E-BUSINESS: GROWTH AND TRENDS IN THAILAND

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Abstract: *The era of e-business has changed the old economic relationship among producers, traders and consumers and the new economic relationship is called extended or integrated relationship. In this context this article has made an enquiry about the growth of e-business in Thailand. The change in technologies has a great impact on the old business models especially in the areas of strategies and customer engagement of business. The platform for changes in e-business is the internet, social media and mobile technology. Majority of the people in Thailand are found to be accustomed in using mobile technology in recent years. Nevertheless, the growth of e-business in the form of B2B, B2C, and G2B/C transactions are not so admirable in Thailand from the analysis and findings of this study during the period of 2012 to 2016.*

Keywords: *e-Business, NRI, Trend, economy, Thailand*

1. INTRODUCTION

'New growth theories support the view that the key driver for economic growth in global economies is innovation' (Griffith et.al. 2004). It could reduce cost and increase quality. According to Todaro (1997) the three important factors underpinning economic growth are- 1. Capital accumulation, including all new investments in land, physical equipment, and human resources, 2. Growth in population eventually resulted to a growth in labor force, and 3. Technological progress. E-business is the concept of conducting trade and retail business online through the use of secure websites. It constitutes the exchange of products and services between business, groups and individuals. There are many ways in which e-business transactions can be classified. Mainly, they are, Business-to-consumer (B2C), Consumer-to-consumer (C2C), Business-to-business (B2B), and Government-to-business/consumer (G2B/C). The growth of e-business leads to raise in the investment of Information Communication Technology (ICT) which in turn leads to raise the productivity and economic growth.

Building a business into a successful e-business has become an important objective for today's enterprises. It requires such business capabilities as global networking, process integration, information sharing, supply-chain agility, and intelligent decision making. The integration of traditional as well as web-oriented functions is the cornerstone of successful e-business. What makes information systems the backbone of business operations is the emerging global information infrastructure. Enterprises can achieve business integration and coordination through this infrastructure. This is the foundation of any e-business.

2. LITERATURE REVIEW

The global economy has undergone a paradigm shift because of the convergence of digital technology, intellectual property and customer supremacy (Chang, T.S., and Li, P.P.2003). Many factors, in today's competitive and global business environment, contribute to an organization's financial success. A business enterprise's management must adopt a strategy that fully exploits information technology's power as a key element to optimize the organization's competitiveness (Asfaw, et.al, 2001).

In a UK study it was proved that e-Business channels could play a major role in building effective customer relationship and sales so as to have a wider market for the farm produce of small vineyard growers (Louvieris, P., Westering, J.V., and Driver J. 2003). From the research of Paul Beynon-Davies (2010) there is clear evidence of the role of e-Business adoption as a driver of regional development and particularly for the SME e-business to address their issue of competitiveness. Some key issues identified by Smart (2008) in e-business are the sellers strategy for the penetration of e-market, supply-chain management through e-procurement, providing value to buyers, and the promotion of private exchanges for e-business mechanism. There must be a variety of management actions and a coherent B2C trust strategy to explore the benefits of e-business (Winch, G., and Joyce, P. 2006). Market place operators must address how they can best meet the needs of their target customers (Smart, A. 2005).

It was observed in a European project in the European region (in member states of the European Union) that there is a need for a shift of focus from general awareness to the more advanced activities of e-commerce. This is not the case for countries where e-commerce is still in its infancy where the focus should be on general awareness creation. (Papazafeiropoulou, A., Pouloudi, A., and Doukidis, G. 2002). It can be seen that although IT is being used to drive significant and rapid organizational change, the main components for ensuring success are based around the stakeholder's capabilities, the fit between technology solutions and strategy, and cultural fit. Within each of these components there will be resistors. Therefore, the effective and timely management of the resistors to change is vitally important (McLaughlin, S. 2009). There are a considerable number of companies that are dissatisfied with their e-business applications. Dissatisfaction with e-business could be in one or more of the following areas, namely, 'Planning and design of e-business model', 'Hardware and software security', 'Integration of e-business applications with internal information systems and business partners', 'Telecommunications network and protocols', and 'Web page design and navigation' (Beheshti, H.M, Salehi-Sangari, E., and Engstrom, A.2006).

3. METHODOLOGY

Secondary data were collected for the study provided by the World Economic Forum which is made available in their website through their annual report entitled 'Global Information Technology Report' published from 2001 onwards. It is a widely accepted record for the decision makers of world economies and they measure the drivers of ICT revolution globally, computing the Networked Readiness Index (NRI). The Index has evolved over time and currently using 53 indicators (variables) to assess the networked readiness of the participating countries. The NRI is constructed by 10 pillars which are again clubbed into 4 sub-indexes- A. Environment sub-index, B. Readiness sub-index, C. Usage sub-index, and D. Impact sub-index. Thus NRI is a composite index composed of 4 main categories of indexes, and 10 sub-categories of indicators which are measured by 53 independent variables (Refer Appendix). This pattern has been consistently followed for computation since 2012 by the World Economic Forum and hence a 5 year period from 2012 to 2016 has been selected for the study. The NRI score as well as the scores of sub-indexes and the 10 pillars are always

aggregated into a 1-to-7 scale where 7 is the best. There is equal weightage for all the sub-indexes in the computation of NRI score and also the pillars are given the same weightage for the computation of the respective sub-index. The number of countries included in computation varied based on the availability of data and it was 142, 144, 148, 143, and 139 for 2012, 2013, 2014, 2015, and 2016 respectively. Diagrams and graphs, and percent are the tools used for analysis in the study.

4. DATA ANALYSIS

The NRI score and Rank of Thailand are plotted in Fig.1 shows that the country is improving year by year since 2012. It had a score of 3.784 in 2012 and placed at 77th position among world economies which gradually increased to 4.201 with a rank of 62nd position in 2016.

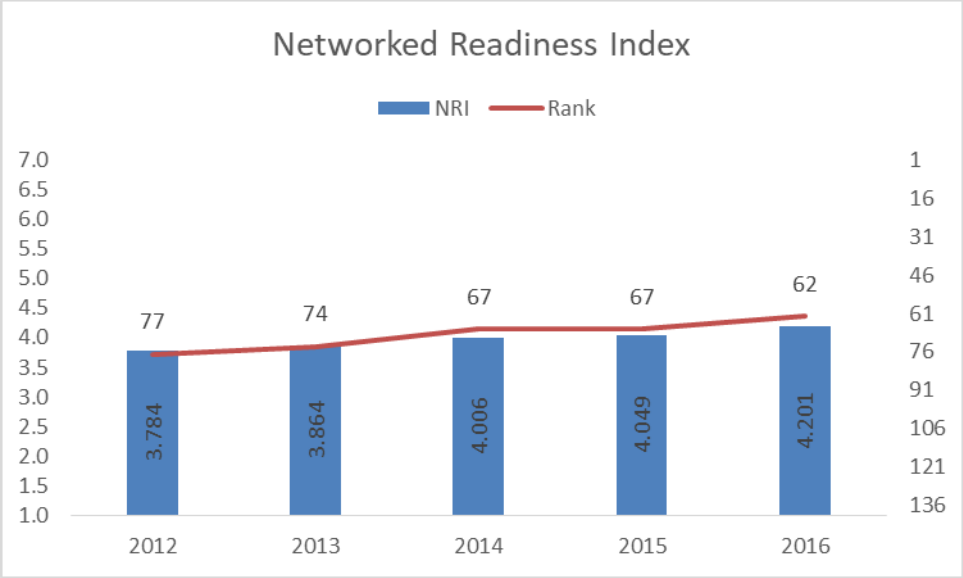

Fig. 1- NRI and Rank of Thailand – 2012 to 2016

The NRI score shows a cumulative increase of 11.02 percent over the period of 5 years with a year-on-year percent increase of 2.1, 3.69, 1.07, and 3.75 respectively in 2013, 2014, 2015 and 2016. The trend shows that there is a swing of up and down in consecutive years, and it could be due to the improved policy measures taken every year and its impact is derived in the consecutive year. The NRI score rank of Thailand is 77 in 2012, improved to 74 in 2013, and further to 67 in 2014 and 2015, and to a higher position of 62 in 2016. So it is a significant improvement in overall analysis of Thailand that in 5 years the country has elevated by 15 places with an improvement of 0.42 points during the period.

The Environment sub-index (Fig.2) is a composite index of the first two pillars of NRI, namely, Political and Regulatory Environment (1st pillar), and Business and Innovation Environment (2nd pillar). The first pillar comprises of 9 variables (Refer Appendix), mainly related to effectiveness and efficiency of the legal system, consumer protection, and Intellectual property protection. The overall index of the 1st pillar was decreased from 3.669 (rank 69) in 2012 to 3.395 (rank 93) in 2016 and the most alarming indicator is the Intellectual property protection which was 3.088 (rank 92) in 2012 and 3.197 (rank 113) in 2016.

The second pillar comprises of 9 variables (Refer Appendix), mainly related to procurement of technology, facilitating environment to start business, higher education and its quality. The overall index of the 2st pillar has slightly increased from 4.242 (rank 54) in

2012 to 4.639 (rank 48) in 2016 and the most alarming indicator is the Gov't Procurement of advance tech which was 3.568 (rank 72) in 2012 declined to 3.088 (rank 90) in 2016.

However, the Environment sub-index has slightly improved over the 5 years with a cumulative increase of 5.05 percent with year-on-year percent change of 1.19, 3.04, (1.03), and 1.79 in 2013, 2014, 2015, and 2016 respectively.

The Readiness sub-index (Fig.3) is a composite index of the three pillars of NRI, namely, Infrastructure (3rd pillar), Affordability (4th pillar), and Skills (5th pillar). The third pillar comprises of 4 variables (Refer Appendix), mainly related to power generation, mobile network, and internet. The overall index of the 3rd pillar was highly improved from 3.059 (rank 107) in 2012 to 4.29 (rank 67) in 2016 and the highest increase was for Secure Internet servers availability which was 13.194 (rank 84) in 2012 and went up-to 23.344 (rank 81) in 2016.

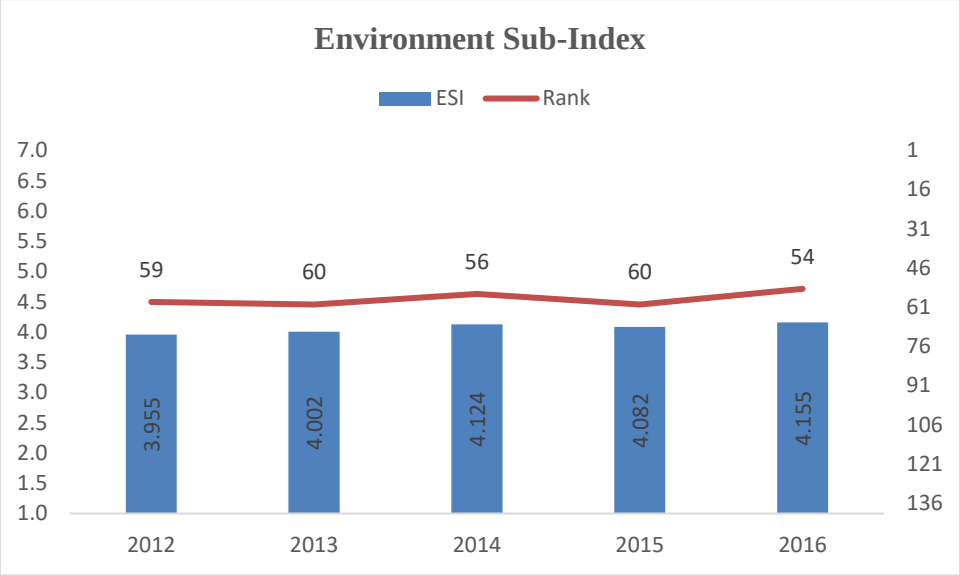

Fig. 2- Environment sub-index and Rank of Thailand – 2012 to 2016

The fourth pillar comprises of 3 variables (Refer Appendix), mainly related to mobile and internet tariff and its competition in the country. The overall index of the 4th pillar was decreased from 5.803 (rank 33) in 2012 to 5.514 (rank 64) in 2016 and the highest decrease was for Internet & telephony competition which was 1.75 (rank 80) in 2012 and went down-to 1.625 (rank 97) in 2016 which shows that the cost has been increased over the period.

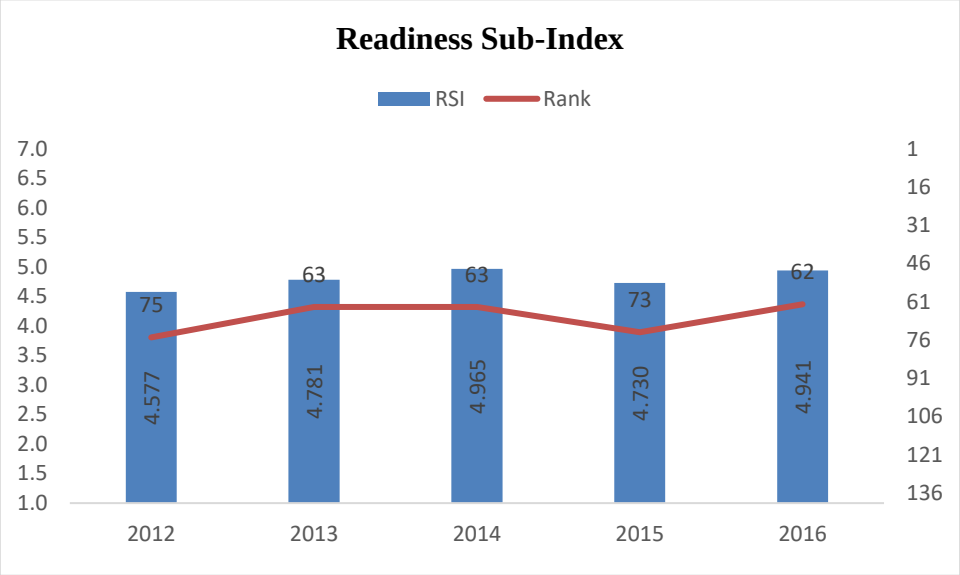

Fig. 3- Readiness sub-index and Rank of Thailand – 2012 to 2016

The fifth pillar comprises of 4 variables (Refer Appendix), mainly related to quality of education system and adult literacy. The overall index of the 5th pillar was increased from 4.87 (rank 74) in 2012 to 5.02 (rank 73) in 2016 and the most alarming indicator was Quality of educational system which was 3.57 (rank 77) in 2012 and remain almost same as 3.58 (rank 74) in 2016 which indicates that there was no much improvement for the educational system of the country.

However, the Readiness sub-index has slightly improved over the 5 years with a cumulative increase of 7.94 percent with year-on-year percent change of 4.44, 3.87, (4.74), and 4.45 in 2013, 2014, 2015, and 2016 respectively.

The Usage sub-index (Fig. 4) is a composite index of the three pillars of NRI, namely, Individual usage (6th pillar), Business usage (7th pillar), and Government usage (8th pillar). The sixth pillar comprises of 7 variables (Refer Appendix), mainly related to mobile and internet subscriptions, and use of virtual social networks. The overall index of the 6th pillar was highly improved from 2.731 (rank 90) in 2012 to 4.281 (rank 64) in 2016 and the highest increase was for Use of virtual social networks which was 5.003 (rank 88) in 2012 and went up-to 6.3 (rank 13) in 2016.

The seventh pillar comprises of 6 variables (Refer Appendix), mainly related to innovation, e-business, and staff training. The overall index of the 7th pillar has slightly increased from 3.627 (rank 60) in 2012 to 3.863 (rank 51) in 2016 and the more concern was the variable patents' application which was 0.627 (rank 72) in 2012 and slightly improved to 1.339 (rank 69) in 2016.

The eighth pillar comprises of 3 variables (Refer Appendix), mainly related to Gov't support for ICT promotion. The overall index of the 8th pillar has slightly increased from 3.606 (rank 86) in 2012 to 3.781 (rank 69) in 2016 and the most alarming variable was Gov't success in ICT promotion which was 3.982 (rank 95) in 2013 which declined to 3.813 (rank 85) in 2016.

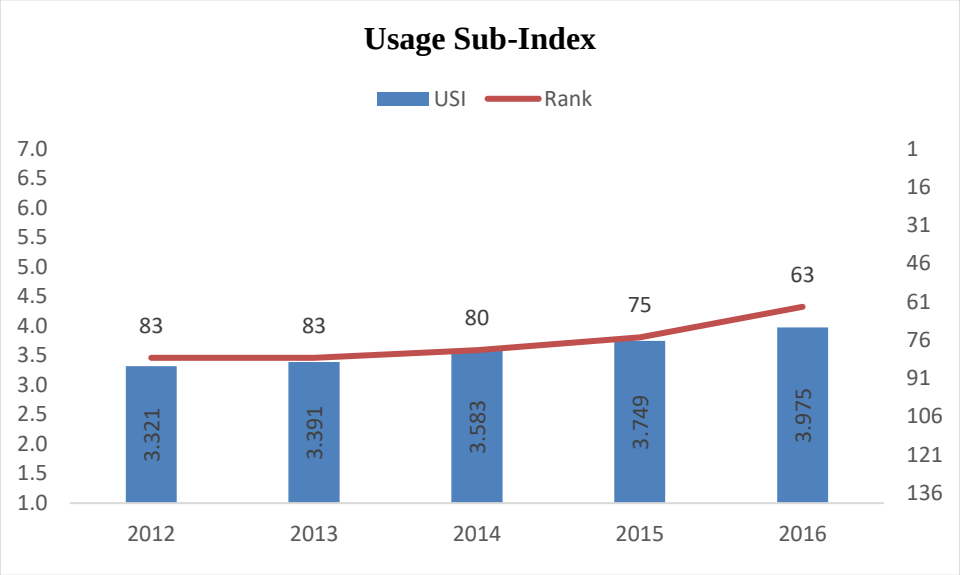

Fig. 4- Usage sub-index and Rank of Thailand – 2012 to 2016

However, the Usage sub-index has improved over the 5 years with a cumulative increase of 19.69 percent with year-on-year percent change of 2.11, 5.65, 4.65, and 6.02 in 2013, 2014, 2015, and 2016 respectively.

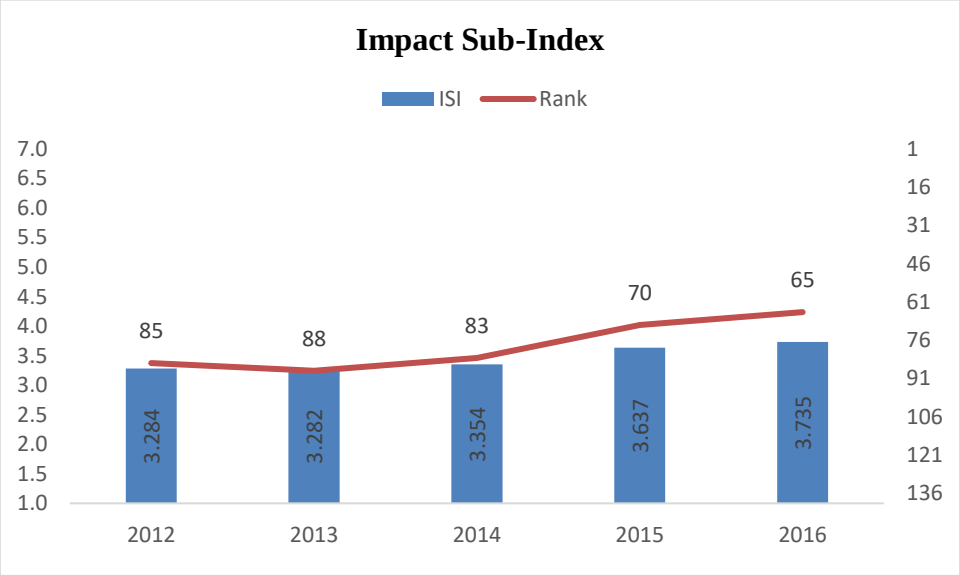

Fig. 5- Impact sub-index and Rank of Thailand – 2012 to 2016

The Impact sub-index (Fig. 5) is a composite index of the two pillars of NRI, namely, Economic Impacts (9th pillar), and Social Impacts (10th pillar). The ninth pillar comprises of 4 variables (Refer Appendix), mainly related to the impact of ICT on business and knowledge-intensive jobs. The overall index of the 9th pillar was increased from 2.929 (rank 96) in 2012 to 3.152 (rank 74) in 2016 and the least improving variable was Knowledge-intensive jobs, % workforce which was 10.765 (rank 99) in 2012 and slightly improved to 13.798 (rank 90) in 2016.

The tenth pillar comprises of 4 variables (Refer Appendix), mainly related to impact of ICT in gov't transactions and how best it has been used by the society. The overall index of the 10th pillar was increased from 3.638 (rank 71) in 2012 to 4.317 (rank 57) in 2016 and the least improving variable was ICT use & gov't efficiency which was 4.161 (rank 71) in 2012 and decreased to 3.968 (rank 70) in 2016.

However, the Impact sub-index has improved over the 5 years with a cumulative increase of 13.73 percent with year-on-year percent change of (0.06), 2.19, 8.45, and 2.68 in 2013, 2014, 2015, and 2016 respectively.

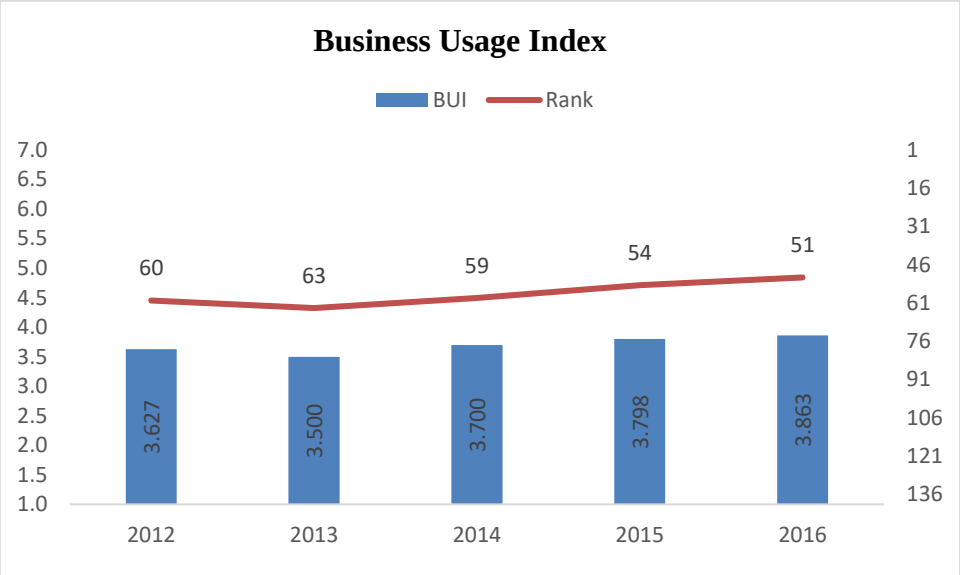

Fig. 6- Business Usage Index and Rank of Thailand – 2012 to 2016

In Business Usage Index (Fig. 6) indicates the use of ICT for business especially in the mode business-to-business transactions and business-to-consumer transaction. The increase of the index for Thailand is not impressive as the increase over 5 years from 2012 to 2016 is 6.51 percent and the year-on-year change was (3.5), 5.72, 2.67, and 1.69 in 2013, 2014, 2015, and 2016 respectively. The position of Thailand has increased from 60 in 2012 to 51 in 2016.

The individual usage of internet (Fig. 7) by the people in Thailand is quite impressive as the increase in 5 years is 56.78 percent in 2016 based on 2012, and the year on year growth was 3.94, 11.76, 19.39, and 13.04 in 2013, 2014, 2015, and 2016 respectively. The position of Thailand has increased from 90 in 2012 to 64 in 2016.

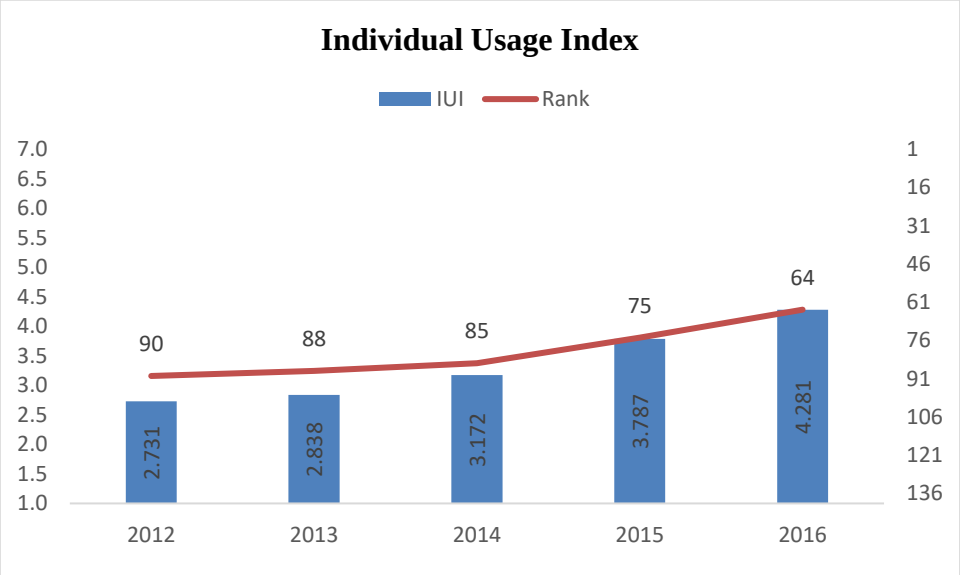

Fig. 7- Individual Usage Index and Rank of Thailand – 2012 to 2016

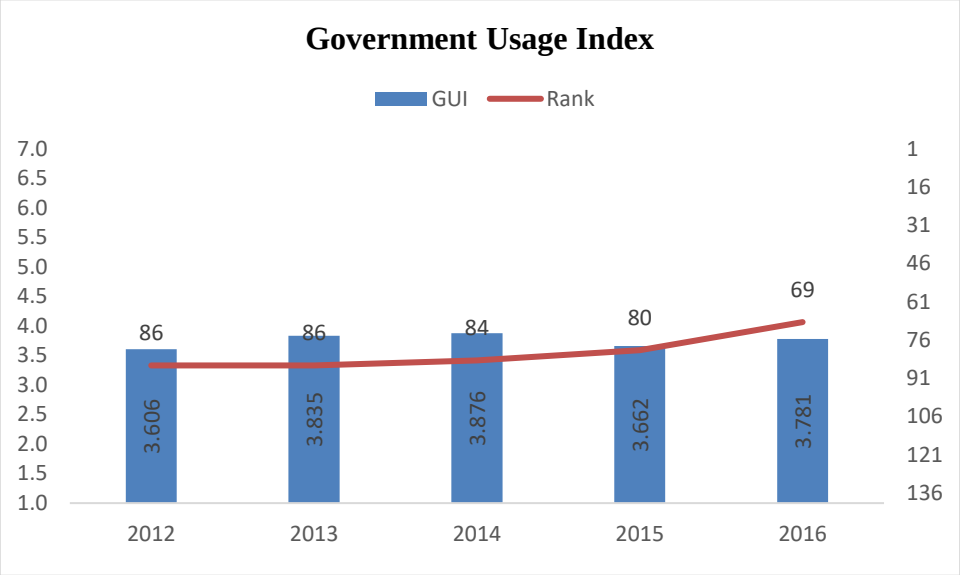

Fig. 8- Government Usage Index and Rank of Thailand – 2012 to 2016

The Government Usage Index (Fig. 8) indicates the use of ICT in Government to citizen transaction especially in the mode government's ICT promotion policies and its success. The increase of the index for Thailand is not impressive as the increase over 5 years from 2012 to 2016 is 4.86 percent and the year-on-year change was 6.36, 1.07, (5.53), and 3.24 in 2013, 2014, 2015, and 2016 respectively. The position of Thailand has improved from 86 in 2012 to 69 in 2016.

5. CONCLUSION

The individual usage of mobile phone, internet usage, bandwidth subscription, household usage of personal computers and internet subscription, and use of virtual social networks in Thailand have been tremendously increased during the period under study. But the sad part is that the business usage of B2B transactions and B2C transactions and G2C/B transactions have not been improved in this period. The applications for patents from the international Patent Corporation Treaty (PCT) of Thailand is very poor. The reason may the poor innovative skill of the population and the poor quality of education especially in science and math. Similarly the firm level technology absorption to adopt new technology by the business seems to be not improving fast. And most important factor for sluggish growth of e-business in the country is the Government's ICT promotion policies which are not found to be so successful and effective in the country. All these elements have contributed for the poor growth of e-business in Thailand.

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Appendix- Networked Readiness Index - Sub Indexes, Pillars, and Indicators

A. Environment sub index

1st pillar: Political and regulatory environment

1.01 Effectiveness of law-making bodies, 1-7 (best)

1.02 Laws relating to ICTs, 1-7 (best)

1.03 Judicial independence, 1-7 (best)

1.04 Efficiency of legal system in settling disputes, 1-7 (best)

1.05 Efficiency of legal system in challenging regs, 1-7 (best)

1.06 Intellectual property protection, 1-7 (best)

1.07 Software piracy rate, % software installed

1.08 No. procedures to enforce a contract

1.09 No. days to enforce a contract

2nd pillar: Business and innovation environment

2.01 Availability of latest technologies, 1-7 (best)

2.02 Venture capital availability, 1-7 (best)

2.03 Total tax rate, % profits

2.04 No. days to start a business

2.05 No. procedures to start a business

2.06 Intensity of local competition, 1-7 (best)

2.07 Tertiary education gross enrollment rate, %

2.08 Quality of management schools, 1-7 (best)

2.09 Gov't procurement of advanced tech, 1-7 (best)

B. Readiness sub index

3rd pillar: Infrastructure

3.01 Electricity production, kWh/capita

3.02 Mobile network coverage, % pop.
3.03 Int'l Internet bandwidth, kb/s per user
3.04 Secure Internet servers/million pop.

4th pillar: Affordability

4.01 Prepaid mobile cellular tariffs, PPP $/min.
4.02 Fixed broadband Internet tariffs, PPP $/month
4.03 Internet & telephony competition, 0–2 (best)

5th pillar: Skills

5.01 Quality of educational system, 1-7 (best)
5.02 Quality of math & science education, 1-7 (best)
5.03 Secondary education gross enrollment rate, %
5.04 Adult literacy rate, %

C. Usage sub index

6th pillar: Individual usage

6.01 Mobile phone subscriptions/100 pop.
6.02 Individuals using Internet, %
6.03 Households w/ personal computer, %

6.04 Households w/ Internet access, %
6.05 Fixed broadband Internet subs/100 pop.
6.06 Mobile broadband subs/100 pop.
6.07 Use of virtual social networks, 1-7 (best)

7th pillar: Business usage

7.01 Firm-level technology absorption, 1-7 (best)
7.02 Capacity for innovation, 1-7 (best)
7.03 PCT patents, applications/million pop.
7.04 ICT use for business-to-business transactions, 1-7 (best)
7.05 Business-to-consumer Internet use, 1-7 (best)
7.06 Extent of staff training, 1-7 (best)

8th pillar: Government usage

8.01 Importance of ICTs to gov't vision, 1-7 (best)
8.02 Government Online Service Index, 0–1 (best)
8.03 Gov't success in ICT promotion, 1-7 (best)

D. Impact sub index

9th pillar: Economic impacts

9.01 Impact of ICTs on business models, 1-7 (best)
9.02 ICT PCT patents, applications/million pop.
9.03 Impact of ICTs on new organizational models, 1-7 (best)
9.04 Knowledge-intensive jobs, % workforce

10th pillar: Social impacts

10.01 Impact of ICTs on access to basic services, 1-7 (best)

10.02 Internet access in schools, 1-7 (best)
10.03 ICT use & gov't efficiency, 1-7 (best)

10.04 E-Participation Index, 0–1 (best)