



## PROMOTING EXPORT OF ICT BASED SERVICES THROUGH THE IMPLEMENTATION OF EXPORT POLICY IN BANGLADESH

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### **Abstract:**

ICT has been identified as one of the major sub-sectors in the service sector in Bangladesh. Export policy of Bangladesh, designed for 2015-2018, has included 12 highest priority sectors considering their special export potentials, where software and ICT enabled service is one of them. The policy has some certain goals for promoting export of ICT based services. The broad objective of the study is to analyze export policy of Bangladesh related with ICT based service and the overall situation of policy implementation and under this broad objective specific objectives are (1) to evaluate the role of export policy of Bangladesh in promoting ICT based service export and (2) to find if there is gap between Bangladesh export policy for ICT based service and implementation of the policy. Both qualitative and quantitative methods have been used to conduct this research. The study found that the policy lacks some very important issues needed to be addressed for capitalizing high potentials ICT based service export sector. But there is no policy statement for supporting ICT entrepreneurs to have better access to national and international arena. Among the variables that affect policy implementation, political will and support have been appreciated by the ICT entrepreneurs. The goals which are not being implemented are probably being hampered by lack of required amount of financial allocation, lack of technical skill and knowledge of the implementers, and lack of related policies complementing this policy. Increased participation of entrepreneurs in this sector will be helpful to harvest the benefit from policy implementation.

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**Keywords:** export policy in Bangladesh, ICT based services, promoting, implementation

## 1. Introduction

### 1.1 Background

After getting liberation in 1971, Bangladesh was a highly aid-dependent country but in the last two decades, it has evolved in a vibrant outward-oriented economy. In 2015, the growth rate in gross domestic product (GDP) of Bangladesh was 6.5% which is much higher than world average (3.1%) (Bangladesh Bank, 2016). Considering the importance of trade for ensuring growth, export-oriented development should be a strategic goal for the Bangladesh economy in its quest to achieve middle income status by 2021.

The services sector is playing an increasingly important role in the global economy and in the development of many countries. ICT has been identified as one of the major sub-sectors in the service sector in Bangladesh. ICT subsector has grown from a negligible size industry to one that was worth USD 350 million in annual revenues in 2009, with software exports nearly trebling from a little less than USD 13 million in 2005 to USD 35 million in 2009 and further to USD 47.3 million in 2011 (Raihan, S. and Cheong, D., 2013). ICT-enabled services (ICTeS) constitute the bulk of these exports. According to the World Bank, ICT service export as percentage of total service exports; in Bangladesh was measured at 27.04 in 2014.

A variety of factors has contributed to the rapid growth of ICT industry in Bangladesh. The government of Bangladesh (GoB) has also taken up several policies towards the development of public ICT projects. The government has clearly mentioned its vision of e-governance and promotion of the ICT in the Sixth Five Year Plan. Although the ICT sector of Bangladesh has almost all the necessary ingredients for success, there are some lacks in this industry too. Insufficient skills of the labor force, lack of finance available for entrepreneurs in the ICT business, pulling away professionals into other sectors, physical infrastructures, etc. are some of the major challenges for this sub-sector (Raihan, S. and Cheong, D., 2013). Although the contribution of the services to economy is the largest, export in services still remains very low.

Export policy of Bangladesh helps to keep a trade-friendly environment which allows economic growth to continue through business. Export promotion incentives designed in the export policy continue to play a crucial role, as complementary to the liberalization process. The incentives ensure that exporters are subsidized and investment in export-oriented industries is encouraged. Earlier, the Bangladesh government had a two-year export policy. However, to get a long-term vision, the policy is now being developed for a three-year period.

The latest export policy of Bangladesh has been designed for 2015-2018 period. In this policy, service sector has included the services identified under General Agreement on Trade in Services (GATS) of WTO, such as (1) ICT based activities; (2) Construction

business; (3) Health service activities e.g. hospital, clinic and nursing services; (4) Hotel and tourism based services; (5) Consulting Services; (6) Laboratory testing; (7) Photographic activities; (8) Telecommunications; (9) Transport and communication; (10) Warehouse and container services; (11) Banking activities; (12) Legal and professional services; (13) Education service, etc; (14) Security service; (15) Pre-shipment inspection (PSI); and (16) Outsourcing and Indenting services

The latest export policy of Bangladesh has included 12 highest priority sectors considering their special export potentials. Software and ICTeSis one of the priority sectors. According to the policy paper, best use of ICT will be ensured in the country for the improvement of information communication system, the possibility of setting up marketing centers abroad will be examined, initiatives for establishment of an “IT Village” for export of software will be strengthened, necessary measures will be taken to connect the sub-marine optical fiber cable to the national ICT backbone to facilitate availability of high speed data transmission line, and strengthen the base of the ICT sector regionally, measures will be taken to provide facilities to develop the ICT sector through the ICT Business Promotion Council (IBPC), necessary steps will be taken for country branding through Export Promotion Bureau (EPB) and Bangladesh missions abroad. Effective planning and regulation will help ICT service trade to grow rapidly in Bangladesh. Different types of complementary policies will also help to maximize the benefits of ICT service export. But the result of a good policy is always subjected to successful implementation of it.

## **1.2 Significance of the Study**

Comprising more than two-thirds of the world economy, services are now commonly traded across borders, helped by technological progress and the increased mobility of persons (Cattaneo, O., Engman, M., Saez, S. and Stern, R., 2010). Services can provide an alternative engine of growth, enabling latecomers to development to leapfrog the traditional manufacturing route. Meanwhile, despite strong global growth, services exports continue to make up less than 25% of world exports (International Trade Centre, 2016). The discrepancy between the size of the sector and its importance in exports points to a major untapped potential in services trade. Businesses and governments are often not aware of the opportunities of growing through service trade. For the past several decades, many countries like China and Malaysia have witnessed strong economic growth and have become successful industrialized countries. But for many years they are stuck in a “middle-income trap”. The middle-income trap is generally associated with the notion that countries get stuck in a certain range of income distribution and rarely manage to reach high-income status. To leap from the trap expanding trade in service sector is important for them. Bangladesh is now a lower-middle income country with the Gross National Income (GNI) per capita \$1,314. Bangladesh has the aim to become an upper-middle income country by the year 2021. To achieve this goal, it is required to increase the GNI to \$4,126. This can be possible if

the growth rate can be accelerated, which is currently around 6.5 percent. To maintain this positive trend of growth international trade of Bangladesh must be well managed.

The present sound growth rate of Bangladesh can be seen as the result of government's export-oriented growth strategy. Performance of a country's integration into international value chain is largely depended on export policy it has. But even a good policy has no implication until it is successfully implemented to achieve the goal for which it has been formulated. Analysis in current study will allow knowing whether the existing export policy for promoting export of ICT based service has a gap with the implementation functions.

In Bangladesh, many researches has been done in the field of relationship between trade liberalization and poverty, impact of trade openness on economic growth, impact of trade policy reform on industrial capacity and employment, trade deficit in the foreign trade, etc. But, in spite of significant structural transformation and policy changes, there was no significant attempt in Bangladesh to study implementation of export policy for the development of international trade. Moreover, ICT based service export has got very little research attention in Bangladesh. The ability to use ICTs is important for productivity growth and trade in developing countries. But the sector is still underdeveloped in Bangladesh as in many other developing countries, although improvements are visible. It will be worthy to take the views of entrepreneurs of Bangladesh about the export policy to understand the gaps in the policy. The present study is expected to produce knowledge how Bangladesh can grow faster than now in ICT service export.

### **1.3 Objectives**

The broad objective of the study is to analyze the export policy of Bangladesh related with ICT based service and the overall situation of policy implementation. Under this broad objective, the current study has following specific objectives:

1. To evaluate the role of export policy of Bangladesh in promoting ICT based service export.
2. To find if there is gap between Bangladesh export policy for ICT based service and implementation of the policy.

### **1.4 Research Questions**

In order to fulfill the above objectives, the following research questions have been developed in this study:

1. Is the content of Bangladesh's export policy sufficient to promote export of ICT based services?
2. How effectively the export policy (the part which is relevant to export of ICT based services) is being implemented in Bangladesh?

## 2. Literature Review

In a report of International Labour Organization (ILO), Raihan, S. and D. Cheong D. (2013) explores the impact and potential of the rise of Bangladesh's ICT exports, its linkages with employment and policies, and actions required for realizing that potential. Their study suggests that under different scenarios relating to ICT export growth there will be positive impacts at the macro, sectorial, and household levels. It also argues that a positive export shock in the ICT sector would lead to a rise in employment not only in the ICT sector, but also in all other sectors in the economy and indirect employment generation would be much higher than direct employment generation. KPMG (2012), a joint team of KPMG India and KPMG Bangladesh illustrates that many domestic business leaders recognize that Bangladeshi outsourcing industry could better market its strengths to the international community. Negative perception about Bangladesh needs to be countered. Government needs to take a holistic approach towards promoting the ICT/ICTeS industry -including investment climate, taxation, remittances, legal framework and flexible working hours. Islam M. S., Musa, M. and Das, R. K. (2012) revealed that total trade deficit of service is increasing over the year. They emphasized on the development of Tourism sector, Software, Transportation and Financial service, Education with quality, etc.

Cali, M., Ellis, K. and Te Velde D.W. (2008) found that the contribution of services to development significant contribution to GDP and job creation, and provides crucial inputs for the rest of the economy, thus having a significant effect on the overall investment climate, which is an essential determinant of growth and development. They argued that services constitute an increasing percentage of GDP in nearly all developing countries and services exports can be an important part of a developing country's growth strategy. Bajwa G. S. (2003) tries to bring out the role of Indian state as an actor in responding to the ICT policy where response means 'role' played by the Indian state towards putting policy statements into practice. The underlying meaning is that information would be the prime mover in information or knowledge societies and ICT will propel India into the league of developed nations. Jensen, J. B. (2011) identifies the significant share of services that US multinational firms can trade internationally and analyzes the impact trade in services has on US firms and US workers. He finds that, in spite of US comparative advantage in service activities, service firms' export participation lags manufacturing firms. Rondeau, F. and Roudaut, N. (2014) found that the effect of product diversification is twice as large as the effect of geographic diversification. They argued that to implement economic growth, developing countries should extend exports of new products rather than exports to new partners.

## 3. ICT Service Sector in Bangladesh

Although the economy has become increasingly open in recent years, total merchandise exports have remained limited, averaging 20.2% of GDP since 2013. Exports remain

highly concentrated both in terms of products and destinations, which carries some risk, with readymade-garment (RMG) exports to the EU and the U.S. the current mainstay. However, as a reputable low-cost producer of garments, Bangladesh has gained global market share in recent years. Bangladesh has outlined a vision of becoming a middle-income country by 2021. This would require it to grow by at least 8% per year, compared to the current 6%-7%, driven by accelerated growth in the industrial and services sectors.

Bangladesh's services exports have doubled during 2005 and 2010, from USD 1,249 million in 2005 to around USD 2.4 billion in 2010 (See Table 1). The contribution of traditional services, such as transport and travel, has declined, while that of other services, in particular communication, other business services, and, to some extent, computer and information services, has grown over this period. Government services, however, dominate, constituting almost half of other services exports. Thus the service export data for the past decade suggest that Bangladesh is increasingly moving towards new services and indicates the role of two main factors, policy reforms and liberalization and the country's comparative advantage in labor-based. The growth in other business services and computer and information services reflects Bangladesh's large pool of manpower and the growing opportunities in emerging services to export skill-intensive and professional services. (Raihan, S. and D. Cheong D., 2013)

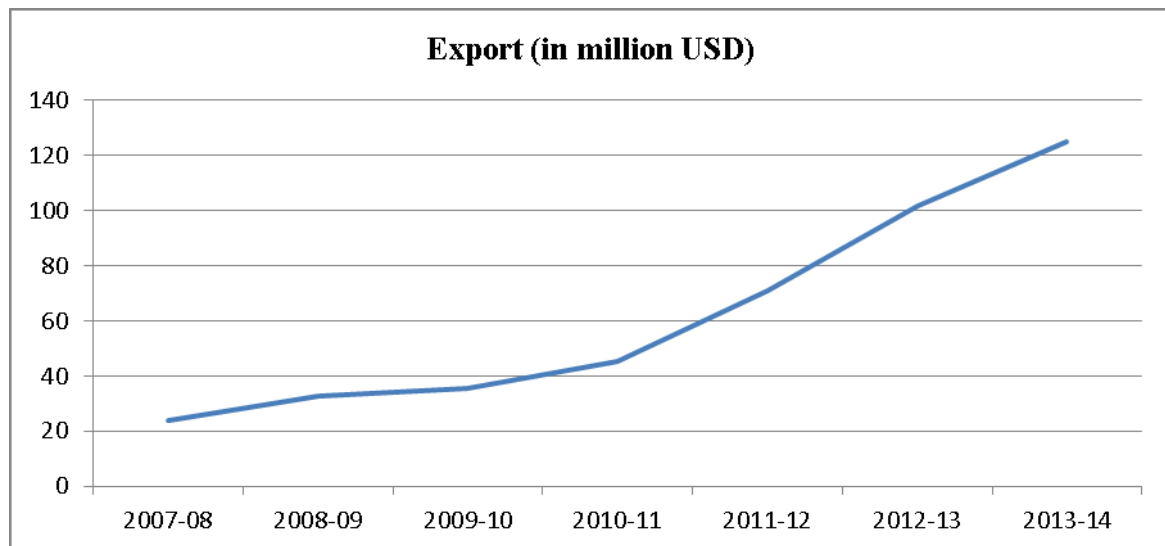
**Table 1:** Value and Share of Exports and Imports for different Service Subsectors

	2005				2010			
	Export		Import		Export		Import	
	Value (USD million)	Share (%)	Value (USD million)	Share (%)	Value (USD million)	Share (%)	Value (USD million)	Share (%)
Total services	1249.00	100.00	2206.66	100.00	2418.17	100.00	4395.55	100.00
Transport	113.01	9.05	1544.73	70.00	173.59	7.18	3440.64	78.28
Travel	70.01	5.61	136.27	6.18	81.22	3.36	260.60	5.93
Other services	1065.98	85.35	525.66	23.82	2163.36	89.46	694.32	15.80
Communications	23.91	1.91	20.62	0.93	277.67	11.48	20.23	0.46
Construction	14.16	1.13	1.07	0.05	6.91	0.29	6.29	0.14
Insurance	5.03	0.40	150.65	6.83	6.84	0.28	26.32	0.60
Financial services	17.97	1.44	13.27	0.60	40.84	1.69	45.35	1.03
<b>Computer and information</b>	<b>18.71</b>	<b>1.50</b>	<b>4.26</b>	<b>0.19</b>	<b>37.76</b>	<b>1.56</b>	<b>5.42</b>	<b>0.12</b>
Royalties and license fees	0.26	0.02	2.75	0.12	0.52	0.02	17.64	0.40
Other business services	210.01	16.81	137.72	6.24	582.15	24.07	305.70	6.95
Personal, cultural and recreational services	1.14	0.09	0.03	0	1.93	0.08	0.13	0
Government services	774.79	62.03	195.30	8.85	1208.76	49.99	267.25	6.08
Memo item: Commercial services	474.21	37.97	2011.36	91.15	1209.41	50.01	4128.30	93.92

Source: UNCTADSTAT

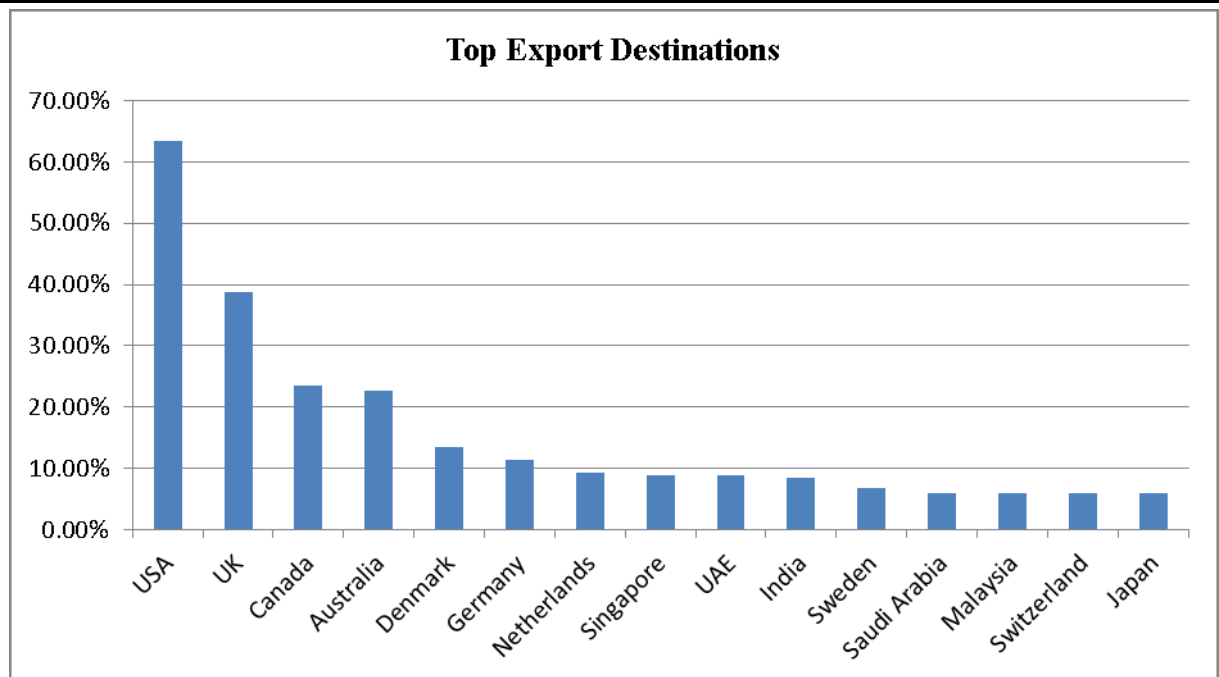
### 3.1 ICT Based Services in Bangladesh

Bangladesh's ICT subsector has grown from a negligible size industry to one that was worth USD 350 million in annual revenues in 2009, with software exports nearly trebling from a little less than USD 13 million in 2005 to USD 35 million in 2009 and further to USD 47.3 million in 2011. ICT service and non-voice ICTeS constitute the bulk of these exports (See Figure 1).



**Figure 1:** Export Trends of ICT Service in Recent Years (Source: BASIS)

According to BASIS, industry statistics, there currently are over 1,500 ICT and ICTeS companies registered in Bangladesh. The total industry turnover is estimated around 600 million USD. In 2004, total export from this industry was 124.72 million USD. At present, Bangladesh is exporting ICT based services to more than 60 countries of the world. The main export markets are North America (accounting for 61 per cent), followed by the EU countries (accounting for 13 per cent), and East Asia, especially Japan (5 per cent). Figure 2 shows percentage of BASIS member companies who export ICT based services to different countries.



**Figure 2:** Destination countries of ICT service export  
 (% of BASIS member companies who export) (Source: BASIS)

### 3.2 Export Policy and Other ICT Related Policy Issues

In June 1997, the GoB recognized ICT as a sector that can make an important development impact. Committee of Export of Software and Data Processing Services was appointed to look into barriers and opportunities to export software from Bangladesh. The committee recommended the government in the short term to support the ICT industry with tax holidays and specific exemptions, to provide the necessary authority to the Bangladesh Computer Council (BCC) to function as the primary facilitator, to review computer science curricula, and to prepare over 1,000 new trainers for national universities. For the medium term, the committee recommended the creation of a 'Market Promotion Fund' to support installation of fiber optic cables and to coordinate setting up a communication hub in Bangladesh. (Ministry of Commerce, GoB, 1997)

In 2009, the National ICT Policy was broadly reformulated across areas including education, science and technology, infrastructural development, employment generation, private sector development, agriculture, health and nutrition. The GoB included an e-governance vision and promotion program for the ICT sector in the sixth Five Year Plan. This vision should support the aim of delivering significant gains in terms of productivity and employment for both domestic as well as foreign investors. The GoB also initiated 'Digital Bangladesh' intending to set up infrastructure for enhanced connectivity. In addition to policy development, the GoB is maintaining close relationships with industry associations such as BASIS, BCS and BCC.

**Export Policy:** The latest export policy of Bangladesh has been designed for 2015-2018 period. The latest export policy of Bangladesh has included 12 highest priority sectors considering their special export potentials. Software and ICTeSis one of the



priority sectors. According to the policy paper, best use of ICT will be ensured in the country for the improvement of information communication system, the possibility of setting up marketing centers abroad will be examined, initiatives for establishment of an “IT Village” for export of software will be strengthened, necessary measures will be taken to connect the sub-marine optical fiber cable to the national ICT backbone to facilitate availability of high speed data transmission line, and strengthen the base of the ICT sector regionally, measures will be taken to provide facilities to develop the ICT sector through the IBPC, necessary steps will be taken for country branding through EPB and Bangladesh missions abroad.

**National ICT Policy:** For the development of ICT sector within the framework of overall national development, the Government has approved the National ICT Policy in October 2002. The vision of this policy is to build an ICT-driven nation comprising of knowledge-based society. In view of this, a country-wide ICT-infrastructure will be developed to ensure access to information by every citizen to facilitate empowerment of people and enhance democratic values and norms for sustainable economic development by using the infrastructure for human resources development, governance, e-commerce, banking, public utility services and all sorts of on-line ICTeS. Some important policy statements of national ICT policy are:

1. Take up programmes to develop quality ICT professionals and skilled personnel to ensure success in the global software and ICTeSmarket.
2. National Information Infrastructure will be developed and it will be directly connected to Global Information Infrastructure to sell software and provide ICTeS to the world-market through involvement of both the public and private sectors.
3. The EPB and Commercial wing of Bangladesh Missions abroad shall take vigorous steps to identify and explore markets for export of software, data entry services and ICTeSfrom Bangladesh, including outsourcing opportunities.
4. An annual target of export of software, data entry and ICTeS shall be revised periodically to match the growth of the market.
5. Software Technology Park with dedicated and advanced data communication facilities shall be established and software development and export companies will be encouraged to set up workspace in those parks at preferential terms.

**Intellectual Property Rights (Copyright) Law:** To help the ICT sector flourish in the country, there is a need for an effective legal framework. Timely and suitable legal reforms can create an ICT-friendly legal environment. Such an environment will help this sector grow by attracting investment. In order to create such a legal environment, the amendment of the Copyright Act 2000 incorporating issues related to ICT is in the process of finalization.

**Law on Information Technology:** To create a smooth environment for e-Commerce and to safeguard the dealings over the net and to check the threat to computer communication, the government has drafted the ICT law and is in the process of enactment by the Parliament. The Information Technology (Electronic Transaction)

Act will provide a legal framework that recognizes digital signatures and other electronic documents and have enough provisions to check cyber-crimes, which are not covered by any existing law of the land. The draft has been made based on the Model Law on E-commerce framed in 1996 by the United Nations Commission on International Trade Law (UNCITRAL).

**ICT Incubation Centre:** In order to encourage startup companies in software/ICTeS development and export, the government has set up an ICT Incubation Centre at a rented space of 68,000 sq. ft. in the heart of Dhaka City. At present, about 48 IT/software related companies have set up operations in this facility. The facility has been provided with 24-hour power supply and internet gateway facility from the Development of Infrastructure for ICT Applications Project of BCC.

#### 4. Research Methodology

In this research, a combination of qualitative and quantitative methods has been used for conducting the study. To understand whether the ICT based service related export policy of Bangladesh is sufficient or not, the researcher has gone for content analysis. It includes export policy of Bangladesh for 2015-18, ICT policy of Bangladesh, official websites of related government organizations, etc. On the other hand, besides conducting a survey among ICT business entrepreneurs, three key informants were interviewed in-depth. Key informants were selected from different sectors and they were government official, entrepreneur pioneering in the ICT business industry, and leader of Bangladesh Association for Software and Information Services (BASIS)<sup>ii</sup>.

To understand the opinion and views of business entrepreneurs regarding the policy and government initiatives, a survey has been conducted with structured questionnaire. There are 1019 companies listed as member of BASIS. Contact email addresses of 200 companies (listed first) were collected from BASIS website. A structured survey questionnaire, transcript into 'Google form', was sent to those addresses. Within the deadline of submission, total 40 responses were received. The researcher has applied quantitative method in order to analyse the data obtained from those 40 responses. Out of 1019 companies in population, 40 responses were taken into account for quantitative analysis.

#### 5. Theoretical Concept: Mazmanian and Sabatier's Model

In the most fully developed top-down model, Mazmanian and Sabatier (1989) present three general sets of factors (tractability of the problem, ability of statute to structure implementation, and non-statutory variables affecting implementation) which they argue determine the probability of successful implementation. These factors then are developed into a set of sixteen independent variables that are hypothesized to influence

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<sup>ii</sup> Bangladesh Association of Software and Information Services (BASIS), established in 1997, is the national trade body for Software & IT Enabled Service industry of Bangladesh.

goal compliance. Seven variables related to "ability of the statute to structure implementation" are (1) clear, consistent objectives; (2) adequate causal theory; (3) financial resources; (4) hierarchical integration within and among implementing institutions; (5) decision rules of implementing agencies; (6) recruitment of implementing officials; (7) formal access by outsiders. Four variables are related to "tractability of the problem"- (1) technical difficulties; (2) diversity of target group behavior; (3) target group as a percent of population; and (4) extent of behavioral change. Finally, five variables are "non-statutory variables affecting implementation", which are (1) socioeconomic conditions and technology; (2) public support; (3) attitudes and resources of constituency groups; (4) support from sovereigns; and (5) commitment and leadership skill of implementing officials.

The 16 variables in the model are then linked to five dependent variables: (1) Outputs of implementing agencies; (2) Compliance of target groups; (3) Actual impacts of policy outputs; (4) Perceived impacts of policy outputs and (5) Major revision in the statute. These variables are then distilled into six conditions of effective implementation:

1. The enabling legislation or other legal directive should have clear and consistent objectives and provide substantive criteria for resolving conflict.
2. The enabling legislation must incorporate a sound theory identifying the principal factors and causal linkages affecting policy objectives.
3. The enabling legislation must structure the implementation process so as to maximise the probability that implementing officials and target groups will perform as desired.
4. The leaders of the implementing agency must possess substantial managerial and political skill.
5. The programme must be supported by organised constituency groups and by a few key legislators throughout the implementation.
6. The relative priority of the objectives should not be undermined over time by the emergence of conflicting public policies.

For Mazmanian and Sabatier clear and consistent policy objectives; a sound causal theory; structuring of implementation during policy formulation; capacity at the implementation level; local and legislative support throughout the implementation; and avoiding conflicting public policies along the way are important for ensuring effective implementation.

## **6. Analytical Framework**

On the basis of theoretical discussions and considering objectives of the research, implementation of export policy related with ICT based service export is the dependent variable for the study. Dependent and independent variables that have been identified for this study have been listed in Table 2.

**Table 2:** List of variables identified for the current study

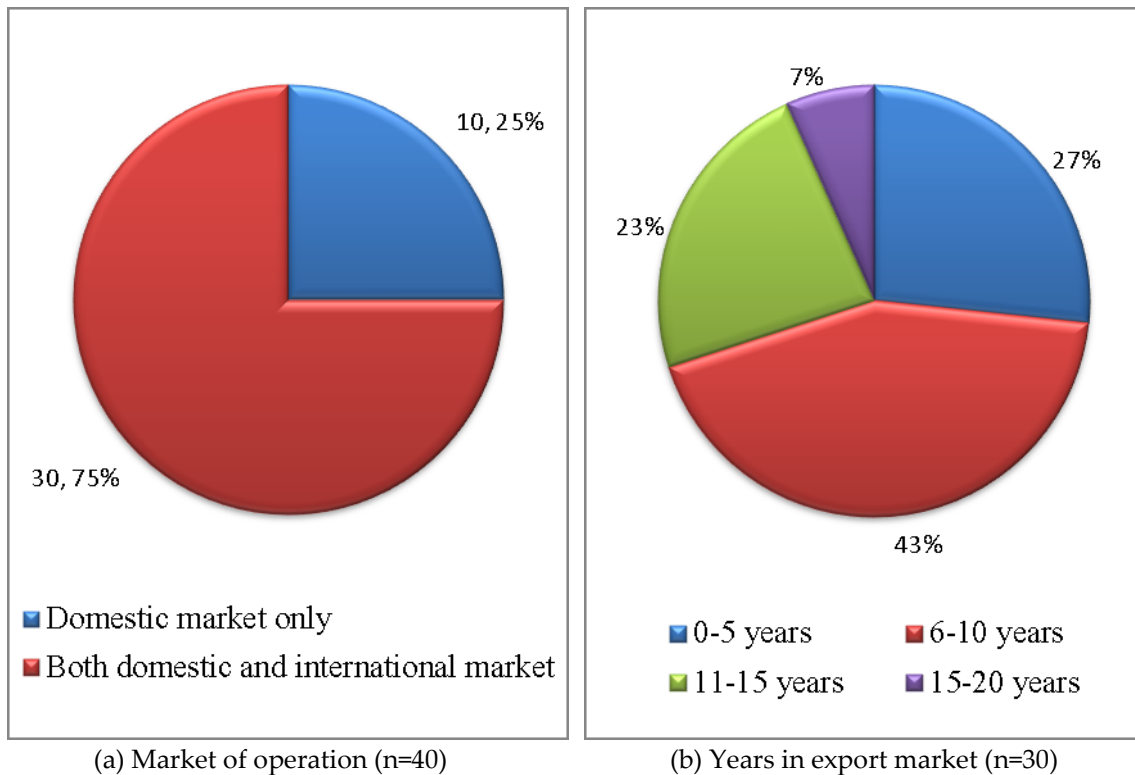
Dependent Variable	Independent Variables and Indicators
Implementation of policy - number of goals achieved - number of goals not achieved - gap between policy and practices	<ul style="list-style-type: none"> <li>▪ Policy standard and objectives</li> <li>- clarity of the objectives</li> <li>- conceiving by stakeholders</li> <li>▪ Allocation of resources</li> <li>- financial allocation in annual budget</li> <li>- money spent in previous years</li> <li>▪ Political environment</li> <li>- level of political will</li> <li>- level of support from the political leaders</li> <li>▪ Characteristics of implementing agencies</li> <li>- level of technical skill of implementers</li> <li>▪ Coherence with related laws and policies</li> <li>- number of facilitating laws/policies</li> <li>- number of obstructing laws/policies</li> <li>▪ Stakeholders' participation</li> <li>- number of private organizations being engaged</li> </ul>

Effective implementation depends on the nature of policy to be carried out and the specific factors contributing to the realization or non-realization of policy objectives. Funds are needed for implementation and inadequate fund makes reaching policy objectives difficult. Political environment are important for creating the relationship between objectives and results. The competence and size of an agency's staff, degree of hierarchical control of processes within implementing agencies are also important factors affecting successful implementation. Implementing agencies may require technical advice and assistance that can be achieved through communication and coordination. If there is any other policy conflicting with the policy under consideration, its implementation is obstructed. Finally, stakeholder's motivation and their participation matter as the policy under consideration of the study is to be implemented through various stakeholders.

## 7. Findings and Discussion

### 7.1 Export of ICT/ICT enabled services from Bangladesh

Among the 40 companies, one fourth of the companies are domestic market based and the remaining 75% operates both in domestic and international market (Figure 3.a). Domestic market for ICT/ ICT enabled services is dominated by custom application development. Few companies are doing implementation and customization of foreign products and applications in banking and other domains. Size of domestic market is small due to limited government procurement. Private corporate business segment has also not yet reached significant level to generate enough cash flow for the total number of ICT enterprises. Major export markets for the companies include USA, Japan, UK, Denmark, Sweden, Norway, Netherlands, Germany, Australia, Saudi Arabia and UAE.

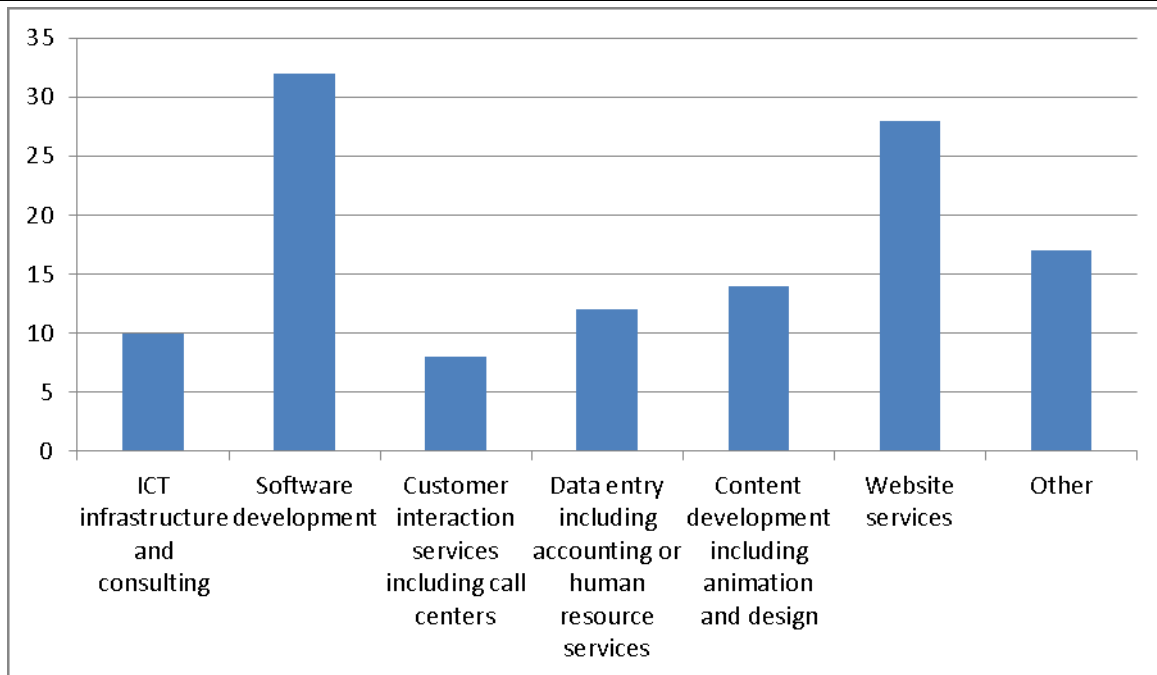


**Figure 3:** Percentage of surveyed companies (a) Operating in international market and (b) Duration of their business in ICT based export services

Among the surveyed companies, 70% have started exporting ICT based services within the last ten years, indicating that the Bangladesh software and ICTeS industries have started to be focused by the overseas investors in this time (Figure 3.b). This growth is expected to continue which is supported by good software export trends and large demand for ICT automation in domestic market. In recent years, a very strong trend of freelancing has emerged where a lot of young professionals are serving overseas clients. These people do not own registered enterprises, they mainly work from home.

### 7.2 Types of services provided

The ICT based service market is also dominated by software development and website services. Survey shows 80% of the companies are involved in software development whereas website services are provided by 70% of the surveyed companies. Other important services that are provided are content development, data entry, ICT infrastructure, etc. At this moment, only 20% of the companies are providing call center services which is expected to be increased in coming years.



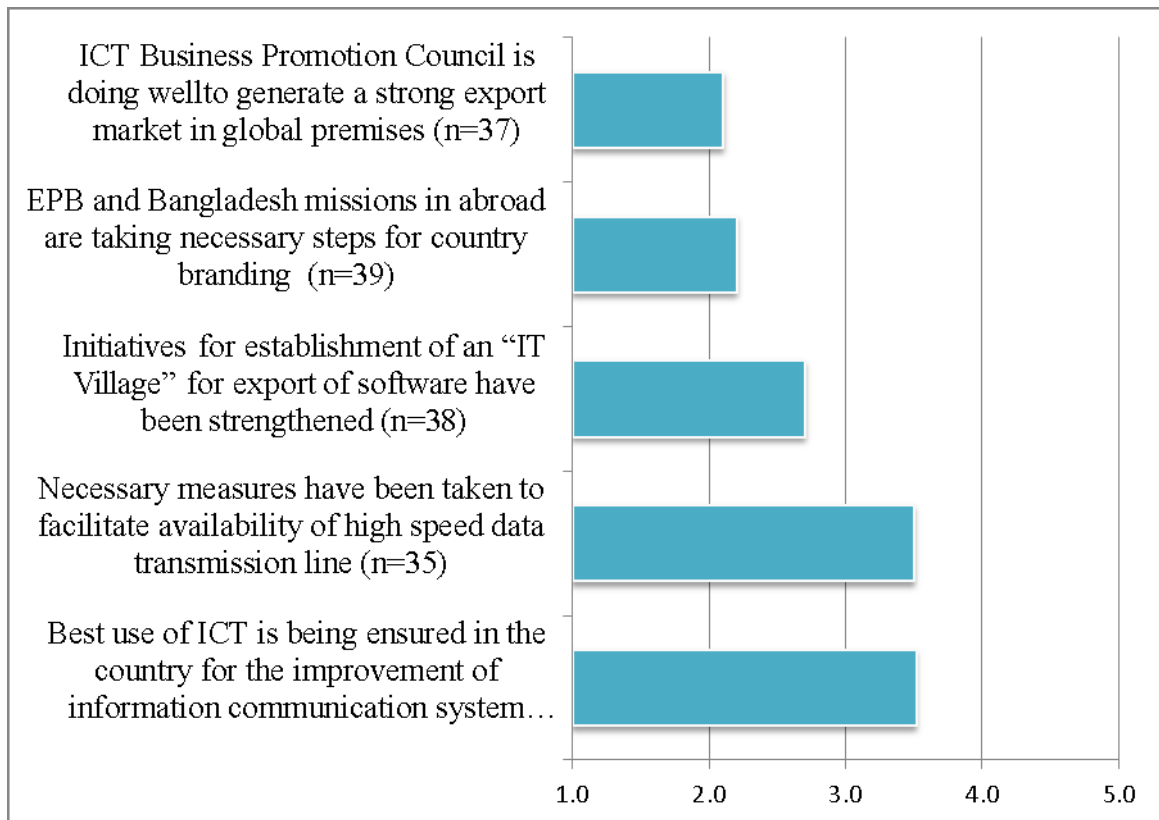
**Figure 4:** Types of ICT based services provided by the surveyed companies

Most of the software exporting companies are mainly involved in small to mid-sized custom application development (e.g. some banking applications, some general Accounting software products), though industry specific matured products are very few. There are some companies which work as direct offshore development center (ODC) for an overseas ICT company. Another type is general software development service providers working on relatively mid-level of technology/domain knowledge expertise and serving clients of different countries of different nature.

It is believed that readiness of Bangladesh for ICT export is more pertinent for ICTeS than for software exports. The required skill level for exporting ICTeS is generally lower in some ICTeS areas such as graphics, engineering drawing, customer support, accounting etc. Also, this sector has more scope for employment creation. There are now a few successes in the fields of Computer Aided Design (CAD), engineering/architectural drawing conversion, and accounting back office.

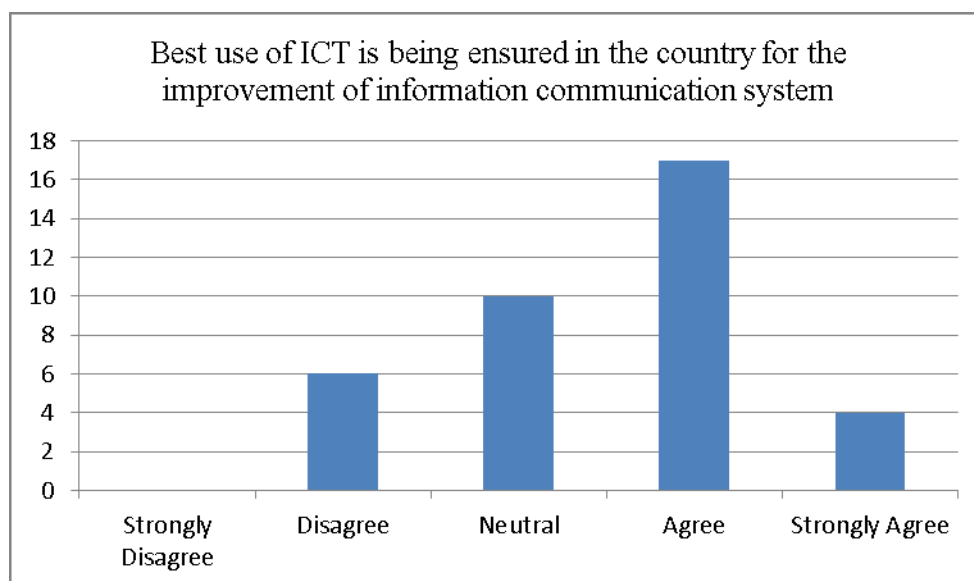
### 7.3 Implementation of policy: Goals set in export policy

Five specific goals have been declared in the export policy for 2015-2018. If these goals have been achieved the key beneficiary would be the entrepreneurs of ICT sectors. So, the study has tried to find the advancements on the way to those goals from the perception of the entrepreneurs. From the mean score of agreement/disagreement regarding achieving the goals, the figure 5 shows that policy implementation is lagging behind in generating strong export market in global premises, taking necessary steps by EPB and foreign missions for country branding, and establishing IT villages in the country. But the respondents are to some extent happy with availability of high speed data transmission line and improvement of information communication system through best use of ICT.



**Figure 5:** Respondent's perception regarding achievement of the goals set in export policy for promoting ICT service export. (Strongly disagree = 1.0, disagree = 2.0, neutral = 3.0, agree = 4.0, strongly agree = 5.0)

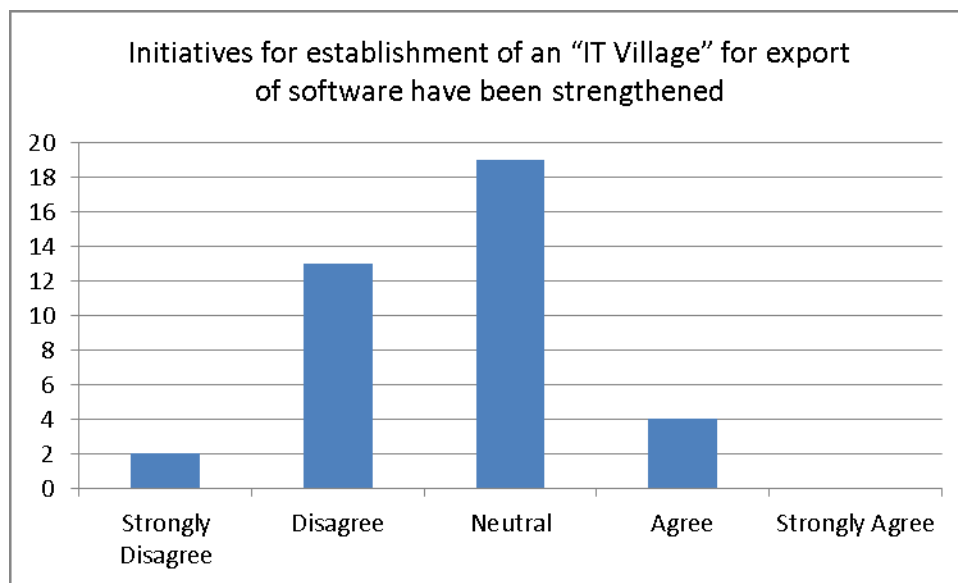
### 7.3.1 Improvement of information and communication system



**Figure 6:** Respondent's agreement/disagreement about the statement "Best use of ICT is being ensured in the country for the improvement of information communication system" (n=37)

Access to Information (a2i) program under Prime Minister's Office has prepared strategic priorities of 'Digital Bangladesh'. To achieve the expected impact of Digital Bangladesh, one of the identified outcome areas is boosting ICT as an export oriented sector to earn foreign currency and generate employment. M-banking and electronic payments as well as electronic business transactions are but a few operational priorities in this regard.

### 7.3.2 Establishment of an "IT Village"



**Figure 7:** Respondent's agreement/disagreement about the statement "Initiatives for establishment of an "IT Village" for export of software have been strengthened" (n=38)

The IT village idea stagnated for a while but recently, the govt. has engaged effort to set some of these villages. Bangladesh Hi-Tech Park Authority (BHTPA) is responsible for the establishment and expansion along with management, operation and development of 'IT villages' within the country. BHTPA was established in 2010 as one of the key driving forces for realizing the goals of Vision 2021 by creating employment opportunities in ICT/ICTeS sector. Kaliakoir Hi-Tech Park, Jessore Software Technology (IT) Park, Sylhet Hi-Tech Park, Mohakhali IT Village, Janata Tower Software Technology Park are important and priority projects for development of IT sector as well as industrialization of Bangladesh.

The major objectives of establishing such IT villages are (i) to create world-class business environment for establishing ICT and other knowledge-based Hi-Tech industries in the parks; (ii) to help develop sustainable technology and firm-level innovation; and (iii) to provide capacity building support for Hi-Tech Park related institutions, private sector ICT/ICTeS companies, ICT/ICTeS association members, skills development training, Freelancers training enabling improved and enhanced business environment with increased opportunities for growth.



Kaliakoir Hi-Tech Park is the first ever Hi-Tech Park in Bangladesh, located at Kaliakoir upazilla in Gazipur district. It is situated only 40 km. North from Dhaka city with 232 acres of area. Additional 100 acres of Government land is under process for inclusion with the Park. The park will be considered as specialized zone to attract investor especially foreign investors where they could utilize vast potential of young educated and technically skilled work force. Bangladesh Hi-Tech Park Authority has taken a decision on 26 April 2012 to establish IT villages at Divisional levels of Bangladesh. In this regard, BHTPA has decided to build a Software Technology (IT Village) Park at Jessore, ICT business incubator centre at Chittagong University of Engineering and Technology (CUET), Hi-Tech Park at Sylhet along with establishment of HTP / STP in other districts of the country.

**Kaliakoir-Hi-Tech Park:** It is the first Hi-Tech Park initiated by the Government covering an area of 232 acres. BHTPA has appointed a developer through PPP model for Block-II & V and selection process has been completed to appoint another developer for block-III. Appointment process of Developer for other blocks is also going on. Initially the allocation of the project was 22236.332 lakh (GoB 1175.11 lac, IDA 18517.31 and DFID 2543.91). After 1st revision the allocation has been increased to 23698.81 lakh (GoB 1175.11 lakh, 16312.06 IDA and 6211.64 DFID). The project implementation period is January 2013 to June 2016.

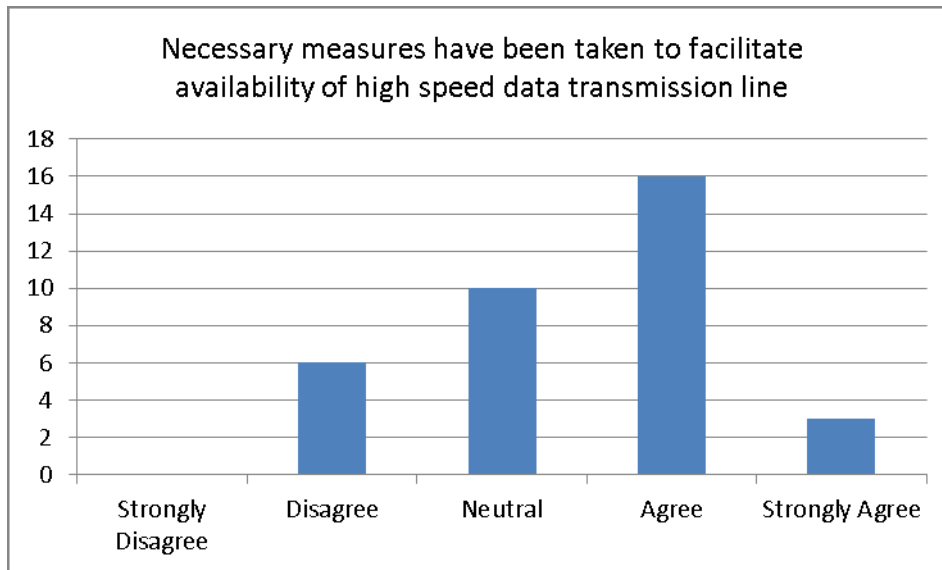
**Jessore Software Technology Park (JSTP):** The BHTPA is implementing another project to establish a Software Technology Park in Jessore covering 9.18 acres of land through GoB fund. A Multi-Tenant Building (MTB) of 14-storey of steel structure has been under construction out of which 4 storied will be implemented through Support to Development of KHTP Project. A 12 storey of steel structure dormitory, 33KVA sub-station building, sub-station line, 4-storey canteen, approach road and boundary wall construction work is going on consequently which will be completed by June 2016.

**Mohakhali IT Village:** Mohakhali IT Village is another important project for BHTPA. RFP has been issued to responsive developer to establish Mohakhali IT Village under PPP Model on 47 acres of land at Mohakhali, Dhaka. This park is located in the prime location of the capital city and well connected to other places by road, rail and air.

**Rajshahi Hi-Tech Park:** Government has allocated 43 acres of land to establish Hi-Tech Park at Rajshahi in the North-Western region of Bangladesh. Part of the land has been transferred to BHTPA and other part is in process.

**Sylhet Hi-Tech Park:** A Hi-Tech Park is going to be established in Companijong upazilla under Sylhet district. Government has allocated 162 acres which is only 12 km away from the International Airport. Land development and electricity line from two feeders is establishing under Support to Development of KHTP.

### 7.3.3 High speed data transmission line



**Figure 8:** Respondent's agreement/disagreement about the statement "Necessary measures have been taken to facilitate availability of high speed data transmission line" (n=35)

Bangladesh was connected to the information super highway through submarine cable in 2006. A project by BTTB is going on to establish the national high-speed data backbone. After this high-speed national data backbone is completed, a flurry of ICTeS and related business activities will happen all over Bangladesh. But it is believed that more extended coverage is needed and only govt. can facilitate this growth. If this growth is left to the private sector, then Bangladesh will ultimately lose as connectivity and infrastructure should ideally be provided by the government in 'the cities of today and tomorrow.

### 7.3.4 ICT Business Promotion Council (IBPC)

One of the reasons for which growth of export of ICT industry is below the expected levels, is absence of government level initiatives in promoting country brand. National export policy adopted the strategy for formation of the product based Business Promotion Councils, and implementation of this strategy lead to form IBPC under the auspices of the Commerce Ministry in the year 2003. The prime objective of forming the Council is to promote the sector to achieve competency in the local and global context as well as to help the industry building capacities in the fields of human resources and acquiring technologies.

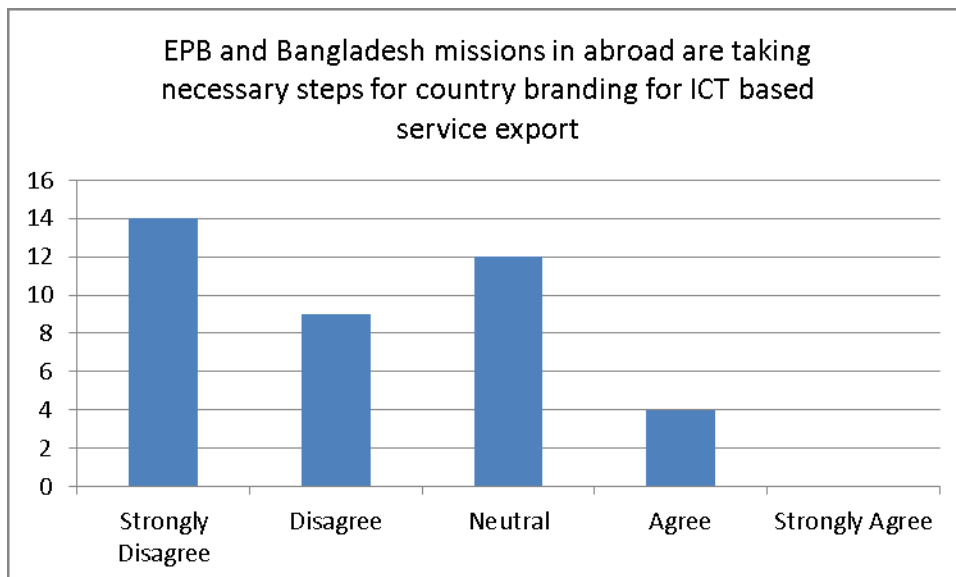
The Council bears the testimony of having partnership between the private sector and the government under Companies Act, 1994 as a limited company. Since its inception in 2003, IBPC is working hand on hand with the industry for building capacity in the fields of knowledge acquiring and dissemination, quality and productivity improvement through human resources development, awareness building, sending market promotion teams & delegations abroad, organizing ICT fairs

at home, monitoring issues related to productivity, quality, compliance, technology trends etc. Besides, IBPC have several training and awareness programs aimed at domestic capacity building of the industry.



**Figure 9:** Respondent’s agreement/disagreement about the statement “ICT Business Promotion Council is doing well for promoting the local market capacity of ICT sector to generate a strong export market in global premises” (n=37)

### 7.3.5 Country branding for ICT based service export



**Figure 10:** Respondent’s agreement/disagreement about the statement “EPB and Bangladesh missions in abroad are taking necessary steps for country branding for ICT based service export” (n=39)

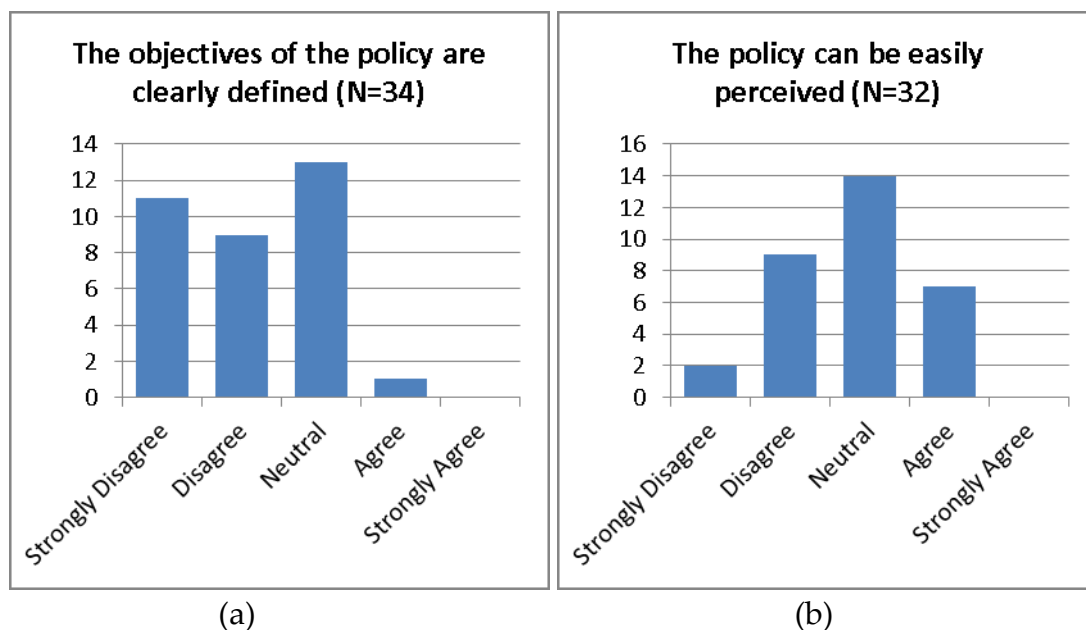
The govt. is perhaps making some in roads, but ICT trained govt. officials must play a role in foreign embassies. There is a need to setup govt. sponsored centers initially

overseas that ICT firm can easily access and run meetings overseas without paying too much. The govt. can create some funds quickly and show its sense of urgency. Experts agree that the govt. is trying to be active in this domain. NRBs can have a pivotal role too. People of Bangladeshi community working in the industry can help support in bringing necessary strategic, marketing and financial support for their backward linkage support in Bangladesh.

#### 7.4. Independent variables

##### 7.4.1 Policy standard

Policy standard is very important factor playing role in implementation of the policy. A well formulated policy should be easily perceived by the implementer as well as other stakeholders. Objectives of the policy should be clearly depicted in a good policy paper. Figure 11 shows that respondents of the survey didn't agree that the objectives are clearly defined or the policy is easily perceived. In a 5-point scale (1 for strongly disagree and 5 for strongly agree) the means of agreement/disagreement are 2.1 and 2.8 respectively.



**Figure 11:** Respondent's agreement/disagreement about the statement (a) "The objectives of the policy are clearly defined" and (b) "The policy can be easily perceived"

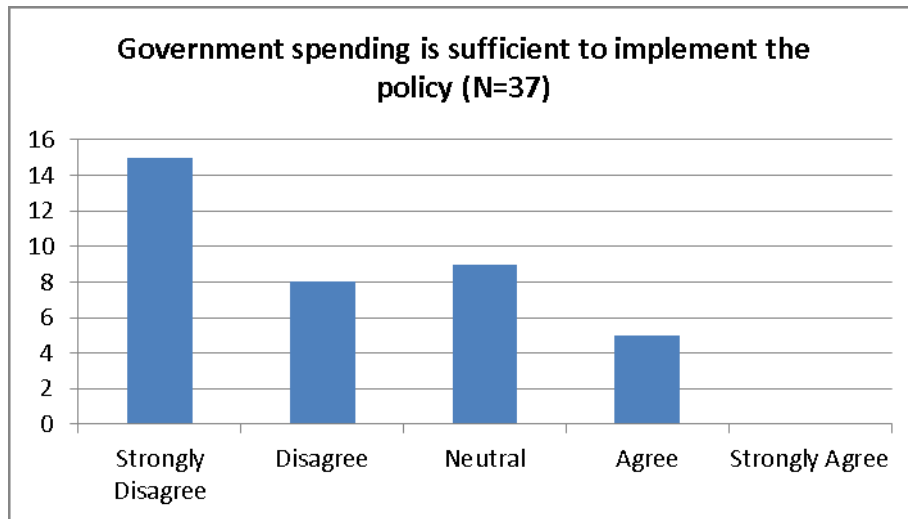
##### 7.4.2 Financial allocation

In recent years, government has increased the budget for ICT division. Table 3 shows the budget of ICT division for 2015-16 and 2016-17 and projection for 2017-18. But respondents of the survey are not quite happy with the allocation of money for achieving the goals. Only 14% of the respondents are agreed that, government spending is sufficient to achieve the goals described in the ICT service related export policy (Figure 12).

**Table 3:** Medium term expenditure for ICT Division (Amount in thousand BDT)

Description	Budget 2015-16	Budget 2016-17	Projection 2017-18
Revenue	533,26,00	508,35,41	564,51,42
Capital	680,29,00	685,74,59	748,98,58
Total	1213,55,00	1194,10,00	1313,50,00

**Source:** Ministry of Finance

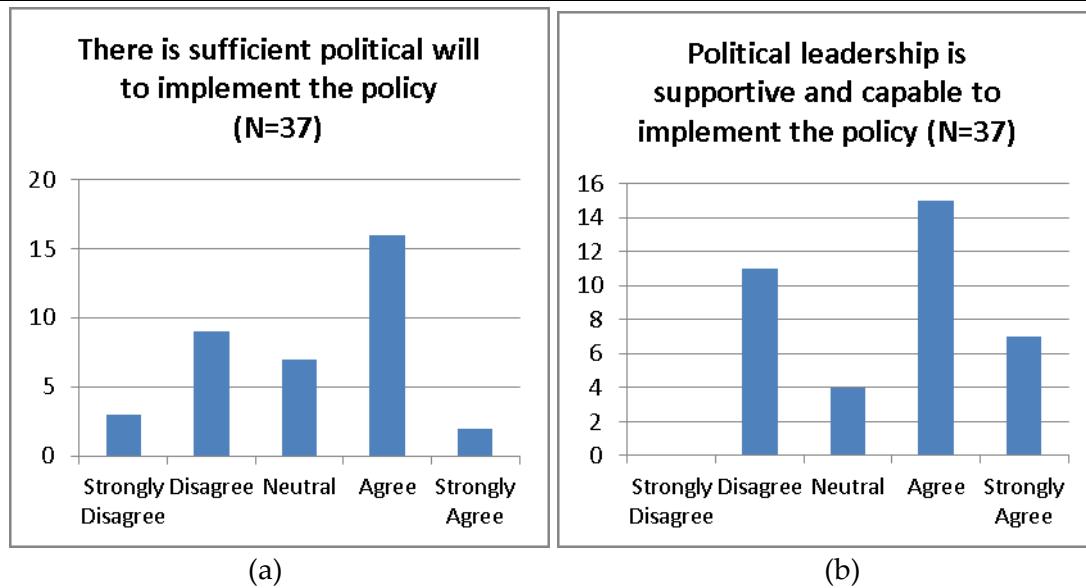


**Figure 12:** Respondent's agreement/disagreement about the statement "Government spending is sufficient to implement the policy"

### 7.4.3 Political environment

Entrepreneurs, when asked about the political environment for implementing the policy related to ICT service export, showed their satisfaction in some extent. Figure 13 shows that 62% of the respondents either opined that there is sufficient political will to implement the policy or they remained neutral in this regard. Regarding the capability and supportiveness of political leaders for implementation of the policy, only 30% of the respondents have perception that leaders don't have those.

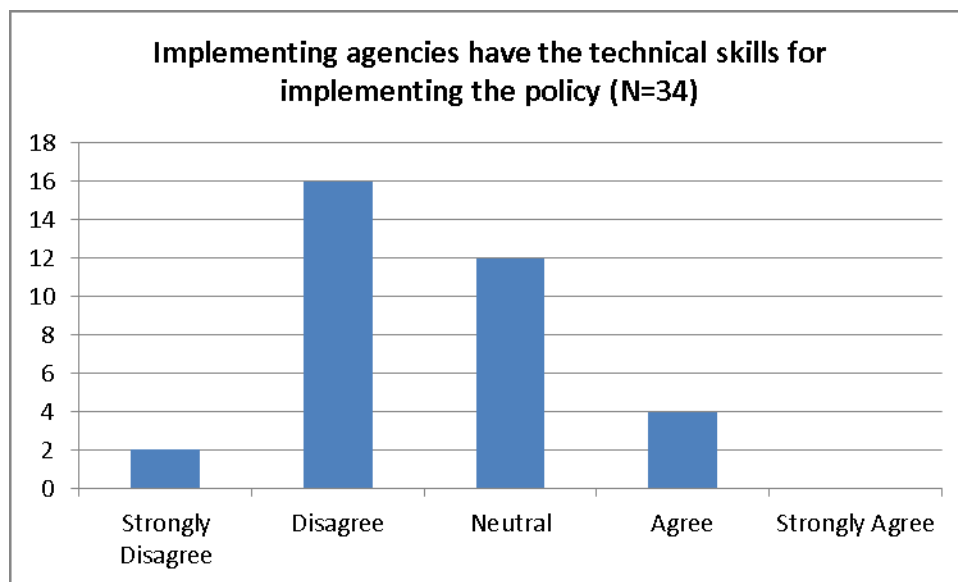
Digital Bangladesh slogan shows the intention of the govt. to turn Bangladesh into a digitally connected Bangladesh. However, it is believed that the govt. is more on the show off side rather than putting forth the real energy to truly channelize the prospects of Bangladesh. Additionally, the Govt. needs to extend its idea of digital connectivity by creating virtual learning possible and introduce legislature to allow digital content, schools, colleges and universities to run. The govt. of Bangladesh must show resolve by bringing MPs to have online community chats and discussions.



**Figure 13:** Respondent’s agreement/disagreement about the statement (a) “There is sufficient political will to implement the policy” and (b) “Political leadership is supportive and capable to implement the policy”

#### 7.4.4 Implementing agencies

Compared to political aspects of policy implementation, respondents showed opposite perception scenario regarding technical skills of the implementing agencies. Only 12% of the respondents agreed that implementing agencies have the technical skills that are much needed for successful implementation, whereas 53% said agencies don’t have it.

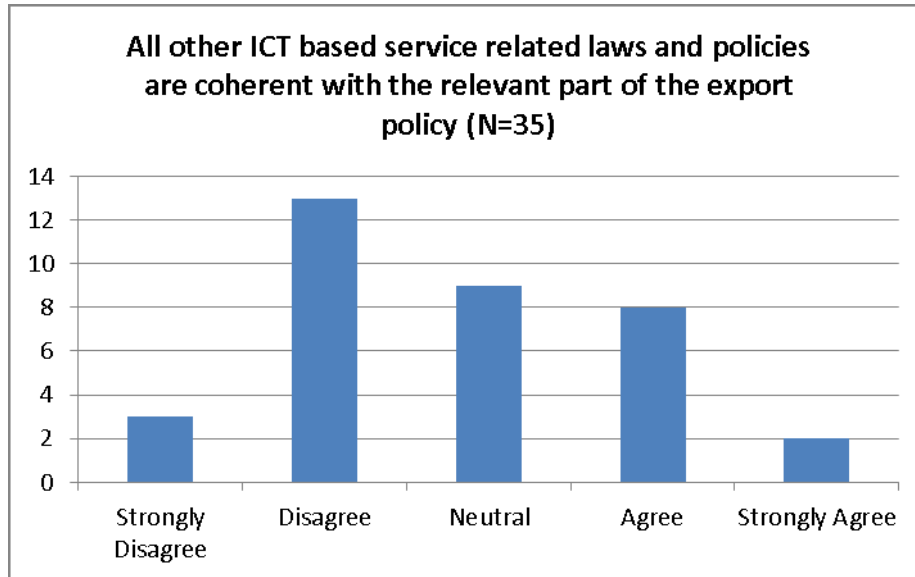


**Figure 14:** Respondent’s agreement/disagreement about the statement “Implementing agencies have the technical skills for implementing the policy”

#### 7.4.5 Coherence with related laws and policies

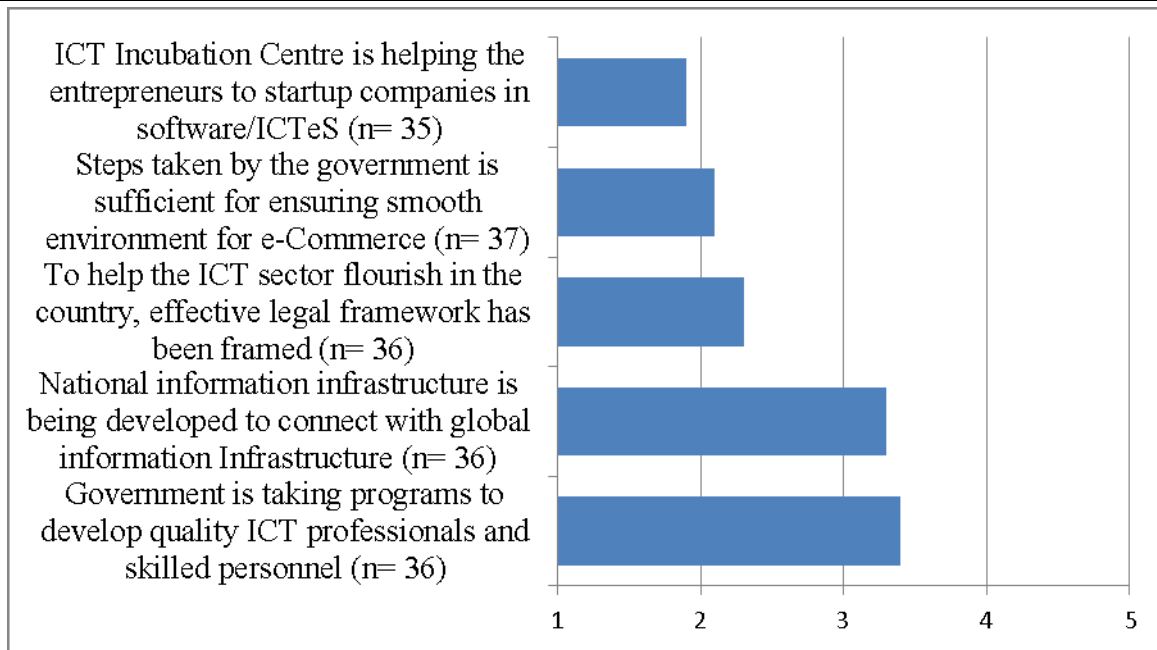
If other policies and laws are coherent, any policy becomes smoother to be implemented. At present, number of laws and policies of the government are related

(e.g. national ICT policy, law on information technology, etc.). Among the respondents, only 29% think that all other ICT based service related laws and policies are coherent and they are supplementing relevant parts of the national export policy (Figure 15).



**Figure 15:** Respondent's agreement/disagreement about the statement "All other ICT based service related laws and policies are coherent with the relevant part of the export policy"

Figure 16 shows that entrepreneurs in ICT sector possess good perceptions regarding government initiatives to develop skilled ICT professionals and to connect national information infrastructure with global infrastructure. But government is doing well in formulating effecting legal framework, creating smooth environment for e-commerce or introducing effective ICT incubation system to help entrepreneurs. In fact, the legal framework is very weak. Many experts think that the govt., the judiciary and the lawyers' community have very thin knowledge on ICT issues and ICT related legal perspective. The govt. should immediately create standard ICT and legal framework trainings and introduce mandatory courses in this domain. The courses must be vetted at an appropriate international and national level.

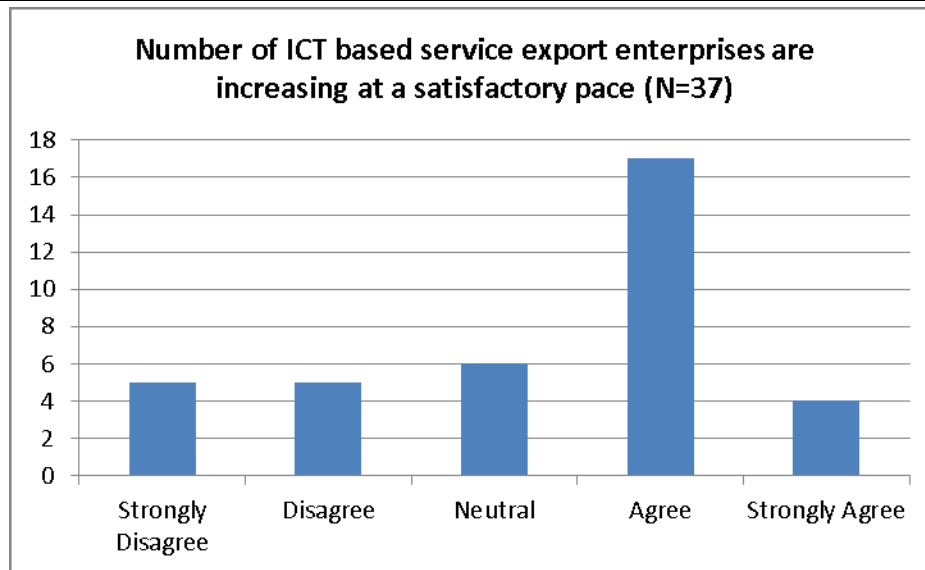


**Figure 16:** Respondent's perception regarding achievement of the goals set in other policies with a view to promote ICT service export. (Strongly disagree = 1.0, disagree = 2.0, neutral = 3.0, agree = 4.0, strongly agree =5.0)

#### 7.4.6 Stakeholders' participation

A good portion of respondents (57%) think that, number of ICT based service export enterprises are increasing in the industry at a satisfactory pace (Figure 17). But some experts opine that we need many more entrepreneurs. According to them, the biggest obstacle is the govt. and Bangladesh Bank policy. These institutions have virtually less understanding on the business process of an ICT firm and they do not have any moral, legal or ethical compulsion to gather knowledge on this field and introduce changes in their policies. These new ventures should be strongly promoted so that one such venture turns out to be a billion dollar ICT industry from Bangladesh in no time. The global powerhouses like the Google, Facebook, Yahoo, Twitter, Snapchat, Ebay, Alibaba, etc. models and financing must be looked at seriously and based on these assessments, the govt. needs to move ahead quickly.



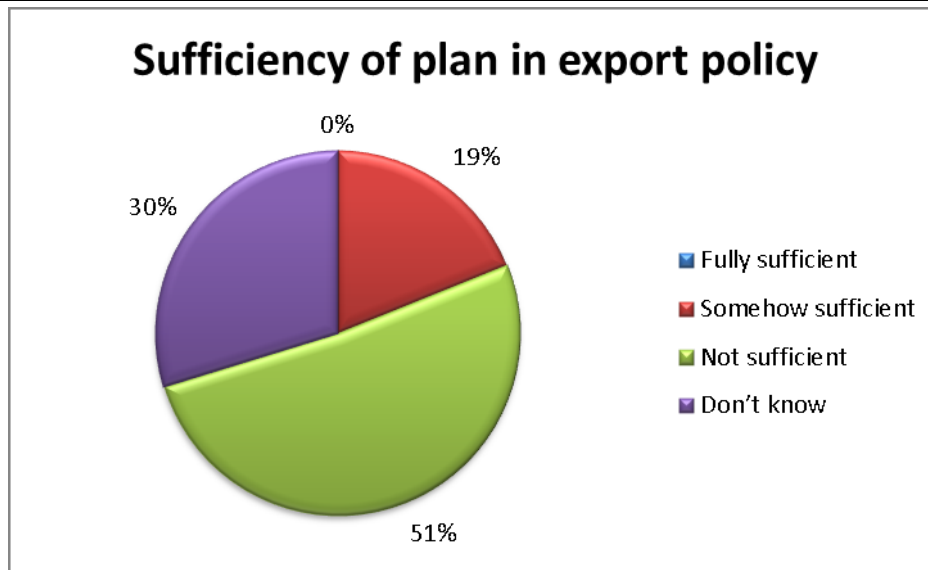


**Figure 17:** Respondent's agreement/disagreement about the statement "Number of ICT based service export enterprises are increasing at a satisfactory pace"

But government has taken many initiatives to solve the problems. For example, to solve the capital/investment problem for the ICT entrepreneurs and companies of the country, BASIS and IDLC have officially launched a complete financial service program. A number of loan facilities will be offered under this program including loans for startups, short term loan, loan to buy domestic software or ICTeSand commercial space. Another step is that, the government has launched a project to train 3,000 rural underprivileged women as freelancers and entrepreneurs and create job opportunities for them. The main objective is to develop female ICT freelancers and entrepreneurs so the less educated rural women can generate incomes from home. SME Foundation, in collaboration with the a2i Program and Bangladesh Women in Technology (BWIT).

### 7.5 Sufficiency of plan in export policy

Respondents were asked whether the plans of national export policy are sufficient to ensure expected growth in the export of ICT services or not. Figure 18 shows that no respondent thinks that it is fully sufficient. Though 19% of the respondents said it is somehow sufficient but the largest portion (51%) of the respondent it is not sufficient. Probably, this is because this sector has still several problems and the policy has not addressed all of them.



**Figure 18:** Respondent's opinion about the sufficiency of plans drawn in national export policy for promoting ICT service export

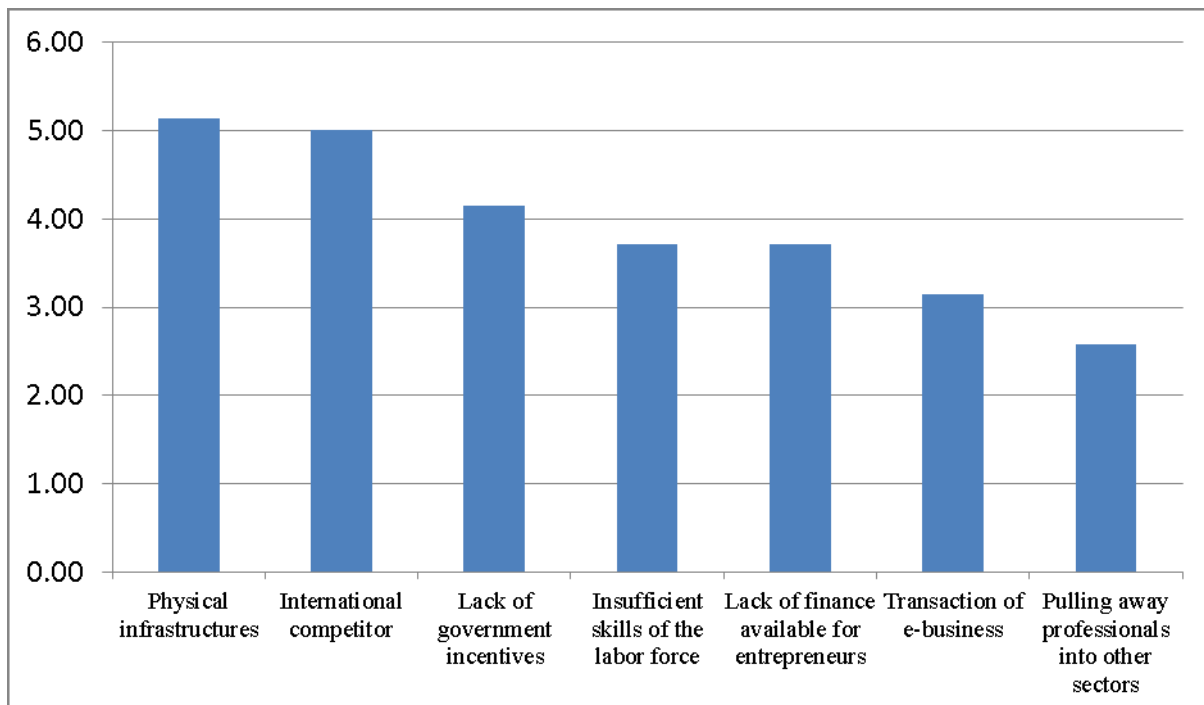
### 7.6 Problems in the ICT service export sector

In the survey, respondents were asked to rank some problems which were identified from the literature. They rank the problems as following way:

1. Physical infrastructures: Absences of ICT Park/Software Technology Park, high internet cost, no redundant submarine cable, power shortage are some of the common infrastructural problems for most of the ICT enterprises.
2. International competitors: There are many international companies which are much more developed in ICT sectors. It is a big challenge for the Bangladeshi companies and entrepreneurs to sustain in the competition in international arena.
3. Lack of government initiatives for country branding: Growth of export of ICT industry is below the expected levels due to inadequacy in entrepreneurial dynamism, limited overseas marketing budget and absence of government level initiatives in promoting country brand.
4. Insufficient skills of the labor force: There is severe gap in both quantity and quality as far as the human resource for software industry is concerned due to institutional deficiency of the tertiary ICT-related educational institutions (lack of industry orientation of teaching resources, slowness of curriculum modernization etc.) as well as inadequate quality input from the higher secondary education system in to the tertiary level. Most companies face the problem of retaining their trained professionals because of high turnover (mainly for migration to other developed countries). Technical and vocational training infrastructure is also not producing industry ready ICTeS workers.
5. Lack of finance available for entrepreneurs in the ICT business: ICT companies (mainly the software and ICTeS) have very limited access to institutional financing, both for working capital as well as project financing. Banking and

financial institutions are not ready to understand the nature of knowledge industry and their products, services and attitude are not knowledge-industry friendly, not enough market size etc.

6. Transaction of e-business: Bangladeshi ICT sector is not that much expert to handle the e-business transaction in an efficient way particularly with the international system.
7. Pulling away professionals into other sectors: Though a significant number of educated and qualified entrepreneurs have started ICT ventures during last couple of decades, most of ICT enterprises (except for hardware companies) in the country are either stuck in the 'small size-low growth' situation or moving towards other sector because of various reasons including fund constraint for growth investment, unfavorable market situation and lack of required resources.



**Figure 19:** Ranking and rank points of problems in ICT service export sector

Other important problems identified from the survey and interviews are:

- Size of domestic market is small due to limited government procurement. Private corporate business segment has also not yet reached significant level to generate enough cash flow for the total number of ICT enterprises. Also the predominant business model is still very much one-off 'client-vendor' model, not long term solution provider model. Hence, the ICT companies cash flow are often erratic and cyclical, not favoring long term strategic growth planning.
- High cost of bandwidth deters growth of domestic market for ICTeS.
- Most of the companies face difficulty in mid and top level management leadership position that would drive the company growth.
- International money transaction is complex which is creating problem

- Lack of government incentive of venture capital.

## 8. Recommendations

Many options for promoting ICT service sector have already been mainstreamed in many other countries, but in Bangladesh, these are not but pipe dreams. We are only scratching the surface of the true potential and have to ensure that the facility truly achieves a sustainable model with the right tool mix. To maximize the benefit from the potentialities that we have in the ICT service sector following issues are recommended to incorporate in policy level.

1. Easy fund facilities from local banks must be ensured for the entrepreneurs.
2. Introduce ICT in teacher's training program and make it mandatory, introduce policies across the nation in phases to have ICT and online science lab and introduce some form of ICT and digital media based learning.
3. Introduce a very high-end govt. Multimedia/Science University bringing the best persons to study there with high end ICT training and ICT adaptive focus.
4. Introduce medium to large global summits where local ICT is exposed globally and invite international companies to set up hub here.
5. Invite Bangladesh entrepreneurs to open ICT/Professional business hubs/incubation/business links in China, India, Africa, etc. Repeated and sustained efforts must be given by the govt. there and the govt. must give support for local companies to create opportunity in those countries and region.
6. Multimedia corridor can be a virtual option to setting up physical infrastructure. The govt. of Bangladesh can give some bulk discount on internet lines, discount purchase of computers, UPS, and ICT materials. This support will create small pockets of ICT businesses nationwide.

## 9. Conclusion

Government has prudently identified ICT service as priority sector considering its prospect in the export market. Export of ICT based service was first promoted formally by incorporating in national export policy in 2012 for the first time. So, it is new era and the present growth in this sector has been surely facilitated by the export policy. The policy has more time to be fully implemented as it has been designed for up to year 2018. But the best outcome can be ensured if only the policy is implemented efficiently and effectively. Moreover, the unaddressed issues, which are also important for the sector, should be included in formulating export policy for the next period.

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