This Case Study was adopted from Sukowski, O; Eppler, M.J.: *Knowledge Management Case Studies: Project Experiences, Implementation Insights, Key Questions.* Net Academy Press, St. Gallen 2002, pp. 85-97.

The Case Study is only used for teaching purposes in the course IS2 >**Global Knowledge Management**< of the 21st Jyväskylä Summer School 2011.

D.

THE PRAGMATIC DEVELOPMENT AND USE OF KNOW-HOW: KNOWLEDGE MANAGEMENT LIGHT AT SECURITECH LTD.

Dr. Martin J. Eppler

Knowledge is not only a decisive competitive factor for research-intensive, multinational corporations, but also for a smaller, know-how-dependent firm such as ourselves, which is now expected to win market share in supra-regional competition.

(Anton Furrer, Managing Director of Securitech Ltd.)

1. BACKGROUND

1.1 AUTHOR

Martin J. Eppler is the vice-director of the mcm institute for media and communications management at the University of St. Gallen. He has written several case studies on knowledge-intensive firms and their information products which he teaches in the executive MBA programs of the University of St. Gallen. His main research areas are information quality and knowledge management.

1.2 CONTEXT OF THE CASE STUDY

The following case study is fictional and the described structure does not correspond to actual fact. It is however based on a series of similar, actual cases which the author was able to study in the field (through interviews, workshops, and document analysis).

1.3 AIMS AND TARGET GROUP

The following learning objectives should be furthered through this case study:

1. The special characteristics of knowledge management in the small-to-medium sized business context should be elucidated.
2. Simple knowledge management tools for smaller organisations such as knowledge fairs, debriefings, and communities of practice should be presented in the context of their specific application and analysed.
3. The preconditions of successful introductions of knowledge management techniques should be systematically depicted.
4. The role of top management in knowledge management is to be presented in an exemplary fashion.

2. CURRENT SITUATION

This morning, Anton Furrer sat in his car earlier than usual. He was on his way to a management seminar. The motorway was still damp from the rain of the previous night, but Furrer had no difficulty in steering his car, and was soon lost in thought.

Almost exactly eight months previously he had participated in the same seminar. Then he had taken part as a participant, not as a speaker like now. Much had happened during these eight months. Some of it he would relate to the participants today. Much he would have to pass over in silence, to avoid de-motivating the participants about the seminar's subject on the very first day. He too had been motivated eight months ago. It was precisely that knowledge management seminar which had been the catalyst for his decision to systematically introduce knowledge management in his own firm. As director of a medium-sized company in the area of security technology with ninety-five employees, it had been one of the few seminars for which he could spare the time. Generally, Furrer was sceptical of such seminars or workshops (he called them "workstops"). The knowledge management seminar had made a lasting impression on him, however, and became the starting point for his own knowledge management activities.

He had immediately seen the connections between the seminar presentations and his own situation at that time, and the arguments and examples of the speakers generally convinced him, even though some of the speeches had been rather esoteric for him, especially this nebulous discussion regarding so-called implicit knowledge. But on the whole, the seminar had greatly impressed him, and he found the speakers' enthusiasm contagious. Once back in the office, he soon called his team into a meeting, gave each member of the management group a copy of a knowledge management bestseller, and announced that Securitech should, must in future be a knowledge-based, learning organisation if it were to win supraregional and significantly more complex projects, as anticipated in their business strategy.

The majority of his colleagues had immediately agreed with his reasoning. They also saw the future of their business in the complex domain of integral security consulting (which offered higher profit margins) rather than simple break-in and fire protection. "But what," they asked "will this mean in terms of our day-to-day work?" "How can we better develop and use our significant know-how?" "What are the next steps?" "How do we use knowledge management for Securitech?" These were some of the questions Furrer's colleagues put to him - rightly put to him, as he had to admit. Furrer then told them of the presentations he had heard at the seminar and the case studies in the aforementioned business bestseller, which he had purchased while still at the seminar and read diagonally. He mentioned expert indexes, knowledge maps, intranets, knowledge brokers, knowledge portals, and noticed as he was listing catch-phrases how he had suddenly come to speak of tools and infrastructures without having given any serious thought to the needs and preconditions relevant to his company. Furrer then did something which had often proved to work in similar situations. He postponed the meeting

until the next week. Thus, he would be able to think systematically about knowledge management at Securitech over the coming days and the weekend, and would be able to present his colleagues with a concrete plan of action. Baumer, one of his colleagues (responsible for finance at Securitech) then, once again made his joke of "management by walking around" ("we walk around the management decisions instead of taking them") but admitted that the subject did indeed require more preparation, especially as regarded the costs of such undertakings.

As Furrer now drove along the motorway to the seminar, in which he would probably be presented as an 'expert', he remembered how uncertain he had felt in this first management meeting regarding knowledge management. Baumer had not directly contradicted or confronted him, but nevertheless made it evident that Securitech did not have the funds for esoteric experiments.

In the following days, Furrer worked all the more energetically towards a systematic approach. He went through all the seminar documentation again, and carefully examined the models shown in the knowledge management book. But the longer he tried to come to grips with models, concepts and spectacular graphics, the more obvious the following insight became - namely, that even if knowledge management could provide a systematic perspective on his company's problems, above all the issue was to solve the specific problems of his company in a step-by-step process, by using healthy common sense and a pinch of experimentation, Furrer again very clearly recalled this key insight from the start of his knowledge management activities:

"Before I start with the preparation of a master plan or a knowledge strategy, I have to know what kind of company we are, where we want to go, respectively, where we have come from, and which preconditions and restrictions determine our actions."

Therefore, Furrer spent the majority of the weekend and the following days reconstructing his own business context and analysing it from this informed perspective. The most relevant facts regarding Securitech Corporation are here summarised in chapter three.

3. BUSINESS CONTEXT

Securitech Ltd. is a limited liability company headquartered in Zurich, which has been trading in the areas of fire protection, break-in protection and corporate security for approximately 25 years. It was originally founded as an unincorporated company, and led by the company's founder for approximately ten years, until he sold it to the management team, which helped to expand the company from around eight to, now, over ninety permanent employees. For fifteen years, a team of six managers had led the firm, although half of these had been with the company for less than five years. One of these was Furrer himself, who had previously worked in a larger firm, and who was hired to improve the profit situation at Securitech. He had been successful in this area, and this

among other things later made it possible for him to acquire equity in the firm. Of the 95 employees, around 80 were directly involved in client projects. Securitech's client portfolio was centered around medium-sized and large industrial companies throughout the greater Zurich area, as well as in the neighbouring regions. These required advice and products for security systems in warehouses, production sites and offices. The range of services offered by Securitech ran from the simple installation of a fire alarm system or a security system to the integrated planning of a company security concept for crucial annex building or the handling of dangerous materials.

Securitech was organised into three profit centre-like sectors, i.e. fire protection and prevention, break-in protection and alarm systems, as well as integrated corporate security. In terms of turnover, the two first sectors each accounted for approximately 40 percent of the total. The remaining 20 percent from corporate security consulting, however, accounted for almost half of Securitech's profit. For this reason, the company's management had decided to more strongly accelerate growth in the area of integrated corporate security, not merely to continue as supplier and installer of security products, but to increasingly present itself as a competent corporate security consultant in the (supraregional) market. A major obstacle in the pursuit of this strategy was, nevertheless, the relatively rigid cost-centre orientation of the majority of the employees, which was especially harmful to the sector-overreaching activities in the context of integrated corporate security. In addition Meyer, the technical director, had several times critically reflected on Securitech's learning capacity to Furrer, and ironically noted that "we call experience what we have been doing wrong for the last ten years - we don't really learn from our successes and failures." Most members of project teams, according to Meyer, "rush from one project to the next without looking right or left."

In addition to all this, it was just in the sector of integrated corporate security where the main know-how was concentrated in a few engineers, who were in great demand in the job market. Several departures of highly qualified employees in the past year had hurt all three business sectors. One had the feeling that a large mass of project experience and technological knowledge had been lost in one go. At the same time, technological change was sweeping the security industry faster than ever before, and many employees expressed their difficulties in keeping up with the newest product developments (to say nothing of the reserve shown in the use of computers and related applications). On the client side, this occasionally led to a lack of respect for the know-how of the Securitech security consultants, probably also because Securitech found it difficult to properly show and market their wide range of knowledge regarding security concepts and technologies.

On the basis of this state of affairs, Furrer suggested the implementation of several knowledge management measures ("knowledge management light", as Furrer would call it in the next management meeting) which seemed to him to be both in line with their business strategy and capable of being implemented. These measures will be briefly presented in the next section. They area also described in the appendix.

4. KNOWLEDGE MANAGEMENT MEASURES AND RESULTS

If Furrer recollected correctly, that time had brought him a good deal of insight, and after numerous discussions with diverse areas of the business, he worked out five specific knowledge management measures which he felt were adequate, and which he wanted to present to his colleagues in the management team. The following five proposals were under discussion:

1. The creation of a knowledge architecture of the areas of Securitech's core competencies, for an improved positioning and marketing of the company's knowledge for client acquisition, but also for recruitment of new employees. This graphic illustration was to show how the different competencies of Securitech worked in unison, and how they were distributed within the firm (which sector possessed which know-how).
2. Continuing on from this starting point, the set-up of a "knowledge shadow organisation" in the sense of a know-how organization chart to improve the network of competencies within Securitech and overcome profit-centre-based thinking. In addition, this measure was intended to determine responsibilities for certain technology areas ("who is a specialist and contact person in what area and documents it accordingly.") This initiative was also intended to foster the concept of "communities of practice" within Securitech.
3. The organisation of a semi-annual knowledge fair with posters in the local town hall regarding important client projects, technologies and problems.
4. The regular gathering of a knowledge cockpit by means of various indicators, for the unitary assessment (and early warning) of the state of Securitech's knowledge.
5. The organisation of regular lessons learned workshops for all large-project teams, to make the learning capital of the finished projects accessible to other employees.

These five measures had been presented by Furrer to his colleagues. As always, he had placed value on clear, systematic and concise communication. Furrer's presentation slides regarding the individual measures are reproduced in the appendix of this case study.

Furrer's management team colleagues accepted the proposed measures with goodwill. Most likely for two reasons: firstly, no one wanted to make an enemy of Furrer, and secondly, the majority was relieved that Furrer had not insisted on commissioning a large intranet, expert system or other resource-intensive, large-scale IT-system. The proposals seemed realistic and sensible to all, although a number of questions remained open, such as which cost centre would bear the costs Furrer had estimated. Since Furrer saw knowledge management as a whole-company strategic initiative, he suggested splitting the financing of the measures between the HR and the (at Securitech, -until now-rather small) R&D budget, with each bearing half of the costs. This suggestion was, after

ten minutes' discussion, also adopted. The only incident marring the meeting (from Furrer's point of view) was Baumer's request, that the initiative be reviewed in a year's time and either be continued through a business management resolution, or - in case the effort had not proved worthwhile - be scrapped without replacement. This proposal was also accepted.

5. IMPLEMENTATION PROBLEMS AND OPEN ISSUES

As he mentally reviewed this particular business management meeting in his car, Furrer remembered another of the adages Baumer had quoted: "An intention is a nag that's often saddled but rarely ridden." Furrer clearly realised that the proposed measures would only make sense if he actively stood behind them and insisted on their realisation. Otherwise the whole effort would be in vain. Even at this early stage, it seemed important to him to staff each measure with a responsible location. As would later become evident, this was a central success factor of the Securitech knowledge management initiative. What he had not adequately considered was the immense importance of communication to these knowledge management activities. He had at the time hastily drawn up five logos within ten minutes, to give the initiatives a visual identity. It was only later that he realised that these logos would receive quite a large amount of attention within the company. Had he realised it earlier, he would probably have engaged a graphic artist, to give the initiatives a more professional appearance. But Furrer's stylistic ideal derived from his student days and the yellow Reclam booklets, and his motto was therefore "content is everything". Thus, the mobilising effort was made difficult from the beginning. If Furrer had not continued to follow-up on the various measures (and continued to inquire about progress with the persons responsible) much would have sunk without a trace. Especially the Securitech know-how shadow organisation was in this respect rather a "barrel burst", in Furrer's words. Although a knowledge structure could be drawn up and the relevant responsibilities distributed relatively quickly, the specific actions then depended heavily on the individual expert leader. Four of them had already drawn up their own technology strategy concepts and "state of technology" reports with their groups, but the majority had at most had one of two brief topical meetings in the last few months. Here it would have been better for Furrer to have identified the "hot topics" and built on existing informal groups, instead of insisting on practice groups. This had by now become clear to him.

Nevertheless, Furrer was really quite satisfied with what had been accomplished. Within a few months (approx. seven months running time) Securitech had managed to create several important processes, events and preconditions for knowledge management, and had been able to securely anchor this subject in the employees' minds. Through two reports in trade journals, Securitech had even managed to recruit new specialists by means of their knowledge management initiative. Staff response was also

generally positive. Especially the "learning curve" was praised as a practical and useful instrument. Only eight teams had so far completed this process, and the documentation of their 'lessons learned' could certainly be improved-here a handier appraisal format would still need to be found. But the thought change regarding project work had obviously begun. The project staff appeared to slowly realise that projects were important vehicles for organisational learning, and should be brought to an proper conclusion. Some teams had even begun to periodically introduce a learning curve (in part even with the participation of the client) to improve a running project.

The knowledge fair had also been carried out once by now, and had occasioned a good deal of trans-sector discussion. All project teams had managed to produce a poster and approximately 80 percent of the project staff took part in the knowledge fair (and many teams put the posters up in their meeting rooms afterwards). The feedback questionnaire was completed by two thirds of the participants. Of these, over ninety percent were in favour of keeping the knowledge fair as an annual event. Furrer also had the impression that the fair was quite a good motivational tool. Following the knowledge fair, he heard many of the employees say that Securitech was well on its way from being a low-tech to being a high-tech company.

The knowledge architecture which Furrer had created together with four other Securitech employees, and to which he had in a subsequent contribution to the employee newsletter pegged the knowledge management initiative as a whole, had received mixed results.

Furrer and his colleagues had indeed managed to accommodate around twenty different sectors and sub-sectors of know-how with some measure of clarity in a diagrammatic depiction. It also proved possible to create practice groups based on this arrangement. But as mentioned above, not all of these groups were a success.

At client meetings and recruitment sessions, the diagram always made a notable impression, and potential clients and competitors assessed it as "professional", "innovative" or also "enlightening" (in part because it could create a common context whereby it was possible to orient oneself in conversations and meetings). The reason for this was probably also that Furrer and his colleagues had worked closely together with an informational graphics specialist, who, after drafting the knowledge architecture most likely knew more about the know-how of Securitech AG than many employees. The diagram finally even found its way into the annual report of the company.

The knowledge cockpit (as almost every other measure) had required much more effort during its implementation than Furrer had anticipated. He had been most surprised, however, at Baumer's sudden enthusiasm for this idea. The thought of making knowledge measurable must have exercised a secret fascination for Baumer. This was the only way Furrer could explain to himself why Baumer devoted so much time and energy to this project and thereby also to some extent overshot the target. Instead of the originally envsioned eight indicators, Baumer soon presented an "indicator-based knowledge accounting system" with a total of 24 indicators in six dimensions. During the initial collection of the data for the four indicators in each of the dimensions, it quickly became clear that Baumer's brilliant intellectual measuring system would fail, given the restrictions of reality. The six dimensions of knowledge development/innovation, knowledge use/implementation, knowledge coding/anchoring, knowledge outflow/risks, knowledge licensing/setoff, and knowledge efficiency/turnaround simply asked too much of the majority of employees, who would have been responsible for data collection in their sector.

The redesigned cockpit, on which Baumer had subsequently undertaken some fine-tuning, had been run three times by now, however, and provided information regarding important trends (Baumer's comment had been: "good things come to those who validate"). It consisted of two dimensions and a total of six indicators. The two dimensions were innovation and efficiency. The three indicators in the area of innovation were the so-called rookie ratio (the percentage of new employees, who had been with the company for less than one year), the new client ratio (percentage of new clients) and the new product ratio (percentage of new products on offer, i.e. which have been available for less than six months). The indicators in the area of efficiency were the winning ratio (number of won clients in relation to submitted offers), the training ratio (number of diplomas received per professional examination taken) and the consulting ratio (percentage of consulting projects).

6. CONCLUSION

Furrer headed off the motorway. In five minutes he would be at the conference hotel. He would make some last-minute changes to his presentation, however, "since we learn the most from our mistakes, after all, and the participants will hear enough glowing success stories today." How he himself would learn from these mistakes, to be able to decide the question of principle for or against knowledge management in his favour, was another question.

QUESTIONS FOR DISCUSSION

BASIC QUESTIONS:

1. Why do you think it was precisely these five measures Furrer proposed? (Discuss with reference to the details given in the case study) Please allocate Furrer's measures to the problems illustrated in the case study wherever possible.
2. Which measures do you consider to be appropriate solutions to the illustrated problems? Which measures do you view with concern, and why?

3. What are the central findings (in the sense of success factors) with regard to the process of introducing knowledge management which can be deduced from Furrer's actions?
4. Which of Furrer's ideas did you consider to be the best? Could this idea have emerged and been implemented even without any involvement of knowledge management?

FURTHER QUESTIONS:

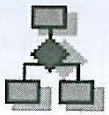
5. Which aspects (problems, barriers to implementation, measures) of this case study are specific to smaller and medium-sized businesses? Why? What would not have worked in a larger company?
6. Which next steps would you propose to Mr Furrer for the coming four months? How can he ensure the continued success of the undertaken measures, and achieve the continuation of knowledge management in the approaching business management meeting?
7. Which aspects of the given context should Furrer pay more attention to in his next steps? Which factors has he given too little consideration until now?

APPENDIX 1:

Brief descriptions of Furrer's knowledge management initiatives

Logo:	Benefit:	Costs:
	The visual depiction of our core competencies and their interaction enables clients and new as well as potential employees to understand our know-how better. In addition, it will aid us in structuring the know-how organization chart (see 2).	One-off drafting by core team and graphic artist: approx. CHF 25,000
	Execution:	
	Will be prepared/reviewed max. once per year	
Target group:		
All (potential and current) employees and clients		
Process:		
1. Determination of our core competencies (integrated security planning, fire prevention, break-in protection, labour and production safety) during the next business management meeting with the participation of important experts (Frei, Sutter, Gerhardt) 2. Working out of interdependent and sub-know how areas 3. Presentation of competencies as an attractive map 4. Printing of respective posters, flyers 5. Notification of employees by superiors 6. Presentation of the map in recruitment and sales discussions 7. Annual updating of the map as appropriate		
Documentation		
Posters and flyers will be filed in the L:/Knowledge/Architecture directory.		
Person(s) responsible:		
Anton Furrer		
Check:		
Measurement though poster distribution in canteen and presentation in every team. Use in sales situations.		

Figure 1 ■ Knowledge Architecture

Logo:	Benefit:	Costs:
Securitech Know-how 	Allocation of responsibility for specific technologies or processes to designated employees ensures a secure basis for the building up of knowledge.	No quantifiable cash investment. Time investment of around 20 know-how area specialists: approx. 5 hours per week = approx. CHF 10,000 per week. (imputed costs)

Execution:

Regular screening of relevant trends as well as periodic briefings and reports to all employees by means of the employee newsletter or documents made accessible on the Server.

Target group:

Technology and process specialists of Securitech AG, as well as key accounter and project leaders.

Process:

1. Extracting approx. 20 know-how areas from our knowledge architecture
2. Identification of relevant experts
3. Allocation of tasks and responsibilities among the experts
4. Experts organise practice groups and send initial orientation E-mail
5. Experts set up area on server
6. Five group leaders will present their area at the first knowledge fair (see point 3)

Documentation

The experts will set up their areas under L:/Knowledge/Groups.

Person(s) responsible:

Gregory Meyer: Head of production and technology

Check:

At least one technology report per know-how expert and year. At least two briefings to employees. At least two practice group meetings per year. Know-how-Organigram is available in the company presentation. Updates with Meyer.

Figure 2 ■ Know-how Organization Chart

Logo:	Benefit:	Costs:
Securitech KnowlegeFAIR	Systematic and global knowledge transfer between the various project teams of all Securitech sectors.	Hall rental: CHF 700 Approx. 30 educational units: CHF40,000 Other costs: CHF 1,300. **Total:** approx. CHF 42,000 per year

Execution:

1-2 times per year, in the form of a half-day event coupled with technical reports and case studies.

Target group:

All project leaders and project staff.

Process:

1. Preparation of posters by project teams to introduce their area of expertise
2. Submission of topics and clustering through Hurter => exhibition layout plan
3. Set-up of booths by operations department, invitations per memo by Furrer
4. Start: 8:30 am, two technical reports and subsequent holding of fair until 1:00 pm
5. Individual informational briefings in booths the whole morning. Short presentations in booths possible
6. Report on fair in employee newsletter by Hurter

Documentation

The posters of the project teams will be filed under L:/KnowledgeFair/ Year/Poster. The two introductory reports will be filed under L:/KnowledgeFair/Year/Reports.

Person(s) responsible:

Hans Hurter: assistant / project management support.

Check:

At least one general company meeting per year with attendance by at least 70 percent of project staff. At least one partial meeting with attendance by at least 40 percent of project staff.

Figure 3 ■ Knowledge Fair

Logo:	Benefit:	Costs:
Securitech Cockpit	Periodic success and risk vetting through a core set of meaningful indicators of knowledge increase and decrease, respectively knowledge use/development, at Securitech.	Data collection costs: 4 hours per department semi-annually: approx. CHF 15,000

Execution:

Semi-annually through all levels (from teams through departments and whole-business)

Target group:

All project leaders and project staff.

Process:

1. Identification of critical knowledge areas (= target-determining)
2. Compiling indicators - modelled on 'balanced scorecard' - in business management meeting
3. Initial collection of indicator data and linking to Cockpit
4. Periodic data collection and analysis
5. Fine tuning and annual comparisons as the occasion arises

Documentation

Indicators will be maintained in the access database.

Person(s) responsible:

Max Baumer (CFO)

Check:

At least one semi-annual run with 8 indicators from the areas of technology-know-how, client knowledge, profitability and processes.

Figure 4 ■ Knowledge-Cockpit

Logo:	Benefit:	Costs:
Securitech Learning Curve	This systematic milestone-analysis will help the team to avoid repeating mistakes, improve processes and reduce unnecessary work/ expenditure, as well as preserving important findings for the future.	Team meeting room, meta-planning tools and room. => Approx. 3 half-day workshops per year and team: no quantifiable cash costs, imputed costs approx. CHF 80,000 (to be charged to project budget)

Execution:

Approx. three times per year as a half-day event with presenter from another project group.

Target group:

All project leaders and project staff.

Process:

1. Stakeholder analysis of the project
2. Survey of the most common questions, mistakes, successes, experiences with external contractors etc.
3. Process review (what went well, what didn't work => findings and actualisation)
4. Plan of measures to be taken
5. Looking forward
6. Documentation saved on L server

Documentation

The metaplan working papers of the project teams will be filed under the path name L:/ Knowledge/Learningcurve. Where projects have been completed, a short case study will be produced and filed in the same directory.

Person(s) responsible:

Large-project leaders. Project management support Hans Hurter

Check:

At least one completely documented learning curve workshop per year / large-project team.

Figure 5 ■ Learning Curve