PROBLEMS AND PROSPECTS OF INFORMATION TECHNOLOGY (IT) AND IT INDUSTRY IN JHARKHAND (INDIA): A CASE STUDY OF RANCHI DISTRICT

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Abstract

Information is power. Computers and internet networks have enhanced our abilities significantly to process the data into useful information. It has revolutionized the society in no time and brought a new era of civilization without any discrimination. Jharkhand (India) is also not untouched with the influence of IT prowess. There were many initiatives taken in the last 10 years but growth was relatively slow in the area of IT and IT industry compare to other newly formed states in India. Since, this state has been producing numerous IT educated human resources; it was taken for study to identify the phenomena related to problems and prospects of Information Technology (IT) and IT industry in Jharkhand. Descriptive research design was adopted and survey method was used to collect the data. Primary data was collected by Interview Schedules. Interview Schedules were developed and administered to collect data for the research consisting of 19 items related to problems and 21 items related to prospects of IT industry in Jharkhand respectively from 48 IT firms in Ranchi. Secondary data were collected from various official websites, government published articles on IT, Annual plans and Working plans from the archives of the department of IT in Jharkhand. The Unit of analysis in the study was organizations heads of various IT business units (registered under STPI and other registered IT units) in Ranchi. Descriptive statistics was used to interpret and report the phenomena related to problems and prospects of IT and IT industry in Jharkhand. Factor analysis was also done to see the grouping of rotated variables related to problems and prospects of IT industry in Jharkhand.

Keywords: descriptive study, information technology (IT), IT Industry, Jharkhand, Ranchi

Abbreviations

1. ACA: Additional Central Assistance
2. BHQ: Block Headquarters
3. BPO: Business process outsourcing
4. CCA: Controller of Certifying Authorities
5. CCS: Common Services Centre
6. CIDCO: City and Industrial Development Corporation.
7. CII: Confederation of Indian Industry
8. CSC Common Service Center
9. CSCS: Common Services Center Scheme
10. CSS: Centrally Sponsored Schemes
11. DHQ: District Head Quarter
12. DIT: Department of Information Technology
13. EVP: Executive Vice president
14. FY: Financial Year
15. ICT: Information and Communications Technology
16. IIFC: International Incubation Facility Center
17. IIIT: Indian Institute of Information Technology
18. INR: Indian Rupees
19. IT/ITES: Information Technology/Information Technology Enabled Service
20. JAPIT: Jharkhand Agency for Promotion of Information Technology
data, and people, developed to address tasks faced by individuals and groups, typically within some organizational setting (March & Smith, 1995). Information Technology (IT) can also be defined as any representation of instruction data, sound and image including source code and object code recorded in a machine in a readable form and capable of being manipulated or providing interactively the use by means of automatic data processing machines falling under the head- ‘IT products’. IT products include computer, digital data communication and digital data broad-casting products as notified by the Ministry of Finance, Government of India or The Central Board of excise & customs. IT services is defined as any service which results from the use of any IT software over system of IT products for realizing value-addition.1

By marshalling its vast human resource and industrial and technological resource India has become an important player in the global IT with the expansion of its software sector. This sector can raise the productivity of domestic manufacturing and services sector. This will lead to growth and development of governance in IT sector, IT industry and IT for every citizen. Information Technology has today become the watchword in the fields of engineering, medicine, Healthcare, business, commerce, science and social science. It is not only just a sun-rise industry but a revolution that has been unleashed for new civilization. It welcomes the technology of the future.2

Micro & minicomputers have decentralized the information systems.3 Local area network makes possible the effective communication, the task, group and managerial work.4 These capabilities are

1 IT Policy, 2006-2011, Government of Gujarat, P.2
2 IT Policy, 2006-2011, Government of Gujarat, P.2
destined to impact culture structure and work practices.\textsuperscript{5}

The fundamental function of IT is the enhancement of our abilities to communicate. The intent of IT is to augment and magnify human mental abilities. IT is at our service to enable us to store, collect, select, transform, send or display information.

Since, IT industry is an emerging industry falling under the category of tertiary or on newly coined term Quaternary industry. There is no such widely accepted definition of IT industry in the literature. An operational definition of IT industry was made for research purpose to delineate the ambiguity in understanding.

The operational definition of IT industry was taken as a market, where various IT firms of different sizes are operating and competing with each other to gain competitive advantage in terms of development, growth and profit in the boundaries of economic activity for socio-economic growth and development of the state and nation by benefitting the customers.

2. HISTORICAL BACKGROUND OF IT AND IT INDUSTRY IN JHARKHAND

The state began its momentum towards IT in 2004 when the IT department was formed and emphasis was laid on formation of an IT policy. JAP-IT was formed to implement e-governance projects. Complete computerization began with the transport department getting itself into the IT fold. In 2006 to 2010, the state has moved ahead computerizing most departments including Treasury, commercial taxes, registration, employment exchange, consumer forum, and Municipal Corporation. The state launched JharNet in 2007 and CSCs were initiated in 2007-08. In 2010, E-Kalyan was initiated. The state Data Centers and E-district project have started. E-District project application has been developed and within this month, the project was rolled out. Enrolment for UID has also started this year with 25 lakh UID issued\textsuperscript{6}.

The state is also looking at formulating a new IT policy to attract IT and hardware industry. It is looking at a new biotechnology policy. It is also planning to open IIIT in Ranchi for which industry partners are being looked out for STPI in Jamshedpur for which the state has got the necessary sanction. SWAN (Jharnet) has been rolled out in 22 DHQ, 35 SDHQ and 200 blocks. The bandwidth required between State Head Quarters (SHQ) to District Head Quarters (DHQ) to Block Head Quarters (BHQ) was extended. CSCs (Citizen Service Center or Pragya Kendra as known in Jharkhand) have been gaining momentum in the state. E-nagrik seva has been launched for issuance of certificates. Jail Sakshatkar (Video conferencing facility at Pragya Kendra for a relative of a person in jail) is ongoing in Dhanbad district\textsuperscript{7}.

Panchayat banks have been of immense success especially for MNREGA payment, online return filing for commercial taxes (started this year) and data digitization. Ranchi has been chosen as the pilot district for roll-out of E-district. Software development and training has been completed. District e-governance society has been formed and E-district project will go live this month. SSDG: RFP has been vetted by DIT and is to be released shortly. 36 services of 10 government departments have been finalized. E-Kalyan, the software for online application for Scholarship by Welfare department and internal process has been developed in the state. E-procurement has started in 10 departments of the state. RFP has been floated for ICT@education, a project for computer education in high school and intermediate schools. RFP has also been floated for JNNURM MMP. Electronic Services Delivery Act is in the final stages of implementation. E-district pilot projects stating that it has been planned in 41 districts across 16 states at a cost of Rs 126.62 crore\textsuperscript{8}.

Compare to Government initiative, the presence of Private IT firm in Jharkhand is limited in terms of their operation. They are only into trading and providing IT solutions. There are very few global and national reputed firms which established its operation in manufacturing IT related products. In spite of having such few firms there are huge opportunities for growth for IT industry in Jharkhand.

\textsuperscript{5} Doherty, N. F., & King, M. (1998). The importance of organisational issues in systems development. Information Technology & People, 11(2), 104-123

\textsuperscript{6} IT Annual Report, Jharkhand (2010-2011), p.16-30

\textsuperscript{7} ibid

\textsuperscript{8} IT Annual report, Jharkhand (2010-2011)
3. REVIEW OF LITERATURE

Many scholars and researchers have done prominent work in the field of Communication, Information Technology and IT Industry. A review of the available literature on IT and Information Technology Industry may identify the major trends and gaps in these areas.

Renu Budhiraja (2007) study observed that electronic governance wave had started worldwide. It was reported that electronic governance was already available but managerial issues were of key importance. Change in the mindset of the people particularly at the top levels in the bureaucracy and policy making was important because they were responsible for providing the right leadership. This change in the mindset can be brought by focused organization development interventions and training programs. Once this is done, there would be a corresponding trickledown effect right through the spectrum of government then, there is a future of e-homes with e-services at the doorsteps. Nirupam Bajpai & Navi Radjow and (2000) revealed that in the emerging knowledge based global economy and sustainable competitive advantage of nations will reside not in their possession of natural resources or cheap labor force, but in their countries intellectual asset. The knowledge revolution offers a unique chance to scale the heights of significant development. They argued that in order to make such a leap Tamil Nadu needed to initiate a knowledge-led development policy that build on the state’s successful IT industry. Their work proposed a road map to raise the global competitiveness of Tamil Nadu’s IT industry through strengthening both demand and supply. Bresnahan and Greenstein (2001) observed the process by which technical change in Information Technology (IT) increased economic welfare. It was found that technical process change resulted in increase in welfare at different rates in different countries and regions. This study considered existing literature on measuring the economic benefits from Information Technology, emphasizing comparative issue and user studies.

A similar study related to IT and economic development was done by Oliner and Sichel (2000) in USA. It was found that the performance of US Economy over the past several years was remarkable, including a rebound in labor productivity growth. This paper re-examined role of Information Technology in the recent growth and contribution of computers and related inputs with the same neoclassical framework. Result indicated that contribution to productivity growth from the use of Information Technology including computer hardware, software and communication equipment surged in the second half of the 1990s. In addition, technological advance in the production of computers appeared to have contributed importantly to speed-up the productivity growth.

Similarly, Kripalani & Clifford (2000) in his study observed that, India has reached a pivotal moment and have an opportunity to prove themselves in the global spectrum in IT growth and economic development. As the benefits of joining the global IT revolution become ever more apparent, India is ready for its moment on the world stage. Pohjola (2002) study concentrated on the impacts of Information Technology on productivity and economic growth. It was argued that most profound impact of the IT revolution could make modern economies increasingly weightless or dematerialized in the sense that an increasingly greater fraction of gross domestic product continues to reside in economic goods with little or no physical manifestation. The thesis of dematerialization suggested that economic value would increasingly be created by producing and distributing bits of logic rather than atoms of physical material.

Researchers have expressed time and again that technological change poses the greatest challenge...
to the organization operating in various industries. Teng and Galletta\textsuperscript{15} (1991) mentioned that not much attention was given to the integration of technology and its use as a coordinating mechanism for organizational units. It is emphasized that IT should be studied as an independent variable affecting the organizational structure and its functioning. Huber\textsuperscript{16} (1990) recommended a reassessment of certain components of organization theory which were affected by the changes occurred in the capabilities and forms of communication technologies. Bayes, Abdul and Von Braun (1999)\textsuperscript{17} also explained the valid impact of IT and IT industry in rural economy of Bangladesh. Bonder & Zajtchuk\textsuperscript{18} (1997) explained the changing paradigm for Telemedicine Development and Evaluation. They commented on prospect and strategies for improving basic education in developing countries through the use of computer-based information technologies. Guy & Arnold (1995)\textsuperscript{19} studied the experience of Canada, Germany, Ireland, the Netherlands, Sweden, the United Kingdom, the United States and Japan in designing, implementing and adapting Information Technology (IT) diffusion programmes in the 1990s. The study examined the developments of effective IT diffusion and analyzed national IT policy portfolios to draw lessons and trends. It was inferred that diffusion programmes should consider technology life cycles, the business needs of potential users, their technological sophistication and their current exposure to international best practices. The study concluded by suggesting roles for governments, private sector and aid agencies to accelerate the benefits of IT diffusion for development.

The literature supports that IT and IT industry helps in economic development of a nation by diffusing the appropriate knowledge of IT and IT literacy programs. There are some comparative studies addressing the economic benefits due to the IT revolution. Few study focused on addressing the effect of IT in organizational structure and organizational performance respectively. Some study observed IT and IT industry as drivers of change in the business growth and socioeconomic development. There are still a very few state wide studies pertaining to India, which tried to identify the phenomena related to problems and prospects of IT industry to evaluate the contribution towards socioeconomic development. The present study attempted to report the existing phenomena related to problems and prospects of IT & and IT industry in Jharkhand to add value in the existing literature of IT and IT industry.

4. OBJECTIVES OF THE STUDY

The following objectives were formed in the study:

1. To study the present status of IT industry in Jharkhand.
2. To find out the problem related to IT industry in Jharkhand.
3. To find out the prospects related to IT industry in Jharkhand
4. To report the existing phenomena related to IT and IT industry in Jharkhand.

5. RESEARCH METHODOLOGY

Kerlinger and Lee (2000) stated that “Research design is a plan structure and strategy of investigation conceived to obtain an answer to research question and to control variance”.

The descriptive research design was administered for this research study. Survey research method was administered to gather the data from Government agencies, private firms registered with STPI and Other unorganized IT firms operating in Ranchi.
Primary data were collected to find out the problems and prospects associated with IT industry in Ranchi. Interview Schedules were developed on problems and prospects of IT industry in Ranchi. There were two Interview Schedules prepared to collect data for the research purpose. First Interview Schedule constituted of 19 items related to problems of IT industry in Jharkhand to collect the response. Only Likert five point scale were used to collect the response from various firms registered and unregistered under STPI. Second Interview Schedule constituted of 21 items related to prospects of IT Industry in Jharkhand. Dichotomous and Likert five point rating scale were used to collect the response. Secondary data was identified to collect information from government officials related to the department of Information Technology, Jharkhand.

The Unit of analysis was organizations heads of various IT business units (registered under STPI and other registered IT units) in Ranchi. To identify and understand the IT problems and prospects, questionnaires were distributed among 59 business heads and government IT professionals. Only 48 units head’s responses were found suitable for data interpretation out 59 respondents. Descriptive statistics (Mean, frequency, percentage and bar diagram) has been used as tools to discuss and interpret the results. Sample size is 48.

Secondary data were collected from various official websites, government policy, government published articles on IT, Annual plans and Working plans from the archives of the department of IT in Jharkhand.

Reliability analysis was done to identify the reliability of the scale developed. Cronbach’s alpha was measured to identify the internal consistency of closely related a set of items as a group. Though, Cronbach’s alpha is not a statistical test - it is a coefficient of reliability (or consistency). A "high" value of alpha is often used (along with substantive arguments and possibly other statistical measures) as evidence that the items measure an underlying (or latent) construct. However, a high alpha does not imply that the measure is uni-dimensional. If, in addition to measuring internal consistency, evidence should be provided that the scale in question is uni-dimensional, additional analyses can be performed.

Factor analysis was also performed to group the similar items and identify the variables related to problems and prospects of IT industry for future research on this topic. The cut off for each factor is kept usually more than 0.3. It means the variances explained by those items are more than 30 percent and should be kept in that factor. If Eigen value is comes more than 1.00 then factor extraction starts. Principle factor matrix was adopted and factors were rotated in Varimax rotation in SPSS version 20.00. The phenomena related to problems and prospects of IT industry were reported based on descriptive statistics and data interpretation.

6. RESULT AND FINDINGS

6.1. Problems of IT Industry in Jharkhand

Primary data were collected to find out the problems associated with IT industry in Ranchi by gathering the response from 48 IT firm’s heads. It constituted of 19 items to identify the phenomena related to problems in IT industry in Jharkhand. There were following findings based the research:

1. It was found that the government policy related to the promotion of IT sector is not up to the mark. Most of the companies were not happy with the government initiatives regarding the promotion and development of IT industry. The infrastructural problems were also found to be more concerning. IT Infrastructural problems are now being addressed by Government initiatives.

2. Air connectivity, road and rail connectivity must be improved. More concern was there with air and road connectivity. Air Connectivity, on time delivery and supply chain management were found to be inadequate and need to be more improved. Law and order problems created the bundh culture and other types of hurdles like bullying for ransom and other disturbances. This affected the IT firms in a more negative way. Government must take initiatives to improve all possible networks by improving the infrastructure and law and order of the state.

3. Land transfer problems were not directly affecting but it was also one of the deterrents in the IT sector development. Because faith among the big investors and entrepreneurs have not become strong as it
use to be after the separate state. The young generations are now well equipped with IT knowledge but workable manpower, knowledge and work culture is missing in the state due to substandard compensation provided by most of the firms.

4. The item reliability of the first schedule was done. Reliability of the scale was found on the lower side (0.538). Such reliability result was found because of new questionnaire prepared on problems related to IT industry for the first time. The respondents were found relatively low compare to the items in the questionnaire. This was validated by the KMO and Bartlett’s Test of data sufficiency or sampling adequacy. Data samples were not found to be very much on the positive side compare to the items in the questionnaire, because KMO and Bartlett’s score was found as 0.503. If, it was found either close to 0.7 or more than that, it can be concluded that data sufficiency was there. Future research may address the above issues such as refinement of questionnaire schedule with increased sample size to come up with more accurate findings. Findings of the study related to the problems in IT industry can be genuinely generalized across the IT firms in Jharkhand if above issues be addressed properly.

5. Factor analysis was also done to extracted latent factors from the questionnaire. There were four factor found by rotated principle axis method of factor analysis. The first rotated factor was identified by combining the seven items as given in the questionnaire such as, government support, slow land transfer, expensive IT services, Naxal problem, less IT educated customer, inter firm rivalry and unwillingness to try new products from the customer. Factor was named Government Machinery and Initiative. The second factor was identified by combining three items such as, IT product quality, government policy and inadequate power supply. Factor was named IT Infrastructure. The third rotated factor was identified by combining five items such as, inefficient law and order, poor road network, language barrier, low disposable income and high IT product price. Factor was named as Economic indicators and consumption. The fourth factor identified was by combining three items such as, inadequate air network, poor timely delivery and IT service quality. Factor was named as Network & Supply Chain.

6. The higher loading in first and fourth factors indicated that Government machinery and initiative must be properly emphasized to bring IT industry of Jharkhand on the right track. Network and supply chain factor must be given the proper priority to improve the IT industry scenario in Jharkhand.

6.1.2. Prospects of IT Industry in Jharkhand

Second Questionnaire Schedule constituted of 21 items to identify the phenomena related to prospects of IT Industry in Jharkhand. Following conclusions were made based on the study:

1. It was found that the assumption related to the competent work force and IT industry is positively related. That means Jharkhand has enough number of competent work force. Government and IT firms must take initiatives to retain these workforces for better resource utilization and socio-economic development.

2. 80% respondents responded that IT industry has bright prospect in Ranchi irrespective of lack of government support and poor law and order. This finding suggests that IT industry is a sunrise industry in early growth phase. A huge market potential and demand for IT products and services are there. This cannot be hindered by lack of government support or poor law and order in the state.

3. IT support from the state Government is needed because other states have far much better infrastructure than this state. Slowly the state is implementing the initiatives taken in the field of IT under the aegis of State IT department.

4. Socio-economic development was found positively related to the development of IT and IT industry in Jharkhand. It can be concluded that at present socio-economic development is highly dependent on IT sectors development of the state, because
it pervades almost all industry and society as a whole.

5. Competent work force was found available but government support is needed to retain and make use of their skills and abilities.

6. An interesting finding was observed that almost equal number of respondents agreed and disagreed on the need of government policy for IT sector development. This suggested that even there was not much done by the government, a huge market potential and opportunities are there for the same.

7. It was found and concluded that employment generation is directly related to government policy in IT sector. Most of the employment generation is still in the hand of state, though private firms are doing their part but still a lot is dependent on IT policy initiatives and implementation.

8. Similar findings were reported in standards of living and education quality in all levels. It can be concluded that IT industry in Jharkhand must be improved to improve the overall development of standards of living.

9. Similarly, state revenue, quality of work life and organizational productivity across the entire sector can be improved if IT sector be properly emphasized and improved.

10. The item reliability of the second schedule was also done. Reliability of the scale was found in the lower side (0.559). Such reliability result was found because of new questionnaire prepared on prospects related IT industry for the first time. However, item reliability was found better than the first questionnaire schedule. The respondents were found relatively low compare to the items in the questionnaire. This was validated by the KMO and Bartlett's Test of sampling adequacy. Data samples were not found to be very much on the positive side because KMO and Bartlett’s score was found as 0.502. If, it should have been either close to 0.7 or more than that it can be concluded that data sufficiency were there.

11. Further, Factor analysis was also done to extracted latent factors from the questionnaire II. There were six factor found by varimax principle axis method of factor analysis.

12. The first rotated factor was identified by combining the four items such as , Social Development, Improvement In educational Standard in UG, Revenue of the State and Quality of Work Life. This factor was named as socioeconomic development. The second factor was identified by combining two items such as standard of living and production process. This factor was named as Standards of living. The third rotated factor was identified by combining four items such as, economic development, Improvement In educational Standard in PG, Effective Communication, and Competent work force. This factor was named and Education and HR competency. The fourth factor identified was by combining two items such as, Improvement In Research Study and Employment Generation. This factor was named as Research and Employment opportunity. The fifth factor identified was by combining two items such as, improvement if educational standard in school and govt. policy. This factor was named and government policy in IT. The sixth factor identified was by combining two items such as, organizational productivity and effective customer services. This factor was named as improved process in IT.

The first, third and fifth factor were having higher loading compare to the rest of the factor extracted. It is concluded that these factors like socio-economic development, education and HR competency and government policy on IT must be emphasized more to improve the IT and IT industry in Jharkhand.

7. PRESENT SCENARIO OF IT INDUSTRY IN JHARKHAND

Presently IT firms in Jharkhand are unorganized. They are in the initial phase of its value chain. Most of them are only into trading, and providing services. There are very few firms who are into web designing and software development. Freelance IT consulting is also identified here because of the defragmented and unorganized IT
industry. Unorganized sector is not able to provide satisfying salary and career development opportunities, because of low bargaining power of IT professionals. Most of the potential work forces are moving out from here for better job and career prospect because of these problems. The emergence of freelance consultancy is also one of its outcomes. There are following registered IT units in Jharkhand under STPI:

**STPI Registered IT/ITES units at Jharkhand**

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Name of the company</th>
<th>Job Profile</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nath Corp. Pvt Ltd.</td>
<td>IT</td>
<td>35</td>
</tr>
<tr>
<td>2</td>
<td>Vidushi Infotech(SSP) Pvt. Ltd.</td>
<td>IT</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Scorpiaan Teletech Inc.</td>
<td>BPO</td>
<td>35</td>
</tr>
<tr>
<td>4</td>
<td>Galaxy Computers Consultancy Pvt. Ltd.</td>
<td>IT &amp; BPO</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>SEM Technology India Pvt. Ltd.</td>
<td>IT</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>Mica Edu Com Pvt. Ltd.</td>
<td>IT</td>
<td>45</td>
</tr>
<tr>
<td>7</td>
<td>Xiphias Software Technologies Pvt. Ltd.</td>
<td>IT</td>
<td>45</td>
</tr>
<tr>
<td>8</td>
<td>Tata Consultancy</td>
<td>IT</td>
<td>15</td>
</tr>
<tr>
<td>9</td>
<td>Tata Technologies Ltd.</td>
<td>IT</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>White Tiger Errand Pvt. Ltd.</td>
<td>IT</td>
<td>05</td>
</tr>
<tr>
<td>11</td>
<td>RSG Info tech Pvt. Ltd.</td>
<td>IT</td>
<td>35</td>
</tr>
<tr>
<td>12</td>
<td>HICON Info tech</td>
<td>BPO</td>
<td>20</td>
</tr>
<tr>
<td>13</td>
<td>Sai Aditya Info Tech Pvt. Ltd.</td>
<td>BPO</td>
<td>15</td>
</tr>
<tr>
<td>14</td>
<td>Soft Build Com</td>
<td>BPO</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>Vaishnavi Technology Pvt. Ltd.</td>
<td>BPO</td>
<td>75</td>
</tr>
</tbody>
</table>

**Source:** Department of Information and Technology, Annual work Plan, 2012-2013, p.16

No. Of STP Units at Ranchi: **13**

No. of STP Units at Jamshedpur: **02**

Total Employment: **425**

**Source:** Department of Information and Technology, Annual work Plan, 2012-2013, p.16

Discussion: The data showed that even after establishment of 13 STP units in Ranchi and 2 in Jamshedpur the total employment is still less. This may be due to the other operational problems such as infrastructural insufficiency and various law and order problems.

**Status of IIFP, STPI-Ranchi**
<table>
<thead>
<tr>
<th>Sl. no.</th>
<th>Name of the Company</th>
<th>Job Profile</th>
<th>Space in IIFC, STPI-Ranchi</th>
<th>Emp.</th>
<th>Employee FY-2012-13 (Expected) in INR Billion.</th>
<th>Export status FY 2012-2013 (Expected) in INR Billion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HICON Info tech</td>
<td>BPO</td>
<td>GL1 &amp; GL2 (800 sq.ft) 24 work station.</td>
<td>20</td>
<td>50</td>
<td>7.5</td>
</tr>
<tr>
<td>2</td>
<td>Xiphias Software Technologies Pvt. Ltd.</td>
<td>IT</td>
<td>GL3 (600 sq.feet)</td>
<td>35</td>
<td>75</td>
<td>12.5</td>
</tr>
<tr>
<td>3</td>
<td>Sobha Software Services (Not operating)</td>
<td>IT</td>
<td>FL1 (400 sq.ft)</td>
<td>15</td>
<td>25</td>
<td>7.2</td>
</tr>
<tr>
<td>4</td>
<td>White Tiger Errand Pvt. Ltd</td>
<td>IT</td>
<td>FL2 &amp; FL3</td>
<td>5</td>
<td>10</td>
<td>7.5</td>
</tr>
<tr>
<td>5</td>
<td>RSG Info tech Pvt. Ltd</td>
<td>IT</td>
<td>FR2 &amp; FR3</td>
<td>35</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Soft Build Com <em>(Not Operating from 2013)</em></td>
<td>BPO</td>
<td>FR1</td>
<td>10</td>
<td>25</td>
<td>3.5</td>
</tr>
</tbody>
</table>

*Source: Department of Information and Technology, Annual work Plan, 2012-2013, p.16*

*Primary source*

The annual work plan for 2012-13 showed that total export from the six STP units is around 43.2 billion INR. This is still insignificant compared to other states. It shows that even after government initiative export has not increased significantly. The visible problem is about the volume of operation, which is still not up to the Indian standard. Other STP in Jharkhand fails to export the product and services after a long year of operation is a major question mark in the progress of IT growth and development. This may be due to the supply chain problems or else the problems related to the inherent inadequate infrastructure.

The most popular firms in Jharkhand were taken to study and identify the area of operation of such firms to get actual status about the development of IT industry in Jharkhand. IT industry can only be developed in Jharkhand when more number of competitive firm opens and operate in this region with ease and better productivity. The key findings after the observation in such popular firm were found in the area where they are doing their business. Almost all of such firms are into providing services in various segments of IT. No firm has still ventured into Research and development of any IT products of any kind. They are just providing services on the imported products. This shows the volume of operation and nature of investment in the area of IT, which is very less compare to reputed global Indian firm.
Annual Plan for FY, 2012-2013

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Type of Scheme</th>
<th>Annual plan 2012-2013 (Rs. In Lakh)</th>
<th>Proposed Outlay</th>
<th>Flow of TSP</th>
<th>Flow of OSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Earmarked Schemes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>NeGP (SWAN,CSC,SSDG,SDC,e-District,Capacity Building,CCA)( ACA)</td>
<td>1500</td>
<td>1000</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>State Share to CSS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>IIIT(50:35:15)</td>
<td>350</td>
<td>350</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>State Plan Schemes Continuing Scheme</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Software Technology Park</td>
<td>1200</td>
<td>600</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Computer Training to Govt. Employees</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IT Publicity</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.4</td>
<td>e-Procurement</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Call Centre</td>
<td>300</td>
<td>300</td>
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</tbody>
</table>

Source: Annual Plan, Information Technology Department Jharkhand, FY, 2012-2013, p.25

The Department of IT in Jharkhand has formulated and implemented IT policy for the development of state by providing infrastructure to the state for socio-economic development. The formulation part was remarkable but the implementation part from the government machinery was not up to the mark. Annual plan indicated that proposed outlay for the IT infrastructural development is not sufficient compare to other state. This was found to be important problems in IT implementation initiative. The low investment is leading to the relatively poor IT Infrastructure and ultimately leading to the subdued faith among the large, medium and small entrepreneurs, who wants to start new business in IT related areas.

8. CONCLUSIONS

It was found that Jharkhand is not untouched with the influence of IT prowess. There were many initiatives taken in the last 10 years but growth is relatively slow in the area of IT and IT industry compare to other newly formed state. The contribution Jharkhand is making is in the field of IT is bare minimum. Only 2.1 crore is being contributed by various firms in terms of software export in the financial year, 2010-2011, compare to the total contribution of 215264.14 crore by all states. Since, this state has been producing numerous quality educated human resources, it has a vast potential to grow as developed state in future. The state was taken for study to identify the phenomena behind its problems and prospects related to IT and IT industry.

Secondary data analysis conferred that establishment of 13 STP units in Ranchi and 2 in Jamshedpur the total employment rate is still less. This is due to infrastructural insufficiency and various law and order problems in the state.

The annual work plan for 2012-13 showed that total export from the six STP units is around 43.2 billion INR. This is still insignificant compare to other states. It shows that even after government initiative export has not increased significantly. The problem is about the volume of operation, which is still not up to the Indian standard. Other STP in Jharkhand fails to export the product and services even after a long year of operation is a major question mark in the progress of IT growth.

20 STPI Annual Report, 2010-2011, pg.8
and development. This may be due to the supply chain problems or else the problems related to the inadequate infrastructure or government support.

The popular firms in Jharkhand were taken for the study and area of operation was identified. IT industry could be developed in Jharkhand when more number of competitive firm opens and operate in this region with ease and better productivity. Results were reported and discussed after the observation. Most of the firms are into providing services in various segments of IT. Very few firms have ventured into Research, development and production of any IT products of any kind. They are just providing services on the imported products. The volume of operation and nature of investment in the area was found very less compare to reputed Indian firm.

The presence of big IT firm is limited in terms of their core operation. They are only into trading and providing IT solutions. There is no firm in manufacturing the IT related products. A unique trend has been observed in the organized and unorganized unit operating in Ranchi. Most of the Firms which are registered under STPI have still not ventured into the IT product’s research and development. Most of them fall into small and medium investment cash and curry business. They are operating as small and large vendors and retailers who purchase products from the reputed big firm and selling it, and then providing IT support to run the business. Few of them are only into consulting, software development and web portal designing and providing support services in the same domain. The IT department of Ranchi must look why big business firms and entrepreneurs are not interested in setting up big firms with large investment in the segment of product and software development.

9. DIRECTION FOR FUTURE STUDY

1. Future research may address the above issues such as refinement of questionnaire schedule with increased sample size to come up with more accurate findings.

2. Present phenomena related to the problems in IT industry can genuinely be generalized across the IT firms in Jharkhand, if detailed study incorporating other IT firms operating in all districts the state be taken into consideration.

3. A causal research may also be attempted to see the impact of IT industry in socioeconomic development of Jharkhand (India).

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