

FROM E-LEARNING TO INTEGRATED LEARNING ARCHITECTURES. A NOVEL APPROACH TO LEARNING MANAGEMENT IN CORPORATE AND HIGHER EDUCATION CONTEXTS

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Abstract. *E-learning has taken an important role in the work of human resources departments, thus increasing both the importance of, and the demands placed upon, learning management processes and technologies. High-performance learning platforms enable a wide range of functionalities and process choice. In addition, they need interfaces for integration into other corporate IT systems. And finally, corporate learning solutions also need to reach all relevant partners who might participate in learning and information exchange processes. Providing examples from the architecture of the leading European learning management system CLIX[®], the article outlines the conceptual, technical, process-related and organizational framework for a successful implementation of viable and sustainable learning solutions in companies, higher education and public organizations.*

Keywords: corporate learning, E-learning, learning management, management education, performance management.

1. Introduction

The ongoing discussion among experts about E-Learning and the e-learning industry has witnessed a number of waves in recent years. Subsequent to the establishment of computer-based trainings (CBT) and web-based trainings (WBT) as training tools in a first wave a number of years ago, 1999 saw the emergence of the first learning platforms (basically simple portals for the dissemination of WBTs). The third wave brought in the first (as yet still relatively unsophisticated) learning and teaching processes, test management solutions and the idea of the community.

Over the last two years, the discussion in Europe and the United States has focused on a concept which was, in reality, never a subject of controversy and whose contribution to the further conceptual development of e-learning was in fact rather limited in substance. „Blended learning” is the concept to which we refer, the discussion of which has partially overshadowed the arrival of the fourth (and now fifth!) e-learning wave. The discussions about knowledge management, communities, blended learning or (currently) informal learning, running in parallel with (and sometimes also counter to) the development of integrated learning technologies, were precisely those which resulted in products (corporately known as „best-of-breed” products for the individual fields of application) often being implemented in companies in separate areas of

application – with outcomes which were sometimes disappointing. The cost of homogeneously blending a range of separate special solutions, incorporating them into corporate training processes and measuring the resulting added value for human resources development was found to be too high.

Yet this is not the whole picture. Some university or corporate strategies were aimed from the outset for the long haul and went with integrated solutions (Kraemer and Sprenger, 2003). This strategy proved to be a winning one: by aiming at integrated solutions and avoiding keeping abreast of every new innovation by blindly buying into new, special solutions, it proved possible to integrate existing training processes into corporate or university business processes in an optimal way. With hindsight it has become clear that the organizations which took this strategic path not only achieved considerable cost and time economies, but also, more importantly, were alone in being able to prove to their boards how much benefit the learning technologies applied were achieving. For this reason, in relation to these two different strategies a distinction between terms becomes relevant: while some have merely invested in „e-Learning”, others have achieved the implementation of „Learning Management”.

2. Learning lifecycle management

Learning management involves taking a look at the complete process and value creation chain of training management in organizations, everything from planning and control to analysis and evaluation of further training programs (management). These four basic management tasks are applied to the fundamental process environments involved in „learning”. This covers all kinds of learning content, the many-faceted processes involved in learning and teaching, the skills and competencies which employees currently possess or need to obtain in the future, and also the resources which need to be deployed in achieving the goals of further education. From this blend emerges a framework which is able to serve not only as a platform for technical implementation designs, consultancy methodology and introductory models, and the basis for the design of achievable business models, but more especially as the basis for the technical architecture of integrated learning management systems (Kraemer, 2004).

3. Performance management

Such a learning life cycle management approach enables departments to centrally and immediately measure the individual (or collective) added value of learning measures. Relevant data – workloads of tutors and resources, feedback of course participants, exact measurement of skills and competencies, skill gap analyses etc. – is automatically generated, aggregated, and referred back to relevant training

goals. Corporate management, thus, comes to perceive learning management as an essential part of a strategically anchored corporate-wide performance management.

The complex changes to which almost all companies as well as universities in today's world are exposed serves as example for the growing importance of learning management to organizational performance. Only ten years back, for example, the automotive sector was making money principally from the product „car“. In view of the relatively simple value creation chain in that sector, the corporate knowledge appropriate and crucial to corporate performance was clear-cut: carmakers needed the relevant production know-how and the ability to position their products through appropriate product marketing and organization of the sales effort. In delivering the product to the customers, sales partners needed information about the product and prices. The consumer decided for or against the purchase of the model available from a given carmaker according to a range of straightforward criteria: price, performance data, product image and quality of manufacture – which, in the final analysis, can all be traced back to the corresponding knowledge topographies and competence in production, sales and marketing where the value creation chain of the manufacturer actually begins.

However, recent years have witnessed changes in the automotive sector, and not only those connected with production processes: the number of manual operations actually performed by the carmakers themselves has decreased in number, coupled with an increasing trend for value creation chains to be remodelled as networks of suppliers, brands, service providers and sales, organized and controlled under the overarching brand name. Actually, carmakers have become service providers in the “mobility” sector, with an enormous expansion in ranges of products and alternatives to product specifics. Rather than an off-the-shelf product, automobile customers are now looking to purchase a car fully in accordance with their own customer wishes. Over the years, this has resulted in a tremendous expansion in the knowledge topography of the corporate players involved, and also those of business partners and suppliers. And there is no end to this process in sight: the introduction in the production domain of completely new materials and production methods is under constant acceleration, with the result for today's end consumer, the purchase of a car is no longer simply the purchase of four wheels, but also an act of buying into finance and insurance services, service agreements, mobility guarantees, club memberships, and much more. This ongoing change calls for ongoing and targeted qualification, achievable above all through application of the tools of learning management. This in turn demands a paradigm change:

Learning management is now a value creation factor rather than a cost factor
Universities are moving to e-universities, combining traditional classroom education with web-based and distance learning offerings

Vocational training organizations are forced to professionally bridge the gap between schools and business

Concrete economic targets are now the drivers for learning management in place of ill-defined human resource development strategies

New target groups not contained within corporate „inner circles” can now be contemplated: sales, marketing, customers, suppliers, business partners, and so on.

To generate efficient, targeted and measurable learning achievement, knowledge contents are now coupled to teaching and learning processes, human competencies and training resources.

Learning processes are increasingly geared toward business processes: feeling unsure in dealing with a concrete task, employees are now able to learn exactly what they need and when they need it within the regular business processes. Periodical seminars turn into „learning on demand”.

One feature of this kind of performance-related approach is that internal processes and organizational structures in training departments are tested on an ongoing basis and revised in the light of new tools such as learning management. In lean organizations, not only production and sales are candidates for scrutiny in this regard. The current wave of corporate reengineering started as corporate organizational units began to operate increasingly from an IT base. To a certain degree, human resource and training departments need to catch up and adapt themselves to media-based human resources management based on information technologies. Exactly in the same way as in production or other core business processes, the future will see training management undergoing ongoing reengineering, so as to benefit from the potential for reorganization offered by the advent of IT.

This leads straight on to the idea that the maxim „You can’t manage what you can’t measure” applies equally to training departments and university faculties. This not only relates to the costs of providing education, but also to other quantitative and qualitative measurement criteria, such as „the number of employees or students certified over a given period” or „level of knowledge following the introduction of e-learning”.

4. Business framework for learning management solutions

The ongoing realignment of learning management in the light of ongoing e-learning projects has meant that not only the technical and organizational framework is subject to continuous reassessment. Measurement criteria and the business case need to be continuously aligned to new goals. Detectable in the body of all e-learning strategies implemented in corporate and organizational projects is the emergence of a market trend, which – in the same way as an individual project – has pointed to a development of the topic which is ongoing. In recent years the introduction of learning management in terms of a basic redesign of business processes within organizations

concerned with training and/or human resource development has been the most important corporate trend. In the public and medium-sized business sectors, the topic has been driven by the first training marketplaces and networks. For the future, this trend is likely to develop in such a way that the all-round design and implementation of internal training business processes will extend across corporate and institutional boundaries, resulting in more intensive cross-partner networking, including in the area of training, in a way resembling the development in such areas as product management, R & D and marketing. Learning management processes will be cross-corporate, reflecting corporate value creation chains, and taking in the training domain, no longer being restricted within corporate boundaries, but extending to, for example, suppliers, service providers or customers. A research study into the learning behaviour of executives (carried out by IMC AG in 2004/2005) (Habermann, 2005) identified the management of external partners (such as business schools) as a central task in executive development for training departments, such as Corporate Universities. The exchange relationships outlined here are, therefore, included in the learning platform CLIX[®] as part of the platform's partner management component. (Habermann, 2005).

Thanks to technology frameworks which facilitate the exchange of data between various applications at low levels of programming expenditure, the technologies available have recently reached the stage of being mature enough for the realization of such business frameworks. Regrettably, however, the organizational structures for this idea of networking in learning management are lagging behind the technology. Notwithstanding, in companies and providers work on strategic concepts aimed at the realization of the next step in learning management networking has been ongoing for some time now. In future, a range of scenarios around the topic of corporate and university e-learning and able to run in parallel, are also set to emerge:

- *Training portals:* Via customized training portals, employees and students are given central and individual access to training resources. In particular, integration scenarios involving a range of learning scenarios and platforms need to be taken account of.
- *Internal learning marketplaces:* Via marketplaces, exchanges between the various education providers of a company or a university (i.e. the faculties and professors) are enabled. The synergies achievable in this way can be considerable: many learning contents are realized by various departments in a very similar way (for topics such as soft skills, project management, leadership, general business administration, and so on), often showing potential for application across the entire organization, beyond the boundaries of the providing department. Marketplaces provide the opportunity for departments to trade their respective offerings, thus achieving not only a partial recovery of the resources expended for production and making the offerings available, but also

enabling various departments to mutually recognize common goals and to achieve these more cheaply in the future in shared projects.

- *Target-group specific learning management*: alongside internal cross-organizational solutions of this kind, the realization of „encapsulated” learning management concepts also continues: e.g. it is not possible to fully accommodate the Corporate University for executives within a single training portal: it will continue to be a strictly closed domain divided into sub domains, each with separate demands in terms of learning environment, contents and processes. The same applies for e.g. an Alumni portal within universities, and so on.
- *Cross-organizational training marketplaces*: The quality and profitability of products and services of an organization (university or corporation) does not only depend on the know-how level of the organization’s members: the continually increasing networking of e.g. production processes and business relationships means that success is frequently decided by correct management of suppliers or by addressing business customers in a more targeted way. Further training is thus key to the successful functioning of such organizational interfaces and, in the medium term, learning management will thus be adapted to extend beyond corporate confines to the entire corporate value creation chain, with change processes, development projects and manufacturing processes achieved cross corporately and accompanied by e-learning measures. E-learning will thus be able to take on the role of a marketing tool, and, alongside the supply chain, also include end consumers and corporate customers in its own portals.

In the mid-term, this vertical networking of training offerings may also lead on to the establishment of horizontal training marketplaces, for example, for the future exploitation and exchange of training offerings between corporations, and also as the marketplace for standard content providers, or expertise for the production of customized contents. Exchange scenarios of this kind include not only commercial, sector-oriented marketplaces but also meta-training networks, taking in schools and places of higher learning.

At the organizational level, application scenarios for learning management both in places of higher learning and in corporations already exist. These also include classical „added-value mediators” in the training market, which serve as links between what in reality are the extremely separate worlds of these two organizational types: private universities with close ties to corporations (for example, due to the closer links between research and hands-on practices, or due to the direct/full funding from corporations) and also business schools or training providers, who expressly tailor their services to the corporate sector while simultaneously maintaining close contact to places of higher learning.

At the organizational level, both of these two markets are served by appropriately specialized application systems at the platform level: CLIX[®] Enterprise, IMC's learning management system aims to serve the corporate sector, while the CLIX[®] Campus learning management system is more geared to the higher learning sector. Because of the realization of an ever-increasing number of cooperation scenarios between these two markets, as previously outlined, with CLIX[®] Connect an integration technology has been created, not only creating the interface between learning management and ERP systems, but also between the two different versions of CLIX[®] (and also between CLIX[®] and the learning management systems of third-party providers). In terms of learning content, there are also two different implementation alternatives, namely the production of standard content or the production of individual learning content (usually to satisfy the wishes of corporations). Cross organizational brokerage business models can also be envisaged at this level and have already been to some extent achieved.

5. Conclusion

Alongside the development of high-performance technologies such as learning process and content management systems, authoring software or rapid E-Learning, the importance of e-learning in further education both in companies and places of higher learning has increased. After a period of years in which the emphasis has primarily been on the restructuring of training management within organizations, over the last twelve months organization and business models have also been increasingly tested for cross-organizational cooperation. The interface technologies which these cooperation models and business frameworks demand have long since been on offer from the leading world-wide providers of learning management solutions. However, of equal importance as the availability of these technologies, is that the players involved have an understanding of the organizational ramifications of cooperative relationships for the realization of cooperative, cross-organizational learning management strategies. The IMC business framework for learning solutions and the CLIX[®] CONNECT integration framework together provide the basis for integrated and cross organizational learning life cycle management.

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