Research for ASEAN Free Trade Agreement Impact to Lao ICT Industry

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By

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Abbreviation

AEC	ASEAN Economic Community
AFAS	ASEAN Framework Agreement on Services
AISP	ASEAN Integrated System of Preference
ASEAN	Association of South East Asian Nations
ASEM	Asia Europe Meeting
ATIGA	ASEAN Trade in Goods Agreement
CEPT	Common Effective Preferential Tariff
CLMV	Cambodia, Laos, Myanmar and Vietnam
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDP	Gross Domestic Production
IAI	Initiative for ASEAN Integration
LIBIC	Lao IT Business Incubation Center
MRA	Mutual Recognition Agreement
PIS	Priority Integration Sectors

Executive Summary

It is a fact that the Government of Laos plans to join the ASEAN Free Trade Agreement (hereinafter referred as 'AFTA') in 2015. It would certainly bring to the nation not only the challenges but opportunities to various business sectors and society. However, there has no specific research been made to date to analyze the AFTA's impacts to the Lao IT service industry. To fill the gap, this study was designed to investigate the positive and negative impacts and to work with the stakeholders for suggesting measures to maximize the positive impacts and mitigate the negative impacts.

The study briefly introduced Lao economy development and current status and characteristics of Lao ICT industry before moving into the AEC and its implication to the ICT industry in general with particular emphasized on the ASEAN ICT Master Plan.

Through key informant interviews and working group meetings where representatives from policy making agencies, private sector (IT service providers) and academia were presented, the study found that for Lao ICT sector, tariff rate for hardware as well as packaged software products has already reached 0%. Therefore, ICT goods could be considered as free flow recently. This implies that by 2015, there would be 'no' or 'positive' impacts in the sense that the consumer or enterprise access to cheaper ICT products.

In terms of skilled labor movement, according to AFAS Mode 4, there is no explicit limitation on the national treatment. The degree of impacts would depend on the demand for foreign workers of the industry and the existing of concerns over foreign competition for works in Laos.

Provided with the current situation of Lao labor market where ICT human resource are still not sufficient, it is considered "positive" in terms of impacts when we move toward a more liberalized labor market in ASEAN. However, in the long run the fear of competition between local and foreign labor for jobs is common for the host countries, including Laos. It is inevitable that Lao labor market need to address the professional IT skills standard in order to stay competitive for jobs.

Overall, most IT service providers are not overly concerned, as the Lao market has long been effectively relatively opened even without the FTA. However, there are a number of measures could be taken to optimize the challenges and opportunities brought about by the FTA.

a) Measure to maximize the positive impacts:
   - In the short term, embrace and welcome foreign talent to develop the better product for the local and regional markets;
   - Develop product with regional market in mind;
   - Adopt latest technology quick;

b) Measures to minimize the negative impacts:
   - In the mid to long term, human resource issues have to be addressed.
   - Get ready to compete. Work more closely among the local IT service providers in order to attain the reasonable level of economy of scale;
   - Create new businesses that response to the local needs with new ideas but it doesn't matter if the deployed technology is new or old one.

Chapter 1 Overview of Lao IT Industry

1.1 Overview of Lao Economy

Laos is one of the few least developed countries in the Association of South East Asian Nations (ASEAN). The economy is largely known as a subsistent economy in which about three quarters of the population relies on the agriculture sector. Lao economy has sustained rapid growth at an average of 7.9 % annually during the past five years. This is among the highest growth rate in ASEAN. Despite the global financial crisis, Lao economy grew further by 7.5 % in 2009, which was the second highest growth in East Asia (World Bank, 2010) and reach 8.3% in 2012. According to the Lao Statistics Bureau's projections, GDP in 2010-11 grows at 8.1%[1], which is faster compared to the previous year's growth rate (7.9% in 2009-10). The agriculture sector grew 2.9%, industry sector grew 17.8% and service sector grew 7.8%. The agriculture covers 26.7 % of the GDP while the share of service sector and industrial sectors are 37.8 % and 29.6 % respectively (Department of Statistics, 2012). Among the three sectors, the industrial sector grows fastest mainly fueled by the expansion of mining sector followed by the service sector which benefits from the rapid growth of retail trade, construction, tourism and financial services.

According to the World Bank's Lao Economic Monitor, November 2012, Lao economy is expected to grow at 8.2 percent in 2012 to 9.43 billion USD, as suggested in Figure 1, benefiting from growth in the construction, manufacturing, mining and service sectors. One key driver for this performance on the demand side is the surge in investment this year in infrastructure and housing, some of which are related to preparation for the ASEM in Vientiane Capital. On the supply side, this development has a positive spillover to manufacturing sectors through increased demand for cement and construction materials. In addition, food and beverages benefit from greater domestic demand. Additionally, higher wholesale and retail trading as well as transport and telecommunications will drive the service sector in 2012. Agricultural output also rebounded from the impacts of floods in the previous year. In the mining sector, increased resource extraction as a result of the current copper-gold project upgrades and the operation of a new gold-silver project will offer a higher contribution to growth compared to last year.

Inflation has trended downward driven by lower food and energy inflation. Food inflation significantly declined from 8.2 percent in March to 3.6 percent in October 2012 driven by the continued fall in rice prices, resulting from government controls of rice exports. Falling rice prices have led to some farmers switching to other more profitable cash crops or alternatively moving to non-farm employment.

[1] 2010-11 Gross Domestic Product (GDP) projections report, 2nd revised, No. 018, 13/1/2012

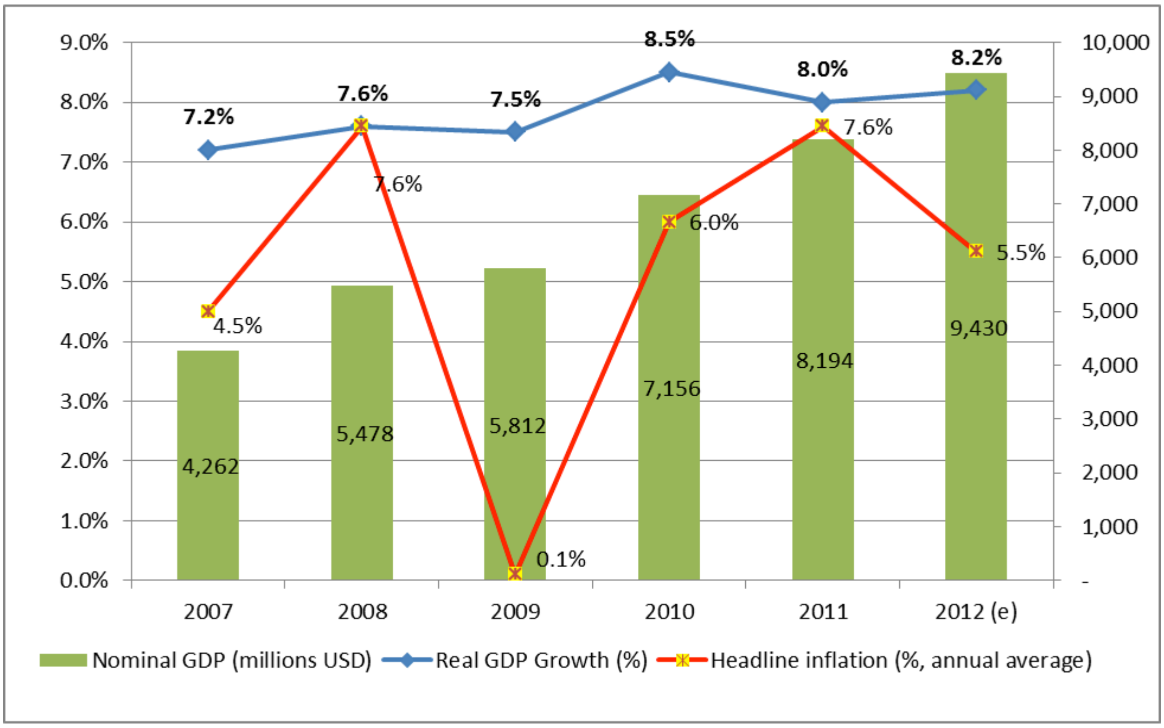

Figure 1 Nominal GDP, GDP Growth and Inflation Rates, 2007-2012
Source: Lao PDR Economic Monitor – all data are the latest revised for November 2012, World Bank
** Note: (e) is for estimate.*

After joining the ASEAN in 1997, Laos has integrated with a larger market with the population of 583 million people and GDP of 1.5 trillion US$ (ASEAN, 2010) and the economy becomes more prosperous. After slight decline in 2009 during the world financial crisis, Lao exports has picked up and continued to increase. Exports in 2011 reached US$1,947 million, 2.3%[2] more than in 2010. In addition, the foreign direct investments approvals increase rapidly from a marginal level of 300 million US$ before joining ASEAN to over 4 billion US$ in 2009 and about US$2.71 billion in 2012. The majority of foreign investments remained in the resources sector, accounting for 57% of total investments. The trended increase in external trade and FDIs is one of the expected benefits from economic integration with ASEAN.

1.2 The IT Industry Development

IT usage within Laos has evolved from the introduction of personal computers (PCs) in the late 80s. At that time, PCs were used by small group of people who had experience working abroad or those working for donor-funded projects. Main usage purposes of PCs were for word processing and simple spreadsheet applications.

After that, by responding to the government policy to promote foreign direct investment (FDI), there were increasing numbers of international corporations invested in the country. Demands for computerization in business process resulting in more advanced usage of IT to support business operations. That implied the network environment; centralized data storage and management, database management and disaster recovery strategies were gradually deployed as a result.

According to the recent studies conducted by Lao ICT Commerce Association (LICA), most local ICT companies (the providers) are focusing on the domestic market. The main areas of business

[2] Initial evaluations by the Ministry of Industry and Commerce

are computer reselling (both hardware and software), training, consultation (solution and application), and telecom and providing Internet service.

Based on LICA's Lao IT Service Market Report in 2011, by 2011 all four mobile operators in Laos (namely LTC, ETL, Unitel and Beeline) had launched 3G services. The Internet sector has experienced a significant drop in service prices and huge growth in the number of Internet users. The cost of Internet access has dropped to one fourth over the period, down from 100USD (in 2007) to 25USD (in 2011) and the number of Internet users has grown five folds, up from 100,000 (in 2007) to 500,000 (in 2011). However, there are some clear obstacles to lifting the number of Internet users in Laos from this low base, i.e. local content and Lao font issue.

Since 2005, banking sector in Laos has been rapidly and significantly growing, not only by the number of local and international banks but also in terms of amount invested in IT infrastructures. There are more competitions in retail banking area, which requires more advanced and sophisticated IT systems to support such requirements. More banks start to realize the necessity to adopt internationally recognized solutions and have decided to implement such solutions in their core business environment.

Another important development in the IT service industry in Laos has been the establishment of the Lao IT Business Incubation Center (LIBIC) at the Department of Computer Engineering and Information Technology, the Faculty of Engineering, National University of Laos. This is a project supported by JICA, considered to be the first business incubation center in the country aiming to take the IT service industry to the next level by encouraging new entrants into the industry through its full scale support.

Laos' ICT industry has now been considered as an important component for the country's economy. As a result, the government has appointed the Ministry of Post and Telecommunication[3] and Ministry of Science and Technology[4] to be the key stakeholders in supervising ICT activities and businesses within the country. This includes ICT development strategies and implementation plans, among others.

1.3 Characteristics of Lao IT Industry

1.3.1 IT service providers

Most of the IT service providers are clustered in Vientiane Capital, which is considered to be the biggest market in the country where major IT service recipients are located.

Based on recent survey conducted by LICA, almost 70% of local IT service providers are involved in hardware reselling; bundled with system maintenance and support. Because there is no brand for local IT equipment, meaning things must be imported. IT companies will need to provide some kinds of maintenance and support services for equipment that they have sold.

Equipment is mainly imported from neighboring countries such as Thailand, Vietnam and China. However, some of them are also imported from other ASEAN member countries like Singapore and Malaysia.

[3] www.mpt.gov.la
[4] www.most.gov.la

In addition to the above, IT companies in Laos also provide a broad range of services such IT consulting, IT education and training, software and application development (both client-server and web-based), mobile application development, data center service, website and content development, IT security service and other IT-related activities such as GPS, CCTV, etc.

In terms of revenue, as one may expect that most of IT service providers in Laos are categorized as SMEs. About 68% claimed to earn up to USD100,000 and about 17% earning between USD100,000 to USD200,000 per annum. Only a few of them, revealed that their revenue could reach USD3,000,000 annually.

The main problems and challenges being faced by service providers are the quality of core IT staffs. Secondly, competition among local companies in terms of price is also considered to be high among others. Furthermore, to be able to survive and compete the local IT service providers also request the government to implement laws and regulations that help facilitate the local IT businesses. This includes producing more skillful graduates and encouraging local companies to participate in major government IT projects.

1.3.2 IT service recipients

As stated in the report conducted by LICA in year 2012, the financial services sector, banking in particular, has been spending or investing more on IT than other industry sectors. This is due to the unprecedented growth in the financial service over the past few years. The growth trend has yet ended and getting even more complicated.

The growing number of commercial banks and the modernization policy of the central bank, the banking sector continues to dominate the overall IT service spending in the market.

1.3.3 IT human resource

In relation to human resource, IT companies in Laos mainly employ Lao staffs who have IT background and experience, most of them have been graduated from either local colleges or universities. However, some senior IT engineers have been graduated from overseas. Some IT companies gradually begin to employ foreign workers in senior positions.

In general, the average age of IT staff ranges between 26 to 30 years old, depending on job function. From LICA's survey, programming staff has youngest average age of 26 and database administrator and hardware/software support staff have average age of 30 years old.

In relation to salary, the research has shown that senior database administrators earn highest average salary of USD560 per month, whereas junior networking and multimedia staffs earn highest average salary of almost USD220 per month.

Chapter 2 AEC and its implication on IT industry

2.1 Overview of AEC Blueprint

Laos fully joined ASEAN in July 1997, which marks an important milestone in Laos' economic integration with the regional economy. Since then, the economic structure has changed significantly within a stable situation. The business sectors have adapted better to the international market and the Lao products become gradually known in the market. The country has been recognized in the region and the global as having a robust economy within a stable political situation. Moreover, the country have benefited substantially from the regional integration. Some of the preferences it enjoys are tariff reduction under the Common Effective Preferential Tariff Scheme (CEPT) and the ASEAN Integrated System of Preference (AISP) offered by the original ASEAN 6 member countries.

Following up the regional integration process, the government of Lao PDR (GOL) together with leaders of other ASEAN countries agreed to establish the ASEAN Economic Community (AEC) by 2020 during the Bali Summit in October 2003. The AEC is the realization of the end goal of economic integration as espouse in the Vision 2020, which is based on a convergence of interests of ASEAN Member Countries to deepen and broaden economic integration through existing and new initiatives with clear timelines. The other two integral pillars of the envisaged ASEAN Community are the Security Community and the ASEAN Socio-Cultural Community.

Later in 2007, the ASEAN leaders affirmed their strong commitment to accelerate the establishment of an ASEAN Community by 2015 as envisioned in the ASEAN Vision 2020 and the ASEAN Concord II, and signed the Cebu Declaration on the Acceleration of the Establishment of an ASEAN Community by 2015.

The main objective of the AEC is to transform ASEAN countries with 4 strategic pillars, namely (a) a single market and production base, (b) a highly competitive economic region, (c) a region of equitable economic development, and (d) a region fully integrated into the global economy.

These pillars are inter-related and mutually reinforcing. Incorporating the required elements of each characteristic in one Blueprint shall ensure the consistency and coherence of these elements as well as their implementation and proper coordination among relevant stakeholders.

From the national economic development and the benefit of an integrated economy point of view, the first pillar, **a single market and production base**, seems to receive more attention from the publics in all ASEAN member countries. Elimination of non-tariff barriers and liberalization of tariffs are the main goals by 2015. In order to achieve those goals, various measures have been identified with a clear implementation timeline in the AEC blueprints. The measures are summarized in Table 1.

Table 1 Selected pillars and measures in AEC Blueprint

Key Pillars	Elements	Measures	Note on Achievement status
I. A single market and production base	1) Free flows of goods	1. Tariff reduction 2. Elimination of tariffs 3. Elimination of non-tariff barriers 4. Rule of origin 5. Trade facilitation work program 6. Custom integration 7. ASEAN single window 8. Standards and conformance	- Almost all tariff line for ASEAN 6 eliminated and down to 0-5% for CLMV after October 2010. - 5 ATMs have live implementation of National Single Windows, 2 ATMs on the way and 3 remain committed. - AMSs allow more than 70% of foreign equity for investment liberalization commitment. However, some sectors such as agricultural and oil/gas sector remain protected for some AMSs. *See Section 2.4 for details for commitment and status on Tariff reduction.*
	2) Free flows of services	1. Service liberalization under AFAS 2. Mutual recognition arrangements (MRAs) 3. Financial services sector liberalization	
	3) Free flow of investment	2. ASEAN Investment Agreement (AIA) 3. Investment liberalization 4. Investment facilitation 5. Investment promotion 6. Investment protection	
	4) Freer flows of capital	1. Strengthening ASEAN capital market development and integration 2. Allowing greater capital mobility Foreign Direct Investment liberalization 3. Portfolio investments liberalization 4. Liberalization of other type of capital flows 5. Liberalization of current account transaction 6. Capital flow facilitation	
	5) Free flow of skilled labor		
II. A highly competitive economic	1) A competition policy		Numbers of regional cooperation initiatives in areas such as IPR
	2) Intellectual Property Rights		
	3) Infrastructure	1. Transport action plan	

region	development	2. ASEAN Framework Agreement on Multimodal Transport 3. ASEAN Framework Agreement on the Facilitation of Goods in Transit 4. ASEAN Framework Agreement on the Facilitation of inter-States Transport 5. Roadmaps for Integration of Air Travel Sector 6. Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN 7. Information infrastructure 8. Content industry 9. Energy cooperation	and competition policy have been launched. Some areas of cooperation are even extended and deepened more than specified in the Blueprint.
	4) Taxation		
	5) E-commerce		
III. A region of equitable economic development	1) SME development		Numbers of IAI Work Plan projects have been implemented. *See Section 2.2*
	2) Initiatives for ASEAN Integration (IAI)		
IV. A region fully integrated into the global economy	Coherent approach towards external economic relations and enhanced participation in global supply network		- ASEAN has completed five ASEAN+1 FTAs, which cover all the original 16 members of East Asia Summit. - There are interests of other trading partners for an FTA with ASEAN; e.g., EU, US, Gulf Cooperation Council

Source: ASEAN ICT Master Plan

2.2 Overview of Initiatives for ASEAN Integration (IAI)

Initiatives for ASEAN Integration (IAI) is created from the fact that ASEAN is still facing several challenges mainly due to the development gap between more developed countries (ASEAN-6) and later member countries (CLMV), particularly Laos. This gap includes per capita income, human resources and infrastructure development. This not only might cause difficulty for CLMV, but also might hinder the growth and development of all ASEAN countries. Therefore, the IAI was launched by the ASEAN leaders at the Fourth ASEAN Informal Summit held in Singapore in November 2000 with the objective of narrowing the development gap between the later member countries namely Cambodia, Laos, Myanmar and Vietnam (CLMV) and the original ASEAN 6 in its endeavor towards building ASEAN Economic Community.

One cause of the development gap between the older and the newer members of ASEAN is the so-called digital divide. Thus, ICT is among the top three priority areas of focus in the IAI Work Plan.

2.3 Overview of ASEAN ICT Master Plan

Under AEC Blueprint, ICT is viewed as an enhancing element among various measures for ASEAN countries including Laos to achieve the end goal of economic integration of AEC. There are two kinds of ICT projects in the IAI Work Plan – one has to do with training and the other with the formulation of plans and policies for governments that skill is still lacking. Examples are the ICT training programs undertaken by individual ASEAN member-states with the support from various donors; the development of the individual member-states' national ICT master plan, ICT legislation, and e-government system, i.e. e-government system in Laos with the funding support from various donors as well as its own funding. The top five donors in the first Work Plan are Japan, the Republic of Korea, India, Norway and the European Union.

For the second Work Plan under competitive economic region pillar (infrastructure development component) the focus are to (1) provide support for formulation of national ICT master plans by 2010; (2) provide support for formulation of e-government master plans; (3) provide support for formulation of national action plans for human resource development in ICT; (4) provide support to review telecommunications regulations to support liberalization (and development) of the telecom sector with an integrated approach on regulation and policy reform (on competition policy, foreign investment, licensing, allocation of resources such as frequencies and access facilities); (5) provide support to complete the GMS Information Superhighway to provide the telecom backbone network and connectivity to all parts of CLMV; (6) conduct a study and implement measures to implement CLMV ICT manufacturing bases/clusters (and to be connected to other IT parks in ASEAN); (7) conduct training programs on the basis of a coherent program for the ICT focal points of CLMV. Moreover, under the same pillar (in the E-commerce component), the focus is on (a) providing support by 2010 to develop e-commerce friendly environment (to cover the areas of e-commerce law, digital signature, information security, etc); and (b) developing capacity building/training programs on the utilization of e-commerce.

Following up with the initiatives set out in AEC Blueprint, particularly IAI, a mutual progress toward realization of the development efforts in ICT sector is the launch of ASEAN ICT Master Plan in the 10th ASEAN Telecommunication and IT Ministers (TELMIN) in January 2011 in Malaysia. The prime objective of the ASEAN ICT Master Plan is to strengthen the ICT sector in the region and to determine direction to which ICT sector shall be developed. The Master Plan laid out a vision towards an empowering and transformational ICT by creating an inclusive, vibrant and integrated ASEAN.

The ASEAN Master ICT Plan by 2015 aims to achieve 4 outcomes: (1) to make ICT an engine of growth for ASEAN countries, (2) to create ASEAN a global ICT hub, (3) to enhance quality of life of peoples of ASEAN, and (4) to enable ICT to contribute to ASEAN integration. To achieve these outcomes, 6 strategic thrusts have been laid out, 3 of which supports the other 3 pillars. These include (1) economic transformation, (2) people empowerment, (3) innovation, (4) infrastructure development, (5) human capital development and (6) bridging the digital divide. All of these are summarized in the following diagram 1. The first three thrusts serve as strategic pillars while the other threes form as foundations to support the pillars. Initiatives under each pillar and each foundation are summarized in Table 2 and Figure 2 as followed.

Table 2 Initiatives under 6 strategic trusts of ASEAN ICT Master Plan

Pillars/Foundations	**Initiatives**
(1) economic transformation	1. Create a conductive environment where business can grow leveraging ICT. 2. Develop Public-Private Partnership (PPP) initiatives for the ICT industry.
(2) people empowerment	1. Ensure affordable broadband access to every community. 2. Ensure affordable ICT products. 3. Ensure affordable and seamless e-services content and applications. 4. Build trust.
(3) innovation	1. Create Innovation Centers of Excellence for Research and Development of ICT services. 2. Promote innovation and collaboration amongst government, businesses, citizens and other institutions. 3. Nurture innovation and creativity at schools.
(4) infrastructure development	1. Improve broadband connectivity. 2. Promote network integrity and information security, data protection and CERT cooperation.
(5) human capital development	1. Build capacity 2. Develop skill upgrading and certification
(6) bridging the digital divide	1. Review universal service obligation (USO) or similar policies. 2. Connect schools and advocate early ICT education. 3. Improve access and relevance of information

Source: ASEAN ICT Master Plan

The Master Plan also specifies governance structure and financing mechanism for the actual implementation together with a timeline toward the achievement of all trusts by 2015. As for Laos, by implementing this Master Plan, the nation could benefit from the improvement in ICT sector, making digital divide gap with other ASEAN countries narrower. Despite having no Lao ICT Master Plan, Laos is on the process of revising the existing National Policy on ICT launched in 2009 and drafting its own Master Plan by the Ministry of Science and Technology.

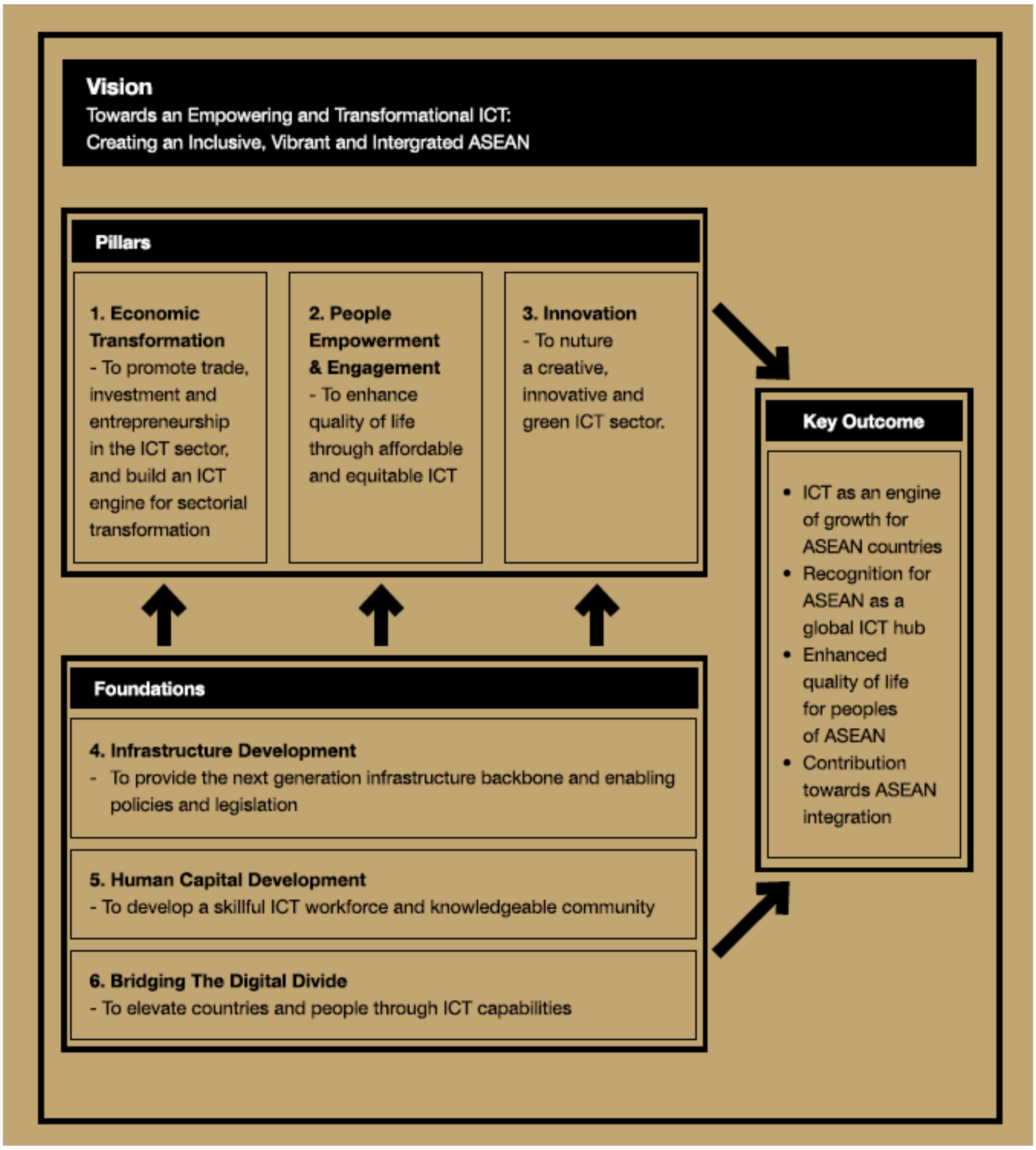

Figure 2 ASEAN ICT Master Plan Framework

Source: ASEAN ICT Master Plan

For a reference, some sample ICT strategy and policy of selected ASEAN countries are summarized in Box 1.

Box 1: Key ICT strategy and policy of selected ASEAN countries and Laos

In preparation to AEC 2015 and to be in line with the ASEAN ICT Master Plan, ASEAN member countries are preparing their IT industry and policy. It is to be noted that Thailand is the only countries among ASEAN countries that has done extensive or similar research on how ACE 2015 will have implication on the IT industry. Some of key strategies and policies of selected ASEAN countries are as follows:

Thailand:

Thailand has developed ICT Master Plan 2020 with the theme "Smart Thailand 2020" with the following key points of interest.

Strategies:

- Broadband infrastructure to allow access to information via broadband Internet for 95% of Thailand's population by 2020;
- Develop ICT human capital and general IT literacy;
- Aims for a domestic ICT industry to represent at lease 6.5% of total GDP by 2015, and increase to 7% by 2020;
- Develop ICT for good governance and smart government;
- Develop and apply ICT in order to lift the productivity of manufacturing and agricultural industries;
- Develop ICT for Life-Long-Learning;
- Develop ICT for a green economy and society.

Areas of Focus:

- Software development;
- ICT Project Management;
- Enterprise architecture design;
- Network and system administration;
- Informational system and network security.

IT professional and skill development opportunities:

- IT professional standard by the universities;
- Skill competency standard for IT engineers;
- Total support by the government;
- IT industry that can support both International and domestic market;
- Promote software park industry;
- IT specialist registration;
- Regional data center;
- Networking for software and hardware;
- The national promotion of ICT engineering;
- Setting up standard of competence for IT skill labors;
- Establishing the testing and certification for ICT products;
- Promoting the deployment of regional network.

IT professional and skill development challenges:

- The readiness of Thai educational system with regards to IT professional and IT skill development;
- Level of English language proficiency and different standard of universities;
- It students and IT engineers have limited access to seminar, study tour, practical training to gain knowledge and experiences.

Malaysia:

Main initiative was the Multimedia Super Corridor (MSC) in Cyber Java with idea of IT-themed city. It has an area of about 28.94 square kilometers. IT spending was more than US$5 billion in 2011. The target export is to primary Indonesia, Vietnam and Thailand. So far, there are more than 2,500 IT companies which employ more than 100,000 IT professionals.

Singapore

Singapore positions itself as an ICT hub for ASEAN. IT spending in 2010 was about US$30 billion for hardware, about US$10 billion for software and US$8 billion for IT services. There are ICT manpower of 141,300 in year 2012.

Infocomm sets ICT skill standard framework for Singapore with 3 strategic trusts:

- to develop ICT competencies in key economic sector;
- to develop globally competitive ICT professional;
- to develop, attract and retain ICT talent.

Vietnam

Vietnam positions itself as an outsourcing hub. IT spending or 2011 was US$8.7 billion; Software was US$1.2 billion. Vietnam IT sector is strongly supported from the government.

National strategy for Vietnam ICT is to transform Vietnam into an advanced ICT country in 2020. It is targeted that ICT industry will represent 8-10% of the total GDP and 70% Internet penetration.

For human resource area, total IT labors have reached 250,000 marks in 2010, of which 127,548 are from Hardware, 71,814 from Software and 50,928 from Datacenter Industry. It set the target to reach the one million marks by 2020. So far, there are 290 universities/colleges offering ICT education.

The Philippines

The IT/Business Process Outsourcing (BPO) industry is already a very important factor in its economy with over half a million full-time employees, between 4% and 5% contribution to the total GDP. The Philippines has been stated as the number one BPO location in the world, including finance and accounting, HR and payroll. The total IT/BPO revenue was about US$9 billion in 2010. It has targeted to reach US$20 billion IT/BPO revenue by 2016. There were about 525,000 IT/BPO employees in 2010, and it is targeted to have reached 900,000 by 2016. IT graduates for the year 2009 were 38,809, and it has set the target to reach 60,000 in 2016.

Laos:

According to the draft ICT Master Plan being prepared for up to 2015 by Ministry of Science and Technology, there are following overall and specific ones outlined.

Overall objective:

- Establishment of a modern information technology broadband infrastructure that can effectively response to information technology application needs in all sectors.
- Formulation and development of an information technology human resource force that can timely response to the short term and long term information technology application and development needs of the country.
- Information technology as a driving force for the socio – economic development, enhancing the management effectiveness and government transparency.

Specific objectives:

- Rapid developing information technology human resource in order to secure appropriate information technology human resource for the demand of information technology development and application. At least 10.000 more information technology experts at deferent levels need to be trained until 2015, meeting the quantity criteria for information technology experts (based on 10.000 citizens) equal to the average level of the countries in the region.
- Fostering the information technology application in the government offices, in crucial economic sectors and large enterprises. Making first steps for e-government and online public service provision for citizens and businesses.
- Telecommunication and Internet development with the state of the art technology, wide broadband, high speed and quality. Until 2015 all provinces of the country will be connected by fiber cable, the remote areas connected to Internet by satellite, Internet user ratio reaches 15% of population.

2.4 Commitment under AEC and Implementation Status

As mentioned earlier, Laos has been involved with many cross cutting agendas of ASEAN Economic Committee, particularly under the sub-pillars of the AEC blueprint. ICT initiatives and commitments are spread and cross cut among pillars. Most importantly, the ASEAN ICT Master Plan would play a very important role in enhancing Lao ICT sector to catch up with the region and enable faster integration to AEC.

The implementation of the AEC blue print relates to a wide range of commitments. The most relevant commitments are related to the Single Market and Production Base pillar (SMPB) of the AEC blueprint. The commitments involve:

- the reduction of tariffs;
- increasing share of foreign equity for the investment in the host countries; and
- the declination of regulations on movement of natural people as well as professional workers among ASEAN countries.

In addition to other commitments in the AEC sub-pillars of the blueprint (See Section 2.1); these commitments are viewed as key contributors to make the integration more explicit and meaningful. On the other hand, by implementing these commitments, small countries like Laos would be potentially affected by liberalization of trade in goods, services, investment and people movement. The impact would not be exceptional for ICT sector as it is among the Priority Integration Sectors (PIS)[5] that would be earlier subjected to the liberalization agenda.

The overall progress for the implementation of tariff reduction was evaluated in 2010. For ASEAN 6, 99.65% of all tariff line has already eliminated from 2010. CLMV countries, including Laos, also made a substantial progress in the removal of tariff. From 2010, 98.86% of the tariff line has been reduced to 0-5%. For Lao ICT sector, tariff rate for hardware as well as packaged software products has already reached 0%. Therefore, ICT goods could be considered as free flow recently.

According to package 8th of the Specific Commitment for Laos, it is considered open in terms of service provision from Mode 1 to 2. There is no specific restriction on the maximum equity of foreign investor investing in Laos. The investors would only have to follow the Law on investment promotion. That is to say, foreign investment in Laos could be in 3 forms, 100% foreign-owned, joint venture, and being representative offices in Laos. Under Mode 4, although there is no explicit restriction on the movements of natural people, foreign workers working in Laos have to follow the Labor and Enterprise Law. Basically, enterprises could employ foreign skilled workers no more than 10% of total workers. However, if necessary, the enterprises could request for government approval on case-by-case basis. All these specific conditions and limitation for ICT sector is considered "green" or passing the commitment laid out in the 8th Package of the AFAS.

[5] PIS includes ICT, healthcare, tourism and air travel sectors.

Chapter 3 Impact of AEC on Lao IT Industry

3.1 Channel of Impact and Research Methodology

The analytical framework undertaken in this study relies mostly on the possible channels through which the first pillar among the 4 pillars of AEC would affect Lao ICT industry. The pillar, namely "Single market and production base", deals mostly with time restricted commitment for Laos to undertake, particularly on the reduction of tariff, deregulation, liberalization of limitation on market access and natural treatment, etc. These commitments would, explicitly and implicitly, have implication to the trade and service provision of Lao ICT industry. Since the other three pillars of the AEC - a highly competitive economic region, a region of equitable economic development and a region fully integrated into the global economy - are considered as enhancing elements which would benefit all ASEAN members especially CLMV countries including Laos, these pillars will not be put in the following analytical framework. Based on this setting, the channels of impact would be set as follows:

- through a reduction in tariff among ASEAN member countries;
- through an increasing share of foreign equity for the investment in host countries; and
- through a freer movement of skilled workers within ASEAN.

While briefing on the broad aspect of ICT industry in the previous sections, the study took two aspects for the analysis – software, and hardware. Research methodology follows the deep key informant interviews of those related to ICT industry supervision, management and operation. Some of the key informants are authorities in Tax Department and Custom Department Ministry of Finance, Foreign Trade Policy Department, Ministry of Industry and Commerce; president of Lao ICT Commerce Association; and selected CEOs of IT service providers. The key informant interviews provide the macro view and policy level of understanding of the potential channels of impact of the AEC.

In addition, the study also bases the analysis on two working group meetings in the form of focus group discussion sessions (see minutes of the meetings in the appendix). The sessions aim not only to provide insight on potential impacts of AEC but also deploying the simple but powerful SWOT analysis framework to get feedback, comments and recommendations from diversified views of representatives from local hardware, software and telecommunication companies in Laos. The focus group discussion would help clarify and provide micro understanding of current situation of Lao IT industry, the awareness of AEC and how to prepare the industry for the integration.

3.2 Impact of AEC on Lao IT Industry

3.2.1 General insight on the impact

Based on the aforementioned channels of impact, it is inevitable for Laos to be affected by AEC. However, the degree of impact would mostly depend on:

- the existing custom tariff and tax rates for ICT products;
- the current restriction on foreign ownership in the companies in Laos; and
- the employment status and demand of foreign workers for Lao local companies.

As pointed out in chapter 2, the tariff rate for hardware as well as packaged software products is already reached 0%. Therefore, ICT goods could be considered as free flow recently. This implies that by 2015, there would not be any different in terms of implementing the commitment to reduce tariff. The local market already consumes ICT goods without tariff, but the consumption tax or value added tax. Therefore, in general, this channel of impact could be considered as ‘non’ or ‘positive’ in the sense that it would provide opportunity for Lao ICT products, if any in the near future, to penetrate ASEAN market.

In terms of services, as discussed in chapter 2, the Lao ICT service market is considered “open” according to package 8th implementation. There is no limitation on Mode 1 and Mode 2 under AFAS (AHTN 2012). For foreign ownership, there is no specific limitation on the equity share of foreign investor. Foreign investment would follow Investment Promotion Law, which applies, not only to ICT sectors but also to other sectors. The investment could be in the form of 100% foreign owned, joint venture enterprises and representative office. In general, relatively open characteristic of the market for foreign investment would imply that Lao government sees foreign investment as an enhancing element rather than treats. That is to say, the Investment Law promotes FDI and technology transfer to local industry. Therefore, the area of liberalization of limitation on foreign ownership would not be a serious concern for the country. However, more specific concerns based on industry level would depend largely on industries specific characteristics, which will be elaborated in the following parts on software and hardware categories.

In terms of skilled labor movement, according to AFAS Mode 4, there is no explicit limitation on the national treatment. However, foreign workers working in Laos (skilled or unskilled) would follow Lao Investment Law. Currently, enterprises in Laos could employ foreign skilled workers not more than 10% of total workers. But the enterprises could hire more foreign workers if necessary and this must be subjected to government approval on a case-by-case basis. With this regard, implicitly, there are still limitations on skilled foreign movement, but the flexibility provided in the law make this area relatively open and pass Package 8th of the AFAS. Therefore, the degree of impact would depend on the demand for foreign workers of the industry and the existing of concerns over foreign competition for works in Laos.

Provided with the current situation of Lao labor market where ICT human resource are still not sufficient, it could be said that, in general, there exists the demand for foreign skilled workers and this would be even higher when the industry developed, unless Lao ICT human resource could fill the gap. Therefore, it is considered “positive” in terms of impact when we move toward a more liberalized labor market in ASEAN. However, on the concerned side, in the long run the fear of competition between local and foreign labor for jobs is common for the host countries, including Laos. It is inevitable that Lao labor market need to adjust in the way that more professional ICT human resource be developed, not only in number, but also in quality, in order to stay competitive for jobs. Currently the advantage of Lao workers is explicitly in terms of language and understanding of local market. However, this advantage would be gradually declining in the future when the integration mature and when Lao workers themselves would intentionally want to go ASEAN.

3.2.2 Analysis

3.2.2.1 Characteristics

a) Packaged software

Software Sub-sector of IT industry in Laos is broadly classified into 2 main categories: Packaged Software and tailor-made software.

Packaged software is defined as ready-made off-the-shelf products to be sold in mass and to be used generically. Some examples of this type of software is anti-virus software, office productivity software (e.g. MS Office suite), Point of Sales software, and the likes. Packaged software is normally bought by both individual and enterprise customers. Main characteristics of this type of software are simple installation with minimum customization.

Packaged software is imported as either in sealed boxes or downloaded files. They are resold by local IT companies and IT shops. The buying and selling activity is more like trading, as it does not required high IT skills to perform the installation and configuration. However, there may be some challenges to IT companies when it comes to complex configuration in order to maximize the full potential of such software unless software producers have properly trained them.

Increasingly, the simple packaged software like Office Suite or anti-virus software are getting more and more competitive and becoming low-margin business.

b) Tailor-made software

On the other hand, tailor-made software is defined as software that has been designed and developed for specific purposes for specific clients. Furthermore, packaged software that has been extensively customized for specific clients can also fall into this category. Such software is mostly used by enterprise customers. So far, in Laos, tailor-made software is used among banking, telecom and government sectors.

Some issues faced by local IT service providers when it comes to the implementation of tailor-made software are the lack of qualified system analysts and programmers. As a result, it is necessary to heavily rely on foreign experts to analyze and finalize clients' requirements. Furthermore, the clients themselves are sometimes do not have clear understanding of their own requirements. This may be because of unclear future business plans, and lacking of standard working process.

With such high technical skills and analytical skills required, tailor-made software is certainly still a high margin business. And it is seen to be growing with the growing IT systems being deployed by more and more enterprises in Laos. Currently and prior to AEC integration, there is no import tax on software coming into Laos. However, when selling software (both packaged and tailor-made), sellers need to add VAT for 10%.

c) Hardware

Hardware markets is categorized into 2 segments: consumer and enterprise.

Consumer market are lined up with PC, Notebook, Tablet, Mobile, Accessories (printers, UPS, routers, etc), while the enterprise market are the products like Server, Storage, PC, Notebook, Solutions (Data Centers, etc.), Accessories (Big UPS, High-End network, etc.)

Key players in the supply chain of the hardware are vendors, distributors, dealers or resellers, sub-dealers, end-users.

Market situation of the consumer segment for the past decade it could be characterized as followed:

- very competitive in terms of price;
- no rule, most goods are unofficially imported;
- low profit margin;
- in many cases no after sales service provided.

For the enterprise market, the situations has been:

- less competitive;
- required some knowledge and good vendor/distributor/dealer relationship to support customers, especially servers and network products;
- margins are getting lower due to competition from increased players, but opportunities in the solution areas remained high.

3.2.2.2 SWOT Analysis

The methodology of SWOT analysis is applied to reflect each element of S (Strengths), W (Weaknesses), O (Opportunities), and T (Threats) of the Lao IT service industry in the context of AEC. From the industry's viewpoint, the analysis has been outlined as followed.

a) ***SWOT (Packaged Software)***

With SWOT analysis framework in mind, the arrival of FTA would devise the following strengths, weaknesses, opportunities and threats for the Lao IT Industry.

Strengths: ▪ Extensive know-how on local market and requirements; ▪ Regulatory support for areas such as accounting.	**Weaknesses**: ▪ Lack of qualified IT professionals such as system analysts and programmers; ▪ Most of local software vendors are considered to be small and work independently with minimum collaboration.
Opportunities: ▪ With the AEC, local software producers will have access to a bigger market; ▪ More collaborations with foreign partners will help broaden product development knowledge;	**Threats**: ▪ Lao software market can be intervened by other ASEAN software producers;

b) SWOT (Tailor-Made Software)

Considering the tailor-made software with SWOT, following challenges and opportunities are presented to Lao IT industry.

Strengths:	Weaknesses:
▪ Extensive know-how on local market and requirements;	▪ Serve only local needs; ▪ Local software engineers have outdated skills that make it difficult to compete at regional scale.
Opportunities:	**Threats**:
• The modernization process of the public and private organizations will continue, thus create strong demand for IT hardware; ▪ With the AEC, local software producers will have access to a bigger market; ▪ More collaborations with foreign partners will help broaden product development knowledge;	▪ Intervened by more choices from regional players. Thus, customers will take more time to compare and finalize their decisions;

c) ***SWOT (Hardware)***

From the products (hardware) point of view, the followings are the Lao IT Industry's strengths and weakness and possible opportunities and threats.

Strengths:	Weaknesses:
▪ The local IT suppliers know the local market well.	▪ Most local small vendors are fighting too much on the price war.
Opportunities:	**Threats**:
▪ The modernization process of the public and private organizations will continue, thus create strong demand for IT hardware; ▪ With the AEC, competitions in non-IT sectors will force the businesses to improve productivity and efficiency by employing more IT products and services.	▪ With AEC, the bigger retails chain in the region could easily set up their presence to develop the local market.

d) ***SWOT (Investment)***

What and how will the freer flow of investment under the FTA will benefit and threaten the Lao IT industry? With that question in mind the following SWOT goes.

Strengths:	Weaknesses:
▪ Deep knowledge of local products, markets and business environment that might attract investment partners from ASEAN countries.	▪ Local investors have limited access to funds; ▪ Lack of exposure to international business practices.
Opportunities:	**Threats**:
▪ More accessible to investment fund and merger and acquisition;	▪ There are risks to local investors if investing in other regional countries

▪ Opportunities to invest or sell local IT services (eg. IT Outsourcing or Business Process Outsourcing) to other ASEAN member countries.	without proper investment knowledge.

e) SWOT (Human Resources)

In terms of IT human resources, what are the Lao IT Industry's strengths and weaknesses? What opportunities and threats will the FTA bring to the Lao IT Industry?

Strengths: ▪ Laos has young labor workforce who are keen to learn new technology; ▪ In general, Lao people are able to adapt themselves easily in a new working environment.	**Weaknesses**: ▪ Lack of innovation and creativity, 'do-as-told' style; ▪ Relatively lack of analytical skills; ▪ Relatively low level of English knowledge.
Opportunities: ▪ With the AEC, local IT businesses will have a better access to bigger pool of talents; ▪ Increased competitions might help to stimulate the local IT talents toward their real potential, which is good for the industry.	**Threats**: ▪ With freer flow of skill labor, if the local IT firms cannot come up with attractive employment opportunities the industry is at risk of losing high skills local talents;

Chapter 4 Measures Coping with Impacts of ASEAN FTA on Lao IT Industry

4.1 Impacts

With a series of key informant interviews and two in depth working group meetings where representatives from policy-making agencies, private IT service providers, and academia were presented. Some positive and negative impacts are well acknowledged and classified as follows:

a) Anticipated positive impacts from ASEAN FTA are:
- local software producers will have access to a bigger market;
- access to a bigger pool of talents;
- increased business interaction with foreign partners will help broaden product development knowledge to the local IT firms;
- more opportunities to invest in other ASEAN member countries;
- more opportunities to access to investment fund and merger and acquisition opportunities.

b) Anticipated negative impacts from ASEAN FTA are:
- increased competition could hit the unprepared local IT firms by the foreign firms;
- Lao IT professionals risk losing employment opportunities to foreign talents in the short and immediate term;
- If there is no proper program to help the local start up, with AEC there might be almost no chance for the new local start up to participate in the market, as the barrier to entry become higher indirectly.

4.2 Measures

Overall, many IT service providers are not overly concerned, as the Lao market has long been effectively relatively opened even without the FTA. However, with this study's detailed investigation through the following channels, there are a number of measures could be taken to optimize the challenges and opportunities brought about by the ASEAN FTA.

a) Measure to maximize the positive impacts:
- Embrace and welcome foreign talent to develop the better product for the local and regional markets;
- Develop product with regional market in mind;
- Adopt latest technology quick;
- With no tariff, IT consumer devices should be more widely adopted and therefore open opportunities to grow web-based (eg. contents) businesses;
- Be open and utilize the local knowledge to the fullest extent to work and exchange experiences with regional or firms from other countries to learn and improve the level of technical knowledge of the local firms.

b) Measures to minimize the negative impacts:
- Get ready to compete. Work more closely among the local IT service providers in order to attain the reasonable level of economy of scale;

- Create new businesses that response to the local needs with new ideas but it doesn't matter if the deployed technology is new or old one.
- Where possible, improve the knowledge of the local staffs. Having regular discussion and exchanging information with local training and educational institutes to reflect the required skills and knowledge into the curriculum;
- Communicate more effectively with the policy makers in concerned agencies in order to reflect the concerns of the private sector to the public policy makers.
- Talk to local banks for better access to financial resources in preparing for the increased competition brought about by ASEAN FTA.

Key impacts and measures are classified as a group in the following table.

Impact	**Possible Measure**	**Time Horizon (Who)**
POSITIVE IMPACT: • Local software producers will have access to a bigger market. • Increased business interaction with foreign partners will help broaden product development knowledge to the local IT firms.	- Embrace and welcome foreign talent to develop the better product for the local and regional markets;	Short-term (Companies)
	- Develop product with regional market in mind;	Mid-term (Companies)
	- Adopt latest technology quick;	Short-term (Companies)
NEGATIVE IMPACT: ▪ Increased competition could hit the unprepared local IT firms by the foreign firms;	- Get ready to compete. Work more closely among the local IT service providers in order to attain the reasonable level of economy of scale; - Create new businesses that response to the local needs with new ideas;	Short-term (Companies) Mid-term (Companies and entrepreneurs)
NEGATIVE IMPACT: ▪ Lao IT professionals risk losing employment opportunities to foreign talents in the short and immediate term;	- Improve knowledge of the local staffs. Having regular discussion and exchanging information with local training and educational institutes to reflect the required skills and knowledge into the curriculum; - Set up IT skills standard	Long-term (Companies) (Academia) (Policy Maker)

In fact, some impacts need to be considered dynamically. For instance, the issue of lacking IT human resource in the short term would be benefit to the industry if foreign IT workers come and work to fill the gap. However, in the long run, if proper skill upgrading program is not introduced human resource won't be properly develop for the long term need of the IT industry.

4.3 Other Recommendations

In achieving measures minimizing negative impacts and those maximizing positive impacts, additional recommendations to the following stakeholders were discussed as well.

a) Policy Maker

- Enabling environment to facilitate and raise IT private sector's competitiveness;
- Raising awareness about the ASEAN FTA among the locals;
- Where possible, give priority to local IT service providers;
- Reinforce standard of competence in IT industry through proper certification programs to ensure the IT skills standard;
- Offer tax incentive to local IT software development;
- Promote entrepreneurship and start up mind set among the local youth.
- Enforce the responsible agencies to promote the MRA for each particular profession, and encourage each professional group to brainstorm and outline responsive measures to minimize negative impacts and maximize the positive impacts.

b) Education and Training Institution

- Develop and update curriculum constantly;
- Work closely with industry to understand market needs (in term of qualifications);
- Promote inter-institution exchange (eg. IT student exchange, internships and training of trainer at the regional level)

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Appendix

Meeting of Working Group Meeting1 on August 20, 3013

Venue: Settha Palace Hotel
Date: August 20, 2013
Time: 8:30 – 12:00

Details:

1. **Presentations by study team members**
   1.1 Dr. Sathabandith introduced about AEC, Lao commitments toward the FTA in general.
   1.2 Mr. Anousa presented current situation of software business in Laos.
   1.3 Mr. Anousa presented SWOT analysis of the business and FTA's implications on positive and negative impacts to the IT industry (software) in Laos.

2. **Discussion, comments and suggestions**
   2.1 Mr. Nongchit, Department of Foreign Trade Policy, Ministry of Industry and Commerce
   - Software will be much related to ASEAN Framework Agreement on Services (AFAS), the businesses should study more. Our department has particular section to deal with trade in services. Everyone is welcome to visit and consult if any questions.
   - In case of packaged software. It is important to distinguish between the modes of delivery (download or sent via CD). At the moment, in practice when the software is downloaded there is no tax collected. But that won't make different if the tariff for all IT products (hard ware and software) reduced to zero in the future.
   - It will be the Tax Department to consider how to tax the consumer for IT products.

   2.2 Mr. Virasack, Lao IT Development Co., Ltd.
   - Qualified IT human resource is seriously lack in the software development.
   - At the same the labor cost is increasing very rapidly.
   - Meanwhile, most clients lack knowledge and understanding of the IT development.
   - After all, with AEC, we are aware that human resource issue must be systematically improved. And the hiring cost should reflect the real capability in order for the business to stay competitive.

   2.3 Mr. Thanousone, LICA
   - In this context, freer flow of human resource might be producing positive effects.
   - We hope to discuss more on this topic when the representative from Ministry of Labor and Social Welfare join us next session.

   2.4 Mr. Nongchit, Department of Foreign Trade Policy, Ministry of Industry and Commerce
   - That's right. We should hear from
   - More and effective communication between concerned policy making agencies and private is required. This will help both the public and private sectors prepare better at the negotiation table and

2.5 Mr. Khamla, APIS

- At APIS we are trying to develop the niched market where local knowledge play a significant role in developing such product or project.
- Meanwhile we are working on a logistic application that can be applied and used in other countries as well. We don't want to focus in the Lao-only products.
- However, sometimes we still face the situation where foreign firms are given more confidence and chances. We urge the local clients (especially government project) to provide us with some opportunities.

2.6 Mr. Oulaysone, Tax Department, Ministry of Finance

- In case of foreign workers who come to work in Laos legally, we work with Ministry of Labor and Social Welfare and Ministry of Foreign Affairs to make sure that the employers declare the personal income tax properly.
- As for the double taxation agreements, now Laos already have such agreements with almost all nations in ASEAN. The only one exception is the Philippines.

2.7 Mr. Souliya, Department of IT, Ministry of Science and Technology

- As for our part, the ministry is working on the ICT master plan, with assistance from Vietnam.
- We are also considering drafting an ICT Law.
- I think the government agencies and the private sectors (IT businesses in this case) should have more dialogues in order to share information and exchange opinions.

2.8 Mr. Virasack, Lao IT Development Co., Ltd.

- In order to prepare for the growing competition, we are aiming at developing creative business ideas with cutting edge areas like mobile applications, HTML5.
- For the lacking of human resource, we would like to suggest organization of software contest.

2.9 Mr. Somphone, Faculty of Engineering, National University of Laos

- We are ready to listen to the market needs in terms of skills and technologies taught at our institute.
- We are organizing IT Festa (an IT showcase event) soon to invite both the young people and would also like to have some businesspersons attending us.

2.10 Mr. Michael, Mekong Software Solutions

- We are a new comer for IT business in Laos, but very positive that we can grow.
- We are a Lao company with management team mixed of local and foreign expats. We are fully aware of AEC therefore we are preparing ourselves for ASEAN market, not only the local.
- We are planning to serve overseas clients (could be an outsourcing service if we can manage to retain good talents).
- We will also start an internship program as a way to ease the issue of human resource lacking in the industry.

2.11 Mr. Somsak, Datacom

- Our enterprise business with strong local support team should help us to hold a good position and trust from clients.
- It will not be easy for a Lao IT company to go ASEAN within a short period of time.

2.12 Mr. Soukdamlong, Soutsaka College

- Want the business open more chance for student's internship program.
- SWOT Analysis is good to some extend. If possible we should study the possible IT players in other ASEAN countries in what are preparing for the AEC as well.

2.13 Mr. Nongchit, Department of Foreign Trade Policy, Ministry of Industry and Commerce

- Actually even with FTA, it doesn't mean that foreigner can just come and work. The allowed professions are mentioned in the Mutual Recognition Agreement (MRA).
- Under MRA, each nation member would have its own requirements. This can be a loose barrier to entry.

Meeting of Working Group Meeting 2 on August 26, 2013

Venue: Settha Palace Hotel
Date: August 26, 2013
Time: 8:30 – 12:00

Details:

3. **Presentations by study team members**
   3.1 Dr. Sathabandith introduced about AEC, Lao commitments toward the FTA in general.
   3.2 Mr. Thanongsinh presented current situation of hardware business in Laos.
   3.3 Mr. Thanongsinh presented SWOT analysis of the business and FTA's implications on positive and negative impacts to the IT industry (hardware) in Laos.

4. **Discussion, comments and suggestions**
   4.1 Ms. Thanomsith, Department of Customs, Ministry of Finance
   - This kind of study is very useful and informative for policy-making agencies as well. I hope to hear more similar studies from other business associations too.
   - As for the custom is concerned, we have recently upgraded the detailed tariff rate version 2012 which covered more than 9,000 items. For all list you may visit the website www.laotradeportal.gov.la
   - As far as IT products (hardware and software) is concerned I believe they are under ATIGA Section 84 and are all subjected to zero rate already. So, it is almost sure that the tariff has already been removed.
   - When it comes to FTA implementation we, Custom Department, work closely with the Department of Foreign Trade Policy, Ministry of Industry and Commerce who actually perform as the negotiator on behalf of Laos with other ASEAN member countries.

   4.2 Mr. Khornsy, Department of Skill Development and Employment, Ministry of Labor and Social Welfare
   - We welcome this kind of study. It is important for us to hear an in depth discussion from the business in order to get the first hand information. This is certainly helpful for labor skills planning and development in the future.
   - I would like to share that we are currently working to apply the ASEAN skills standard. Of course, it is an ongoing process it could take some times to implement fully.
   - Now, the 7 professions under the MRA is still not yet clear who is going to regulate which profession and the detailed coverage of each profession is also remained unclear.

   4.3 Mr. Thanongsinh, LICA
   - As mentioned in the study, the enterprise segment is still a high margin business. However it required high skilled employees and local knowledge, therefore the local businesses who moved quick to retain the high quality skilled labor should be able compete with overseas players even after the FTA comes into effect.
   - In the consumer segment, nowadays IT equipment and gadget are into everybody's daily life. With the younger generation adopting technology trends, it creates new opportunities for the business to serve the changing consuming behaviors.
   - Therefore, personally I think the FTA is pretty exciting and is presenting to us a lot of new opportunities. Of course they come together with some challenges.

4.4 Mr. Anousone, ACE Equipment

- Even now, we face lots of difficulty in recruiting and retaining IT or technical staffs.
- With the arrival of FTA and anticipated more competitors we will certainly have to be prepared even more.

4.5 Mr. Padapxay, ETL

- Can we expect any government help in terms of protection for certain business areas?

4.6 Mr. Sengkeo, SOA

- We are already facing the human resource problems. Therefore, what we are doing now is to invite foreign skilled labor to train up our local staffs.
- However, with very limited basic knowledge of the local staffs it is very challenging to prepare for sufficient technical persons to meet the demand from the market.

4.7 Mr. Khornsy, Ministry of Labor and Social Welfare

- At the ministry level, we do want to hear the exact issues that private sectors are facing. For example it will be very helpful if the business associations can identify the type of exact skills that are lacking in the market and quantify the estimated number of required labor workforce in those particular skill areas.

4.8 Mr. Alounsinh, LT Computer

- As a company that deals mainly with hardware trade I don't see much of negative impacts from the FTA, as it is quite free even now.
- I think what we will see is the benefit to the end users who will enjoy even cheaper products and better services, as result of more competition.

4.9 Mr. Ngakham, ICT Solutions

- At the very core, I think the most important thing is to prepare the quality staffs with high standard technical skills and sales and operational staffs with good service-mind.
- As for this type of study, I wish we could gather more views from the provinces too. That's to reflect how the whole nation is actually feeling and preparing for the upcoming impacts (both positive and negative) from the FTA.

4.10 Mr. Somsack, Faculty of Science, National University of Laos

- I think the anticipated cheaper IT products should benefit the education sector. The students as end users could get more for the same amount of money. It will allow more students access to more technologies.
- As for the concern of skill gaps for example curriculum that might not reflect well the needs of the market, the educational institutes and the business should communicate more.
- Some universities abroad allow university lecturers to do joint research program with private business. I think if we can study more about such type of scheme it might be helpful for all parties.

4.11 Mr. Khornsy, Department of Skill Development and Employment, Ministry of Labor and Social Welfare

- Now, I want to restate about the standardization of the skill labor. Each country in ASEAN has different skills standard for the similar industry worker. Therefore, this is certainly an on going process that our ministry is also involving in. We hope to share and discuss more with you all on the other occasion when there is progress.

- As for the MRA in regard to IT engineer, it is not clear which organization is in charge.