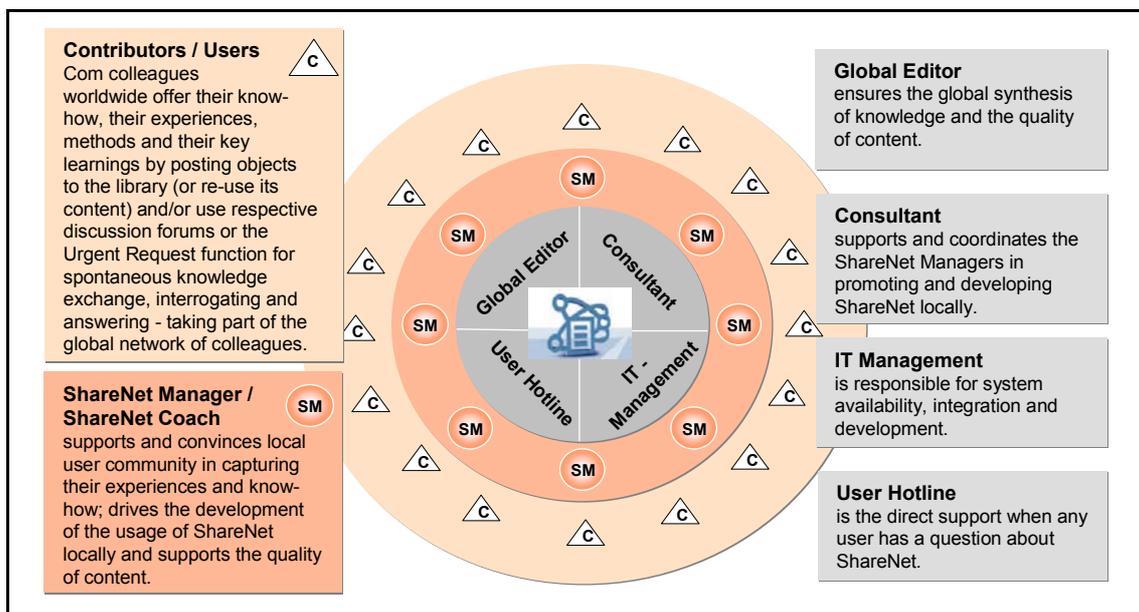


Figure 3: The Com ShareNet Organization

The **Global Editor** ensures the content quality and provides a suitable structure and taxonomy. He distributes so-called "quality guidelines" for knowledge sharing on Com ShareNet. These comprehensive "laws" – defining how to share which kind of knowledge – add legitimacy and provide the Global Editor with a tool to reduce misuse by referring to an agreed-on set of company-wide rules. However, the ultimate responsibility for the contributions always stays at the respective authors themselves.

The **Consultants** are responsible for training the ShareNet Managers and developing a knowledge-sharing culture and philosophy throughout the organization. They run workshops and presentations about ShareNet and knowledge management and are a kind of "KM evangelists" within the company.

The **ShareNet Managers** and **ShareNet Coaches** are decentral KM multipliers locally working in their home countries. They serve as a local contact for their users, motivate their users to contribute their knowledge, organize ShareNet trainings, administer their local user groups, approve recently registered users within their user groups, give proposals for the further development of ShareNet, uncover innovative projects within their countries and take care of their topical publication into Com ShareNet.

Last but not least, the most important link within this chain form the **Contributors**. They are the ones, who provide their know-how, their personal experiences and their best practices towards the readers. Without contributors providing content, the best KM tool would be worthless.

## 5 MODULES AND STRUCTURE

There are several modules ensuring an efficient and user-friendly exchange of information and knowledge. Any module or contribution can be individually subscribed, thus new or edited contributions will be automatically sent via e-mail to the subscribers (see chap. 5.3). Certain modules support storage and retrieval of the two types of knowledge (see chap. 3) in Com ShareNet: Codified ("structured") knowledge and personalized ("spontaneous" and "communicative") knowledge.

### 5.1 Modules for Codified Knowledge

Within a "knowledge library", structured knowledge objects can be stored. Dependent on the object's type, a structure of data fields (e.g. text field, file attachment, date, number, link to user, link to contribution) is clearly defined. Following a questionnaire, any user can easily enter his/her knowledge into the suitable data fields. Com ShareNet currently provides three knowledge libraries: One designed for sales, marketing and service purposes, one containing research and development topics, and another for storing and finding competitor-related knowledge.

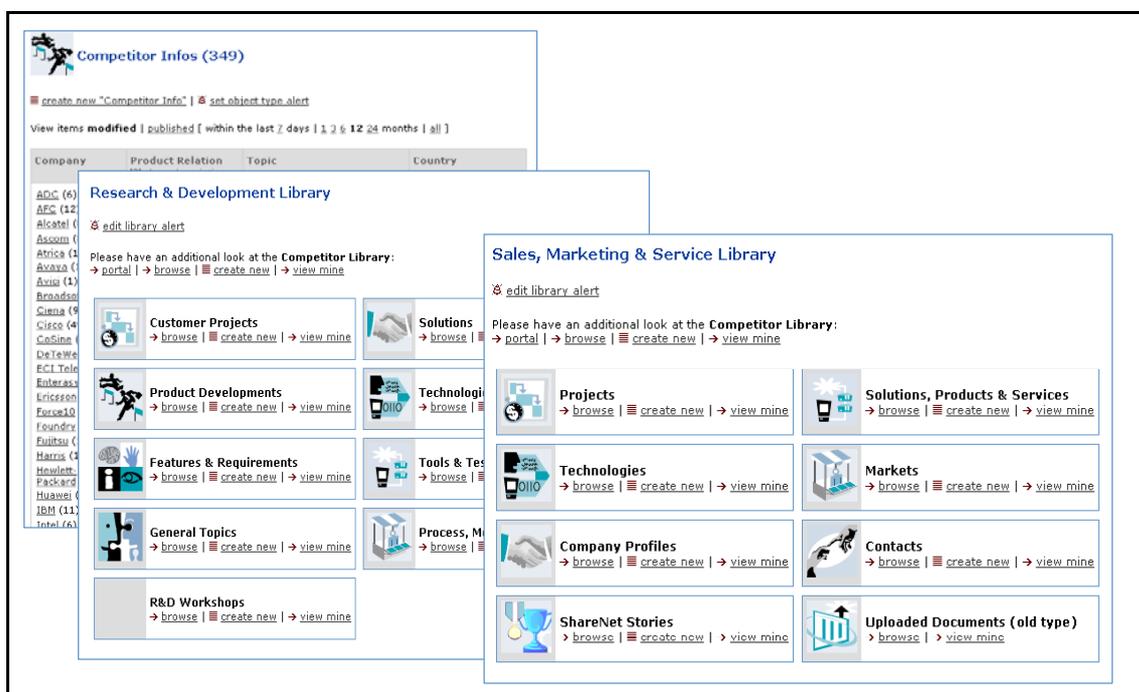


Figure 4: The Com ShareNet libraries contain 18 types of knowledge objects.

### 5.2 Modules for Personalized Knowledge

The personal communication is supported by a large set of topic-related discussion forums. Each discussion forum contains several threads being a sequence of an initial posting and any number (none, one or several) of concerning replies. A discussion forum is a kind of virtual 'Community of Practice', i.e. several users interested in the same topics, assigned to any hierarchical level, and located anywhere in the world. A special kind of discussion forum is the 'Urgent Requests' section. Any 'Urgent Request' is a pressing demand for information and is clearly marked as urgent for 14 days. Additionally, the latest 'Urgent Requests' are shown on Com ShareNet's homepage. In average, about 80% of the 'Urgent Request' receive at least one answer, most of them within 24 hours.

Furthermore, there is a 'News & Events' section containing short press-like messages and 'MaterialsXchange', which is a virtual market for offering or requesting any business-related hardware or software. So called 'Topic Portals' allow CoPs to individually administer and easily design their own intranet homepages.

### 5.3 Alert Notifications

The alerting mechanism in ShareNet allows the users to receive the latest postings or modifications of his/her choice directly into their mail-box. By using this alerting feature, one can stay up-to-date with relevant contributions without frequently being logged-in to Com ShareNet. According to the individual topics of interest, a wide or narrow alerting scope can be chosen: Community alert, library alert, object type alert, object alert, forum alert, thread alert, 'News & Events' alert, 'MaterialsXchange' alert, and category alert.

All kinds of e-mail alerts can be individually configured to be instantly, daily, twice weekly or weekly sent. Different alerts can be collected into one 'digest e-mail' notification, if the amount of e-mail notifications from ShareNet should be limited. Optionally, certain keywords can be defined. Then, the notification will be only sent, if at least one of these keywords is found within a new contribution.

It is even possible to directly reply to discussions and urgent requests via e-mail. This very useful feature allows our users to participate in discussions and to answer urgent requests via e-mail only and without being connected to Com ShareNet.

## 6 QUALITY ASSURANCE AND REWARD SYSTEM

Com ShareNet's Quality Assurance and Reward System has been designed to help ensuring the quality of the contributions and to reward active users. Knowledge contributors, whose objects have been reused or successfully reviewed, are rewarded – and those, reusing or reviewing knowledge from ShareNet and giving insightful reuse/review experiences and valuable feedback. Furthermore, responses on urgent requests can also receive feedback by the respective questioner. Given feedback is indicated by stars on a range from 0 (☆☆☆☆) to 5 (★★★★★). The purpose of the Quality Assurance and Reward System is to incentivize givers and takers of high-quality knowledge, to ensure the content quality, and finally to succeed in the "battle" for knowledge capturing time against other important daily issues.

There are many motivations for contributing knowledge to Com ShareNet. The Quality Assurance and Reward System is just one minor aspect among many important motivators [Sch04]:

- giving knowledge in turn for reusing other knowledge,
- being a part of a community,
- pride of excellence,
- demonstrating expert status – around the world,
- cooperation within a team by the help of ShareNet (e.g. team-internal use),
- reducing the time known experts spend answering standard questions, and
- the Quality Assurance and Reward System.

ShareNet Shares are points like frequent-flyer-miles. They can be collected, accumulated and turned into rewards. ShareNet Shares are automatically distributed by Com ShareNet for particular contributions (i.e. responses to urgent request, responses to discussion groups and publishing knowledge objects) and for feedbacks both received and given. Each user can collect and accumulate ShareNet Shares on his/her personal shares account. Like a bank account, this account clearly indicates the amount of shares earned for any previous contribution.

## 7 BENEFITS FOR SIEMENS COMMUNICATIONS

Com ShareNet offers many advantages for Siemens Communications as a whole, for the involved divisions, departments and local companies, and for the individual users: Com ShareNet ...

- reduces costs and improves quality by making all relevant knowledge available,
- helps to avoid "re-inventing the wheel",
- saves time by providing reusable modules, presentations, key selling arguments, etc.,
- increases skills by providing a wide range of proven selling methodologies, best practices, competencies, tips and tricks,

- grows the individual network fostering cross-country and cross-organizational collaboration,
- increases sales through reusing business opportunities and leveraging solutions across markets and customer types,
- increases the quality of the offerings by exchanging best practices and anticipating key trends,
- thus helps to improve the satisfaction of Com's customers,
- opens new business opportunities for Com, and
- supports Com on its mission to become a global solution provider.

### 7.1 Example for a Success Story: Italy – China

In China, domestic vendors such as Huawei or ZTE heavily attack foreign vendors. The competition situation was serious and Siemens stood at a very disadvantageous position. Some questions were posted in Com ShareNet regarding integrated microwave solution using Siemens outdoor BTS BS41. The Italian colleagues answered exactly the key blocking point for the project and the customer could be convinced for the Siemens solution. The contract value was about US\$ 4 million.

### 7.2 Example for a Success Story: Ukraine – Italy

The target was to enlarge business opportunities with Tiscali by helping them in selling an EWSD exchange inherited by the acquisition of an UK startup company (Telinco). An announcement was made in Com ShareNet's MaterialsXchange. Siemens Ukraine responded and an agreement was made. The exchange has been shipped to Ukraine and Siemens Italy (Carrier Networks) received the payment to be forwarded to the customer Tiscali. This will help Siemens Italy in generating additional business opportunities with Tiscali. The turn-over from Tiscali was about €4 million.

## CONCLUSION

"ShareNet is innovative in the way that it is the first state-of-the-art possibility for fast two-way support between Siemens organizations on a peer-to-peer level. It is not primarily intended for an (old fashioned) headquarter to periphery type of communication with all its draw-backs. The value of ShareNet is much more in the extremely fast response to all kinds of small, rather simple and mostly very practical questions. The ICN world, internal and external, changes ever faster, and for that reason I see no alternative how we can make good use of experience gained within Siemens somewhere in the world – who knows where? Look at Microsoft, the best tool they have invented is 'copy and paste'. Copy and paste is always much faster than "invent the solution yourself". It saves precious time, it improves our speed, and it motivates our employees. It takes a lot of time to get employees that far that they use ShareNet on a very frequent basis. But once they use it that way, they can't live without it."

(by Ernst Wolters, previous head of Siemens ICN in The Netherlands)

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