

ROLES OF UMS-LIC IN OVERCOMING ICT DEVELOPMENT CHALLENGES AMONG SMES IN LABUAN

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ABSTRACT

UMS KAL as a University is always perceived as a workforce supplier rather than as a continual training partner and provider for SMEs and professionals at Labuan. As an International financial hub the ability to adopt ICT and e-commerce among SMEs are no longer an option. A campus located in Labuan offers great opportunities to be grasped by SMEs to achieve that goal. However, due to the growth characteristic of ICT, skills shortages will remain as an issue haunting SMEs. Continuous staff training is the way out, however many SMEs are reluctant to train their workforce. Issues and barriers pertaining to skills development were reviewed by referencing previous studies undertaken. The paper highlights ICT skill challenges facing SMEs in Labuan. The paper concludes by outlining several suggestions to improve on ICT development among SMEs in Labuan. This paper highlights how UMS-LIC can play its important part to promote socio-economic development in the field of ICT.

Keywords: *Information and Communication Technology (ICT), Small and Medium Enterprises (SMEs), Training, Skills Development Barrier*

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Introduction

The definition for the term SME varies according to countries. In the Malaysian context, SME is classified into micro enterprise, small enterprise and medium enterprise based on the annual sales turnover and the number of full time employees. In the manufacturing, manufacturing related services and agro-based sectors, SMEs are enterprises with full time employees not exceeding 150 or sales turnover not exceeding RM25 million. In the services, primary agriculture and Information and Communication Technology sector, SMEs are enterprises with full time employees not exceeding 50 or with annual sales turnover not exceeding RM 5 million [13]. SMEs are in the spotlight of researches not without reasons. SMEs play an important role in sustaining a nation's employment and economic stability. SMEs account for 60 percent to 70 percent of jobs in most developed and developing countries and for most jobs that are created [9]. Governments around the world are placing increasing importance upon the success of small business entrepreneurs and providing increasing resources to support this emphasis [3].

Rapid growth of ICT poses both continual opportunities and challenges for SMEs. The importance of ICT as a tool in businesses is widely recognized. ICT improves business process efficiency and productivity. It is believed to be a crucial tool for SMEs to sustain the competitiveness and prosperity of their businesses if not survival in a competitive environment. However, to fully harness the advantages of ICT in businesses, skills shortages in workforce need to be overcome. A skilled and knowledgeable work force is closely linked with successful implementation of technology [1]. SMEs are willing and eager to embrace ICT technology as they are scared to be left behind, but they are not able to do so as they are lacking the necessary skills and knowledge [5]. Employers are not aware of the opportunities offered by the existing if not the latest ICT solutions and employees are not able to contribute towards effective ICT technology implementation.

Training is seen as an essential and effective way to help SMEs to cope with skill shortages. The rapid changes of ICT means ICT skills shortage is a continual challenge and thus demands continual education and training. Although training has been highly regarded as an effective tool for addressing skills shortages, small businesses are particularly reluctant to train [6]. Government is chasing businesses to develop their workforce through training yet businesses are seeking to recruit the "final product" [7]. In crafting ways to motivate workforce training among SMEs, understanding root barriers to skills development is essential. Various barriers have been identified and clarified by Lange namely cultural barrier; financial barrier; access and provision barrier; and awareness barrier.

Cultural barrier; some SMEs owners/ managers perceive employees who know more than they do as a threat. A number of SMEs owners/ managers do not hold any formal qualifications and often do not aware of the potential benefits of training and oppose formalized learning. On the other hand, employees are doubtful on the motive of training where it is often associated with solution to poor performance. The fundamental characteristics of SMEs are heterogeneity and transience [4]. SMEs are always being overwhelmingly concerned with short term survival issues, whereas many benefits are long term [12]. SMEs are expecting immediate payback from training investments which is often unlikely to be achievable. Therefore, they tend to overlook on the benefits gained from training and are less convinced of the link between training and profit.

Financial barrier; the cost of training is also higher for SMEs as compared to larger firms which have greater power in negotiating deals with training providers. SMEs are normally restricted with limited resources such as time, finance etc and therefore it is not surprising when training is often seen as a luxury. SMEs also face the possibility of their trained employees being poached by competitors. Armed with skills and knowledge, trained employees are made more marketable and job hopping becomes easier to be accomplished.

Access and provision barrier; while training and learning opportunities in large organizations appears to be organized, planned and structured (regular approach), smaller companies seem to offer training if and when the need arises (ad hoc approach) [7]. SMEs are often occupied with survival issues and therefore staff training tends to be less emphasized. Furthermore, training programs are usually reported to be inadequate, irrelevant and not fit to meet the competency needs of workforces. Relevance of training content rather than qualifications is the key for owner/ managers in selecting training for their employees [2].

Awareness barrier; another barrier to skills development worth mentioning is the availability of training information and the awareness learning opportunities by SMEs. Lange argues that established initiatives with proven track record, wide ranging marketing support and clear aims and objectives are unlikely to fail [7].

The paper attempts to gain insights on the current ICT usage pattern and training provision of SMEs in Labuan. It aims to shed some lights on the barriers of ICT skills development among SMEs in Labuan so that initiatives can be formulated to encourage businesses towards staff training on ICT. The results of the study hopefully will provide valuable guidelines for the betterment of SMEs in Labuan.

Methodology

The empirical study was conducted in the first quarter of 2008. Questionnaires were distributed among businesses in Labuan which were chosen randomly from the Internet. The questionnaire survey was used to address the following question;

1. Profile of Companies
2. Use of computers
3. Current training provision
4. Awareness and Attitudes toward ICT and Training
5. Areas for ICT Training and Support Needs

The questionnaires were created in two language version; English and Malay to overcome the language barrier in SMEs. The data were collected from business owners, directors and managers. A total of 35 responses have been received, of which 29 are usable. Interviews were also undertaken to examine the preferred training delivery methods.

Result Analysis

Usage of ICT

93% of the companies surveyed have some form of Internet connection in the office. 34% of the companies do have company website, while majority 66% otherwise.

Table 1: Use of ICT Equipments

ICT Equipment	Percentage of Companies (%)
Computer	97
Fax machine	90
Printer	83
Scanner	62
Laptop	59
Modem	59
Hub / Switch	31
Router	28
Server	24
PDA	21

In terms of IT equipment use, 97% of the companies are using computer. 90% of the companies are relying on fax machine as a medium for communication. Only 31%, 28% and 24% are using hub/switch, router and server respectively indicating that networking and resource sharing are not widely used. The use of mobile devices such as laptop and PDA are relatively low.

Table 2: Proportion of Employees Using Computer

		Frequency	Percent
Valid	1/4	10	34.5
	1/2	4	13.8
	3/4	1	3.4
	1	13	44.8
	Do not know	1	3.4
	Total	29	100.0

45% of companies reported that all of their employees are using computer. Up to three quarter of employees are using computers in 3% of the companies. 14% of the companies indicated that up to half of their employees are using computers. Computers are being used by up to a quarter of employees in 35% of the companies. The proportion is shown in table 2 above.

Table 3: Business Functions Supported by Computers

Business function	Percentage of Companies (%)
Finance/ Accounting	86
Marketing	66
Business and Strategic Management	59
Sales	59
Customer Service	45
Human Resources	45
Research/Development/Production	28
Procurement	24
Training	24
Manufacture/ Process Control	17

Computers are predominantly used for finance/ accounting activities. 66% of the companies are using computers for marketing. 59% of the companies are using computers for both business strategic management and sales. The use of computer in areas such as research/development/production, procurement, training and manufacture/process control are relatively low.

Table 4: Employees Have Sufficient ICT Skills to Perform Roles Effectively

		Frequency	Percent
Valid	No	5	17.2
	Neutral	9	31.0
	Yes	9	31.0
	Absolutely yes	6	20.7
	Total	29	100.0

52 % of the companies reported that employees have sufficient ICT skills to perform their roles effectively. 17% of the companies do not think so while 31% are uncertain or neutral.

Current Training Provision

45% of the companies do not provide training for employees on ICT. 17% rarely do so. 28% do have this provision occasionally and 10% of the companies frequently provide training for employees on ICT.

51% of the companies rely on experts within company for ICT training where 17% of the companies are very satisfied or satisfied with the training provided, 6% are very dissatisfied or dissatisfied, and 28% are neutral. 49% of the companies depend on IT training companies for ICT training where 14% are dissatisfied with the training provided. Most of the companies also rely on the owner/ manager for training. The list of current training providers and the relative level of satisfaction are depicted in table 5 above.

Table 5: Training Providers and Satisfaction Level

Satisfaction with training:	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Total
Providers of training:						
Experts within company	3%	3%	28%	7%	10%	51%
IT training companies		14%	14%	14%	7%	49%
Owner/ Manager		3%	20%	17%	7%	47%
Technology suppliers		3%	17%	10%	7%	37%
Academic institutions		3%	24%	7%	3%	37%
Government Organization		3%	14%	17%	3%	37%

59% of the companies do have training plan for employees on ICT and 41% otherwise. 69% of the companies allocate RM 10 000 or less for ICT training on employees. 10% of the companies allocate between RM 10 000 and RM 19 999 and 3% allocate more than RM 49 999. 18% of the companies did not respond.

Table 6: Barriers in Providing ICT Training to Employees

Barrier	Percentage of Companies (%)
Financial Constraint	3
Operation Disruption	17
Employees are Temporary	45
Trained Employee Will be Stolen by Competitor	17
Lack of Training Option	24
Others	3

The most frequently specified barrier in providing ICT training to employees among the companies is “employees are temporary”. “Lack of training option” is also one of the significant barriers in providing ICT Training to employees. 17% of the companies cited “operation disruption” and “trained employee will be stolen by competitor” as barriers.

Awareness and Attitudes toward ICT and Training

52% of companies strongly agree that strategic planning is essential for a firm to remain competitive. 35% agree while 14% are neutral with the statement. 62% of companies strongly agree that workforce skills and knowledge is one of firm’s greatest assets. 28% agree and 10% are neutral.

83% either strongly agree or agree that ICT is important for business. 17% are neutral. 31% strongly agree and 48% agree that ICT plays an important role in a firm’s strategic planning. 21% are neutral. 76% believe ICT skills increase workforce productivity. 3% disagree while 21% are neutral. Apparently, the companies have positive attitudes towards ICT as a catalyst of growth for their businesses.

83% either strongly agree or agree that training will enhance workforce skills and knowledge. 17% are neutral. It shows that the companies are well aware of the potential benefits of training. Majority 72% of the companies either strongly agree or agree with the statement that training is a continuous process whereby today's training will not serve all future needs. 3% disagree with the statement while 24% are uncertain or neutral. It appears that the idea of lifelong learning is well accepted among the companies.

35% of the companies view training as very important towards successful implementation of ICT. 38% view it as important while 28% are neutral.

Areas for ICT Training and Support Needs

Most of the companies have shown interest in word processing and spread sheet especially at intermediate and advance level. They are also interested in general knowledge of ICT at beginner and intermediate levels, internet usage at intermediate level, email at advance level and database at beginner level. More technical areas such e-commerce, multimedia, networking and programming are gaining ground among the companies at beginner and intermediate levels. The companies also indicate interests in web design at beginner level. Training in ICT areas like EDI and video conferencing are less popular among the companies. The details are given in table 7 below.

Table 7: ICT Training Needs and Training Level Required

Training Level Required:	Beginner	Intermediate	Advance	Total
Areas for ICT training needed:				
Word processing (e.g. Word)	14%	31%	35%	80%
General knowledge of ICT	31%	41%	7%	79%
Internet usage	21%	38%	17%	76%
Email	17%	24%	35%	76%
Spread sheet (e.g. Excel)	10%	35%	28%	73%
Database	35%	7%	21%	63%
E-Commerce	21%	28%	10%	59%
Web design	35%	10%	14%	59%
Multimedia	24%	21%	14%	59%
Networking	28%	17%	10%	55%
Programming	28%	21%	3%	52%
Video conferencing	17%	10%	10%	37%
EDI	10%	21%	3%	34%

From interviews on ICT training delivery method, majority of the companies prefer to have computer based self training where mostly chose CDROM over Internet downloads as medium for training materials delivery. A moderate number of companies chose on job training by internal experts as their preferred ICT training delivery method. A small number of companies prefer face-to-face, off job seminars and workshops with expert or

tutor support. Furthermore, they prefer to have hands on activity based learning (practical) as compared to knowledge based learning which is academic oriented. In addition, a few of the companies also opt for virtual web based learning with expert and tutor support.

Discussion

Findings show that computers are widely used among SMEs in Labuan. 97% of the companies surveyed are using computers. In fact, computers are used by large proportion of employees in most of the companies. However, the use of computers is limited in scope and revolves around conventional business functions such as accounting, marketing, business management and sales. The benefits of ICT are not fully harnessed as evidenced by the limited use of ICT equipments. Findings from the use ICT equipment shows that networking, resource sharing and mobile technologies are not widely used. It could be possible that the SMEs are not well aware of the opportunities provided by the latest ICT solutions or simply do not have the knowledge provisions to identify the gap between the current and required competencies. They are well off with the existing ICT solutions and skills which may be obsolete and may no longer effective for their businesses. Thus, it is not surprising to have majority of the companies reported that their employees have sufficient ICT skills to perform their roles effectively, which may not be true considering the rapid growth of ICT. The perception of SMEs that employee have sufficient ICT skills explains the findings on the current training provision revealing that SMEs do not provide training regularly. SMEs need to be updated of the current if not latest development of ICT solutions. This is very much shaped by the level of understanding and awareness of the ICT itself.

This is a way how UMS-LIC can lend a hand by organizing regular program to promote collaborative programs. UMS-LIC and SMEs at Labuan have to start somewhere to promote related programs for their both interest. This program would be very much effective to create the awareness among the public if involvement of related agency such as Multimedia and Commission (MCMC). Such program is commonly held through out Malaysia by MCMC as the regulatory body which responsible promoting national ICT agenda.¹ Understanding the capabilities of e-business and its applications system researchers at UMS-LIC should have offered their skills and expertise to promote its usage in the business at Labuan. This will catalyst and transform the traditional ways of doing business activities whilst promoting the national agenda towards creating knowledge based business society.

In order to have business information system in place to support their key business process require adequate knowledge of the key business process, how the entire business operated and how the business information system add values for their competitive advantage. Anyway understanding the key business process of organizations at Labuan requires close and thorough understandings of their business activities involved and the nature of the business itself. This cannot be carried out without a good rapport between UMS LIC and the business entities at Labuan. Instead of a "light and casual" program such as ICT awareness activities the researchers at UMS-LIC are looking forward to have more directed programs such as workshops and seminars with participation from the business players to grasp the extensive understanding the business processes involved.

¹ <http://www.skmm.gov.my/index.asp> accessed on Jan 3, 2010.

An exposure of this kind will certainly be helpful to allow the SMEs to better identify the ICT competency gap and subsequently ICT skills and training needs. A point noteworthy of the current training provisions by SMEs in Labuan is that majorities are not fully satisfied with the existing training providers indicating rooms for improvement.

It is understood that limited of training providers available in this small island hold back the ICT development. This research reported that local SMEs faced great challenge to overcome the access and provision barriers, ICT training programs which are adequate and relevant need to be created to meet the competency needs of workforces. Actual training needs and the preferred training delivery methods should be addressed in designing training programs that will appeal to SMEs. For the companies to hire expertise for training or sending workers outside the island are both too expensive for many SMEs. Determining specific ICT skills required for every individual SMEs rather than offering a general one-size-fits-all package is another challenge for the university to come up with. Thorough surveys are required to be undertaken to tailor the specific ICT training requirements for every individual SMEs.

The SMEs do recognize the workforce skills and knowledge as one of the firm's greatest asset. They are well aware of the pivotal role ICT play in their businesses. They have also shown positive attitudes towards staff training and lifelong learning. Majority agree that training is important towards successful implementation of ICT. Apparently, cultural barriers to ICT skills development are not that significant among the SMEs in Labuan. Somehow, SMEs need to be regularly made aware on the potential benefits of ICT training which are usually gradually in a long term. It should not be an uphill task as findings show that most of the SMEs are aware of the significance of having strategic planning for their businesses.

Findings on the barrier to skills development show that only one of the companies reported financial constraint as a barrier. Anyhow, efforts on creating affordable yet effective training packages for SMEs will certainly not go wasted. Another barrier to skills development as reported is operation disruption. Therefore, training programs should be designed in such a way that is flexible to the workforce without causing major disruption to operations. Web based learning could be an alternative however with considerations on the suitability of the subjects being delivered and the accessibility of the intended trainees such as Internet connection and so forth. One barrier to skills development which is cited by most of the SMEs is temporary employees. Strategies could be formulated to attract and maintain the employees so that the SMEs will be able to reap the benefits on their investments on staff training without having the benefits being reaped elsewhere. When employees are loyal, companies will be more willing to train them.

Instead of short term *ad hoc* ICT trainings UMS-LIC offered continuous education for those who seek to upgrade and equip themselves professionally. Since semester 1 2007/2008 Centre for External Education has started to recruit new intake for both undergraduate and postgraduate studies. LSIS has opened up the e-commerce program with only 8 students since then. The program meant to provide life long learning particularly for those who are working without leaving the jobs to equip themselves with knowledge and skills in IT. Access to higher education provided by UMS-LIC has open up doors locally for personal skills development. Before the program was in place access to higher education really a great challenge for the people to travel to nearby city such as

Kota Kinabalu.

There is a common practice by many organizations to bind the employees over for some period of time for trainings provided by the organizations to prevent brain drain. Regular programs such as seminars and workshops by UMS-LIC and any related agencies would gradually change the SMEs mindset in terms of providing continuous learning programs for their workers. Retaining untrained staffs will be a liability rather than let them leave the organizations provided that continuous learning programs are in place.

As to overcome the access and provision barriers, ICT training programs which are adequate and relevant need to be created to meet the competency needs of workforces. Actual training needs and the preferred training delivery methods as addressed earlier could be used in designing training programs that will appeal to SMEs.

Lack of training option is another factor cited in majority of the companies surveyed. It could be possible that training is available but not known. Therefore the right marketing mix should be deployed to make known to the SMEs that training options are not only available out there but credible and relevant to their needs.

A part from a work force provider UMS-LIC serves the SMEs at Labuan by sending the internship student to channel their ICT skills and knowledge. Since 2007 the total number of students who went for internship (industrial training) is 21. The students carried out various task from designing web portal, developing information systems into management related tasks. Since the students are spending from 4 to 6 months attachment, the SMEs can tap knowledge and skills though may not be adequate since the students may not be hired permanently. The students on the other hand will have opportunities to expose themselves with real challenge in the real working environment.

Table 8: IT Students Internship in Labuan Since 2007

Semester	Student Count
Sem. 1 2007/2008	2
Sem. 2 2007/2008	2
Sem. 1 2008/2009	4
Sem. 2 2008/2009	7
Sem.1 2009/2010	6

The internship students would send report to their supervisors both at the local SMEs as well as their lecturers that monitor their progress. A part from an ordinary a routine academic program that serve as prerequisite for graduation the internship program could serve as bridge of knowledge between university and SMEs. For example before new students will be sent to particular SMEs an initial study can be conducted to understand the business and system requirements of any SMEs. With initial guidance from the school the student should be able to produce an executive summary to explain how ICT can serve the organization better based on their initial findings such as providing an inventory management information system, human resource information system and etc. It is understood that some limitations may constraint the development

such as duration of the internship, financials and etc. Anyhow the executive summary plus and internships' end report can serve as milestone for the future students that will be coming at the same local SME. Instead of creating from a scratch the existing system can be incremented to become full fledged information system with complete functionalities and desired features.

Conclusion

The paper has reviewed on ICT skill challenges faced by SMEs in Labuan from the perspective of the business owner and top management. Guidelines to improve on ICT skill development among SMEs were then presented as a reference for policy makers and the relevant parties who are involved in designing ICT training programs for SMEs. Further research can be conducted on ICT skill challenges of SMEs from the perspective of the workers which shall be helpful in designing robust ICT training packages as they are the prospective trainees who directly involve in training.

References

- Allison I.K. 1999. Information systems professional development: a work based learning model. *Continuing Professional Development Journal*. Vol. 2. No: 3. pp. 86-92.
- Athayde R and Blackburn R. 1999. Learning to use the Internet: SME and business centre experiences. 22nd ISBA National and Small Firms Policy and Research Conference, Leeds.
- Burgess S. 2001. *Managing Information Technology in Small Businesses: Challenges and Solutions*. Idea Group Publisher, Hershey, PA.
- Chittenden F. and Wildgust S. 1999. *The Small Business Service: A commentary*, ISBA Small Firms Policy Forum, London.
- Duan Y. et al. 2002. Addressing ICTs skill challenges in SMEs: insights from three country investigations. *Journal of European Industrial*. Vol. 26. No. 9. pp. 430-441.
- Elbari. 2001. Training practice of polish companies: an appraisal and agenda for improvement. *Journal of European Industrial Training*. Vol. 24. No.2-4. pp. 69-79.
- Lange T. et al. 2000. SMEs and barriers to skills development: A Scottish perspective. *Journal of European Industrial Training*. Vol. 24 No. 1. pp. 5-11.
- Lawless N. et al. 2000. Face to face or distance training: two different approaches to motivate SMEs to learn. Vol. 42 No. 4/5. pp. 308-316.
- M. Mutula S. and Van Brakel P. 2007. ICTs skills readiness for the emerging global digital economy among small businesses in developing countries. *Library Hi Tech*. Vol. 25. No. 2. pp. 231-245.
- Smallbone D. et al. 2000. The implications of new technology for the skill and training needs of small and medium sized printing firms. *Education and Training*. Vol. 42. No. 4/5. pp. 299-307.
- Stokes A. 2001. Using telementoring to deliver training to SMEs: a pilot study. *Education and Training*. Vol. 43 No. 6. pp. 317-324.
- Westhead P. and Storey D. 1999. Trainnig Provision and the development of small and medium sized enterprises: a critical review. *Scottish Journal of Adult and Continuing Education*. Vol. 5. No. 1.
- <http://www.smidec.gov.my>. 13th May 2008.