The Challenge of Implementing Organizational Learning and What Organizations Can Learn from It

Stasi, M.

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Mafalda Stasi

Associate Professor, Université Pierre et Marie Curie

Tel: +33 (0)1.46.37.41.92

Mobile: +33 (0)6.74.59.15.92

mafalda.stasi@upmc.fr

mafalda@alumni.utexas.net

Abstract: This paper shows how the theoretical view of learning as a pervasive, systemic and complex activity taking place in a specific ecology is often challenged by existing assumptions about what learning is, and by various constraints aimed at 'streamlining' and reducing complexity in the name of 'organizational optimization'. This dynamic is shown through the specific example of how a large IT corporation set about developing and commercializing a distance learning application predicated on collaborative learning theories, at a time when the prevailing distance learning pedagogies revolved around solitary self-study. Even more than the specific outcome, the complexity of the uneasy interweaving of individual and collaborative paradigms is the best proof of how limiting it is to consider learning exclusively as an individual, private act. Understanding the irreducible complexity of an organization's engagement with learning and its implications is in itself a process of organizational learning.

Keywords: distance learning, e-learning, collaborative learning, communities of practice, organizational learning, workplace learning

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Introduction

> The original assumption behind it was, we didn't want [LearningSpace] to be CBT, we didn't want this to be computer-based training where people sat on their own desk and worked through a tutorial. We wanted to simulate sort of in an asynchronous mode a classroom experience, and so that was our goal at the time. (Skidmore interview)

In previous works (2003, 2008) I have already explored some of the prevailing conceptualizations of distance learning both in academia and within the high tech computer industry: to use the terminology employed by Vakkayil 2008, I have shown how notions of learning as transfer and corrective change, supported by behavioristic underpinnings, have more recently been challenged by ideas of learning as self-organization and coordination. I will now examine a specific instance of how these different conceptions played out in the development and early piloting of the Lotus LearningSpace (LS) software. I am drawing my data from an ethnographic study of the LS development team, known as the LearningSpace Group, spanning the years 1995 to 1999: this larger study, completed in 2003, in which I was a participant-observer, examines the discourse, practices, structures, relations and processes taking place in and around the Group as it designed, developed and marketed the LearningSpace distance learning software application. These five years are a crucial time for distance learning, as they see the development of the earliest instances of a collaborative paradigm, and the spreading of concepts, such as that of communities of practice, which will become central in the current emphasis on web 2.0 social computing.

The LearningSpace Application

The LearningSpace Group started working on their application in 1995; its working name was Distributed Learning Network, but it was renamed LearningSpace 1.0 when it shipped in October 1996. More versions followed, but this paper only deals with the code stream up to 3.x—starting from 4.x in 1999 the

product underwent a radical rewriting based on a different theoretical paradigm and offering a different set of affordances, which made it primarily into a Learning Management System.

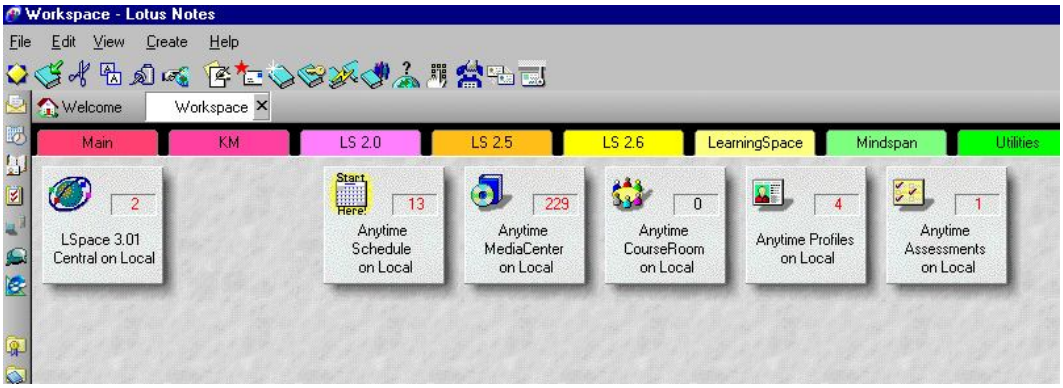

Illustration 1: Notes 5.03 Desktop with LearningSpace 3.01 Databases

LearningSpace is a Lotus Notes-based application: that is, a customized set of five Notes databases whose various affordances allow users to perform specific sets of operations. The framing metaphor is that of the classroom, and each of the databases is assigned a different function: the Schedule holds the syllabus and calendar of assignments; the MediaCenter functions as a library and holds the course materials; the CourseRoom functions as a discussion area, and also has workflow functionalities to afford assignment editing and reviewing; the Profiles hold a description of participants; finally the Assessments area contains tests and exams, and the workflow necessary to administer them. Mature versions of LearningSpace, from 2.5 onwards, also included a Central database, which acted as course catalog and enrolment facility. Illustration 2 here below is taken from an actual course developed by the Henley Business School, and it provides a short upfront description of the tool.

The CourseRoom is the heart of the collaborative affordances of LearningSpace. A discussion area affords a threaded, newsgroup-style discussion. Students can also use the CourseRoom to work as a coordinated team on collective assignments, thanks to workflow functionalities facilitating textual exchange, editing and revision.

> [The CourseRoom] is where course participants consult one another and discuss topics and assignments. Participants post documents and others respond to them, resulting in a discussion *thread*. The CourseRoom enables you to ask questions and have discussions either publicly or privately as you wish. This is the database that allows you to interact with your classmates and instructor as required by the course. (Henley course)

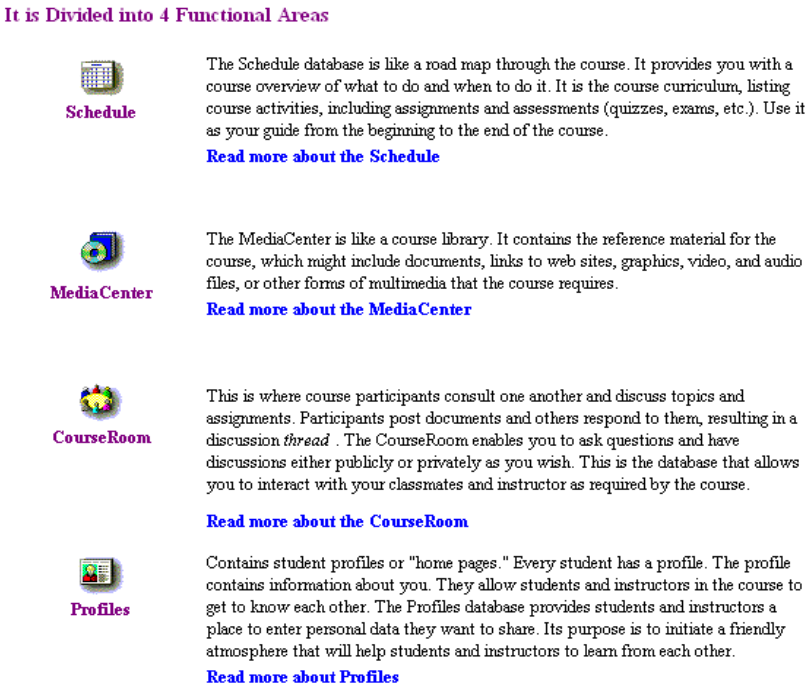

Illustration 2: What is LearningSpace?

Compared to contemporary distance learning applications, the LearningSpace collaborative set-up and philosophy were unusual, as was the idea that distance learning could be approached not only at the individual level. In 1995, most other applications followed the "industrial approach" advocated by Otto Peters (Keegan 1994), as Garrison explains in his 1993 study:

> Distance education is still predominantly a private form of learning based upon prepackaged course materials produced to achieve economies of scale. The primary purpose of this industrialized model [. . .] is to instruct as many students as possible regardless of time and location. (11)

In the landscape before and up to the 1990s, where both distance learning technologies and pedagogies were geared to provide mostly one-way information transfer such as CBTs or educational TV, the unusual conception of

LearningSpace was due both to the LearningSpace Group's theoretical background and the tool they had available in Lotus Notes.

The LearningSpace People

The LearningSpace Group was formed in 1994-5 within the Lotus Institute (LI), a newly-chartered research and development division of Lotus, which developed successful Notes applications, such as TeamRoom or InterCommunity.

The Institute was put together through the acquisition of a small Boston consulting firm, the Human Interface Group (HIG), specialized in providing organizational performance and knowledge management business consulting—usually implemented with the help of customized Lotus Notes applications. Former HIG co-founder Peter Rothstein, together with Peter Skidmore and Marla Capozzi, headed the LearningSpace Group, the Lotus Institute division focusing on distance learning.

> LearningSpace primarily started around I wouldn't say necessarily formalized learning, but situation [based learning]. (Rothstein interview)

The background of the early team members from the HIG, and of course the team's position inside Lotus, made Notes the obvious choice for the tool that would support and embody the Group's ideas around learning and its function in business organizations. As it can be seen from the quotes here below, the LI team worked on a set of recurring theoretical assumptions that pervade materials written by them or about them:

> open communication and broader access to information leads to increased levels of involvement, shared knowledge and commitment in teams; […] visible communication, based on the shared access of Notes databases, is a better environment for team communication than the private model embodied in e-mail; […] having one common, coherently-structured place where information is communicated and stored facilitates and simplifies team communication. (Cole and Johnson 24)

> design decisions[,] emphasizing issues of flexibility, diversity and democracy. (Carotenuto et al. 1)

> working and learning are no longer mutually exclusive activities. LearningSpace incorporates the richness of group learning with the flexibility to support individual learning, all enabled by collaborative technologies. [. . .] high-quality "distributed" learning environment [. . .] part-time, continuing education. (White Paper 1996)

> [the Notes approach] was based on a theory of coordinated group action, developed by Dr Fernando Flores. […] a "customer-centric" coordination process. This new perspective enabled the groups to reach a common understanding of the process, which then provided the basis for designing a [Notes-based] replacement. (Flores et al.)

These themes are consonant with the discourse around Notes, and more in general of computer mediated collaboration and groupware as they pervaded the business literature of the time: but the new element introduced by the LI was to extend to distance learning ideas around distributed cognition and organizational autopoiesis developed by then cutting edge authors such as Winograd and Flores, Lave and Wenger, and Hutchins. The Group was influenced by learning theories and practices coming from several sources: Rothstein had been reading on collaborative learning, and drawing on his experience with the Harvard Business School:

> For two years I was a consultant working at Harvard Business School, and I was managing a team of people who were building software applications for the expertise classification area of the HBS. That was 1989 to 1991. Nobody was calling it e-learning at that point in time, but we were building software applications for course material distribution, for discussion groups, for multimedia tutorials, that type of things. (Rothstein interview).

Throughout the LearningSpace research and development phase, the Group[1] worked closely with a set of chosen academic organizations experienced in distance learning:

> we went to Duke University, we went to NYU, and three or four other places where we went basically interviewing the schools who were starting to look into doing distance learning, to learn how to do research for how we planned on building a technology. (Skidmore interview)

Most of the institutions that the Group contacted were business schools, as the Group was relying on Rothstein's contacts from Harvard (Capozzi interview). This is important, as it explains the prevalence of a specific model of learning in the experience of all three founding members of the Group: a business school type of pedagogy practice. Rothstein confirmed explicitly that his models of learning practices were based on the business and management school methodology of case study teamwork: the typical course in an MBA program is based on a small class working together on discussing, analyzing and writing reports on case studies, what could be called writing intensive seminar-based courses, where the organizational dimension of problem-solving is paramount.

> We were thinking about courses that would include, they tended to be more sort of management education courses, they could have been in business schools or they could have been in corporate management development areas, where there would be things like content, case studies and group discussion and tests might be involved, a little bit of short answers and true and false, but where the test might not be highly intricate SAT type of test, like a business school model. (Rothstein interview)

The strong influence of academically-oriented organizational management science on the LearningSpace Group is best seen in a key document for the Group's history, a veritable snapshot of their early thinking: the August 1996 Lotus Institute white paper, titled *Distributed Learning: Approaches, Technologies and Solutions.*

In industry parlance, a white paper is an essay-length text analyzing in some depth a product or an offer. It is a non-technical piece of writing, that often focuses on the thinking beyond a technology, the "philosophical" approach and the reasons behind its functionalities. White papers are bound as a booklet and distributed for free, as promotional material. The marketing purpose of these types of documents is sometimes obvious, as they can present a retro-fitted justification for the goodness of the product being sold, little more than a thinly disguised sales pitch. Sometimes, however, they are less biased texts which approximate quite closely a scholarly article. The 1996 distributed learning white paper is an

example of this second type of more reasoned and in-depth text: while of course it did have a marketing function, it was not just about marketing.

Even though the white paper is collectively attributed to the Lotus Institute, it was actually written by two of the three original members of the LearningSpace Group, Marla Capozzi and Peter Rothstein. They were also helped by editor Kathy Curley, who had been a faculty member in the school of management at NorthEastern, and who later became faculty at the Boston University school of management. The document presents the theories and strategies pursued by the Group in their research and development activity, and the technology that resulted from them. As such, it can indeed be seen as a theoretical charter for the LearningSpace Group:

> We got a lot of good feedback on that paper. Obviously we were trying, we had some intent around our product, but I think it was a good paper, I think it was trying to explain a lot of thinking theory around the value of distance learning. (Rothstein interview)

The 1996 white paper is explicitly based on collaborative and organizational learning paradigms: "Lotus Institute has pioneered a distributed research and development effort to design technology solutions and methods which support collaborative learning" (1). As noted earlier, this emphasis on collaborative learning comes in part from the historical situation in which the LearningSpace Group found themselves: the mid- 1990s were a time in which distance learning technologies were developing the potential to afford effective collaborative learning, and correspondingly aligned constructivist pedagogical paradigms were becoming more and more popular (Stasi 2008). Moreover, the Group's avowed sources of theoretical and practical inspiration from the fields of management science, workplace organization theories, collaborative work via groupware tools, and the then-emerging discipline of knowledge management were also pushing them to privilege the organizational and collective dimension of learning (Rothstein and Skidmore interviews). The white paper’s main research

question was: how can we use the collaborative affordances of Notes to provide the best type of learning for our customers?

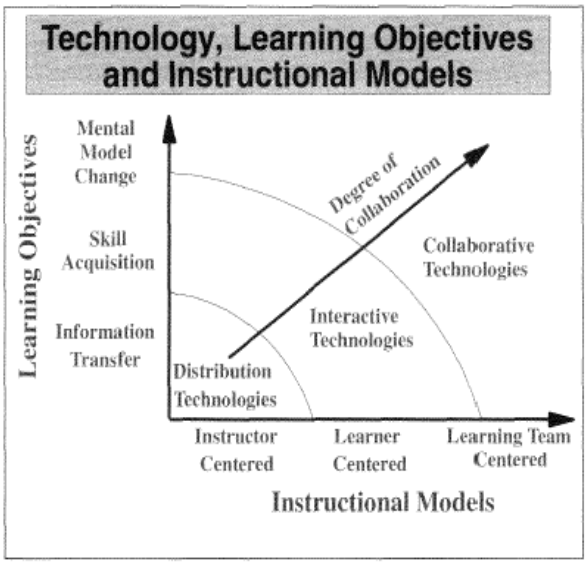

Illustration 3: The 1996 White Paper Pedagogical Model

The core of the 1996 white paper is the diagram represented in illustration 3 above: the Cartesian axes represent horizontally three possible instructional models, and vertically three possible learning objectives. The first dimension goes from instructor centered to learner centered to, finally, learning team centered; in the other, the progression is from information transfer to skill acquisition to mental model change. The diagram is completed by a diagonal arrow, showing a movement from distribution technologies, which are instructor centered and lead to information transfer, to interactive technologies, which are learner centered and lead to skill acquisition, and finally to collaborative technologies that are learning team centered and lead to a mental model change. The mental model change is defined as a permanent change in the working paradigms of the learner, or in organizational terms as the learner's adaptation to the system. While the white paper ostensibly cautions against an explicit ranking of different modalities, advocating context-based choices, the diagonal arrow does have a direction, and it

points to a growing degree of collaboration as desirable to attain more permanent and complex organizational learning objectives.

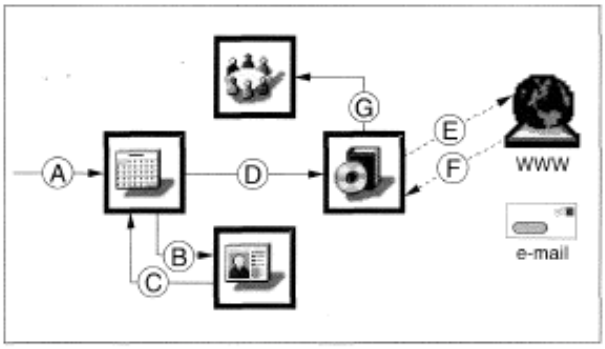

Figure 1: Student

Illustration 4: Example of Student Path - 1996 White Paper

The other important message in favor of the learning team centered approach comes in the second half of the white paper, where special emphasis is placed on collaborative processes, the "paths" of workflow that provide a structure for students and teachers to work collaboratively in reviewing written assignments. Illustrations 4 and 5 show webbing processes similar to those proposed by Winograd and Flores for their "The Coordinator" groupware system (Winograd; Winograd and Flores 159). Each functional area of the LearningSpace tool is represented as a square; those squares are variously linked by arrows symbolizing the paths students and teachers should take to complete a learning task.

The learning team centered approach thus assumes that online activities constitute an ongoing collaborative learning process aimed at shaping and evolving a shared view, a collective consensus. In other words, this approach favors and affords the organizational dimension of learning. Moreover, it is also one of the very few examples of a distance learning pedagogy that did not simply see distance as an obstacle to be overcome, or learning as "a circumscribed process whereby individuals consume specific information" (Slatin 2000, 15), but rather as an open ended interchange with its own special and useful affordances: a positive rather than a remedial approach.

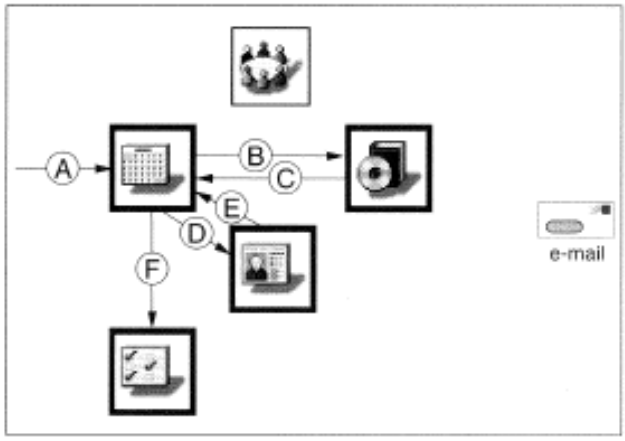

Figure 3: Instructor

Illustration 5: Example of Instructor Path - 1996 White Paper

The LearningSpace Users

> Lotus Institute has pioneered a distributed learning research and development effort to design technology solutions and methods that support collaborative learning any time and any place (Lotus Institute 1).
>
> one of our earliest pilots. I think they had a self-paced course, no collaboration [. . .] I think LearningSpace is just for delivering self-paced content, as a Notes database. (Rosen interview)

It would seem clear that one of the most central and defining characteristics of LearningSpace is that it affords collaborative and organizational learning, and programmatically so. Yet, a closer look at the way early pilot participants saw and used these collaborative affordances reveals a disconcerting contradiction: in each pilot, despite much praising of collaborative learning, actual collaboration practices were scarce to non-existent.

I believe that such a contradiction is crucially revealing of the complex organizational interplay among the intended pedagogical perspective adopted by the LearningSpace Group, their chosen commercial strategy, and the specific constraints imposed by various historical, ideological, technical and contingent factors in the actual dynamics of events—and that disentangling such dynamics is

in itself a much-needed contribution to the learning process an organization must undertake if it wants to properly implement organizational (distance) learning.

The first customer pilots were organized by the LearningSpace Group from 1995 onwards. The Group ran a number of pilots—up to sixty in the 1998 timeframe, about evenly divided between corporate and academic sites (Lotus Education *SAIL* 3, Case Study section)—in order to gather useful indications for subsequent product development and commercial strategy. One of the earliest 1995 pilots was collaboration between Lotus, IBM and the New York University's School of Continuing Education (NYU), whose results were presented at the 1996 Asynchronous Learning Networks (ALN) conference (http://www.sloan-c.org/conference/proceedings/1996/index.asp). The results of this pilot were deemed positive enough for IBM to embark on a long-term joint development project of LearningSpace courses for IBM[2] (Landau interview).

The NYU pilot courses included titles such as "Project Workbench" and "Methodology". The former consisted of 4 weeks of "independent study with instructor access" and the latter of 5 weeks of "self study and collaboration" (Snyder 4). In the Workbench course, 9 students out of 15 completed the course, while in the Methodology one, nobody did, and the reason given was "incompletion due to work schedules" (Snyder 5). Students worked from home, in the 6PM to midnight time period. Their feedback was positive, and contained comments such as "excellent potential for delivery system" (Snyder 6). The difference in the completion rate, and other observations from both the ALN conference presentation and interviews, indicate a strong tendency to use the courses in a non-collaborative mode as structured containers to access self-paced material, even if the different modes and their relative rate of success were not directly addressed in the reports.

The following year, the Group ran another important pilot, whose results were widely used not only in strategizing but also in marketing. The customer this time was a corporate one, a small, "privately held specialty chemical

manufacturer" (Lotus Education *SAIL* 4, Case Study section). This organization had a strong reputation for being "recognized experts on knowledge management" (ibid.); their KM-oriented approach was stressed in the set up of the pilot course, whose topic was new employee orientation. Despite some false starts, the pilot was deemed successful: so much so that the customer authorized Lotus to use them as a reference account and quote them in their marketing material: "On-line facilitation clearly differentiated distributed learning from other methods. Facilitation includes students interacting with each other and the teacher." (Lotus Education *SAIL* 18, Case Study section).

What is less evident from the public-facing written material, but can actually be evinced by looking more closely at the data, is that the pilot course was not really collaborative. The course materials were pre-existing CBT-based files uploaded into LearningSpace, and public discussion among peers in the CourseRoom threaded discussion area was not really happening. A spokesman from the customer organization was quoted as praising "the ability to send private electronic messages, eliminating the historical classroom dynamic of asking embarrassing questions." (Lotus Education *SAIL* 10, Case Study section) This evidence was confirmed in the LearningSpace Group interviews: "I don't think they ever used the CourseRoom" (Rosen interview).

A third, somewhat later, pilot also shows similar ambiguities. In 1998, the Group worked together with the University of Maryland's executive program, which targeted working executives by offering them development programs. The pilot was offering a "blended" solution, where 200 executives from a Government agency "meet for two weeks, leave for six weeks to work on a project [. . .] and return for two weeks to complete the program" (Lotus Education *SAIL* 21, Case Study section). This course had no facilitation, i.e. no teacher presence, and as far as I could find out no evidence of peer collaboration. This pilot was not really successful: "it included a difficult learners' group, who didn't really feel comfortable with the technology; the pilot was measured as effective as e-mail"

(TE, personal communication). The difficulty was openly acknowledged and incorporated in the recommended best practices for LearningSpace.

> If a course is designed for heavy collaboration, but instructor-led process support is not provided to students during the course, then improved results over other electronic media will not be achieved. (Lotus Education *SAIL* 21, Case Study section)

This perforce short summary of three different pilots, cutting across the academic, business and government populations, is representative of the contradictions that surfaced whenever LearningSpace was used—both in pilot stage and with later, regular customer implementations. Throughout my research, I could not find any actual LearningSpace course where assignments or other activities consciously and actively implemented the 1996 white paper pedagogical model[3]. In most courses I've seen, people tended to use LearningSpace as a Learning Management System of sorts: a structured container to provide linear progressions of tasks, mostly self-study assignments. The notion of team-centered or organizational learning was conspicuously absent.

The LearningSpace Strategy

The difficulties with collaboration were not lost on the LearningSpace Group. The white paper firmly stated the need for a non-traditional pedagogical approach:

> [d]esigning and developing courses in LearningSpace requires a new approach to instructional design. It requires knowledge of new media, knowledge management practices, models of anytime, anywhere collaboration, and approaches to interweave individual and collaborative team learning in manners appropriate to the content and context. We are creating an instructional design course to assist educators in creating effective learning experiences in LearningSpace. (14)

While the stress on instructional design was laudable, it turned out not to be sufficient. The complexity and the size of the issues at stake went beyond

pedagogy to invest the social, cultural and ideological sphere, the full organizational ecology[4]. Simply adopting a good, innovative pedagogy and a tool which affords it was not enough to foster a good practice.

> It's one thing to have what you believe is the best product, and be a bit ideological about it; but it's another to satisfy what the market asks for, to actually make money. These things can be opposing sometimes. Sometimes you have to make a choice whether you're going to just continue to push for this thing you think is better, but you're having a harder time upselling it; or whether you're gonna move to another area of the market even if it's not quite what you originally thought it would be [. . .] We were trying to be innovators: we didn't go to the corporate market and say "how would you like to manage your CBTs". CBTs were already out there; we were trying to take the content of learning and put that into Lotus's mode of technology, which is collaboration, and that was the innovation that we were trying to go after. We weren't necessarily interviewing to understand what the market was looking for; we were trying to understand how to build a collaborative learning environment [. . .] But the customer looked at what we did and said, "great! But what do we do with all the CBTs we have?" (Skidmore interview)

The Group's early strategy was to orient and determine customers' choice, by positioning themselves as thought leaders and addressing the innovators and early adopters in the market. The academic market was favored, because of existing connections and affinities. Larger strategic and commercial considerations, however, brought about a change in strategy. The main target became the corporate market, and the approach shifted from offering innovation and quality to following customers' request for products that they already know and are familiar with. This shift is well exemplified by the shift in style and content of later white papers, which adopted a more commercial language, had little or no theory, and were mostly focused on issues of technology and business. Here is what the *LearningSpace Anytime* white paper (1998-9) has to say about pedagogy:

> How do people learn? This simple question can lead to some complex theories. But it's clear that learners respond well to teaching that employs various delivery methods. [. . .] In the world of online training, variety is also the key to successful learning. (Lotus Development 4)

Neither strategic choice was unproblematic, or fully successful. The former addressed a small niche market, deemed lacking in commercial and growth potential. With the latter, the Group was renouncing their stance on collaborative learning, their most innovative competitive advantage; however, they had little choice as they were trying to be more competitive in a market that demanded more CBT-based approaches and the tools to administer them for large deployments (all of which were not well afforded by the LearningSpace architecture). Ultimately, the original Lotus Notes-based architecture of LearningSpace was replaced with a web-based one. The notion of process and review cycle in the student's collaborative activities was dropped altogether; the tool was entirely rewritten to provide content management and tracking and administration functions, and thus turned in a market-aligned Learning Management System. Its subsequent history is not the purview of this paper anymore.

Conclusions

With the obvious benefits of hindsight, it is easy to point out how some of the problems the LearningSpace Group faced were symptomatic of a larger, historical trend—the tension between different learning models, made more intense in the field of distance learning by the continued introduction of new technologies (Stasi 2008). What is specifically interesting in the LearningSpace story, however, is how an apparently positive stance—the emphasis on collaborative learning through groupware affordances—can turn against itself.

The LearningSpace Group was in effect trying to teach organizations to effect a mental model change and adopt a learner team centered approach—yet they were doing so without fully taking into account the organizational complexity of their potential customers, not to mention the complexity of the

Group's own internal organizational ecology, which undermined their effectiveness.

Jean Lave points out that learning is a complex activity taking place in an organizational ecology as actors adapt and coordinate with a system, where they participate peripherally, gradually moving towards its center as they acquire mastery in their subject. Distance learning in this respect is no different from any other form of learning, even if the specific situated conditions of its taking place will be different in each case. These specific conditions are influenced by historical, technological, pedagogical, ideological, socio-economic and organizational factors, which will combine together in a dynamic and complex process. The rich spectrum of interactions in an organizational ecology, with all its discontinuities, contradictions and pluralism and relativity (Star 15) cannot be collapsed into a single dimension, interesting and laudable as it can be. Yet, the Group's heartfelt investment in collaborative pedagogies led to glossing over or minimizing emerging contradictions indicative of important organizational issues.

Referring back to the success rates of the NYU pilots, one of the main issues was "incompletion due to work schedules" (Snyder 5). This actually meant that students were asked to learn in addition to their usual workload, and tried to do their best in their free time in the evenings. This is a sadly common practice in many industry organizations, despite regulations, and one which distance learning makes much easier to exploit. Significantly, the presentation reporting the NYU results talks about motivation but does not consider it in its larger institutional context: it rather reduces it to an individual, voluntaristic problem.

Similarly, the lack of facilitation in the pilots did not lead to a discussion of how distance learning affects the role of teachers, their workload and their preparation, and their cost to the organization: yet teachers were one of the major concerns in the detailed report on a series of pilots run by the University of Wisconsin, put together in 1997-1998. The report stresses that faculty in their pilots were mostly concerned with limited time and lack of training (Sledge and

Tengler 53), and it points out that "spending a significant amount of time developing a course for delivery over the Internet may be viewed as a precarious activity for a non-tenured instructor at a university" (Sledge and Tengler 60).

To the Group's credit, they were only one of the many actors in a larger organization: an organization which had its own set of objectives and complexities to contend with. The Group was financed through the profits gained from the sales of Lotus Notes, one of the main groupware, collaborative work tools in the market. Lotus' main product and marketing strategy to differentiate themselves from the competition was all about collaboration in the workplace: which made the over-reliance on the "collaboration is good" mantra inescapable. More in general, large commercial organizations such as IBM are understandably invested in streamlining complexity into codifiable, conflict-free processes, in an effort towards keeping a high morale aimed at maintaining organizational cohesion. I believe this effort to be mostly futile, if not counterproductive, as ecologies are complex and difficult territories to navigate, and contradictions abound, as actors variously negotiate, construct or oppose structures, relations and processes. Stifling a contradiction in one place only means that it will resurface somewhere else later on. Unfortunately, prevailing management science and business theory approaches employ rhetorical and narrative devices through which undesired aspects of socio-organizational practices in the business ecology, such as its inherent complexity, are variously denounced, denied and displaced in favor of an orderly and prescriptive take of business.

I am not saying that the Group's endorsement of a collaborative paradigm, and its introduction of innovative ideas about distance learning into the larger commercial world of corporate organizations, which up to that point had been the almost exclusive province of behaviorist-inspired CBT training and pedagogies, was a bad choice in itself—what I am questioning is the reification of collaboration as an absolute goal, which ironically masked and evaded the point

that collaboration is only part of a larger, complex ecological dynamic, which can only be ignored at one's risk.

From this perspective, the LearningSpace story is a cautionary tale against organizational oversimplification and prescriptive approaches. The (distance) learning process in an organizational ecology cannot be reduced to a basic rulebook where simple choices of technology and pedagogy unproblematically bring the intended learning results. No matter how attractive the simple solution may be in business terms, and how compelling the supporting narrative, contradictions will emerge to reveal the underlying organizational complexity: it's up to the organization to learn—or not—from this lesson.

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[1] The role of Marla Capozzi in this phase was both important and revealing of the underlying organizational dynamics of the LearningSpace Group. For a more detailed discussion, see Stasi 2003.

[2] Even if IBM acquired Lotus in 1995, the two organisations remained legally independent for several years. Integration was completed gradually, the process completed only in 2001-2002. During the 1995-2001 transitional period, the relationship between IBM and Lotus was comparable to that between close business partners.

[3] When I say “actual” I mean courses that were offered and actually completed, with students taking them for credit. There are ‘model’courses written with an eye to collaboration, but they were showcase examples, not actual implementations.

[4] I am defining an ecology as "a set of interrelated and interdependent complex systems" which are "self-organizing, adaptive and dynamic" and their actors, structures, relations and processes entail properties of distribution, embodiment, emergence and enaction. “"it is not possible to predict a [complex system's] behavior simply by understanding its parts and their relationships to each other; a complex system defies any attempt at a strictly mechanistic explanation" (Syverson 3 ff.).