
Networked knowledge – implementing a system for sharing technical tips and expertise

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Abstract

In a sales and service environment, business is mostly driven by employees at the customer interface. By virtue of their intensive contact with the customer, sales representatives and service technicians are not only one of the major sources of knowledge and experience in these organizations, but also a source of information about future customer needs.

This case study considers the effect of a dynamic market environment on the opportunities for implementing a knowledge management program. After a short introduction to the organizational context, we discuss the market shift that created a need for the systematic management of knowledge. The study then gives an overview of a knowledge management initiative – its approach, relevant factors, and some of the underlying design principles.

A detailed description of KN Service Knowledge – an initiative for generating organizational knowledge for technical services – is provided, illustrating the activities involved in redesigning the work processes, IT architecture and collaboration with other departments. The human dimension is discussed, including the design of an incentive system used to bring about the necessary changes in behavior.

For the innovative and customer-oriented conduct that resulted from the repositioned linking of Knowledge Management and service, the knowledge networking initiative “KN Service Knowledge” was awarded the 2001 Service Management Award.

Introduction

Over the last ten years, the communication-network infrastructure business has undergone a change that has profoundly altered the rules for achieving and sustaining competitive dominance for Siemens Information Communications Networks, Sales Germany (ICN VD). Customer expectations have become increasingly more sophisticated with the simultaneous proliferation of products. With this growing complexity, compa-

nies have increasingly had to build up core intellectual and service capabilities to meet the requirements of the new environment. Value creation has become increasingly associated with developing highly individualized, knowledge-intensive solutions, rather than ones simply based on the sale of pre-packaged products. As a result, product experience has become less important. Siemens Information and Communication Networks (ICN VD) needed to take a proactive approach that emphasized the provision of complex packages of products and services, often referred to as “solutions”. These solutions are typically developed in conjunction with, and specifically for, a single customer. As a result, they are highly individualized and demand substantial resources in terms of time and money.

Due to the geographic organization of ICN VD, complex customer solutions developed and provided in the Hamburg region, for instance, could not be simply reapplied in Munich. There was an urgent need for a more systematic management of the knowledge portfolio to prevent duplication in the provision of solutions. As the redevelopment of solutions from scratch means an enormous amount of time, work and also risk, the systematic sharing of localized knowledge across organizational boundaries became an urgently needed strategic lever to transform the business.

The emerging need for Knowledge Management

The organizational context

The setting for this case study is the German Sales and Services Organization within Siemens’ business unit Information and Communication Networks (ICN). ICN is a specialized division that develops customized end-to-end solutions in the converging worlds of voice, data and mobile communications, for customers in industry, as well as those in the business and public sectors.

The Siemens’ business segment Information & Communications (I&C) comprises Information and Communication Networks, Information and Communication Mobile and Siemens Business Services. Siemens I&C brings together the entire competence in the areas of networking technologies, telecommunications and information technology, and offers a whole range of products, solutions and services to customers worldwide.

Information and Communication Networks, Sales Germany (ICN VD), is the German market organization for the ICN business unit. With about 9,200 employees, ICN VD aims to provide diverse clients with solutions for data, mobile and telecommunications. In addition to selling products and services, its activities include consulting, professional services, technical services and training. It targets a customer base of more than 280,000 corporate and carrier clients in Germany and generates an annual turnover of around 2.6 billion Euro.

Like the whole Siemens Group, ICN VD has a decentralized organization. Several sales channels for specific market segments (e.g. carriers, small and medium-sized companies) serve the customers. Each sales channel is organized into sales regions, which, in

turn, consist of individual sales offices within the region to ensure customer proximity. In total, ICN VD comprises six sales regions and about fifty sales offices, each of them enjoying a considerable measure of autonomy. The main business processes, such as Sales, Order Fulfillment, Marketing and Human Resources, are enclosed within one geographical unit.

This organizational structure, referred to as a geographic organization, also exerts an effect on the distribution and, therefore, in turn, the management of knowledge. As similar standard products were sold and serviced in all sales regions in the past, there was no need to exchange experiences and knowledge across regions. Within regional units, the sales and service representatives were accustomed to sharing knowledge in small networks that display the strong bonds of long-established contacts and personal friendships between a small group of employees. This localized approach worked very well while every geographic unit was doing the same business and possessed the same levels of competence. However, when business shifted towards more customized solutions and the variety of products, solutions, and services increased dramatically, the weaknesses of this method of sharing knowledge became apparent – it reduced the transparency of the internal knowledge practice.

Serving the customer as a solution provider

Top management at ICN VD pondered the implications of the shift in competitive emphasis and their strategic intent to transform the business from a “box mover”, with its emphasis on products, to a “solution provider”, which would focus on the provision of knowledge-intensive solutions. For Dieter Spangenberg, head of the business unit, Knowledge Management was a major key to adapting the organization to meet the new competitive realities:

The management of our knowledge assets constitutes not only an indispensable pillar of our business, but should be seen as the central element of our strategy as a solution provider.

Yet, this transformation meant that attitudes, behaviors and mindsets also had to change.

Practically every employee – whether in sales or services – possesses a rich portfolio of tacit knowledge and experience. This resource can only be utilized with the staff's active and voluntary collaboration. We need to get our colleagues to build a network of knowledge sharing.

The solution – a knowledge management program

Top management decided to implement a dedicated knowledge management program. A knowledge-networking team – comprising employees from support functions, sales representatives and service technicians – was set up to develop and run the program. The envisaged benefits included the re-use of proven solutions, reduced time-to-market and last, but not least, better customer services. Emphasis was placed on overcoming the limitations inherent in the geographic organization of ICN VD, and thus the devel-

opment and implementation of tools and processes for knowledge sharing across individual regional boundaries. Hence, the interpretation of Knowledge Management at ICN VD became known as knowledge networking (KN). Dieter Spangenberg outlined the considerable breadth of knowledge networking in this statement: “The objective of knowledge networking is to create a living network of knowledge amongst all employees at ICN VD”.

Knowledge networking

The goal and approach of knowledge networking

The most important aim of the knowledge management initiative at ICN VD was to provide support for the solution business. Due to the enormous complexity of this business, it was not possible for all the sales and service staff to know everything about their jobs. Instead, sales people had to know where they could acquire specific knowledge as and when they needed it. Employees, therefore, had to be integrated in a “net of knowledge”, giving the 9,200 sales employees, consultants and service specialists in fifty locations in Germany quick access to a common knowledge base.

Benchmarks by management consulting firms had shown that an organization-wide network of knowledge could not only improve the quality of service, but also reduce workloads and save costs. The potential for knowledge networking at ICN was enormous. If employees could learn from past experience, if they could re-use some of the work done in creating a solution, they could offer the same solution to different customers, with only slight adaptations to suit individual requirements.

Factors to consider for the knowledge networking implementation

Setting up and sustaining such a network was far from easy. There were various factors which had to be considered first:

- How could the knowledge networking team show the sales force that they needed KN?

According to the knowledge networking team, “You need to sell KN just as aggressively as you sell products and services”. The selling of any KN initiative has to be a twofold activity: On the one hand, top management has to be persuaded of the enormous potential of Knowledge Management so that they can be won over to spread the word throughout the organization. On the other hand, the user groups have to be persuaded of the benefits.

- How would the knowledge networking team reach all 9,200 employees?

The Knowledge Networking team suggested that this should be achieved by using an “infection” approach:

To implement Knowledge Management in a company, you need to work with viruses. Infections must concentrate on small teams and their specific needs and requirements. These teams need to be confronted with the enormous benefits of Knowledge

Management to their particular work. As with biological viruses, the infected teams will spread the virus and infect others as the benefits materialize.

This approach was further advocated because it was **perceived** to create a feeling of mutual trust, since it used existing networks rather **than impose** new artificial ones. The virus would spread within teams as they co-operated naturally with one another, and would eventually link all the employees in a large knowledge-sharing network.

- How to define the right scope of knowledge networking?

According to the knowledge networking team, successful Knowledge Management is based on a combination of personal networks of relationships and a functioning technical infrastructure. Knowledge networking had to be an appropriate mix of “high tech” networking and “high touch” networking, reflecting the interdependence of social and technical networks necessary for effective knowledge sharing. The right “mix” of these two aspects would be crucial at ICN.

The design principles of knowledge networking

The knowledge networking team defined a set of design principles for conceptualizing the knowledge management initiative.

1. Customer orientation

A key aspect in designing the initiative was customer orientation. The initiative had to be geared to the knowledge requirements of the major user groups of knowledge networking. Sales representatives require in-depth knowledge about the competition, how to approach key customers, and how to develop solutions jointly with the customer. Service technicians, on the other hand, have a greater need for technical knowledge, for example, how complex integrated product and solution systems could best be implemented, and corresponding tips and expertise. In the initial discussions it became clear that a “one-size-fits-all” solution would be inappropriate, and that there should rather be customized solutions for special target groups. The knowledge networking team recognized that they needed to offer practical solutions that would be of real assistance for this program to be accepted.

2. Voluntary participation

The concept was to communicate the benefits of sharing knowledge for every employee and for the company. Through slogans such as “my knowledge pays off” and other appeals, employees were made to realize that any previous perceptions of gaining a career advantage by withholding knowledge from one’s colleagues, no longer applied in the new competitive dynamic. People had to participate voluntarily for knowledge networking to become a reality. Prevailing mindsets had to be changed through promotion and support of knowledge networking in the form of communication campaigns, training and a bonus system.

3. Compatibility

Knowledge-networking initiatives had to be compatible with existing systems and other knowledge-management initiatives at Siemens. With this in mind, the knowl-

edge networking team decided not to develop an independent system, but to utilize existing expertise in the areas of internal communications, training, and Intranet development. If systems were already in place, the knowledge-management processes would support these systems, instead of competing with them. Knowledge networking would therefore go hand in glove with other knowledge management initiatives. This meant, for example, that the knowledge networking team could then concentrate on the needs of ICN VD while another initiative, called ShareNet, took care of Knowledge Management between all ICN sales organizations worldwide.

4. Interdisciplinarity

As the business saying goes, “a fool with a tool is still a fool”, therefore knowledge networking success requires a smart mix of behavioral changes, adaptation of business processes and the development of an appropriate IT platform. Knowledge networking had to follow an integrated, interdisciplinary approach.

5. Sustainability

The basis for lasting success in the consulting and systems-integration business would be a sustained and heightened awareness of knowledge networking. Besides the immediately visible successes, permanent change in the awareness of dealing with knowledge should be introduced. Knowledge networking should not be seen as the “flavor of the month”. The quest for quick results should be accompanied by an endeavor to bring about enduring change in the corporate culture and work patterns.

With these design principles as guidelines, a special initiative to share technical tips and expertise between service technicians – Knowledge Networking Service Knowledge (KN Service Knowledge) – was launched to enable staff to respond to the increasing knowledge requirements in the installation and maintenance of individualized customer solutions.

KN Service Knowledge – networking technical tips and expertise

At present KN Service Knowledge supports the improved transfer of know-how between field service technicians (First Level Support), the Technical Assistance Center’s solution specialists (Second Level Support), and the product specialists in product development (Third Level Support). It also promotes an exchange of experience within each of these levels. But before this initiative could be defined and implemented, the initial situation had to be analyzed.

The initial situation at Siemens ICN VD’s technical service

The knowledge managers at ICN VD analyzed the initial situation before introducing the knowledge management system. They established the following:

- More than half the sales were achieved on the basis of the products in conjunction with know-how intensive, customer-specific solutions, and not merely the products.

- ICN had a decentralized organization and knowledge was therefore also regionally distributed.
- Solutions to customers' special needs were regularly replicated in the various regions. Past experiences were not fully utilized, or if they were, only partially and within a single region.
- The ever-shorter innovation cycles and the complexity of new solutions meant that not all the required knowledge could be acquired through formal training. Employees had to have access to knowledge as and when the needs arose.
- In the quest for solutions it was usually necessary to search many information sources in different media. Service technicians could not always verify the quality and topicality of the information.

The objectives of Knowledge Networking Service Knowledge

Using the characteristics of the initial situation as a starting point, the knowledge managers of the knowledge networking team developed KN Service Knowledge.

Oliver Holz, information manager in the Technical Assistance Center and the member of the Knowledge Management team responsible for the development of KN Service Knowledge, explained the overriding objective:

The strategic objective was to increase service quality by improving the networking of existing knowledge and collective experience within the organization. At the operative level, knowledge and experience needed to be distributed quickly and made available organization-wide, via solution maps.

Dieter Schorn, service manager at ICN VD, explained the special challenge to the knowledge managers:

Due to the large number of service staff and the many service locations, it was important that an initiative such as KN Service Knowledge was introduced quickly and comprehensively. All available opportunities had to be exploited to this end.

The target group of KN Service Knowledge comprised all service employees and their superiors who had to be persuaded to openly and actively share their knowledge with other technicians.

As the KN Service Knowledge emphasized the exchange of technical tips and expertise within the field service and between the various service levels, the process was integrated into the existing Service Information System and adapted to the specific requirements of the knowledge carriers and searchers.

Potential benefits of KN Service Knowledge

An example demonstrates the potential of KN Service Knowledge: When installing communications solutions in customer companies, the field service technicians (first-level support) are frequently confronted with existing components from manufacturers other than Siemens, which have to be integrated into the general solution. While doing

this, these technicians acquire valuable know-how that could save their colleagues tedious research on similar projects – if they only knew that this know-how already existed and how to access it quickly, it would save time and money. This knowledge also represents an important tool for the remote-service call-center staff and the Second Level Support solution specialists. In addition, it provides fundamental impulses for further product developments.

The initiative also created another advantage: increased customer satisfaction due to faster service times. Knowledge Management has therefore made an important contribution to customer bonding, which means that Knowledge Networking has paved the way for sales to expand. At the end of the day, customers benefit, because they get faster, and often cheaper, solutions to their problems.

How KN Service Knowledge works

At ICN VD it was previously very difficult, or even impossible for the field service to document the knowledge acquired on site and share it with colleagues on the Intranet. This is where KN Service Knowledge comes in: The redesigned information processes permit the field staff to share their experiences easily.

Adaptation of business processes

Today, service technicians contribute their tips and expertise by phone, email or directly in a special forum in the Service Information System. This is a Lotus-Domino-based platform and, besides the application for processing service cases, also contains extensive databases with information about tried-and-tested problem solutions, examples for setting up customer solutions, hardware and software releases, software updates and other topical service information. An editorial team was set up at the Technical Assistance Center to ensure the topicality, quality and the correctness of the tips and expertise, and to prevent the duplication of entries. These experts edit and validate the contents of all information, before making it available as examples in the knowledge base of the Service Information System.

This information is also forwarded to the product development experts (Third Level Support), who adapt the set-up examples to current product specifications and ensure that the customer solutions function problem-free with future product developments and software releases. This information is also used in making decisions about new developments, as it reflects the customers' requirements and needs.

Development of a technical platform

One of the most significant barriers to a well-functioning knowledge network is a lack of time. In order to motivate staff to participate actively in Knowledge Management, it had to be possible to effect both the forwarding and accessing of information. The infrastructure at ICN VD satisfied this requirement through the availability of an exist-

ing Intranet, with almost 10,000 connected computers and a well-functioning IT system. Consequently, service technicians did not have to sacrifice much time, which made the new facility more acceptable to them.

One of the objectives was that technicians with problems should have quick and easy access to the documented knowledge, which is why the knowledge networking initiators first analyzed and then improved the query methods. As the “single point of information”, the search function had to be able to scan different information rooms. It had to offer users the choice of searching for the required information on the Internet, the Intranet, in the Service Information System’s databases, or in the product manuals. The search function had to be able to search sites on the Internet, Intranet, in Lotus Domino and other databases and, simultaneously, guarantee quick response times. To meet these requirements, the knowledge networking managers chose the Knowledge Query Server. This is a metacaller that takes advantage of search engines that are already in place and presents all search results in a single display.

With the new “single point of information”, all staff could directly access the knowledge content of all information rooms (see Figure 14). Improved documentation and search capacities not only prevent duplicate work, but in so doing, also provide more time for personal contact, when no documented knowledge is available.

Stimulating behavioral changes – managing the human factor

The Knowledge Networking team started an information and training campaign and offered incentives to get the system up and running with sufficient input as quickly as

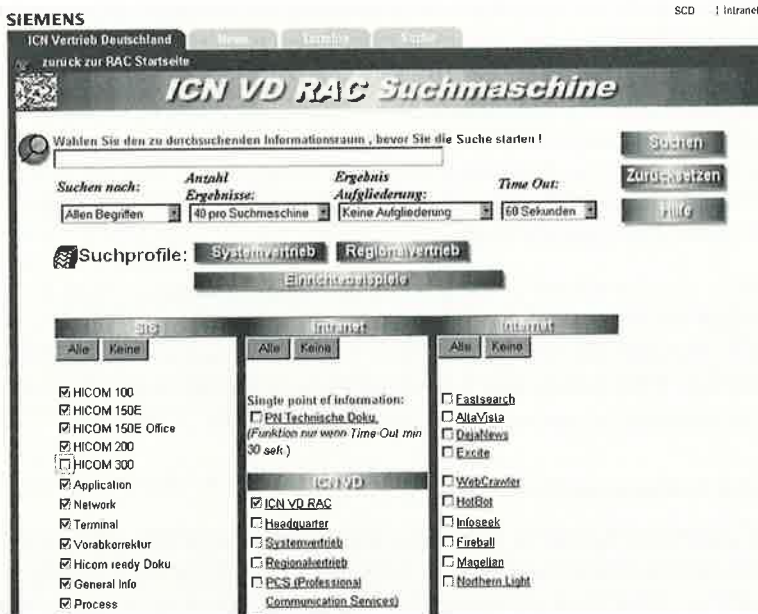


Figure 14 The new “single point of information” for all service technicians

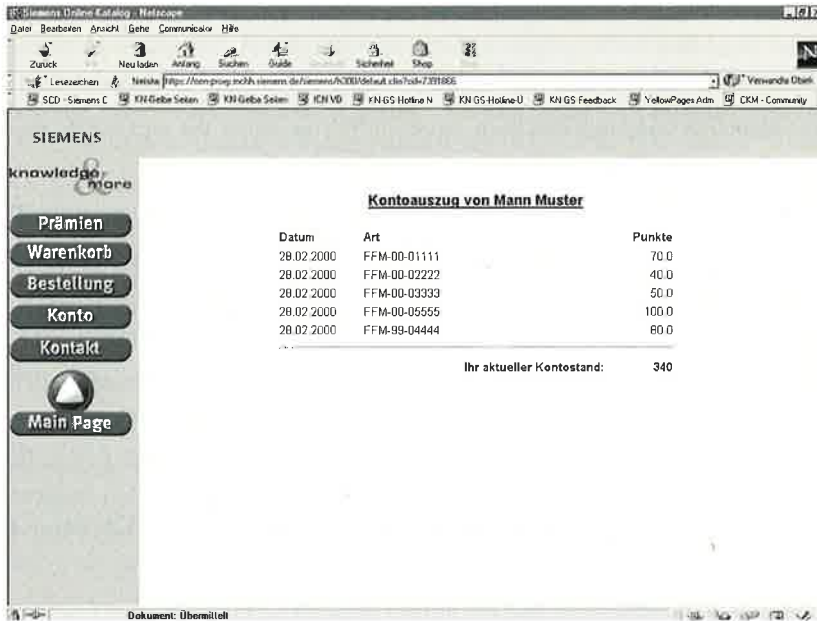


Figure 15 The “Knowledge & more” personal account statement

possible. The campaign was aimed at stimulating service staff to share their knowledge. It was also designed to overcome any reservations they may have had about using the new medium.

Motivating the service staff was the first priority when introducing KN Service Knowledge to the field. “After all, anybody planning to submit a solution is going to have to invest time”, remarked Knowledge Manager Andrea Dora. The knowledge networking team developed the “knowledge & more” incentive system not only to provide motivation for the submission of tips, but also to honor the quality of the tips.

Each service employee who submitted a useful tip or trick was awarded “knowledge & more” points. Each solution submission was judged on the basis of a set of fixed criteria created by the editorial team. Only once a tip had been submitted electronically, fulfilled the minimum criteria for content, and supplied additional information about application areas and validity, would it be awarded the maximum points. When a certain number of points had been reached, the staff member could redeem the points for a bonus, ranging from personal digital assistants to travel arrangements. Bonuses were available from 300 points upwards, meaning that a single technician would have had to submit at least five solutions before being awarded the full number of points and qualifying for one of the prizes. The service technicians were able to call up their point accounts (see Figure 15) and the bonus catalogue accessed on the Intranet at any time. Apparently many found this set-up very attractive.

“After “knowledge & more” had been running for nine months, in our large-systems segment alone, more than 2,200 suggestions had been submitted. Considering that the service staff totals 2,500, this is a great result”, enthused Andrea Dora.

Once the first incentive campaign had been successfully concluded, the knowledge networking team started one for the medium systems segment.

Additional motivation for the bonus system is provided at the team-management level where many regional service managers have made target agreements with their staff. The service executives thus play an important role as multipliers by motivating their teams to submit their tips and expertise. An internal corporate ranking regularly shows how many solution tips have been submitted by each service region. “This created a kind of competition and contributed to the flood of suggested solutions”, reported Oliver Holz.

The service staff are trained to use the new knowledge documentation and to access the instruments. The training includes, for example, an “Intranet driving licence”. In these ways, the technicians’ managers repeatedly emphasize the potential that KN Service Knowledge presents.

The scope and size of the challenge that the project presented can be deduced from the above descriptions.

More about KN Service Knowledge

To support the service staff, the existing Service Information System (SIS) is being expanded to include the service employees’ undocumented knowledge. To this end a process of knowledge sharing was defined. An integral part of this knowledge sharing was formed by the incentive program “knowledge & more” and the online premium catalogue.

At present service staff (of Siemens ICN VD as well as the international market) access the information site of the Remote Assistance Center (RAC), including the SIS databases, on an average of 180,000 times per month.

The incentive program “knowledge & more”

Within the framework of the KN Service Knowledge, ICN developed an incentive system, called “knowledge and more”, which was available to Siemens ICN VD service employees.

The goal was to locate high quantity and quality service solution suggestions from experts in the Hicom 300 and Hicom 150 fields as part of the ICN VD business outreach, as well as to make work-related solution tips available to the employees of all sales regions.

With the temporary incentive program “knowledge & more”, the solutions provided by very experienced and middle segment service employees will, through their active participation, be accessible to each and every service employee. The subject editorial staff at RAC tested every solution according to strict criteria and prepared them for inclusion in the Service Information System databanks.

The online premium catalogue

Each and every service employee can access the KN Yellow Pages through his or her password-protected entry and view his or her personal points balance in the online premium catalogue to be found there.

The “knowledge & more” online premium catalogue not only offers a view of the points balance, but also provides access to the premium offer, to the order form and to the contact site for requests for help and further questions.

When a service employee has chosen and ordered his or her desired premium from the broad offer available, the value of the premium will automatically be subtracted from his or her point balance.

The number of orders clearly indicates that the numerous solutions that were received, are of a very high quality. The requirements were exacting since the premium claim only became possible from the first 300 points onwards. However, 225 employees were able to enjoy their desired premiums.

Not all of the 3300 solutions that were received by the subject editorial staff of the RAC could meet the demanding criteria. A few of the solutions, for example, were disallowed as they were duplications.

“Trouble was taken to organize a feed-back process to the provider of each solution tip. In this way all participants received individual feed-back as to the status of their accomplishment”, says Reinhard Meurs, Head Manager of Service and Information at RAC.

A solution tip also underwent the following process: The service employee sent his solution to the subject editorial staff who tested whether it completely met the needs of the required underlying principle; checked for duplication and, eventually, reworked it if required. The editorial staff also undertook the process of verification of the solution, provided the editorial input and placed the solution on the SIS where everyone can access it.

The results

Both the incentive programs presented within the framework of the KN Service Knowledge as described under “knowledge & more” above, have been completed.

The knowledge networking team has come to the following conclusion:

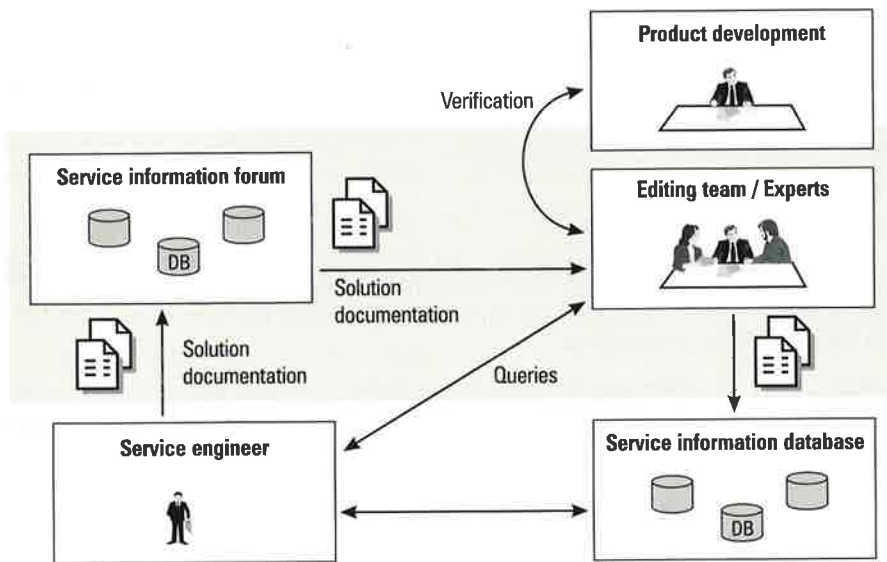


Figure 16 Process KN Service Knowledge

- The premiums offered, as well as the time limit of the programs, proved to be extremely appropriate for encouraging and directing knowledge sharing in the areas that had been specifically identified.
- Since the incentive measures were limited to a certain area of solutions as well as time-wise from the start, the raised awareness could be kept constant over the delimited time period.
- The choice of expertise and event premiums worked in favor of an identified motivational effect that went beyond the work area to affect private lives as well.

“The incentives have accomplished much”, says Dieter Schorn, leader of the Remote Assistance Center. “The foundation of KN Service Knowledge has been laid in the SIS (Service Information System) databases. The system now needs to increasingly become a common place tool in the daily work of each service employee. Not everyone is as yet participating actively in knowledge sharing and exchange. Each staff member needs to motivate and encourage his fellow employees to provide solution tips and tricks and their use”.

With the Service Management Award, the German Customer Service Association won the annual prize for the best customer service-oriented initiative and its repositioning.

Within Europe, the German Customer Service Association, with its 1,200 members, is the largest and most important business association for management employees engaged in customer service and service.

Future outlook

The subject editorial staff of RAC, in conjunction with the knowledge networking team, are planning a survey of 400 remote RAC employees to ascertain the use of KN Service Knowledge. The goal is to discover to what degree the form of the solution available in the SIS supports real work and if this can be improved, where these areas of improvement lie, and what is necessary to empower service employees for this medium and to sensitize them to regular use.

“A database and a knowledge tool such as SIS exists through employees’ permanent input of actual data and its regular use. Even after the incentive’s termination, making his tips and tricks available should be part of each employee’s life. His colleagues will then be able to effectively access solutions which will provide them with quick reaction from experts”, emphasizes Reinhard Meurs.

The authenticated solutions in the KN Service Knowledge initiative within the framework of Knowledge Networking have increasingly established themselves as valuable tools. Those service employees who regularly utilize the capabilities of the SIS databases as a tool, could save up to three hours per week on their solution searches. If only 1,000 service technicians use an active use solution, this action will provide the company with a ratio potential of almost 10 million Euro per year.

In future permanent demands will be made on service staff. Without a functioning Knowledge Management – for which they are all responsible – the coming technological revolution and the intensive expertise required thereof will not be successfully mastered.

Key propositions

- 1. KN Service Knowledge thrives on customer intimacy.** For the successful implementation of Knowledge Management projects in sales organizations, the needs and requirements of the customer must form the backdrop against which all other activities are performed. Without customers there is no business. By paying close attention to the customers, relevant Knowledge Management content will be generated.
- 2. Benefits and pitfalls of decentralization.** Organizational structure, particularly geographic organization, or the “localized approach,” exerts an effect on the distribution and, therefore, the management of knowledge. Decentralization means the concentration of knowledge is clustered in small pockets, instead of being widely accessible. The basis for the transfer of knowledge is personal relationships and geographical proximity. Knowledge Management seeks to extend the immediacy of this natural contact beyond its boundaries by taking advantage of technology. In so doing, it extends the formerly untapped and often invaluable, benefits of local and particular groups, to a Community of Practice, unhindered by geographical boundaries. In short, technology turns what was previously perceived as a pitfall into a veritable windfall.

- 3. KN Service Knowledge means a change in management style.** The introduction of KN Service Knowledge necessitates a fundamental change in established management procedures and mindsets. Typically, when growth requires a corporation to focus on the sharing of knowledge, this has broad implications for the established “way we do things around here.” The critical question is whether the organization can afford to align itself with the requirements for enabling the sharing of knowledge. When established procedures are not conducive to the sharing of knowledge, the company must be ready to restructure itself into an organization more amenable to knowledge sharing.
- 4. Incentive systems are good for initiating programs like KN Service Knowledge, but should not be sustained indefinitely.** Incentives have proved to be a good mechanism for launching a knowledge-management initiative and are especially important for raising the awareness of the initiative during the first few months. However, incentive schemes are not considered useful in the long-term, which is why they should be restricted to certain topics to a limited time period. Over time, the intrinsic benefits of sharing knowledge should become apparent and the system then becomes self-perpetuating, thereby rendering incentive systems obsolete.
- 5. Existing structures should be fully utilized.** Fundamental to the principles of knowledge networking is the utilization of existing knowledge. In keeping with this, the knowledge networking team at ICN was able to exploit existing tools successfully for the implementation of this project, thereby practicing what they preached, and setting a practical example at the outset.

Discussion Questions

1. What are the special challenges for managing knowledge in a Sales and Services organization?
2. Discuss how the requirements of a knowledge management program in this setting differ from those in other organizations. What are the implications of these similarities and differences of requirements for the management of knowledge?
3. How well does the chosen approach meet these challenges and requirements?
4. Develop an alternative approach for the sharing of technical tips and expertise, and discuss the advantages and disadvantages of the approach used in this case study.
5. In which areas of KN Service Knowledge do you envisage possible improvements?
6. What additional initiatives could the Knowledge Networking team provide to support the solution business of ICN VD?