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# ICT Skill Among Labuan's SMEs: Issues and Challenges

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**Abstract**

The rapid growth of ICT presents both perpetual opportunities and challenges to SMEs. ICT serves as a competitive tool for SMEs provided they have the necessary skills and knowledge to embrace it. 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. Among the focus of investigation are; usage of computers, current training provision, awareness and attitudes toward ICT and training, areas for ICT training and support needs. The paper concludes by outlining several suggestions to improve on ICT skills development among SMEs in Labuan.

*Keywords*: Information and Communication Technology (ICT); Small and Medium Enterprises (SMEs); Training; skills development barrier.

**Abstrak**

Pertumbuhan pesat ICT memberikan peluang dan cabaran kepada PKS. ICT berfungsi sebagai alat yang berdaya saing untuk PKS dengan syarat mereka mempunyai kemahiran dan pengetahuan yang diperlukannya. Walau bagaimanapun, disebabkan oleh pertumbuhan ICT yang pesat, kekurangan kemahiran akan menjadi suatu isu yang melingkari PKS. Latihan kakitangan yang berterusan adalah salah satu penyelesaian, namun terdapat banyak PKS yang mengabaikan latihan terhadap tenaga kerja mereka. Isu-isu dan halangan yang berkaitan dengan pembangunan kemahiran dikaji semula dengan merujuk kepada kajian-kajian lepas. Kertas kerja ini cuba menyingkap cabaran kemahiran ICT yang dihadapi oleh PKS di Labuan. Antara tumpuan kajian adalah; penggunaan komputer, penyediaan latihan semasa, kesedaran dan sikap terhadap ICT dan latihan serta latihan dan keperluan sokongan ICT. Kertas ini diakhiri dengan menggariskan beberapa cadangan bagi meningkatkan pembangunan kemahiran ICT di kalangan PKS di Labuan.

*Kata kunci:* Teknologi Maklumat dan Komunikasi (ICT); Perusahaan Kecil dan Sederhana (PKS); Latihan; halangan pembangunan kemahiran



## 1.0 INTRODUCTION

It has been evidence that SMEs play a vital role in Malaysia's economic development (Central Bank of Malaysia, 2003). SMEs constitute almost 95 percent of enterprises within the country and directly serve as both the backbone and river of national economies. The current trend of economic growth and the rapid industrial development has force SMEs to capitalize ICT infrastructure. Yet issues on how ICT plays its significant role remain major issues.

The contribution of SMEs to employment and the countries' gross domestic product (GDP) are by no means trivial. As of July 2006, estimated close to 140 million SMEs in 130 countries employed 65 percent of the total labor force. In Malaysia there are 96.1 % SMEs as all enterprises and in manufacturing alone 54.6% SMES employees compared to the total employed population (Kotelnikov, 2007).

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 (Mutula & Van Brakel, 2007). Governments around the world are placing increasing importance upon the success of small business entrepreneurs and providing increasing resources to support this emphasis (Burgess, 2001).

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. ICT can play a very important role because it can assist SMEs to remain competitive against their rivals whilst create more business opportunities. Appropriate ICT design and implementation can save operation costs by improving the internal processes, improving product development and better promotions and distributions online. In fact, ICT has great potential to improve business resources through efficient and effective business process.

Located in a developing state, SMEs play very crucial roles as the major source of income, a breeding ground for entrepreneurs and provider of employment. This research will path the way for future research on SMEs and ICT for development as it serves as a milestones to promote economic growth, through wealth and employment creation in the era of global economy.

The research shows that organizations that use paper took average 7.4 days to more a purchase from request to approval, but if done electronically, only took 1.5 days (Cassidy, 2002).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 (Allison, 1999).

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 (Duan, *et. al.*, 2002). 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 (Elbadri, 2001). Government is chasing businesses to develop their workforce through training yet businesses are seeking to recruit the "final product" (Lange, *et. al.*, 2000). 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 (Chittenden & Wildgust, 1999). SMEs are always being overwhelmingly concerned with short term survival issues, whereas many benefits are long term (Westhead & Storey, 1999). 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) (Lange, *et. al.*, 2000). 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 (Athayde & Blackburn, 1999).

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 (Lange, *et. al.*, 2000).

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.

Although incorporating the business operation with ICT is no longer new phenomenon for competitive edge awareness levels that motive local SMEs still raise major issues in Labuan. Further ICT development will not end and limited within the SMEs operations. On the buyer sides and demands for becoming more competitive in a globalized will require other SMEs thorough out the supply chain to adopt ICT too. The convergence of ICT application system with other systems will invoke future research.

## 2.0 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

## 3.0 RESULT ANALYSIS

### 3.1 Usage of ICT

Generally, 93% of the companies surveyed have some form of Internet connections in the office, 7% otherwise. 34% of the companies do have company website, while majority 66% otherwise. In terms of IT equipment use as shown in Table 1, 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. Somehow the variation ICT equipment in use is limited.

**Table 1** Use of ICT equipment (n=29)

| 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 |
| Personal Digital Assistant (PDA) | 21 |

On the proportion employees using computer as shown in Table 2, 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 of employees using computers varies possibly due to differing nature and business sectors.

**Table 2** Proportion of employees using computer (n=29)

| Proportion | Frequency | Percent (%) |
|---|---|---|
| 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 |

From Table 3, computers are predominantly used for finance and 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, manufacture and process control are relatively low. Generally, computers are used for primitive business functions.

As in Table 4, 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. Considering the rapid growth of ICT, the respondent may not be aware of current ICT skills requirements thus highlighting the importance of ICT training.

### 3.2 Current Training Provision

From Table 5, 45% of the companies do not provide training for employees on ICT. 17% of the companies rarely do so. 28% do have this provision occasionally and 10% of the companies frequently provide training for employees on ICT. Obviously, ICT training is lacking among SMEs in Labuan. There are barriers in ICT training as explained in Table 8 such as temporary employees.

**Table 3** Business functions supported by computers (n=29)

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

**Table 4** Employees have sufficient ICT skills to perform roles effectively (n=29)

| Opinions | Frequency | Percent (%) |
|---|---|---|
| No | 5 | 17.2 |
| Neutral | 9 | 31.0 |
| Yes | 9 | 31.0 |
| Absolutely yes | 6 | 20.7 |
| Total | 29 | 100.0 |

**Table 5** Training Provision (n=29)

| Frequency | Percentage of Companies (%) |
|---|---|
| None | 45 |
| Rarely | 17 |
| Occasionally | 28 |
| Frequently | 10 |

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 related level of satisfaction are depicted in Table 6.

Generally, 59% of the companies do have training plan for employees on ICT and 41% otherwise. As shown in Table 7, 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** Training Providers and Satisfaction Level (n=29)

| Satisfaction with training: / Providers of training: | Very Dissatisfied | Dissatisfied | Neutral | Satisfied | Very Satisfied | Total |
|---|---|---|---|---|---|---|
| Experts within company | 3% | 3% | 28% | 7% | 10% | **51%** |
| IT training companies | 0% | 14% | 14% | 14% | 7% | **49%** |
| Owner/ Manager | 0% | 3% | 20% | 17% | 7% | **47%** |
| Technology suppliers | 0% | 3% | 17% | 10% | 7% | **37%** |
| Academic institutions | 0% | 3% | 24% | 7% | 3% | **37%** |
| Government Organization | 0% | 3% | 14% | 17% | 3% | **37%** |

**Table 7** Annual budget allocation for ICT training on employees (n=29)

| Budget range | Percentage of Companies (%) |
|---|---|
| <RM 10 000 | 69 |
| RM 10 000 – RM 19 999 | 10 |
| RM 20 000 – RM 29 999 | 0 |
| RM 30 000 – RM 39 999 | 0 |
| RM 40 000 – RM 49 999 | 0 |
| >RM 49 999 | 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. The details are shown in Table 8. To the party concerned particularly the training provider and SMEs themselves should find ways to eliminate the barriers in providing ICT training to the employees.

**Table 8** Barriers in Providing ICT Training to Employees (n=29)

| 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 |

### 3.3 Awareness and Attitudes Toward ICT and Training

From Table 9, 52% of companies strongly agree that strategic planning is essential for a firm to remain competitive. 35% agree while 13% 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. Generally, the SMEs in Labuan have positive attitudes toward ICT and training.

**Table 9** Opinions toward ICT and Training (n=29)

| Statements | Percentage of Companies (%) | | | | |
|---|---|---|---|---|---|
| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| Strategic planning is essential for a firm to remain competitive. | 0 | 0 | 13 | 35 | 52 |
| Workforce skills and knowledge is one of the firm's greatest assets. | 0 | 0 | 10 | 28 | 62 |
| ICT is important for businesses. | 0 | 0 | 17 | 40 | 43 |
| ICT plays an important role in a firm's strategic planning. | 0 | 0 | 21 | 48 | 31 |
| ICT skills increase workforce productivity. | 0 | 3 | 21 | 30 | 46 |
| Training will enhance workforce skills and knowledge. | 0 | 0 | 17 | 40 | 43 |
| Staff training is a continuous process; today's training will not serve all future needs. | 0 | 3 | 24 | 30 | 42 |

### 3.4 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 levels. 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 Electronic Data Interchange (EDI) and video conferencing are less popular among the companies. The details are given in Table 10 below. Most of SMEs require training for office applications and communication purposes to support their business activities.

**Table 10** ICT Training needs and training level required

| **Training Level Required:** / **Areas for ICT training needed:** | Beginner | Intermediate | Advance | **Total** |
|---|---|---|---|---|
| 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%** |
| Electronic Data Interchange (EDI) | 10% | 21% | 3% | **34%** |

From interviews on ICT training delivery methods, 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 methods. 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 opted for virtual web based learning with expert and tutor support.

## 4.0 DISCUSSION

Findings show that computers are widely used among SMEs in Labuan. 97% of the companies surveyed use 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 from Table 1 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 (Table 4) explains the findings on the current training provision revealing that SMEs do not provide training regularly (Table 5). SMEs need to be updated of the current if not latest development of ICT solutions. 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.

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 obvious among the SMEs in Labuan. Somehow, SMEs need to be regularly made aware on the potential benefits of ICT training which are usually 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. The existence of training institution and institution of higher education such as Institut Latihan Perindustrian (ILP) and University Malaysia Sabah (UMS) in Labuan could become as a training provider. Not only provided affordable training for SMEs, these institutions can conduct the training in house and tailor the trainings according to the SMEs requirements.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 are more willing to train them.

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.

## 5.0 CONCLUSION

This 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 are directly involved in training.

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