

Barriers to effective Corporate E-Learning in Mauritius

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Corporate e-learning can facilitate workplace learning, and ensure HRD contributes to the organisations' competitive advantage. However, successful corporate e-learning implementation implies overcoming the barriers identified in the literature as organisational (cultural and policy dimensions), technology (IT infrastructure availability and accessibility, user friendliness, and usefulness) and learner (IT skills, demotivation to learn and poor learner centeredness) obstacles. This paper aims at uncovering the corporate e-learning barriers in Mauritius, following postal questionnaires sent to 400 companies across the private and public sectors. The study reveals a low corporate e-learning uptake due to the above-mentioned barriers and some recommendations are also discussed.

Keywords: e-learning, barriers, workplace learning

This paper is based on a research investigating corporate e-learning importance in contributing to organisations' competitive advantage in Mauritius. Currently e-learning is much debated about as a medium for HRD, lifelong and workplace learning. However, successful corporate e-learning implementation can only happen if the associated barriers were identified and overcome. Thus, this paper explores the barriers to e-learning in Mauritian organisations.

Literature Review

The literature about barriers to corporate e-learning identifies three main sets of obstacles to overcome: Technology, Organisational and Learner (Hartley 2000; Armistead and Beamish 2001; Geisman 2001; Halkett 2002; Young 2002; Sambrook 2003; Hofmann 2003a; Macpherson *et al.* 2004).

Technological Barriers

These obstacles refer to the investment level in the right information technology infrastructure to ensure accessibility and availability of hardware, software and high bandwidth on web based systems to all employees in the organisation (Young 2001; Hofmann 2003a; Hofmann 2003b; Welsch 2002). From the Technology Acceptance Model (TAM) perceived ease of use and perceived usefulness of a technology are major determinants of the behavioural intention of employees to use the technology (Davis 1989; Davis *et al.* 1989; Venkatesh 1999; Venkatesh 2000). Hence user friendliness and usefulness of e-learning will impact its acceptance in the organisation (Sambrook 2005). The ease of use could be facilitated by ensuring that personal computers, intranet, extranet and internet are available and readily

accessible to everybody in the organisation. The hardware backed by high bandwidth connection should be supported by the appropriate and user friendly softwares (Young 2001; CIPD 2002; Weaver 2002; Homan and Macpherson 2005). The lack of technology infrastructure at National level can also adversely impact the organisational IT infrastructure (Sambrook 2003). In addition the usefulness of technology can be viewed as e-learning being relevant to the work, instrumental to improved organisational performance via enhanced individual and departmental performance, and supportive of workplace learning through its flexibility in delivery, pace and distribution of learning (Eddy and Tannenbaum 2003; Macpherson *et al.* 2004).

Hence, we would expect organisations to invest in the right e-learning hardware and software, supported by high bandwidth. This IT infrastructure should be readily available and accessible to all so that corporate e-learning is perceived as easy to use. In addition, organisations could be expected to be fully aware of e-learning IT infrastructure and its potential benefits to the individual, department, and organisation, so that corporate e-learning is perceived as useful. Furthermore, the National IT infrastructure should facilitate the organisational IT infrastructure for the uptake of corporate e-learning.

Organisational Barriers

These pertain to the organisation context obstacles, in particular cultural and policy dimensions, that should be overcome for corporate e-learning to become a reality (Macpherson *et al.* 2005). The lack of an organisational learning culture would be detrimental to e-learning since there is a need for a strong and continuous learning culture emphasising self-development and self-directed learning to motivate employees to train and learn (Armistead and Beamish 2001; Eddy and Tannenbaum 2003; Chiaburu and Tekleab 2005; Homan and Macpherson 2005). A strategic human resource development approach would ensure the presence of a strong learning culture (McCracken and Wallace 2000). The existence and coherence among the nine SHRD elements - Shaping organisational missions and goals; Top management leadership; Environmental scanning by senior management, specifically in HRD terms; HRD strategies, policies and plans; Strategic partnerships with line management; Strategic partnerships with HRM; Trainers as organisational change consultants; Ability to influence corporate culture; Emphasis on cost-effectiveness evaluation – can contribute to build this strong learning culture supportive of corporate e-learning.

Other cultural resistances have been noticed by Geisman (2001) like the tacit understanding that computers are used for job tasks only, the preference for traditional training methods, unwillingness to invest in new technology for training purposes, and a love/hate relationship with training. This preference for classroom and off the job training can be explained by the perception of e-learning creating low socialisation thus missing on the social aspect of learning (Rumble 2001; Rovai 2002; Sambrook 2005). Preference for traditional trainer centered delivery methods is also due to the difficulty of measuring the cost of e-learning (Sambrook 2005). Organisations could be providing employees with PCs but limiting their use to work only and thus see access to network facilities as not relevant for the job. This can inhibit corporate e-learning since e-learning is internet-enabled learning and not computer based training available on discrete computers (Gunasekaran *et al.* 2002; Macpherson *et al.* 2004; Brown 2005). The lack of management and peer support can as well reinforce this barrier, since they have difficulties to view e-learning transfer into the job and thus will not be motivating employees to embark on e-learning (Sloman 2002; Hofmann 2003c; Baldwin-Evans 2004; Macpherson *et al.* 2004; Chiaburu and Tekleab 2005).

There are also traditional organisational policy barriers like a lack of financial resources to invest in e-learning reinforcing the love/hate relationship with training (Geisman 2001; Sambrook 2003). This could result from top and middle management resistance to change

associated to e-learning (Macpherson *et al.* 2004). The lack of management support could arise from the unclear link between e-learning and business strategy, and the difficulties in measuring e-learning programmes outcomes, Webster *et al.* (2005). This can only reinforce the entrenched management attitudes towards training (love/hate relationship) which is an inhibiting factor to workplace learning through e-learning (Macpherson *et al.* 2004; Sambrook 2005; Brown 2005). The lack of top and line management commitment and leadership to their personal development can send the wrong messages to employees about the importance of learning, and hindering e-learning, in the organisation (Sanders 2001; Ashton 2004; Ellinger 2004; Sambrook 2005).

The lack of formal HRD infrastructure, in terms of HRD strategy driving coherent HRD policies and plans, and clarifying the contribution of HRD to the bottom line, can inhibit e-learning uptake (Sambrook 2003; Homan and Macpherson 2005; Macpherson *et al.* 2005; Sambrook 2005). Trainers lacking e-learning expertise can be a further barrier. Trainers are expected to adopt new roles like e-trainers, e-moderators or e-instructors, as well as becoming organisational change agents who are able to provide customised solutions to the organisation and learners. Therefore trainers should possess the necessary IT skills to evolve in a web based environment and should not view e-learning as a threat to their existence but be willing to change the focus of their role from training providers to facilitators. Hence training will be less trainer centered and more learner centered which is a requirement for e-learning success (Mantyla 2000; McCracken and Wallace 2000; Frankola 2001; Welsch 2002; Young 2002).

Thus organisations are expected to take into account the above organisational context barriers, cultural and policy dimensions, if they were to embark successfully on corporate e-learning.

Learner Barriers

The last obstacle to corporate e-learning can be considered as learner barriers which pertain mainly to a lack of IT skills, demotivation to learn, and poor learner centeredness. Learners need IT skills to use the e-learning hardware and software, and enjoy their learning experience. This can only improve the user friendliness of technology and ensure that the learners perceive e-learning as easy to use (Davis 1989; Davis *et al.* 1989; Venkatesh 1999; Venkatesh 2000). Therefore the employee should be provided with IT skills training to embrace e-learning (Honey 2001; Sanders 2001; Sloman 2002; Weaver 2002; Sloman and Rolph 2003). In addition, IT training will enhance learners self-efficacy and confidence by improving their ability or aptitude, and reducing their fear of technology (Eddy and Tannenbaum 2003; Sambrook 2003; Sambrook 2005). E-learning is based on learner centeredness and empowerment of learners to take responsibility for their own development. This would imply that learners are self-motivated and induce in self-directed learning. Learners could show resistance to learn on their own because of the discomfort with learning new methods and tools, the preference for learning through social interaction as opposed to experiencing learner isolation, and the need to interact with experts (Geisman 2001; Sambrook 2003; Baldwin-Evans 2004; Macpherson *et al.* 2004). Learners' willingness and motivation to learn is crucial, requiring that learning styles and preferences be integrated in customised e-learning programmes as well as overcoming other constraints like work-life balance (Cranton 1992; Sadler-Smith 1996; Fry *et al.* 1999; Honey 2001; Mumford 2002; Young 2002; Sloman and Rolph 2003; Macpherson *et al.* 2004). Self-motivation not only implies that supervisors and peers support learners in taking responsibility for their own learning but also the freedom to learn in the workplace at their own pace and time. Hence, learners with an external locus of control and experiencing a lack of choice to participate in training, in terms of not being able to choose training attendance, will suffer from demotivation to learn. Therefore increased autonomy and a reduced workload in the

organisation could help in motivating learners to embark on e-learning (Holton *et al.* 2000; Eddy and Tannenbaum 2003; Naish 2003; Brown 2005; Homan and Macpherson 2005; Macpherson *et al.* 2005).

Therefore, organisations going for e-learning should be aware of the above learner blockages and tackle them through the development of self-directed and self-motivated learners.

Methodology

Postal questionnaires were used for the corporate e-learning research, and incorporated a section comprising of barriers to successful elearning uptake. Other sections comprised of awareness, enablers, and areas for future investment in corporate e-learning. Most of the questions were dichotomous, with explanations (in open ended form) for rationale behind the answers, thus reducing the risk of making misleading inferences. Some 'ranking', 'rating', and 'Likert scale' questions were used to capture respondent perceptions. A few open ended questions allowed respondents to express themselves. The questionnaires were posted to 400 organisations across all the major (private and public) sectors of the Mauritian economy based on a stratified sectorial sampling.

Sample Calculation and Responses by Sectors.

(a) Combined Sectors	Population (N)	Calculated Responses	Target Desired Responses	Actual Sample sent	Actual responses received
(a)	(b)	(c)	(d)	(e)	(f)
Primary Sectors	1,284	72.37	56	112	22
Restaurants and Hotels	144	8.12	20	40	9
Business Services & Consultancy	714	40.24	40	80	17
Public Services, Education, Social Work, Health	431	24.29	24	48	16
Computer and related activities	60	3.38	20	40	5
Wholesale and Retail Trade	364	20.52	20	40	5
Transport, Storage and Communication	108	6.09	20	40	9
Companies in groups					10
TOTAL	3,105	175	200	400	93

Table I: Summary of Sample and Responses.

Column (a) in Table I refers to the different economic sectors and column (b) is the number of firms (employing 10 or more people) as per the 2003 records of the Central

Statistical Office. Due to time and cost constraints, the investigators aimed at obtaining 175 questionnaires. As presented in column (c), the breakdown for each sector was done using the stratified method. Since some figures were too low for statistical analysis, they were over-weighted, while that of the primary sector under-weighted (Column (d)). Following this re-weighting, 200 questionnaires were expected to return. Assuming a response rate of 50 percent, the amount of questionnaires to be sent was doubled for each sector (Column (e)). Selection of participants was then done using the purposive sampling technique (Kerlinger 1973). Around 80 participants were selected from the Association of Human Resource Professionals directory. 25 more were taken from the Top 100 companies as per the year 2003 list. The remainder was randomly selected from the list of Top 3000 companies from the Registrar of Companies.

Column (f) shows the number of questionnaires actually returned per sector. While reminding respondents to return questionnaires and when some of them were actually returned, it was realised that some firms formed part of a group and the head office replied on behalf of those subsidiaries. The sample was adjusted accordingly to cater for firms, which actually closed down, thus yielding a final sample of 350 organisations. Ninety three questionnaires were returned representing a response rate of 27 percent. Most of these questionnaires were filled by Human Resources professionals. On receipt of the completed questionnaires, they were grouped by sectors and 're-weighted' to fairly represent their respective proportions as in the population. The 'weight score' was then used in SPSS to produce fairer results.

The data collected were processed using the 'data triangulation' method whereby evidences for each 'Barrier' issue were retrieved from a combination of scattered questions throughout the questionnaire. Furthermore, a round table was organised involving a panel of specialists on corporate elearning and Human Resources Managers as participants. Preliminary findings were presented to the floor and audience who subsequently responded and discussed on issues like 'Why there is low use of e-learning in Mauritius', and 'Existence of national e-learning incentives' among others. The comments shed light into the reasons behind some of the preliminary findings, thus enabling the 'fine-tuning' of the final results.

SPSS 11.5 calculated cross tabulation, means, frequencies, and correlation co-efficient. Cross tabulation was used when analysing different questions in order to find out whether there are particular relationships among two or more variables. Additionally, comments and discussions from the round table are also incorporated into the analysis.

Analysis and Discussions

13 percent of the respondents indicated using e-learning. This low corporate e-learning uptake is due to the barriers explored in the coming sections.

Lack of Organisational Learning Culture

An organisation should have a strong and continuous learning culture to facilitate e-learning (McCracken and Wallace 2000; Armistead and Beamish 2001; Chiaburu and Tekleab 2005; Macpherson *et al.* 2005). Organisations adopting an SHRD approach can build the required strong learning culture.

A previous study conducted by Vencatachellum and Munusami (2005) to assess the state of SHRD in Mauritian firms, based on the McCracken and Wallace framework, found that Mauritian firms do not possess a strong learning culture. It was suggested that they would lie somewhere between training organisations (no learning culture) and HRD organisations (weak learning culture).

From Table II, the main problem seems to be that Mauritian firms adopt a pick and mix, instead of a coherent, SHRD approach. This results into a poor organisational learning culture, that would not support and motivate self-directed learners, representing a major organisational obstacle, inhibiting e-learning (Armistead and Beamish 2001; Baldwin-Evans 2004; Macpherson *et al.* 2004; Chiaburu and Tekleab 2005; Macpherson *et al.* 2005).

Summary of SHRD maturity in organisations in Mauritius

No	ELEMENTS	NO LEARNING CULTURE	WEAK LEARNING CULTURE	STRONG LEARNING CULTURE
1	HRD shaping organisational missions and goals.		*	
2	Top management Leadership.		*	
3	Environmental scanning by senior management specifically in HRD terms.	*		
4	HRD strategies, policies and plans.		*	
5	Strategic partnerships with line management.		*	
6	Strategic partnerships with HRM.		*	
7	Trainers as organisational change consultants.		*	
8	Ability to influence corporate culture.	*		
9	Emphasis on cost-effectiveness evaluation.	*		

Table II: Summary of SHRD maturity in organisations in Mauritius

Lack of Top Management Support

Top management sponsorship is an essential factor in creating a conducive atmosphere for organisational learning. An effective way to achieve this is for them to lead by example. Leading by example would be for top management to: emphasise about HR development in their speeches; willingly share knowledge with subordinates; act as coaches and mentors; and embark on their own development. Respondents were asked as to what extent top management in their respective organisations engage in the above. The findings are summarised in Figure I.

The answers are more inclined towards 'rather agree' and 'strongly agree'. In the 'rather agree' column, most examples are on the same level. When considering the 'strongly agree' column, top management emphasising about HRD in their speeches comes first followed by their willingness to share knowledge, them acting as coaches and mentors, and finally for them to embark on their own development. The latter point is further reinforced as only 16 percent of top management willingly initiate their own training. Detailed analysis indicates

Pearson Correlation co-efficients (at the significance level of 0.01) of 0.542, 0.544, and 0.492 (Table III) with respect to top management embarking on their own development and them emphasising about HRD in their speeches, their willingness to share knowledge, and them acting as coaches and mentors, respectively.

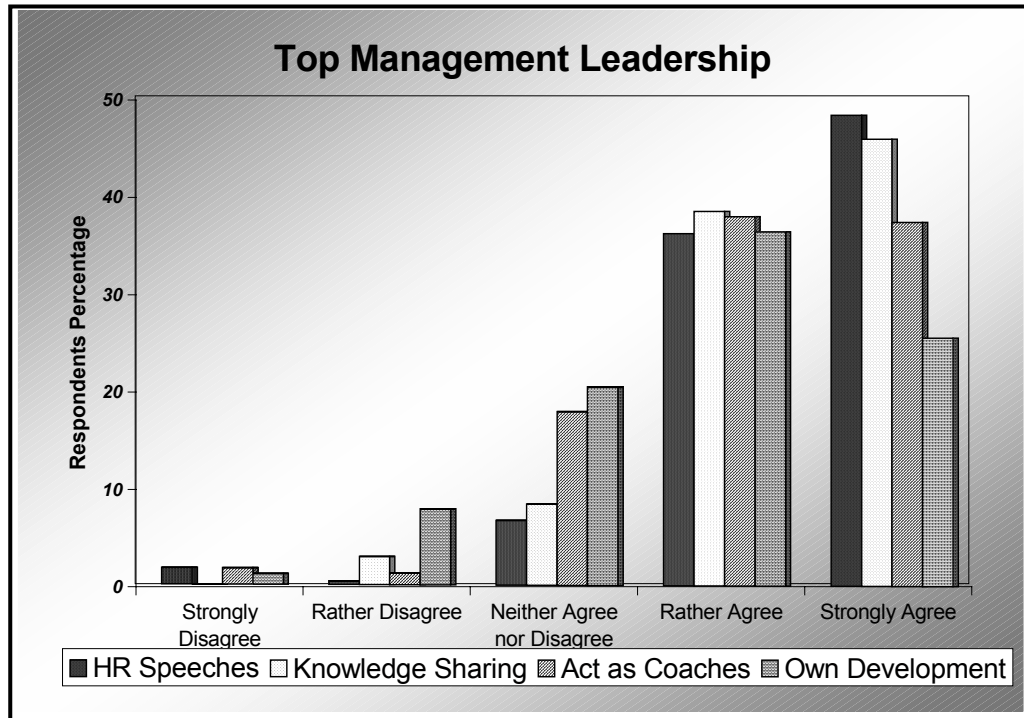


Figure I: Elements of top management leadership

Top Management Leadership Correlation

		HR Speeches	Knowledge sharing	Coaches	Own Development
HR Speeches	Pearson Correlation	1	.746(**)	.709(**)	.542(**)
	Sig. (2-tailed)	.	.000	.000	.000
	N	93	93	93	93
Knowledge sharing	Pearson Correlation	.746(**)	1	.778(**)	.544(**)
	Sig. (2-tailed)	.000	.	.000	.000
	N	93	93	93	93
Coaches	Pearson Correlation	.709(**)	.778(**)	1	.492(**)
	Sig. (2-tailed)	.000	.000	.	.000
	N	93	93	93	93
Own Development	Pearson Correlation	.542(**)	.544(**)	.492(**)	1
	Sig. (2-tailed)	.000	.000	.000	.
	N	93	93	93	93

** Correlation is significant at the 0.01 level (2-tailed).

Table III: Top Management Leadership Correlation

The relatively low correlation co-efficients indicate that there is barely a relationship between on one side top management emphasising HRD in their speeches, sharing

knowledge, and acting as coaches, and on the other side top management engaging in their own development. Hence, top management seemingly take a more passive stance like talking about HRD, just paying lip service, instead of taking proactive stances like acting as coaches and mentors, and leading by example through embarking on their own development. Even the sharing of knowledge is questionable since their own development is not a priority. This demonstrates top management entrenched love/hate attitudes and lack of support to learning which would inhibit workplace learning, and represents another organisational barrier to e-learning (Geisman 2001; Sanders 2001; Ashton 2004; Ellinger 2004; Macpherson *et al.* 2004; Brown 2005; Sambrook 2005) .

Lack of support for Training

72 percent of organisations claim to have a department responsible for the HR function and two third of the respondents acknowledged that they have a training department or at least a person responsible for the training function. Out of those organisations, 48.8 percent also possess a training centre. Training Needs Analysis were performed by 72 percent of organisations, while two third of respondents acknowledged the existence of annual training plan. There is a high interrelationship between those doing Training Needs Analysis and those having an annual training plan as denoted by a Pearson correlation co-efficient of 0.697 between these two responses at a significance level of 0.01. These results suggest that the necessary training and development infrastructure is in place.

However, in terms of their actual importance, training and development was ranked second (26 percent) by the respondents from a list of HR practices. The ranking for training dropped from the second to third place with only 8 percent when respondents were asked where future focus should be placed. This indicates that organisations may not be giving enough importance to training and development although the infrastructure may seem available. This point is further emphasised by the finding that on average an employee spends only 1.56 day per year on training. In addition, there seems to be a low level of training democratisation since training is mostly available for higher ranked employees.

Furthermore, from Table II, the lack of environmental scanning by senior management specifically in HRD terms, and the limited integration and coherence of HRD strategies, policies and plans greatly hinder e-learning initiatives, since there will be unclear link between e-learning and business strategy making it difficult to measure e-learning programmes outcomes, Webster *et al.* (2005). This represents a further organisational barrier to e-learning.

Lack of Financial Support

Financial support is paramount given that e-learning infrastructure and application software may be quite costly. Hence, organisations must be willing to invest in training and e-learning. However, only about 35 percent of respondents claim to have a training budget of Rs 250,000 (£ 5,000) or more per year. The others have either no training budget or less than Rs 250,000. This figure is unfortunately insignificant to warrant investment in e-learning, especially as hardware and the required software are quite expensive. Even for those engaged in e-learning, only 21 percent said they have a dedicated e-learning budget. The fact that a high rate of respondents does not have a specific e-learning budget implies a rather low commitment towards e-learning. This is amplified by the fact that 56 percent of respondents indicate that the e-learning activities are coordinated by HR staff. The ideal situation, (Rana 1999; Weaver 2002) would have been to have the involvement of both the IT department and top management to build credibility around e-learning initiatives, as agreed by the round table speakers. This shows the unwillingness to invest in new technology for training and represents a traditional organisational obstacle to e-learning (Geisman 2001; Sambrook 2003).

Difficulty in Measuring Outcomes

Cost-effectiveness evaluation of training is essential to demonstrate that the invested resources are reaping higher benefits, thus showing top management the contribution of training to bottom line, McCracken and Wallace (2000). However, only two third of respondents confirmed doing training evaluation.

From those organisations doing training evaluation, 72 percent assess at the reaction level, 85 percent at the immediate level, and 66 percent at the intermediate level. These figures dropped to 52 percent at the ultimate level and just 35 percent at the cost-benefit level. Such low figures may suggest difficulties to measure the impact of training on organisational performance. This finding is strengthened from the fact that only 17 percent of those doing e-learning evaluated training at the cost-benefit level, while slightly above 40 percent evaluate e-learning impact on job and organisational performance. Only 13 percent found it easy to measure outcomes. The major problem seems to be the difficulty to measure the contribution of training on overall performance as only 43.02 percent of respondents agree that trainers are able to evaluate training outcomes. This helplessness to demonstrate training transfer into the job and organisational performance, and to perform cost effectiveness evaluation, can only reduce management and peer support to motivating employees for e-learning (Eddy and Tannenbaum 2003; Baldwin-Evans 2004; Chiaburu and Tekleab 2005; Sambrook 2005), thus creating yet another organisational barrier.

Unqualified and Unprepared Trainers

As seen above, it will be difficult for unqualified trainers to undertake a proper training evaluation at the cost-benefit level. In addition, they should possess a good level of IT skills to evolve in the e-learning web based environment. However, the respondents were not very positive when asked whether existing trainers possess skills like evaluating training outcomes; proactive problem solving; IT skills; and customising contents. The importance of those skills is also emphasised by a speaker from the round table who considers communication skills, pedagogy, and research as essential for building a learning organisation. The lack of skills suggest that trainers will not be able to customise learning programmes to learners' and organisations' needs representing a major barrier to encouraging employees to learn (Sadler-Smith 1996; Honey 2001; Mumford 2002).

This also suggests that trainers are still anchored in their provider role instead of being organisational change consultants, e-trainers, e-moderators or e-instructors (Mantyla 2000; McCracken and Wallace 2000; Frankola 2001; Welsch 2002; Young 2002). This status quo in trainers' role is reinforced by the preference for trainer centered delivery methods, since 90 percent of the respondents use classroom and workshops training rather than e-learning and on the job training. This can be explained by the difficulty to measure e-learning cost, and the perception that e-learning inhibits learning through social interaction (Geisman, 2001; Macpherson *et al.* 2004; Sambrook 2005). Hence, unprepared trainers represent a major organisational barrier to e-learning.

No Freedom and Autonomy to Learn

51 percent of respondents do provide some freedom and autonomy for employees to learn. The fine line between those offering or not freedom and autonomy, supports the finding that only a small percentage of organisations do allow employees time to prepare for training during working hours. Arguments in the round table revolved about employees making improper use of autonomy, with a proposed solution being the use of Learning Management System (LMS) to control access time of employees, demonstrating a lack of trust towards employees embarking on self-directed learning. Releases (Time off) seem to be the most

predominant forms of freedom that organisations provided to employees but they are mainly to attend traditional off the job training courses. The Public sector has even got a guideline that each employee is allowed 40 hours per year for his own training, but it seems that red tapism makes it difficult for everyone to actually benefit from this incentive, questioning the level of discretion that the employees have over their own learning and development. This reinforces employees' external locus of control, and lack of choice to participate in training. The lack of autonomy and freedom to balance their workload, reduces employees' self-motivation and self-directed learning required for corporate elearning (Holton *et al.* 2000; Eddy and Tannenbaum 2003; Naish 2003; Brown 2005; Homan and Macpherson 2005; Macpherson *et al.* 2005). This finding can be both viewed as organisational and learner barriers to e-learning.

IT Availability and Accessibility

In two thirds of the organisations Internet, Intranet and Personal Computers, are available but less than 20 percent use Extranet. Top management and middle management seem to demark from supervisors and other employees when it comes to accessibility of these IT tools. Shop floor employees are given far less access while top management lead the rankings for these IT tools. Furthermore, Intranet access is more than Internet access for all employee levels except for top management. This could mean that organisations are controlling their employees, as to what materials the latter are accessing, and limit their use of IT tools to job tasks only, Geisman (2001). This lack of trust represents a barrier to the empowerment of employees, required in e-learning, Eddy and Tannenbaum (2003).

60 percent of respondents answered that their organisations intend to invest in IT. The main investment would be in hardware like personal computers, laptops and routers, etc.. Some also complained about the unavailability of e-learning products. However, the main concern remains the cost of Internet, as pointed out in the round table, with further discussions indicating that the bandwidth is too low. These weaknesses are due to the National IT infrastructure being not very good, with too much duty on IT equipment. Therefore the lack of organisational IT infrastructure availability is conditional on the improvement of the National IT infrastructure, Sambrook (2003).

The difficulty in IT tools availability and restricted accessibility in organisations will reduce the perceived ease of use of the technology, and thus be a major barrier to employees' intention to use e-learning (Davis 1989; Davis *et al.* 1989; Venkatesh 1999; Venkatesh 2000).

IT Training and IT skills

Respondents were asked about the percentage of employees who have undergone IT training in the past three years, to give us an idea as to the proficiency level of the employees. Low percentages have been provided for each employee category. However only around 16 percent of respondents say that more than 75 percent of their clerical staff have undertaken IT training. Nevertheless, there does not seem to be a great enthusiasm for organisations to provide IT training for their employees.

Employees' knowledge and skills in IT tools affect their ability to engage in e-learning, Geisman (2001). Less than two third of the respondents identify the proficiency levels as being good or very good for each category of employees namely top management; middle management; supervisors; clericals; and shop floor workers. For 'very good', top and middle management are largely in front reflecting privileged access to the available IT tools. However, in the 'good' category, clerical has the highest rating with 37 percent due to the substantial level of IT training undergone. This level of IT proficiency could also be due to using personal computers for job tasks only, which could be considered as a barrier to e-learning, Geisman (2001). This can explain the least IT proficiency percentage, for shop floor

employees, presumably because they deal less with computers for their job tasks. In addition, the majority of organisations engaged or not in e-learning indicated ‘workforce lacked necessary IT skills’ as a constraint to e-learning. This lack in IT skills among employees will affect their confidence and self-efficacy, reducing their perceived ease of use of the technology and inhibiting e-learning use (Davis 1989; Davis *et al.* 1989; Venkatesh 1999; Venkatesh 2000; Eddy and Tannenbaum 2003; Sambrook 2005).

Lack of Awareness and Misconception of E-learning

62 percent of respondents correctly identified the e-learning definition from four different statements representing blended learning, e-learning, distance learning, and computer based learning. Since e-learning definition alone is insufficient for a thorough understanding of the whole concept, the respondents were further asked whether they were familiar with e-learning related terms. A list of 18 terms like asynchronous and synchronous learning, conference technology, learning management system, extranet, internet and intranet, were provided out of which nine relate to frequently used terms in the e-learning context. It was assumed that if a respondent knew at least six out of those nine terms, then he has a good understanding of ‘e-learning’. Using this methodology (6 out of 9), only 37 percent of the total respondents actually have a good understanding of e-learning. Furthermore, only 24 percent of the respondents correctly identified both the e-learning definition and terms, and can be said to possess a deep understanding of the concept.

The alarming conclusion is that more than three quarter of the respondents have a misconception of e-learning, explaining why around 84 percent do not engage in e-learning. When provided with a list of possible constraints, which could hinder e-learning uptake, 74 percent acknowledge that the concept is not well known. A significant percentage (around 50 percent) of those engaged in e-learning also reckon the lack of awareness of e-learning concept proved a major constraint. This lack of clarity about e-learning is confirmed by the respondents identifying ‘decreases staff turnover’, ‘promotes socialisation’, ‘easy to measure outcomes’ and ‘encourages team learning’ as the least perceived benefits from e-learning, thus viewing it as more beneficial to individuals than the organisation. This lack of awareness and misconception about e-learning can only act as a barrier to corporate e-learning as the perceived usefulness of e-learning is questioned, reducing the intention to use it (Davis 1989; Davis *et al.* 1989; Venkatesh 1999; Venkatesh 2000; Macpherson *et al.* 2004).

Learner Demotivation

Learner motivation is another very important issue. Some speakers from the round table said that people are reluctant to learn and so they need incentives to engage in learning and training. Organisations in Mauritius seem to be more inclined on extrinsic, almost 80 percent provide financial sponsorship, rather than intrinsic factors of motivation, like a strong organisational learning culture and management support emphasising self-directed learning and self-development (McCracken and Wallace 2000; Chiaburu and Tekleab 2005). Some added in the round table that job enrichments may be a way to encourage employees to learn, through workplace learning, rather than subscribing to the ‘glamour’ paradigm of off-the-job training. As seen earlier, the lack of autonomy and freedom to learn, lack of trust and empowerment of employees can contribute to learner demotivation towards e-learning, thus hindering corporate e-learning (Holton *et al.* 2000; Eddy and Tannenbaum 2003; Naish 2003; Brown 2005; Homan and Macpherson 2005; Macpherson *et al.* 2005).

No Learner Centeredness

One of the important features of e-learning is the existence of self-directed and willing to learn employees in the organisations. Figure II below shows to what extent training has been initiated by organisations, employees, and both.

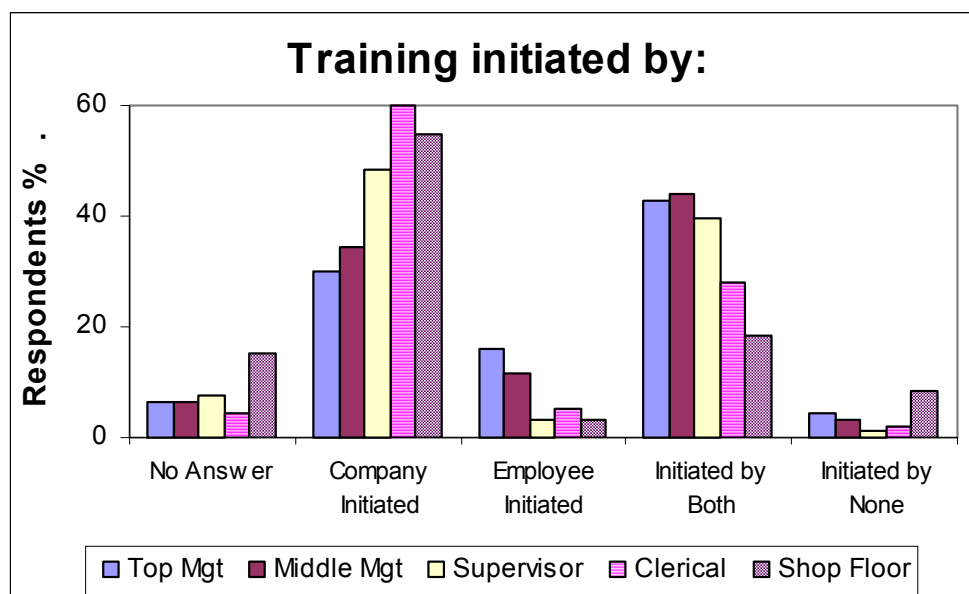


Figure II: Training initiated by whom?

It is noted that a very insignificant percentage of respondents acknowledge that training has been initiated by employees (Top management – 16%; Middle management – 12%; Supervisors – 3%; Clerical 5%; and Shop floor – 3%). This may indicate unwillingness of employees to learn on their own (as agreed by some participants in the round table), thus exhibiting a barrier for e-learning. Some participants in the round table argued that this situation is a result of a low organisational learning culture, and employees tend to avoid uncertainty and do not take risks, thus missing on opportunities to do reflective learning, that is to learn from mistakes. Therefore, employees should be empowered to learn by themselves. For this to occur, they need freedom to learn on their own which is not really allowed for the time being by organisations. It is also seen that around 43 percent of respondents say that training is initiated by both the company and employee for the top and middle management levels. Joint responsibility for training may act as a transition phase from solely company to employee initiated training. Therefore, empowerment of learners could be facilitated by joint development initiatives. As encountered before, the preferred and used training delivery methods are still mainly trainer centered with limited customisation to learners' styles and preferences. This shows employees discomfort with learning new methods and tools as well as a resistance to learning on their own (Cranton 1992; Sadler-Smith 1996; Fry *et al.* 1999; Geisman 2001; Honey 2001; Mumford 2002; Young 2002; Sloman and Rolph 2003; Macpherson *et al.* 2004). Hence, learner centeredness is not yet a reality, representing an additional learner barrier to e-learning.

General Comments

As seen in this section, all the major organisational context barriers, pertaining to both cultural and policy dimensions, as well as technology and learner obstacles are present. Although the National IT infrastructure can mitigate the availability and accessibility of the e-learning technology, the combined effects of the organisational, technology and learner barriers have resulted in the low corporate e-learning uptake in Mauritius. There is still some belief in

corporate e-learning as 67 percent of the respondents still want to pursue it. There is much room for improvement and some wise initiatives can facilitate the implementation of corporate e-learning.

Recommendations and Conclusion

Organisational context obstacles could be addressed by assessing the readiness for e-learning. A cultural audit based on the SHRD elements of McCracken and Wallace's framework could identify organisational weaknesses, and help to develop an integrated and coherent SHRD approach required for building a strong learning culture. The learning transfer system inventory (LTSI) can be used to assess the existence of inhibiting and supporting factors to workplace learning (Holton *et al.* 2000; Eddy and Tannenbaum 2003; Chiaburu and Tekleab 2005; Sambrook 2005). Furthermore, financial readiness assessment based on the strategic fit between e-learning and business goals, top management sponsorship, and a substantial e-learning budget, would help in building organisational commitment to corporate e-learning (Welsch 2002). Hence, organisations will be in a position to develop an integrated and cost effective e-learning strategy incorporating the following: an awareness campaign to clarify the misconceptions about e-learning and communicate its usefulness to everybody; train the trainer programmes to enhance trainer competencies in e-learning environment; and integrated HRD strategy, policies and plans to democratise training and support an e-learning climate.

Overcoming learner barriers will be facilitated by a strong learning culture ensuring an environment of self-motivation, self-development and self-directed learning. In addition, coherent actions like learning to learn and capacity building programmes, focusing on improving employees' IT competencies and the development of proficient learners, will enhance the learner centeredness required for e-learning. Thus, the workforce will be motivated to embrace e-learning.

The investment and democratisation of access to IT tools – Internet, Extranet, Intranet and PCs - in the organisations would help to overcome the technological barriers. The ease of use and usefulness of e-learning should be driving organisational technology investment plan. Organisations could adopt a consortium approach, based on the LearnShare model, to minimise the cost of e-learning as well as sharing e-learning contents and technology (Anfuso 1999; Sloman 2002).

The National ICT infrastructure has recently been improved with the high bandwidth international connectivity through the SAFE (South Africa Far East) submarine fibre optic cable. Organisations should be tapping into this opportunity of accessing broadband facilities. Partnership between the business community and government, like the Computer Proficiency Programme, should be furthered to spread the ICT culture in Mauritius. Other upcoming government initiatives incorporate ICT training for all, leading to the Computer Core Certification (IC3), and the Community Empowerment Programme providing internet access to the public via post offices (<http://www.gov.mu>).

Hence, organisations in Mauritius should take advantage of the National ICT infrastructure by approaching corporate e-learning from a holistic angle, i.e. addressing the whole range of e-learning obstacles (organisational, technology and learner) so that corporate e-learning can become a reality.

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