‘Managing ICT Workers in the Malaysian Multimedia Super Corridor: Independent Knowledge Workers?’

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This paper examines the development of the Malaysian Multimedia Corridor (MSC) and associated information, communication and technology (ICT) worker human resource management (HRM) issues. It considers the extent to which Malaysian ICT workers comply with previous research that suggests the development of an independent or nomadic ICT worker profile, suited to short term project work, as opposed to longer term career development within the firm. It further considers recruitment and human resource development issues, including supply side constraints that may hamper the Malaysian government’s goal of creating a knowledge based society by 2020. This research is still ongoing however some initial conclusions may be made. Firstly, previous research on ICT workers has tended to be too generic, with much of it lumping ICT workers into one homogeneous group. But Malaysian ICT workers and firms form a heterogeneous group with different skills, requirements and expectations. Further, the continued development of Malaysia’s ICT industry is not merely a function of its ability to produce more ICT graduates per se. Rather, Malaysia needs to produce ICT graduate with the skills demanded by the local ICT industry.

Introduction

In 1996 the Malaysian government embarked on an ambitious project to turn Malaysia into a regional information, communications and technology (ICT) hub which included a grand vision to transform Malaysia into a ‘knowledge based economy driven by a knowledge society’ (MSC Malaysia 2008; ISIS 2002). Malaysia then needed to develop a skilled local ICT workforce to support new high tech ICT industries. This paper is based on research undertaken in Malaysia that examined human resource management (HRM) issues associated with the rapid development of the Malaysian ICT industry. A number of objectives underlined this research project. First, it examined the concept of the emerging independent or nomadic knowledge management worker within Malaysia’s Multimedia Super corridor (MSC). Second, it critically analysed the broad claims that often surround the independent ‘knowledge worker’ typology, against the reality of the MSC workforce (Awad & Ghaziri 2003; Dif 2004; Tremblay 2002). Third, it considered how Malaysian ICT firms are meeting the challenges of managing knowledge workers and fostering innovative creative work. These issues have important implications for public policy debates in other countries, including Australia, both from employment relations (ER) and workforce skills development perspectives. Further, ICT firms by their very nature rely on the intangible skills of their workforce, where much of the value of the firm resides inside the heads of its employees. However the independent ‘knowledge worker’ typology suggests that these workers tend to be independent, relatively mobile and often engaged on fixed term project work. Thus at the conclusion of a project, much of this knowledge may literally ‘walk out the door’ (Jashapara 2004). This research therefore considered how Malaysian ICT firms addressed this challenge (see Awad & Ghaziri 2003).

The research project included the collection of qualitative and quantitative research, however, this paper focuses on evidence and data collected from the former, as much of the quantitative data was still being collected at the time of writing. The paper therefore presents a ‘work in progress’, however personal observations along with the qualitative data already collected, allow for some initial conclusions and conjecture on HRM issues in the Malaysian ICT industry. The paper begins by considering the history behind the development of the Malaysian ICT industry. It then outlines the research methods used and sets out a number of
propositions that underpin the interview and survey questions. It analyses and discusses the results of the qualitative data and makes some preliminary conclusions regarding the findings.

**Malaysian Super Corridor (MSC)**

The MSC strategy was a vision of former Malaysian Prime Minister, Dr Mahathir Mohamed, who was well known for embarking on large-scale projects. Figure 1 sets out the broad aims of the MSC which included attracting ICT related foreign direct investment (FDI) - and associated knowledge transfer- fostering the development of a local ICT industry and supporting the socio-economic development of Malaysia, including its ‘Vision 2020’ to achieve developed nation status by that date (Interview with MDEC 2008).

The MSC included three phases. During Phase 1 (between 1996 and 2003) the Malaysian government developed five ‘cybercities’, which are essentially large industrial parks/suburbs that provide the required infrastructure for ICT firms (MSC 2008a). The original and largest cybercity is Cyberjaya, located outside of the Malaysian capital, Kuala Lumpur. The Malaysian government also provided incentives, including 10 year tax breaks, to assist in attracting FDI into the sector. Qualifying firms were also awarded ‘MSC status’ which added to their local status, particularly when tendering for government related jobs. MNC status also allowed firms access to government subsidised training programs and to bring in overseas workers where required. For example, MDEC, the quasi government body set up to support Cyberjaya, expedites applications for foreign workers through its links with the Malaysian Immigration Department (Interview with MDEC 2008). In contrast, interviews suggest that bringing in foreign workers for non-MSC firms is a time consuming and bureaucratic process. The ability to import foreign workers is particularly important for ICT orientated MNCs which may need to supplement local ICT and/or management skill shortages with overseas workers.

Phase 2 of the MSC strategy (2004 to 2010) is still ongoing. It includes developing and networking more cybercities and smaller cybercentres throughout Malaysia. This includes developing ICT industries in the state of Penang, an important Malaysian industrial centre which to date has been associated with manufacturing industries. Phase 3 (1996-2020) leads on from the earlier phases but is in many ways more of a vision or concept rather than a specific concrete plan. In broad terms it aims to transform Malaysia into a ‘Knowledge-based Economy and Society’ by the year 2020. Importantly it aims to transform the whole of Malaysia, including regional and rural areas, which is a difficult assignment. While Malaysia has recorded high economic growth and is now rated as a middle income – rather than developing – country, significant income differentials remain between city and rural/regional areas. 

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**Figure 1: MSC Strategy**

Three main roles for MDEC/MSC strategy

- Foster development of local ICT industry
- attract ICT related FDI & associated knowledge transfer
- Contribute to Socio-economic development i.e. Malaysian 2020 plan

*Source: Interviews with MDEC*
areas. Further, despite the government’s efforts to develop a larger ICT workforce, the number of ICT graduates in recent years has actually decreased, although MDEC managers advised that this situation was now being turned around (Interviews with MDEC 2008). Jarman and Chopra also suggest that despite the Malaysian government’s monetary investment and support, including the provision of world class ICT infrastructure, it has not been successful to date in its aim to develop a leading multimedia R&D hub (2008). Rather it has been more successful in developing lower value added business support services, which are less likely to boost overall incomes across society (Jarman & Chopra 2008). Therefore while the MSC strategy has had some notable successes, its faces significant challenges in reaching its 2020 goal.

**Research Methods**

The research methodology involved a triangulation approach that included qualitative and quantitative data analysis. This ‘mixed methods approach’ allows for greater research depth and flexibility including an ability to examine the ‘complex interactions of culture, institutions, societal norms and government regulations’ within the Malaysian context (Kiessling & Harvey 2005). Qualitative data collection included 21 interviews with Malaysian ICT related organisations. These included interviews with different Multimedia Development Corporation (MDEC) managers, representatives of the Penang Skills Development Corporation (PSDC), a representative of the Penang based ICT firm association, SCOPE, interviews with managers of Malaysian based subsidiaries of overseas based MNCs, interviews with managers of Malaysian MNCs and interviews with managers of Malaysian SMEs. The interviews were semi-structured with the same list of questions being used as the basis for each interview. However interviewees were given every opportunity to discuss in further detail any areas that were of particular concern to them. The interviews were based on an estimated time frame of 60 minutes each; however, many lasted 90 minutes or longer. While the Malaysian trade union movement has not had a significant influence on developments within the Malaysian ICT industry to date, interviews were being organised at the time of writing with representatives of the Malaysian Trade Union Council in order to gain their perspective on employment relations (ER) issues within the sector. As outlined below, confidentiality guarantees and associated university ethical requirements mean that interviewee names and/firms cannot be stated in this paper.

The interview data was supported by direct observations and discussions made by the author during the five months that the author lived in Malaysia in 2008. These included observations of Malaysian ICT employees at work and general informal discussions with local Malaysian academics, business people and international expatriates. A decision was made early in the research project not to tape record interview data because of the cultural and political sensitivity of the Malaysian context. The Malaysian government is highly active in the promotion of the MSC concept and the dividing line between business and government activities is more blurred than in many western contexts. Many large local ICT jobs are also awarded through government tender. Interviewees therefore tended to be concerned over any possible government backlash from their responses. Malaysia also has a large ethnic Chinese population that dominates the business sector, while the ethnic Malay majority dominate government activities. Therefore both groups are sensitive to the need to not publicly denigrate the activities of the other ethnic group – Malaysian laws also allow for the arrest and detention of persons seen to be inciting racial unrest. While interviewees were assured that the information that they gave was confidential – i.e. they could not be linked to their responses – they appeared far more comfortable with written notes than tape recordings. These interview notes were written up immediately following the interview.
Quantitative data collection included a survey of the broader Malaysian ICT manager population in the Cyberjaya/Kuala Lumpur area. Names and addresses for Malaysian ICT firms were obtained from publicly available government and industry body web based sources. At the time of writing completed survey data was still being collected. The results will be statistically analysed once the collection of the data is completed.

**ICT Workers**

A prevailing viewpoint in the ICT HR literature is its suitability for project workers operating on fixed-term contracts (Benner 2002; Clinton 1997; Dif 2004; Hyde 2003; Tremblay 2003). Dif, for example, suggests the emergence of independent ‘nomadic’ knowledge workers within the telecommunications sector (Dif 2004). Other researchers suggest that ICT workers may be more loyal to their profession and fellow ICT colleagues than to their employer (George & Chattopadhyay 2005). In the Malaysian context, falling ICT graduate enrolments juxtaposed with an expanding ICT sector, could also be expected to increase ICT worker turnover, with supply failing to keep up with demand. This could further be expected to apply upward pressure on the wages of ICT workers. The paper’s first three propositions therefore state:

**Proposition 1**
Malaysian ICT workers will exhibit relatively high turnover rates.

**Proposition 2**
Malaysian based ICT firms will prefer to employ ICT workers on a fixed-term project basis

**Proposition 3**
Supply constraints are placing upward pressure on Malaysian ICT worker salaries.

If Malaysian ICT workers do exhibit relatively high turnover rates then an ensuing problem becomes the management of intellectual property (IP) rights. The very nature of the sector means that much of the added value and/or competitive advantage of an ICT firm resides in the heads of its workers (Awad & Ghaziri 2003; Jashapara 2004). When ICT workers leave a firm they then take this knowledge with them. This knowledge may then be used to assist a competitor firm and/or the former employee may become a future competitor themselves. Therefore it could be expected that Malaysian ICT firms have implemented processes to prevent the loss of this knowledge. The paper’s next proposition is therefore as follows:

**Proposition 4**
The potential loss of IP is an issue for Malaysian ICT firms. They have therefore set up processes/strategies to address this challenge.

Relatively high turnover rates aligned with the potential loss of IP rights then impact on training processes. Training is expensive therefore it could be expected that firms will be more reticent to engage in large-scale training of ICT workers if they are concerned that they will leave the firm. If this training is essential then it could be further expected that firms will have implemented processes to retain these workers. The MSC strategy is further predicated on building a local indigenous ICT industry. However many local Malaysian ICT firms are SMEs that lack the resources to engage in large scale in-house training (Hashim 2006). MNCs in contrast have the resources to engage in in-house training. The papers fifth and sixth propositions are therefore as follows:
Proposition 5
Training costs and the associated loss of knowledge are an issue for Malaysian based ICT firms. They have therefore set up processes/strategies to address this challenge.

Proposition 6
Malaysian SME ICT firms will favour external training programs while MNCs will favour in-house training programs.

Finally, the ICT industry is relatively new and often staffed by younger workers and managers. For example, many mobile phone services and mobile content providers did not exist until the relatively recent advent of third generation mobile phones. Tales of Silicon Valley senior managers in firms such as Google and Apple turning up for work in t-shirts and sneakers are also commonplace. This research therefore considered this from the Malaysian ICT industry perspective. This aspect is especially interesting given the cultural norms of Malaysia which include a relatively high degree of power distance and formality. In this context the use of full titles, such as Mr, Mrs, Miss and Sir within the work environment is the norm. But such cultural norms may mitigate against the creativity and innovation required for the ICT sector. Further, the maximisation of innovation and creativity may require more flexible approaches to employee management than the traditional fixed eight hour work day within the firm. In this regard new technologies mean that the location of ICT work increasingly becomes irrelevant as digitised information can easily be sent from one location to another. The paper’s final two propositions therefore state:

Proposition 7
Malaysian ICT workers will be younger employees who need to be managed differently/more informally than other workers.

Proposition 8
Malaysian ICT workers will enjoy more flexible working arrangements than other workers.

The following discussion considers the above propositions in light of the data collected to date.

Discussion and Conclusions
A constant theme throughout interviews was the difficulty that Malaysian firms faced in finding and retaining local well qualified/skilled ICT workers. This accorded with the paper’s first proposition and in part reflected the rapid growth of ICT firms in centres such as Cyberjaya, leading to an increased demand for ICT workers and graduates. Therefore in some ways the MSC has been a victim of its own success. Further, once ICT graduates gain work experience it is then becomes easier for them to find jobs elsewhere; for example, jobs that pay more. This was a particular problem for SMEs who had to compete with MNCs for talent, with the latter typically paying higher wages and providing better working conditions. But the link between demand for ICT workers and upward pressure on salaries appears more complex than a simple across the board demand and supply perspective. Between 2005 and 2008 Malaysian workers salaries increased by around six per cent per year (PIKOM 2008). Interviewees advised that wage rates for ICT workers sector were governed by the ‘going market rate’ and their responses to what they were paying their ICT workers were quite similar, despite the divergent firms interviewed, as shown in table 1. Therefore some general upward pressure on wages was occurring. MNCs also often provided further bonuses on top of the below base rates of between one to two months pay per year, along with other benefits such as health insurance for workers and their families. The latter appeared to be of greater
use as a strategy to retain older workers who were more likely to be married with children. Younger workers in contrast were more interested in the cash component of their remuneration.

### Table 1: Malaysian base ICT wage rates 2008

<table>
<thead>
<tr>
<th>Experience</th>
<th>Malaysian Ringgit (RM) per month</th>
<th>A$ equivalent (approx)</th>
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<tbody>
<tr>
<td>New graduate to 1 year</td>
<td>RM1,800 to RM2,200</td>
<td>RM2.40 RM = A$1.00</td>
</tr>
<tr>
<td>2 to 3 years</td>
<td>RM3,000 to 4,000</td>
<td></td>
</tr>
<tr>
<td>4 to 5 years</td>
<td>RM4,000 to RM5,000+</td>
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*Source: Interviews 2008
Note: After five years ICT employees’ wages tend to stagnate unless they then move up into a management position.*

While the above base rates appeared to be fairly standard for many ICT employees, interviews suggested that the heterogeneous nature of the Malaysian ICT sector and its work force meant that higher than average wage pressures were limited to specific ICT workers with required industry skills rather than ICT workers across the board per se. These included workers with specific in demand technical skills and/or managerial skills, who were paid higher salaries in order to retain their services. For example, one of the SMEs interviewed paid most of its workers rates that were at the bottom of the above scales. However, they also paid one worker RM6,000 a month because they needed their skills; a relatively high wage for a small firm operating on low overheads in a competitive environment. Therefore proposition 3, which predicts upward pressure on ICT salaries, is partially correct. ICT wage increases are not uniform across the sector but limited by the firms capacity to pay (e.g. MNCs have greater resources than SMEs) and the specific skills of individual ICT workers. Further, Malaysian unions are quite weak (Ramasamy 2008) and have had little impact in the ICT sector. This has limited collective and/or pattern bargaining wage pressures.

As outlined above, the number of Malaysian ICT graduates dipped in recent years. This in part was a reflection of bad publicity including media reports that many Malaysian ICT graduates could not find suitable employment within the sector. Many interviewees linked this problem to the skill levels of Malaysian ICT graduates. One MNC HR manager defined Malaysian ICT graduates as having ‘level one basic technical skills; reasonable but not great’. This was a typical response with interviewees generally grading local graduate technical skills levels from poor to average – no interviewee rated graduate technical skills highly. Perceived problems included universities teaching outdated software skills, a failure to match tertiary courses to industry demands and graduate attitudes. This was despite Malaysian government organisations, such as MDEC, actively working to match ICT worker skills to industry requirements. One problem is the rapidly changing nature of the sector, which means that some university training will inevitably become redundant. Other interviewees advised that Malaysian ICT graduates tended to be more suited to back office support work rather than innovative R&D work. This was again linked to the Malaysian education system with interviewees stating that ‘Malaysian students are taught to answer questions rather than ask them’. This same phrase came up during interviews across a range of different firms – including MNCs and SMEs – suggesting that this was a fairly widespread perception. Interviewees also linked the Malaysian education system’s emphasis on passing written exams was also linked to perceived low oral communication skills amongst graduates. Such perceptions provide further challenges for the Malaysian government’s ‘Vision 2020’ goal.
Interestingly, ICT graduates from private universities were often rated more highly than those from public universities, with the former being seen as more proactive and more likely to have already gained industry certifications. Some of these comments however, could reflect ethnic bias, with many SMEs run by ethnic Chinese managers/owners. Malaysian public universities operate on a quota system, with student quotas based on the percentage of the population held by each ethnic group. The majority of university places are therefore allocated to ethnic Malays (Bumiputras) who comprise the largest ethnic group. Private universities therefore enrol many Chinese students, who have not been able to make the public university quota cut.

Along with technical skills interviewees were further asked about the English language skills of their graduate employees; a 2007 MSC survey found that competency in English communication was one of the most sort after skill sets amongst Malaysian ICT firms (MSC 2007:13). But the general response from all interviewees was that the English language skills of ICT graduates were generally poor. But this was more of an issue for some interviewees than others. English has become the de-facto global business language for ICT and many MNCs require English language proficiency skills for their ICT employees. While formal English language training was not widespread, one MNC did offer free English language classes; these were not compulsory but staff could elect to attend them free of charge. Local SMEs in contrast often tendered for local jobs and therefore had lower English language requirements. There was also a perception that government departments and agencies preferred to deal with Malaysian Bumiputras (ethnic Malay) workers, with discussions and/or negotiations carried out in Malaysian. Most SME managers however considered English language skills to be desirable.

From a public policy perspective the above graduate issues suggest that a simple emphasis by governments on producing more ICT graduates will not on its own alleviate potential supply constraints such as those faced by the Malaysian ICT industry. Rather, ICT graduate skills need to better address the needs and demands of business. Further, potential ICT graduates themselves must see the sector as having the potential of providing them with their career expectations, including long-term employability within the sector and reasonable remuneration.

Despite these ICT graduate issues, interviewees advised that a bigger problem was finding and hiring higher skilled/experienced ICT workers and/or managers. Further, global competition for ICT worker skills has intensified. Until relatively recently Malaysian ICT worker salaries were relatively higher than Indian and Sri Lankan ICT wages. This made it easier to bring in experienced foreign ICT workers. But the rapid rise of the Indian ICT sector and associated increasing demand for ICT workers has increased Indian wages to the level where they are now comparable to those being paid in Malaysia. Other countries are also bidding for this talent, with large numbers of Indian ICT workers now working in Silicon Valley and across the Middle East. Therefore, while the Malaysian government has made it relatively easy for MSC firms to bring in foreign workers from an administrative viewpoint, these firms face still face global supply constraints. The Malaysian government has been attempting to attract back overseas based Malaysian ICT workers, but anecdotal evidence suggests that they have had limited success in this endeavour.

In part to counter some of the above staff turnover problems, most of the firms interviewed preferred to employ workers on a full-time rather than fixed-term project basis. This was an interesting result which does not accord with the paper’s second proposition and previous research in other countries. While one MNC manager advised that they relied heavily on outsourced workers because they were cheaper to employ, most of the remaining managers
believed that full-time workers displayed more loyalty to the firm. Some managers further advised that full time workers could be trained to perform a range of tasks, while outsourced workers could only perform narrow roles linked to their project. A further reason was the heterogeneous nature of the Malaysian ICT industry, with many ICT firms operating in niche areas. This was more apparent amongst SMEs that needed to find and service niche areas, rather than go head to head with larger rivals. Therefore many SME managers advised that it was unusual to find new workers with the required skills. Rather, most new workers needed training in the firm-specific skills required for this niche area. It was then in the firms’ interest to employ these workers on a full-time basis in order to recoup this investment, otherwise they had to keep retraining new employees. In contrast, large MNCs that performed generic ‘back office’ type work were more likely to rely on outsourced workers.

Training programs such as those outlined above are expensive. While interview responses were broadly in accord with proposition 6, that SMEs would favour external training, because of a lack of internal resources, while MNCs would favour in-house training programs, there were some provisos. Large firms still used external training providers for areas that they considered were not linked to their core competency and for areas that covered specific ICT certifications. In these cases it was easier and cheaper to send off specific workers to a specialist external provider. SMEs in contrast made greater use of government subsidised external training programs such as those provided by the MSC. The employees that receive these new skills then often become more employable across the ICT labour market and may therefore take these skills and other firm specific knowledge (including IP rights) to competitor firms. Such transaction costs are well known in the management literature (see Williamson 1979; 1991; 1996). While interviewees concurred that the potential loss of knowledge to competitor firms was an issue for their firms, many of them made a distinction between newer and/or fixed-term employees and experienced workers and/or managers. They advised that short-term project workers and new workers generally had limited knowledge of specific processes and/or parts of a project. Managers in contrast had more detailed comprehensive knowledge of entire projects and/or firm processes and therefore were the employees that they were most concerned about with regards to the potential loss of firm-specific knowledge.

Many interviewees advised that they used training bonds and confidentiality agreements to help cover training costs and prevent the loss of IP rights. This accords with propositions 4 and 5 that Malaysian firms would set up strategies/processes to address these challenges. For example, employees that were sent to external training programs paid for by the firm (e.g. to gain a required certification) signed a bond requiring them to stay with the firm for an agreed period of time; the more expensive the training the longer the bond. If an employee chose to leave the firm before the bond expired then they had to pay a financial penalty. Confidentiality clauses also aimed to prevent employees from taking confidential knowledge with them to other firms. Some firms also made employees sign employment agreements that prevented them from working for competitor firms for up to two years after they left. However all interviews agreed that enforcing these legal agreements was difficult and potentially expensive, while there were some doubts as to the legal basis of some of these contracts; only one person could actually recall a case where a worker had been taken to court for infringement of a confidentiality contract. Further it was difficult to prove which firms were competitors, while computer programmers advised that a slight change to software codes could often make them appear legally different even though they essentially performed the same function. Other interviewees advised that it made little sense to try and keep workers that no longer wanted to work for the firm and that unhappy workers could do more damage to the firm by remaining than if they left. Most therefore advised that many of these
agreements gave their workers more of an expectation of how the firm expected them to behave rather than acting as a strict legal enforcement mechanism. Further, the rapidly changing nature of the ICT industry meant that ‘new’ technology and processes often become redundant relatively quickly.

The dynamic nature of the ICT sector is further linked to the employment of younger workers. Proposition 7 suggests that these workers may need to be managed differently and/or more informally than other workers. However, Malaysian firms have traditionally exhibited relatively formal high power distance workplace practices. While interviewee responses suggested that younger ICT workers did work more informally than previous generations this appeared more linked to the ‘Gen Y’ effect than being ICT sector specific. Most conversations revolved around the changing work attitudes of younger workers being linked to their having been raised in a more affluent environment. Interviewees also regularly commented that younger Malaysian workers often lacked good oral communication skills, however, such comments are also commonplace in Western countries such as Australia. The interview data also revealed few shifts towards more flexible working arrangements for Malaysian ICT workers. While some firms were considering introducing flexible working hours none had introduced them. Other firms advised that they were not even considering flexible working hours as this was something that was not a normal practice for Malaysian workplaces. Further none of the firms that were interviewed allowed their employees to work from home as part of their normal working hours, despite this being technically possible. Propositions 7 and 8 therefore were not substantiated by the interview data, suggesting some degree of Malaysian exceptionalism in contrast to research in other countries.

To conclude, while much of the previous literature has tended to place ICT workers together in one homogeneous group, this research found a high degree of heterogeneity amongst Malaysian ICT firms and their workers. It further showed that the Malaysian ICT sector exhibited characteristics that differed to those found in previous research on ICT workers in other countries. This evidence points to the need for further research on the HR practices of this sector. The continued development of Malaysia’s ICT industry is further linked to its ability to produce graduates that meet industry needs. Such graduates also need to have the required skill sets to engage in innovative R&D work if Malaysia is to succeed in its goal of truly becoming an ICT regional hub, as opposed to relying on back office outsourced work. This is not to denigrate the impressive advances that the Malaysian ICT industry has achieved in a relatively short period of time, including the exponential increase in the number of ICT firms based in Malaysia. Rather it points to the need for continued improvement and development across the sector if it is to remain competitive in the global ICT market. This paper is part of ongoing research that will continue to monitor and examine these developments.

References


