KM as a Chemin Faisant: The Valtech Experience

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Abstract: *Valtech* is a Paris-based consulting firm established in 1993 and devoted to e-business technologies. The company was initially structured as a distributor of new information technologies to the French and European market, which secondarily provided training in the use of its products. Valtech now positions itself as a pure knowledge-transfer firm that instructs clients in the strategic use and development of cutting-edge electronic technologies. Valtech organized itself according to KM principles in 1993, but only became aware of KM as a formal organizing framework in 1998. While the adoption of KM is often "pushed" onto companies by the academic or consulting communities, Valtech pulled itself toward KM organizing logics by the New Age of business it defined for itself. It is in this way an excellent example of strategic commitment and organizational design from a KM perspective. It is also relatively unique in that most of the literature records KM adoption from a "push" rather than a "pull" perspective.

Keywords: Knowledge Management, knowledge creation, organizational learning, knowledge transfer, case study

The proper names that are employed in this text are pseudonyms excepting those of the Company founders, the CKO and the Assets Manager. All quotes and interview transcripts are authentic, verbatim and have been validated by the Company.

1. Introduction

The taxi drops us next to the Grande Arche that dominates the sector of Paris known as *La Defense*, the heart of France's industrial elite. The air is crisp on this November morning, the revolving door that stirs us into the stainless steel building cools it even more as we find ourselves in front of a receptionist who sits amiably at what otherwise would pass as a street vendor's designer kiosk. It is shocking orange. She stops chatting with a spiked-haired and tattooed young man to greet us with a broad smile. We later conclude that the spiked hair sits atop a programmer's brain because anything else would be insulting to the context. Framing this scene are black on white walls in a cow motif sprinkled with grayscale photos, all of which embrace 6 canvass chaises longues in 6 colors which themselves surround a silver coffee table of the free-form variety. We have entered the universe of a (maturing) start-up: the address is 4 Place des Vosges, Paris La Défense, and we have stepped into the world of Valtech (http://www.valtech.com).

The receptionist announces our presence and we take the stainless steel elevators deeper into Valtech territory. The colours and patterns on the walls of the fourth floor are no less striking than those in the entrance. We pass an expresso bar as Valtech' s Chief Knowledge Officer guides us to the glass-enclosed conference room and invites us to sit on orange stools that do, in fact, serve well as chairs because of two little arms that discreetly embrace the small of the back. This may be a designer environment, but it seems to pay attention to the people that enter it.

Michel Ezran smiles as he untangles LAN cables that spout from the middle of the conference table and plugs in his notebook. He sits back and says, *"We're happy to talk about KM in Valtech but beyond the academic value of publishing a case, I'd like to get some business benefits as well. Let's talk about the dissemination plan."* This, it turns out, is consistent with one of the company's core values: Valtech is all about emerging technologies and business benefits. The formal mission statement reads: *We are dedicated to creating value from technology.* *Value* and *Technology* are the grammatical as well as the commercial roots of *Valtech.* Its value proposition has shaped impressive growth since 1993: the company has nearly doubled its number of employees each year (reaching 1,000 in 2001), retained and extended its intellectual capital[1] and expanded operations across 6 countries. Valtech's IPO was offered at € 7.35 on 13 April 1999 and less than a year later its stock was selling at € 37,70 on France's Nouveau Marché. None of the company's annual reports have shown a loss nor less than an 86% increase in turnover.

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[1] The founders of Valtech are still present and over 92% of the people that joined the company during the first 5 years remain.

This impressive record is on track as we speak but things are not completely serene.

"Formalizing KM was a natural evolution for us, it's working but unevenly around the company and we're wondering what we should do next. This office now has 300 employees instead of 30; the company has about 1,000 and things have changed." (Ezran)

2. Valtech

Jean-Yves Hardy, Olivier Cavrel and Eric Mouilleron founded Valtech in 1993 with the objective of developing a highly profitable business, not to pursue a passion for technology. Rather than experts in emerging software technologies, they describe themselves as sufficiently informed to perceive the needs, trends and potential business benefits of a fast-moving techno-business environment.

The initial business concept focused on importing new information technologies into the French market from other parts of the world. North America, in particular, was developing software technologies in the early 1990's that were relatively unknown in France, hence indicating an unexploited market that seemed rich with promise. Valtech began by selling object-oriented technology products and offering training services that accompanied the sales function. With agility, the company identified and then embraced successful new technologies as soon as they emerged, adding products such as Corba, OMT, Java and EJB to its portfolio.[2] Valtech designed its approach to training services such that customers became relatively autonomous in the use of a technology once they completed a course. It also began to expand its core business during this period by introducing consulting services – a logical extension of sales and skills transfer in the product range.

From the mid-1990's Valtech doubled its staff each year, opened new locations, expanded its core business (training services), increased its consulting activity and reduced the volume of software it distributed until stopping this activity in 1998. The Valtech brand was established at that point, the industry growing and the

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[2] Created in 1975, object oriented technologies were on the cutting edge in 1990. CORBA is a distributed object architecture that allows objects to inter-operate across networks regardless of the language in which they were written or the platform on which they are deployed, and OMT is a method for analyzing software and the predecessor of UML. ?EJB

business volume for this company – then viewed as one of France's new industrial sweethearts –outstripped its human resources.

It may be said that Valtech bypassed adolescence and entered a corporate maturity phase only five years after its founding. This passage to maturity was marked, in particular, by the decision to abandon product sales and focus exclusively on two fundamentals: (1) knowledge acquisition (high internal expertise, accomplished in a variety of ways) and (2) knowledge transfer (profitable dissemination of internal expertise, accomplished primarily through training and consulting services).

The following year, 1999, marked a turning point as the company began an expansion strategy that would be paired with the launch of its IPO. On April 13 Valtech was in the national spotlight as it offered 830,000 shares at € 7.35 on the Nouveau Marché in Paris and raised ~ € 6.1 million. The IPO was well received by investors who over subscribed the offer by 1,200% in less than a week (Les Echos, 1999). Valtech's Chief Acceleration Officer, Eric Mouilleron, commented that, "*The offering of Valtech stock in France will support our future acquisition strategy. The country managers in each market have a shopping list, and acquisitions will start to take place shortly after the IPO*" (http://www.valtech.com/pressrelease).

Mergers and acquisitions began with USA-based Expede Inc., a technology services company that specialized in distributed systems development. Press headlines in March 1999 read, "V*altech extends global leadership positioning in advanced technology consulting"* (M2 Presswire, 1999) and Jean-Yves Hardy, Valtech's President, stated, "*Expede has a proven project delivery process and a staff with extensive advanced technology experience. The combination of expertise, market position and technical assets made the acquisition an obvious one for Valtech"* (Anonymous, M2 Presswire, 1999), The Expede operation became a template as the company swelled from 150 employees across 6 locations in 1999 to over 1,000 employees across 6 countries and 12 locations by the end of 2001.

3. Managing Valtech

From 1993 to 1998 Valtech assembled young and dynamic people who wanted to work in the information society's avant-garde, and doubled their numbers each year. This collection of youthful expertise, the company's own youth

as an entity, the technological frontiers it navigated and other factors combined to produce the Valtech culture: an ensemble of rules, routines, systems, structures and a thick layer of psychosocial expectations that can be characterized by the following:

- Personal commitment to work
- Company commitment to individuals
- Agility with new technology and avant-garde business
- Informality and community
- Speed

The early Valtech was informal to the point of being unstructured. While it stocked itself with IS and sales expertise, for example, it had added only 1 administrative employee to shoulder HR and accounting functions by 1998. Corridors and offices, on the other hand, were animated by employees looking for the expertise needed to make a project work because, *"…you simply did whatever it took to get the job done"* (Paul, consultant). Recruitment was a feelings-based process, career development an organic affair and turnover unheard of … not only because Valtech had trouble finding enough of the *right* people, but also because the people it employed found a comfortable fit with its knowledge-intensive organization. Policies and procedures existed, but not on paper: they stirred through the company culture and were absorbed on an experience basis. When a newcomer asked about an operating policy the general response was, *"There are no rules, but everyone knows them"* (Franck Halmert, Knowledge Assets Manager). The majority of employees were passionate about their work but the other message was also clear: only full commitment was admitted and the pace was fast.

This portfolio of technological, pedagogical and human competencies wove together a distinctive competitive edge for Valtech. The challenge, known by all, was to create customer value by applying expertise and transferring skills. Valtech and its employees were constantly working to stay on the leading edge of new developments because its technological and business environment moved fast, and obsolescence was swift and costly. But the company had few financial worries, was expanding and seemed to stay on top of its situation. Motivation, enthusiasm, challenge and initiative were the hallmarks of work during this period.

Around 1999 Valtech began confronting new internal challenges, occasioned by continuous growth on all fronts and a shifting business environment. The leadership worked to maintain the company's sense of community, and it continued to value the motivation and loyalty of its staff. But the organization was becoming more hierarchical despite itself and as Jean-Pierre explained, *"It's hard to organize a nice, company-oriented weekend with the group when you have Sweden, America and South Korea in the equation."* Valtech thus began to employ vision and mission as a partial antidote to its growing complexity and dispersion. The management style remained active: the founders were hands-on and kept the business model clear: reconciling business objectives with technology solutions. The *Valtech Way* was prescribed, which included leading-edge expertise, enabling clients through knowledge transfer, opportunistic development and business agility.

4. KM in Valtech

Knowledge has always been Valtech's only real asset. From its inception the company's core activity consisted in mapping new technologies, determining their potential, developing internal expertise and then applying it to the marketplace. This expertise was (a) repatriated to Valtech and (b) injected into new or developing product markets. In doing so, the company was also learning (c) how to capture and transfer skills and (d) how to deliver customized solutions to its clients. Valtech's intellectual capital therefore grew in *single loops* and *double loops*: it learned about technologies, products and markets (single loops), but it also learned how to continue learning (double loops) (Argyris & Schön, 1978). While the typical Valtech engineer of this period learned and transferred what (s)he learned, the company learned from the acquisition/transfer process and created a secondary stockpile of company-specific intellectual assets. "I think you could explain some of it this way," said Michel Ezran, and Figure 1 emerged from the conversation that followed.

	Product	**Process**
Valtech	1 *Acquiring technology*	2 *Stockpiling expertise*
Customer	3 *Installing technology*	4 *Transferring expertise*

Figure 1: The Valtech Learning Environment

These knowledge assets were unformalized: they existed and their existence was acknowledged, but between 1993 and 1998 no systems or structures were dedicated to their management. Informal discussions, collaborative work, hallway encounters, team-based projects and drinks after work were the managerial method. Knowledge assets were therefore deeply embedded in everyday action. Emergent routines assembled new technology-based, employee-rooted knowledge assets; consulting teams applied these assets with (not to) clients; client engagements generated meta-knowledge on how to transfer or install the expertise; the employee's increased knowledge was brought back into the company. Small numbers, geographic proximity and a high level of professionalization allowed consultants to know who knew what in the company and how to access the expertise when necessary. At the beginning of 1999 Valtech's 151 employees were spread across 5 offices in 3 countries and the spontaneous community it had once been was changing. Interactions were less impulsive due to size and dispersion; routines that had been the signatures of community spirit were fading; business leverage and capitalization were entering the management vocabulary.

Against this backdrop, top management decided in early 1999 that the position of R&D manager – until then focused on the development of training materials – would be transformed into that of Chief Knowledge Officer with a budget representing 7% of the company's turnover (considered as an expense) and reporting directly to the CEO. A month later the position of Asset Manager was created and charged with capitalizing on training know-how and expertise. The 2 people that assumed these roles thus formed the nucleus of Valtech's formal KM initiative. Neither knew of Knowledge Management as a domain of study and practice at the time, but their situation took on the contours of a now-familiar logic: the CKO would focus on knowledge formalization in the consulting function, while the Assets Manager would mine the training function for greater returns.

Their first 6 months were devoted to structuring a lessons-learned system that would capture the meta-knowledge acquired by consultants during a client engagement. Each client solution, they reasoned, was a source of fast-decay experience that could be formalized, codified and made accessible for genuine business benefits. They also began structuring the company's ensemble of training expertise, a body of content and pedagogy that varied across topics, client populations and geography.

The results were mixed. Despite Valtech's communicative culture, middle managers baulked at the idea of adding their know-how to a "database" because, in large part, it required time. The different operating styles and cultural expectations in offices outside France also complicated the task. A standardized production process for training material was established, on the other hand, and the portal *my.valtech.com* was launched in July 1999, which web-enabled the work of the KM team. Valtech employees now had access to commercial and technical documents for re-use, learning and support.

The KM movement was now underway and gaining speed. Its manifestation in *my.valtech.com* was important as a sign that things were in motion; as a tool that consultants could actually use in their daily work, and as a communications vehicle that facilitated corporate information flow. *"I think this early portal sped up the integration of acquisitions and helped our revenue stream by making it easier for people to service our clients, and I think it was eventually seen that way. But not immediately,"* said the CKO in 2002. A Denver-based R&D lab was also launched with the objective of merging French content and American pedagogical know-how. The goal was to develop leading-edge training packages for consultants, nested in a library that was consistent from one pedagogical unit to another. The CKO also published a standardized project management method – the *Valtech Unified Process* – that was aimed at the delivery of e-business projects on time and on budget.

By the end of 1999 the KM team numbered 10 people and results were satisfying, at least in France. Based on this, Valtech's KM strategy was formalized: *contribute to business value-added by capitalizing on skills, know-how,* *expertise and past experience.* This emphasized the capture and re-use of know-how from the company's two core activities, training and consulting (Figure 2).
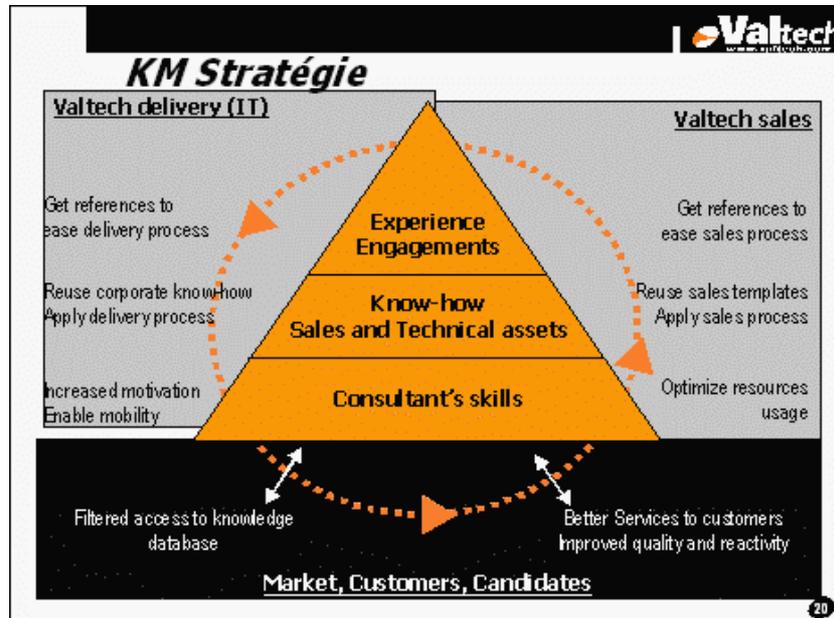

Figure 2: The Valtech KM Strategy

my.valtech.com provided access to this intellectual capital, a portfolio of model projects (exemplars) and advice from qualified experts. Portals of all kinds require the expert and tailored content that makes a visit worthwhile, however, and this challenge was attacked by creating *KM Correspondents* in each Valtech location: a group of volunteers who would promote the KM effort, capture local content and assist in its formalization (Figure 3)

Figure 3: The Valtech KM Network

my.valtech.com developed into an icon of the Valtech culture, leveraged on three levels: (a) corporate life, by sharing news and contacts; (b) competency development, by facilitating learning; and (c) productivity, by displaying content, artifacts and exemplars.

Nonetheless, problems did exist. One difficulty involved content management because contributions remained uneven and difficult to obtain. KM Correspondents were recruited on a relationship basis; their contributions were voluntary and the returns from their efforts, personal. Hence, *my.valtech.com's* lifeblood – front line insights and experiences – remained outside of traditional management processes, including remuneration and time allocation. But the concept was in keeping with the *Valtech Way* (skill transfer through collaborative work) and therefore in conceptual harmony with the culture.
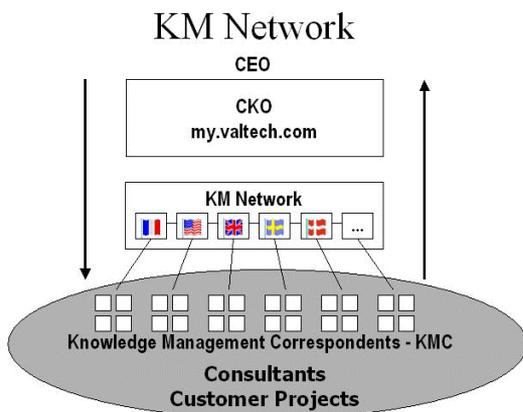
By the end of 2000 an assessment of the KM function and the company's emerging needs chartered the structure of a new portal, defined around five objectives.

Productivity, through the access, transfer, retrieval and re-use of information and expertise;
Efficiency, by providing access to the *right* information at the *right* time and facilitating communication flows;
Visibility, aimed at clients (extranets) and Valtech employees (intranets);

Capitalization, the systematic and methodological accumulation of intellectual assets;

Client value-added, through high quality service delivery, access to Valtech know-how and empowered client relationships.

The company was entering a period of financial turbulence, however, due to the worldwide decline of technology shares and Valtech's aggressive M&A policy. Top management continued its support and launched the project, but restricted the overall KM budget to 4% of turnover, reassigned 5 members of the KM team to other functions and closed the Denver R&D lab.

While *my.valtech.com* continued its role in the company, *project@valtech* was prototyped by a project team with representation from each location and user group, and its introduction was supported by a change management program that included the following:

- Meetings with key actors to plan the project's deployment;
- Surveys to measure satisfaction and perceived problems during the pilot phase;
- *Think Orange* days (Valtech's official color) and internal newsletters designed to attract the interest of employees:
- Meetings and training sessions, held throughout the organization, aimed at fast applicability to everyday work and ease-of-use;
- Surveys to gather information and develop the user base, directed at the KM network, consultants and middle managers;
- An email campaign that kept employees updated as to the project's objectives, benefits and development;
- A periodic review with top management

The adoption of *project@valtech* was phased in over time and 6 months after its introduction, its utilization was widespread. *"The change management program was a big factor, something you don't give enough attention to normally. But in our case it got everybody on track and was a big key to success,"* according to Bernard (consultant). The CKO agreed and added, *"It's clear from our experience, and hundreds of our consulting assignments, that the world's best technology goes nowhere without the right kind of organizing around it."*

The KM team began to analyze return on investment for *project@valtech* at the end of 2001. It searched for results in two broad categories:

Objective and measurable: including timesaving in accessing and delivering information, re-use of knowledge, systematic capitalization of experience, user satisfaction;

Subjective and perceived: including work methods in project teams, faster business development, increased collaboration between Valtech offices, better project management.

As of May 2002, results were abundant and encouraging for the second category but difficult to assess for the first. The KM team found it devilishly hard to link hard, quantified evidence to the positive but subjective judgments of the KM initiative. It assessed "clicks" and user contributions but judged these types of measures to be intermediate, as opposed to fundamental, appraisals.

The time of innocent spontaneity passed with the introduction of *project@valtech* and the KM team positioned itself at the heart of Valtech's business. It continued to organize *return-on-experience* sessions, for example, "*…but only in the late afternoons so that they didn't interfere very much with client schedules,*" said Franck Halmert. The work of KM correspondents was legitimized with objectives assigned to local management and KM-specific elements integrated in the job descriptions of correspondents themselves. *"Our KM program is built around investment in sales support channels, in services on the company intranet, in a network of active correspondents in each office, in a strong and continuous training program supported by the training department"* (Valtech annual report, 2000, p. 8).

In early 2002 the company announced organic growth of 15% and revenues of € 121.5 million for 2001, a 42% increase over 2000. The slogan, *think globally and act locally*, seemed to be working since consultants were using Valtech's international network and the company's position in most of its markets was strengthening.

The KM team began integrating *my.valtech.com* and *project@valtech* into a new and more comprehensive portal. Results after 3 years of work are concrete, uneven and encouraging. The third generation portal is anticipated by line employees because they now expect real benefits that will help them deliver real results. The KM network is disappearing into the company's normal everyday activity – the best of all worlds. Some

clients praise the access to information and experience that quickly deployed extranets provide in consulting assignments.

The major issue remains KM's ROI. *"Fundamentally speaking, we are skeptical, skeptical regarding quality, regarding KM. But intellectual and business logic has provoked us to develop the KM program and it's making sense,"* said Jean-Yves Hardy. *"But there is a critical need for measurement. We are at the parting of the ways: either we continue investing in KM or we stop. Only a clear ROI will help us make the right decision."* Common measures, such as frequency of use and client satisfaction, are deemed inadequate because the KM team embraces a more strategic perspective on its work. "*For Valtech, the future of KM will be defined by KM-based products that are replicable and easily transformed into models for clients. We also need easy and reliable measurement systems, and easy ways to port our KM tools into extranets that wrap clients and providers together in a consulting assignment,*" said Hardy. He continued, "*We want to develop a very pragmatic firm where we can provide instant access to exemplary projects and highly qualified expertise.*"

5. Discussion

The research for this case history employed an ethnographic methodology over 9 months (ending Spring 2002) and included informal observation, structured interviews, corroboration, textual/archival analysis and photographic recording. The authors had full access to company records and personnel, including Board members, the CKO and his staff. This paper is a significantly abridged version of the full case history. It nonetheless describes, we would argue, a company that is currently an excellent example of KM-based strategic commitment and organizational design, but which arrived at this state as a result of competitive pressures and new organizing logics.

Valtech optimized its product range and service delivery by reorganizing according to Knowledge Management principles at the group level. In the company's collective mind, it was **"pulled"** to this policy by business necessity and organizational exegesis rather than **"pushed"** by academic or consulting trends. This, we argue, departs from a number of other cases in the literature where the "hype" surrounding KM seems to have driven a conversion experience that caused one or more top managers to impose strange new systems and structures on an unwilling organization.

After an initial period where informal knowledge sharing featured in its culture, Valtech formally embraced KM to manage its fast-paced development, achieve scale efficiencies and reach higher levels of business performance. KM at Valtech is squarely focused on business performance, but relatively unique in that it arose naturally ("organically," in the words of its founder) as a result of new organizing logics. This has been a "chemin faisant" in the mind of this company or, from the French, a path it traced as it navigated its way forward. "*KM is federative for the brand, the corporate culture, and defines our business model,*" said Valtech CEO JY Hardy in April 2002.

This case history presents 9 elements that both academic insight and Valtech's experience advance as important factors in a KM initiative:

Commitment. Valtech's KM initiative was the product of several dynamics but from the perspective of sustainable organizational development, top management's decision to commit the company and its resources was clearly a key. Among the formal and informal symbols of this commitment in evidence, the KM team's direct report to the CEO is prominent.

Strategy & integration. Flowing from the above, the company formulated and refined a KM strategy that featured the integration of KM structures and systems in its everyday business. KM was firmly linked to business benefits.

Resources & infrastructure. Valtech allocated resources commensurate with the objectives of its KM effort (budget, staff, infrastructure). The KM team numbered up to 10 people and financing has varied between 4% and 7% per year of the company's ever-growing turnover.

"The way we do things here." A KM-friendly culture earmarked the company's working environment, often forming around the conviction that knowledge was Valtech's only real asset. The company exercised in this way Argyris's prescription for the learning organization: technical mastery combined with effective teamwork, productive client relationships and the meta-ability to critique internal practices (Argyris, 1991; Schein 1994).

Task and Process. Edgar Schein (1994) has commented that most academics and managers hold the assumption that,

"…management deals with hard things - data, money, bottom lines, payoffs, production, competition, structure. And it is even better if these hard things can be quantified." But he goes on to say that learning organizations pay at least as much attention to process – the way they achieve results. Valtech's management achieved a balance on this count, concerning itself as much with the soft and subjective ways it organized itself as with the hard results it obtained.

Constructive agitation. Valtech made growth, development and improvement a part of its culture. This permeated KM initiatives such as the Denver R&D lab and *Valtech University,* which, though considered imperfect, were attempts to meet the needs of motivated engineers who needed to stay at the top of their fields.

Tools & technologies. Valtech combined cutting-edge KM systems with change management and effective organization. *my.valtech.com* became a backbone of corporate communication partly due to effective portal/intranet technology, and partly because it was well adapted to the company. *project@valtech* took the next step by deeply embedding itself in the core business (giving consultants the advantage of offering project-based extranets to clients, for example).

Single-loops, double-loops. The company valued, and the KM effort focused on, the meta-knowledge that developed when a Valtech engineer worked out a solution with a client. Single-loop learning refers to the simple acquisition of knowledge in such situations, while double-loop learning implies, "…*cognitive rules or reasoning people use to design and implement their actions"* (Argyris & Schön, 1978).

Assessment. The evaluation of results stamped each step of Valtech's KM development and the evaluation process was always anchored in business objectives. Quantitative and qualitative criteria have been employed. Though considered inadequate, the KM team used these measures to shape its systems, structures and organizing principles on as clear a view as possible of the needs of its client (Valtech) and the impact of its efforts.

Ryder and Wilson (1997) have observed that complex systems evidence a natural tendency toward decentralization of information and control. This, they write, "…holds true for a swarm of bees …, a market economy, or a learning infrastructure." The 9 elements noted provide concrete examples of such decentralization, in service of organizational effectiveness and business success. As a parallel, it is interesting to note that each of these 9 elements fits comfortably in the literature devoted to *learning organizations*. Kerka (1995), for example, has written that the following are often considered important characteristics of the learning organization:

- Continuous opportunities for individual and group learning;
- Learning considered essential to goal attainment;
- Individual performance linked with organizational performance;
- Rules, routines and systems that foster inquiry and dialogue;
- A culture where people consider it safe to share openly and take risks;
- Creative tensions valued as a source of energy and renewal;
- Systems and structures aimed at awareness of and interaction with the environment.

The 9 elements (**Commitment** through **Assessment**) that were identified at Valtech are, however, increasingly cited as *key success factors* or *KM enablers* by the KM practice literature (Chauvel & Despres, 2002). Figure 4, which summarizes the findings in this article, provides additional perspective on Valtech. *Phenomena* refer to structural or functional conditions in a company that are responsible, at some level, for the success or failure of a KM initiative. Most of the 9 elements noted above are *enablers* in this regard. *Action* refers to observable actions that range from broad, corporate strategies to more individualized practices or behaviors. Organizational action at the level of practices points to the development of an infrastructure that is dedicated to the management of knowledge and includes many of the systems, structures, routines, work habits and technologies noted in the paragraphs above.
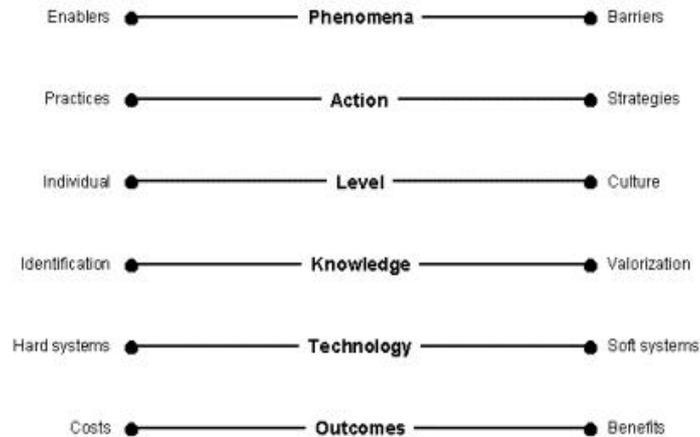
Figure 4: Dimensions of Concern in Applied Knowledge Management

By *Level* we refer to the units of social aggregation - individuals, groups, organizations, cultures, environments - at which a company aims its KM initiative(s). In this regard Valtech clearly has a wide embrace but seems particularly focused on 3 levels: groups and individuals within the company, and their external business environment. The dimension *Knowledge* refers to the practical issue of identifying useful knowledge and then putting it into effective action. This remains a significant concern for Valtech and the KM team, which has to date adopted a defacto policy of Utilitarianism (*if it's accessed by our users, it must be useful and if it works with a client, it must be good*).

The dimension of *Technology* points to the tools and techniques that are employed in KM and includes IS/IT solutions as well as human-social technologies that are more concerned with the social psychology of organizing a knowledge-based enterprise. On this count Valtech appears to be employing IS/IT solutions that both arise from and are generative of new human-social technologies, in a spiral of action that seems far from planned or predetermined. The approach is tactical and focused on the short to medium term. Finally, *Outcomes* concern the upshot of a KM initiative and, in the vernacular, this dimension focuses on the 'so what' issue. Here, the words of Valtech's CEO are unequivocal: "… *there is a critical need for measurement. We are at the parting of the ways: either we continue investing in KM or we stop. Only a clear ROI will help us make the right decision.*"

6. Conclusion

The case history has outlined Valtech's (http://www.valtech.com) journey from start-up to a multinational knowledge-intensive firm, tracing its development and specifying the conditions that motivated its organizing along KM principles. We have identified some of the systems, structures, phases of development and successes/failures the company has encountered along this path. Both external and internal observers have identified a number of distinctive features in Valtech associated with KM phenomena, including organizational culture, emergent routines, work rules, management styles, adaptive and generative organizational learning, and autopoietic processes. It can be said that Valtech's experience with Knowledge Management is shaping its history. Unknowingly, the company initially acted on KM principles in order to cope and survive in its environment. Four years later its approach to KM was formalized with strategies, resources and action. Today, and despite a lack of concrete evidence, Valtech believes that its investment in KM is playing a major role in the company's success.

Appendix 1

Milestones in KM at Valtech

End of 1998: emergence of formal need for knowledge capitalization
Early 1999: creation of the CKO position
March 1999: creation of the Asset Manager position
January - June 1999: formalization of the consulting function
Actors; Task definition and mapping; Mapping of expertise and knowledge
Documentation;

January – June 1999: formalization of the training function

Actors; Training course material; Content publications process

July 1999: creation of *my.valtech.com*

July 1999: creation of Denver R&D Lab

January 2000: KM strategy formalized

January 2000: KM tools disseminated

2000: creation of KM Network and Correspondents

2000: retooling of *my.valtech.com*

Early 2001: decision to invest in a new KM portal

Mid-2001: introduction of *project@valtech* and rollout of change management program

End of 2001: new policy and organizational role for KM Correspondents

January 2002: *my.valtech.com* and *project@valtech* merged and integrated

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