SELECTING LCMS IN HIGHER EDUCATION: LESSONS FROM THE SOUTH AFRICAN MINING INDUSTRY

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Abstract: The Learning Content Management System (LCMS) plays an important role in the integration of online learning. The purpose of the study on which this paper is based was thus to investigate how the South African corporate organisations select their LCMSs. This study involved 15 South African organisations from various industrial sectors. However, this paper reflects experiences of the three mining organisations (mining industry) only. This paper will reflect procedures that could be followed when selecting the LCMS. These procedures are lessons that were from the South African mining industry. It is the belief of the authors that the higher education institutions could learn from these lessons.

Keywords: Learning Content Management System (LCMS); Integration of Online Learning; Selecting the LCMS; Procedures to Follow; Lessons from the South African Mining Industry; and Higher Education Institutions

1. Introduction and background

The Learning Content Management System (LCMS) plays an important role in the integration of e-learning. Several authors describe LCMSs as engines or keys of e-learning. According to Morrison (2003), LCMS is a huge Web-based software application – encompassing a set of tools – that centralises and automates aspects of the learning process through its functions. Kaplan-Leiserson (2003) describes an LCMS as a software application that manages the construction, storage, use and reuse of learning content. These descriptions show that LCMSs are indispensable when an institution of higher learning is integrating online learning.

The purpose of the study on which this paper is based was thus to investigate how the South African corporate organisations select their LCMSs. This study involved 15 South African organisations from various industrial sectors. However, this paper reflects experiences of the three mining organisations (mining

industry) only. A qualitative approach was employed, involving observation and legislation analysis in addition to focus group and key informant interviews.

2. Problem statement

In his research report entitled "The integration of online learning for human resources development in corporate training environment", undertaken under the auspices of the University of Witwatersrand, Dagada (2004) records that, amongst other things, most organisations participating in his study were finding it difficult to choose the LCMS. However, his study finds that the South African mining industry has good procedures in place for selecting the LCMS. The main thesis of this paper is that institutions of higher learning can also use these procedures when choosing the LCMS. Dagada's research also indicates that the LCMS is the largest purchase linked with the integration of e-learning in organisations.

3. Sampling and profile of the organisations

It was mentioned in introduction and background that the participants in this study were learning facilitators, learners and managers in 15 South African organisations in which online learning is used for human development purposes. The researcher did not record the gender, age, qualifications and races of the participants because it was not relevant for this study. However, the positions of the participants were record since they depict the roles and functions of participants in online learning integration. For the purpose of this paper, the researcher will only focus on the mining industry.

During the course of this study purposive and convenience sampling were used because the above-mentioned organisations have their head offices in Johannesburg and Pretoria, South Africa and it was inexpensive to liaise with them because the researcher is based in Johannesburg. Other than these mining organisations, the researcher also visited and liaised with experts based in vendors, universities, corporate training, consulting organisations and SETAs.

This section reflects the context of the study. A brief description of online learning resources in the South African mining corporate environment will be given. This section will also provide a brief description of the mining organisations that participated in this study. This will enable readers to contextualise the integration of online learning in these organisations. It should be noted that the effectiveness of integrating online learning is affected by factors within and outside the organisation.

The three mining organisations that participated in this study have physical learning resources. These include learning centres, learning institutes, virtual learning centres and corporate universities. They also have technological

resources in terms of computers, hardware and software for learning purposes. The human resources include learning facilitators, e-learning co-ordinators, instructional designers, managers, consultants and experts. The reason for this brief description is to enable the readers to contextualise this study.

Organisation A

For more than a century, the name of this organisation has been associated with diamonds. This company is a world leader in diamond exploration, mining, recovery, sorting, valuation and marketing. This organisation produces about 45 % by value of the total annual global diamond production from its South African mines through its partnerships with two African governments. This mining conglomerate is committed to find ways to exploit the value of its brand. It needs well equipped employees to achieve this and thus e-Learning its one of its human resources development tool. During the course of this study this organisation was in the process of establishing Diamond [Corporate] University, which will also employ online learning as a delivery mode.

Organisation B

Organisation B plc with its subsidiaries, joint ventures and partnerships, is a leading world leader in the mining and natural resources sectors in the whole world. This organisation has major and purposeful interests in gold, platinum, diamonds, coal, base metals, ferrous metals and industries, industrial minerals and paper and packaging, as well as financial and technological strength. The group is geographically varied, with operations and developments in Africa, Europe, South and North America and Australia. It embodies a dominant world of resources. This organisation has several campuses which are used for learning and training purposes. This organisation also has a computer centre which enables employees who do not have computers in their offices to access to online learning.

Organisation C

Organisation C break-up from its steel producing parent in 2001. It boasts the portfolio of world-class assets spanning three continents in mineral resources - Africa, Asia and Australia. This organisation, headquartered in Pretoria, South Africa is focusing around four key commodities - iron ore, coal, base metals and heavy minerals. This organisation is listed in JSE Securities Exchange. Wary of the fact that mines are wasting assets, new business opportunities are evaluated on an ongoing basis. The main strategic focus is to sustain and advance international competitiveness, adopt international best practices and optimise existing operations. This organisation wants to develop its employees through blended learning approach so that they will be able to implement this strategy. This organisation has learning centres and computer centres which enables

employees who do not have computers in their offices to access to online learning.

The information in the brief descriptions of the above-mentioned organisations was obtained through the interviews and websites of these organisations. During the initial communication with the organisations that participated in this study, the researcher undertook all possible means to ensure that participating in this study was not to the organisations' detriment. Thus the researcher allocated pseudonyms to all participating mining companies to protect their identity.

4. The research approach

A qualitative approach was employed, with observation, legislation analysis and focus group and key informant interviews being conducted. The rationale for using the qualitative approach was that respondents could constitute a rich and valuable source of information (Devers & Frankel, 2000). This study therefore "went beyond numbers" (Greenhalgh & Taylor, 1997). The study took the form of a generic study to investigate how 15 South African companies were using online learning to improve human resource development. The usage of online learning also included the acquisition of LCMSs.

5. Data analysis

Data obtained from individual and focus group interviews was analysed using open coding. A constant comparative method was applied to analyse data within and between interviews. Content analysis was also used to analyse the content of interviews. The process involves the simultaneous coding of raw data and the construction of categories (Merriam, 1998).

Data was analysed with a view to identifying common patterns and formulating categories; these were compared with the literature and legislation (Barbour, 2001). These categories were used to answer research questions.

Content analysis was used to analyse field notes compiled during the observation sessions. Common patterns and themes were identified and categories formulated (Silverman, 2000). These categories were used to answer research questions.

Data collected through interviews and observation was analysed by comparing it with the South African education and labour legislation policies. Content analysis was also applied to analyse the legislation. The data collected was weighed against existing literature (Poggenpoel & Myburgh, 2001:410). The results were contextualised to the South African context.

6. Findings of the study regarding the selection LCMS

There are several measures that were taken by the mining companies that participated in this study. These include the following:

6.1 Nail down the education requirements

Education requirements that are driving online learning integration should be identified and documented. The researchers have noted that online learning coordinators who did not provide educational requirements for online learning experience problems with their top management. Acquiring LCMS is very expensive and thus top management was reluctant to finance its acquisition. Online learning coordinators in the South African had to provide their top management with the business case for online learning before they could acquire the LCMS and other resources. The business case reflected all the industry' training and learning requirements. The case for online learning in corporate training environment included things like the following:

Constant change; increasing complexity in terms of tools; increasing levels of knowledge required; decreasing time available for formal development actions – training; increasing levels of uncertainty and insecurity; rapid change; increasing complexity in terms of access to information; increasing pressure to act with higher levels of autonomy; increasing need to multi-skill; and having learners in different parts of the world.

Lessons from the mining industry also show that the purpose of the business case is not just to convince the top management. The training and learning requirements that are contained in the business case also enable the online learning coordinators to determine the type of the LCMS that they require.

6.2 Get to know online learning vendors

The LCMS are provided by online learning vendors and thus it is important to get acquainted with the vendors before the LMCS is selected. The mining companies that participated in this study established vendor selection teams that possess diverse range of knowledge and experience. These included individuals who have expertise on instructional design, online learning interoperability standards, information technology and subject matter experts. The teams covered as many vendors as possible. Mining companies usually included an outside consultant into the team to provide the expertise that might be lacking in the team and to offer an independent view to evaluation.

During the course of this study the researchers noted that the selection team also documented the evaluation process. The evaluation process also included the criteria. In one of the South African mining conglomerate the evaluation was like this:

Evaluation Criteria

CRITERIA	% WEIGHTING
Reporting (Workplace Skills Plan)	12
LCMS ease of use	13
Scalability	10
Support & experience of the vendor	15
Vendor stability and future vision	14
Local reference sites	9
Cost of acquiring the LCMS	9
Technological fit	18

During the course of this study, the researchers noted that finding a potential vendor should not be a difficult task. The single easiest way to find a vendor is to browse the American Society of Training and Development (ASTD)'s *Buyer's Guide*, which is in the Internet – www.astd.org. The *Buyers' Guide* can be used for preliminary screening because a vendor which is "anybody who is anybody" in the training and development industry will be listed in the guide. In the corporate training environment a companies also consulted the *European eLearning Directory* that provides details of more than 150 European vendors.

Are American and European vendors suitable to South African academic and corporate environment? Yes. After interacting with the South African mining industry, the researcher of this study concluded that organisations should not restrict themselves by the geographical base of a vendor because the best online vendors may not be on your backyard. Be that as it may, there are several South African vendors such as – Eiffel-Corp, Reusable Objects, Safmarine, High Ground Content Services, Learning Advantage, *eDegree,* and Learning Strategies. Unfortunately, there is no online learning directory in South Africa. Most South African vendors have been performing exceptionally well and they understand the requirements of local legislation, learner profiles, politics and business environment. Many American and European vendors have offices and agencies in South Africa.

The coordinators of online learning in the mining industry also find the potential vendors by attending online learning conferences and trade exhibition. In some instances the organisation can employ the services of consultant who would assist in identifying the right vendor.

6.3 Develop Request for Information

The South African mining companies that participated in this study developed the RFI (Develop Request for Information) as part of the LCMS selection process. The RFI is an important document in the process. The RFI allows the vendors to

provide the prospective client with information about themselves by responding to a series of questions.

6.4 Visit vendors for presentations and demonstrations

 Once the organisation has received the RFI answers, the selection team would visit the target vendors to view presentations and demonstrations.

6.5 Document requirements

In the South African mining industry the team would document product or/and service requirements. These should be a reflection of business, functional and system requirements.

6.6 Make the first shortlist

At this stage the South African mining companies that participated in this study would make the first shortlist. The team would spend some time assessing the RFI responses. The scorecard would be created based on the requirements of the enterprise. The individual team members would rank vendors based on the information they have initially provided. The individual's ranking would then be consolidated to create an overall team score.

6.7 Request for proposal

At this stage the South African mining companies would request for proposal (RFP) from short-listed vendors. During the interview sessions with online in the mining industry, online learning coordinators claimed that the RFP is second crucial document in the selection process. This assertion is supported by authors like Morrison (2003)), who believes that RFP delivers the following benefits:

- o Makes vendor comparison easier.
- o Ensures objectivity and a level playing field.
- o Encourages focused responses.
- o Sharpens price competition among vendors.
- o Minimise complaints from vendors who fail.
- o Helps project team justify costs internally.
- o In case of a contract dispute or scope change, provides a clear point of reference for both vendee and vendor.

6.8 Make the second shortlist

At this stage the LCMS selection team in the South African mining industry would then make the second shortlist. The number of vendors should be narrowed to at least three or four. Document analysis of documents collected form the mining

companies that participated in this study showed that the price of the LCMS should not be the only factor for eliminating the candidates. In fact price can only be negotiated

6.9 Meet the short-listed vendor

During the LCMS online learning coordinators in the South African mining organisations that participated in this study reported that during this stage they would meet the short-listed vendors and take the first decision. Each vendor would be informed if it is in the final shortlist. Questions arising from the RFP responses would be prepared. These questions were asked telephonically and through face-to-face meeting. A final scorecard would be developed. This would be followed by final evaluation, discussion and decision.

7. Conclusion

The purpose of the study on which this paper was based was thus to investigate how the South African corporate organisations select their LCMSs. This paper was built and expands at the research done under the University of Witwatersrand. This research recorded that, amongst other things, most organisations participating in his study are finding it difficult to choose the LCMS It was indicated in the paper that this study involved 15 South African organisations from various industrial sectors. However, this study paper reflected experiences of the mining industry only. A qualitative approach was employed, involving observation and legislation analysis in addition to focus group and key informant interviews. Qualitative data analysis methods were used to analyse data. This paper outlined steps that could be taken in the process of selecting the LCMS. It was indicated in this paper that Higher Education Institutions could learn from the experiences of the South African Mining Industry.

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