CHAPTER II

Potentialities of Electronics and IT industry in Assam
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POTENTIALITIES OF ELECTRONICS & IT INDUSTRY IN ASSAM

2.1 Characteristics of Electronics & IT industry:

The some unique features of Electronics Industry act as a very powerful tool for the social and economic development of a country like India.

The Unique features of Electronics Industry are:-

1) Independent of transportation problems
2) Independent of location
3) Independent of raw materials problems
4) Labour intensive
5) Not capital intensive
6) Quick return on investment, fast capital formation
7) Multiplicative effect and leverage on other industries
8) Highly dispersible
9) Unique range of size- from cottage industry level to big corporation
10) Open- ended nature, fast and continuous growth

1 Source: - article published in Assam tribune on 20th July 1975
Information Technology (IT) implies the application of computers to store, process and use of information particularly in the field of commerce and now more into e-commerce and e-business. Basically, IT helps to provide right information at right time, with the use of computer, communication, telephone, Internet etc. Because of this opportunity, IT has been recognize as a potential enabler for the growth and expansion of the business. Modern companies have been invariably growing their business by looking at new markets and products with the help of IT. There is no formal design for Information Technology as offered or implied. But the use of Information Technology is burgeoning, large accounting firm have IT departments, there are specialist IT lawyers, some Governments have Ministries of IT, Universities have established IT faculties, IT journalist of region and self-styled IT professionals abroad.

2.2 **Industrial Feature of the Assam:**

The two major industries of Assam are oil and natural gas and tea which account for the maximum value addition. The oil and natural gas industry is govt. controlled and operates under the umbrella of the Ministry of Oil and Natural Gas. The tea industry in Assam, which accounts for around 50% of the country's total tea production, is mainly controlled by large private companies. Both the sectors have made considerable progress over the years and are
way ahead of the other industries in the state. Besides oil and natural gas and tea, the other important industry in Assam is mining. Coal and limestone are mined in considerable quantities in this state.

The food products sector account for bulk of the industrial production in Assam. Although the contribution of this sector to the total output of the country's manufacturing sector is very minute, the importance of food products in the state's economy cannot be overlooked. In fact, there is considerable scope for the establishment of large and medium scale industries in these sector. After food products, the most significant sector for Assam is the petroleum, plastics and rubber sector. This sector accounts for 30% of the total output value for the state's manufacturing industries. In the other manufacturing industries category, the most important sector is textiles which accounts for 1.7% of the total output value of Assam's manufacturing industries.

2.3 **Prospective allied industries:**

Assam is the only NE state which can be compared in the same scale as the other states in the country. The potential of industries is also much higher in Assam as compared to the other NE states. Assam derives its advantage because it already has an established
industrial culture and also has the most developed infrastructure in the region. This is supported by a diverse resource base which can form the basis of many industries. Assam also has a much higher surplus generation than the other NE states. This can support a host of demand based industries in the state. In Assam there is plenty of scope for value addition in the mineral based downstream and ancillary units. The crude that is extracted can be further value added through refineries and also many downstream projects can come up to these refineries. Similarly for coal, Assam has very good potential for Sericulture. The major potential industries for Assam are -

**Primary resource based industries**

Primary resource based industries are those that are based on the natural resources available in the state. The resources that are considered are wood, bamboo, tea, oil and natural gas, mineral resources like granite, coal and limestone, horticulture items and silk. The industries are listed below:

a) Plywood and Hardboard based on wood. Very high quality soft wood is available in Assam and also in the neighboring NE states.

b) Limestone Quarry based on the limestone reserves of North Cachar hills. This has the largest deposits of cement grade limestone reserves. Most of it is found in the Garampani and Umrangsho area.
c) Granite reserves are found in the Panimur area of the North Cachar hills. Granite quarrying and processing is a sunrise export industry, and granite processing units with their own quarries can be set up in Assam. If the processing cost can be kept under control, then granite has a very good potential in Indian and overseas market as a decorative building material.

d) Exploration and exploitation of oil fields in Assam

e) Refinery for the crude that is extracted

f) Sugar Mills from sugar cane

g) Paper from bamboo chips or bagasse from sugar mills

h) Fruit processing and food processing units using banana, mushroom, meat (pork and beef)

i) Sericulture and silk processing and textile units. Excellent quality silk of eri and muga variety are grown in Assam. In fact, the cultivation of bi-voltine variety of silk should be encouraged so that the quality of silk that is produced can compete with the best silks in the world. If good silk can be produced, modern silk processing plants can be set up in the state.

j) Handloom and Handicrafts items which have very high value addition can be used as export items.

**Downstream and Ancillary units**

The downstream projects that are considered here are chiefly based on the gas and oil that are available in the state. The other
industries for which downstream projects have been considered include coal-based downstream projects, cement as downstream to limestone quarrying etc. Ancillary units can be thought for tea machinery and oil tankers.

a) Gas Cracker projects utilizing the gas from the oil fields of Assam. The plant will produce downstream products of ethylene, propylene and oxo-alcohols.

b) Plastics as downstream projects of the refinery.

c) Textile Mills using synthetic fibers obtained from the downstream projects to the refineries.

d) LPG bottling projects as downstream projects of the refineries operating in Assam.

e) Liquefaction of coal gas.

f) Coal washery for improving the calorific value of coal for supplying to secondary steel making units.

g) Cement Plants

h) Oil tanker

i) Tea machinery

**Demand based industries**

The demand based industries will be based on the local demand generated for various goods and services both in the domestic and industrial sector. The raw material will be imported from other
regions of the country and value addition will be carried out in the state. The price of these products has to be competitive as against those coming into the state from other regions. Demand based industries can come up in the following areas:

Hotel to cater to the tourist and also the mobile business community.
Nursing Home.
Rolling mill from scrap iron.
Induction Furnace.
Carbon Products.
Electrode manufacturing.
Soft Drinks.  

2.4 **Scope of Electronics and IT industry in Assam:**

The State of Assam is characterized by a charming diversity of culture and lifestyle. It is abundantly blessed with various natural resources. The improvement in transportation and communication system makes the state ready for rapid growth and development. More attention and emphasis is now being given at the highest levels for the industrialization of the state in order to catch up with the advanced states of the country and meet popular aspiration.

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2 Internet- North East India Databank
Electronics and IT has been identified as a thrust area for Assam at various forums. AMTRON was established as a government of Assam undertaking with the objectives to promote Electronics and IT industry in Assam and act as a nodal agency.

The scope for Electronics industry in Assam is very significant due to the following potentialities & incentives for its growth in the State.

1. The dust and pollution free atmosphere of Assam is considered as a promising land for Electronics Industry.
2. Sales Tax exemption.
3. Transport Subsidy.
5. The State also being a backward State, Financial help from both the government of India and the State Government are available.
6. Sufficient qualified and unskilled Worker.
7. Wide market for Electronics Products.

Similarly, in respect of IT industry also Assam has great potentialities for its growth and development.

1. IT is basically a knowledge based industry. The large number higher educational institutions in the state (as shown in the following note & table below) are the power house for technologically knowledgeable persons in the state.
Table 2.1

The number of educational institutions in Assam in the year 2004-05 is listed below:

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Number</th>
<th>Teacher</th>
<th>Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. University</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>2. Institute of National Importance</td>
<td>5</td>
<td>N.A.</td>
<td>13371</td>
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<tr>
<td>3. College for General Education</td>
<td>1</td>
<td>N.A</td>
<td>N.A.</td>
</tr>
<tr>
<td>(a) Arts, Science and Commerce College</td>
<td>317</td>
<td>10462</td>
<td>370338</td>
</tr>
<tr>
<td>(b) Junior College</td>
<td>125</td>
<td>1614</td>
<td>35672</td>
</tr>
<tr>
<td>4. College for Professional Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Agriculture and Forestry</td>
<td>2</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>(b) Engineering</td>
<td>3</td>
<td>444</td>
<td>3810</td>
</tr>
<tr>
<td>(c) Law</td>
<td>20</td>
<td>166</td>
<td>7165</td>
</tr>
<tr>
<td>(d) Veterinary</td>
<td>2</td>
<td>187</td>
<td>736</td>
</tr>
<tr>
<td>(e) Medical College (including) Homeo/Ayurvedic/Dental/Pharmacy/Nursing</td>
<td>7</td>
<td>805</td>
<td>2556</td>
</tr>
<tr>
<td>5. School for General Education</td>
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<tr>
<td>(a) Higher Secondary School</td>
<td>620</td>
<td>21201</td>
<td>515524</td>
</tr>
<tr>
<td>(b) High/post Basic School</td>
<td>4629</td>
<td>54224</td>
<td>1081585</td>
</tr>
<tr>
<td>(c) Middle/Senior Basic School</td>
<td>8143</td>
<td>73147</td>
<td>1106711</td>
</tr>
<tr>
<td>Institution Type</td>
<td>No. of Institutions</td>
<td>No. of Students</td>
<td>No. of Teachers</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>---------------------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>(d) Primary/Jr. Basic School</td>
<td>30068</td>
<td>83720</td>
<td>2624942</td>
</tr>
<tr>
<td>(e) Pre-primary/Pre Basic School</td>
<td>199</td>
<td>199</td>
<td>746390</td>
</tr>
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</table>

6. Institution for Professional Education

(Under Graduate)

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>No. of Institutions</th>
<th>No. of Students</th>
<th>No. of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Polytechnic Institution</td>
<td>8</td>
<td>N.A.</td>
<td>4500</td>
</tr>
<tr>
<td>(b) Technical Industrial Arts and Craft School</td>
<td>32</td>
<td>N.A.</td>
<td>4560</td>
</tr>
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</table>

7. Teachers Training institution

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>No. of Institutions</th>
<th>No. of Students</th>
<th>No. of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Teachers Training college</td>
<td>40</td>
<td>340</td>
<td>2387</td>
</tr>
<tr>
<td>(b) Teachers Training School</td>
<td>1</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

8. School for Vocational Professional, Special and Education.

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>No. of Institutions</th>
<th>No. of Students</th>
<th>No. of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Commerce</td>
<td>36</td>
<td>152</td>
<td>6423</td>
</tr>
<tr>
<td>(b) Music and Dancing</td>
<td>43</td>
<td>252</td>
<td>5492</td>
</tr>
<tr>
<td>(c) Arts and Craft</td>
<td>26</td>
<td>95</td>
<td>678</td>
</tr>
<tr>
<td>(d) Junior Technical</td>
<td>6</td>
<td>98</td>
<td>495</td>
</tr>
<tr>
<td>(e) Handicapped</td>
<td>5</td>
<td>69</td>
<td>555</td>
</tr>
<tr>
<td>(f) Juvenile Delinquent (Jail School)</td>
<td>4</td>
<td>5</td>
<td>189</td>
</tr>
</tbody>
</table>


**Primary education:** For achieving universal elementary education, Sarva Siksha Abhijan (SSA) and other schemes have
been started. Some of the important indicators of elementary education are stated below:

Total population (2001 census) : 2,66,55,528

Children population 5-13 years: 52,37,964

Children enrolled in schools: 46,28,181

Children out of school: 4,24,845

Average teacher per school:-

Lower Primary: 3

Upper Primary: 7

Till 2004, Assam has 30068 primary schools and 7704 upper primary schools.

**Secondary and Higher Secondary education:** As on 2004, Assam has 3719 secondary schools and 788 higher secondary schools. During 2003-04, the state government granted an amount of Rs.5 lakh per schools to 20 nos. of govt. high school for renovation of their building. The state also introduced Rajib Gandhi Computer Literary Programme in some higher secondary schools.
Higher Education: At present there are five universities in the state. There are altogether 363 institutions for higher education serving by 12425 nos. of teachers in the state during 2002-03. Out of these institutions there are only four govt. colleges.

Technical Education: The technical education is one of the most crucial of resources development. The current courses with intake capacity of some institutions are given in the table 2.2

Table 2.2

Position of Technical Institution in Assam

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Institutions</th>
<th>Intake capacity</th>
<th>Nature of course</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Two State Engineering Colleges</td>
<td>510</td>
<td>Degree</td>
</tr>
<tr>
<td>2</td>
<td>Regional Engineering College, 50% seats for Assam</td>
<td>105</td>
<td>Degree</td>
</tr>
<tr>
<td>3</td>
<td>Reserved seats in different Engineering Colleges outside Assam</td>
<td>102</td>
<td>Degree</td>
</tr>
</tbody>
</table>
4 Nine State Polytechnics

(i) 1170 Diploma
(ii) 180 Post Diploma

Source- NER Data Bank down load from Internet

One important institution in the field of technical education is IIT, Guwahati established in 1994.

**Adult Education:** The state is also emphasizing on adult education with the help of some NGOs and through Total Literacy Campaign (TLC).

**Literacy Rate (in %):** 1991 Census: 52.89% 2001 Census: 64.28%

2. Due to social and cultural isolation most of the people like to stay in home state and it has an added advantage or potentialities to developed IT industry and IT enable industry in the state.

3. The location independence of IT industry and IT product does not create any transportation problem like other conventional industry. The physical transportation facility is not required in IT industry.
4. In all prospective ancillary industry as mentioned in the 2.3 above may apply IT enable services (ITES) and presently most of the industry apply ITES in production and other activities.

5. The facility of out sourcing and Back Process Operation (BPO) with the help of IT, enable the development of most ancillary industries in the state.

6. In terms of infrastructure for IT, Assam today has adequate bandwidth both in terms of private and semi-government sectors. There exist more than 4 Internet Service Providers (ISPs) in Assam with a total available bandwidth of more than 38 MBPS. There are three categories of Internet Service Providers in Assam, namely A, B & C. AMTRON is a category B ISP covering the entire state. BSNL, STPI, VSNL, SATYAM etc. are the other ISP increase the strength of the National Informatics Backbone (NIB) in the state.

7. Software Technology Parks of India (STPI) has been one of the leading agencies in the state providing the basic infrastructure and Gateway for export of Software and
software related services. STPI, Guwahati has been one of the front runners in terms of performance and growth.

8. The scope of Electronics and IT industry in the state is also arises due to the support of the state and central government in this sector. The state government has patronizes the growth of IT and related services in the state by opening different sector for private participation. some important of them are :-
   a) Education
   b) Transportation
   c) E-Governance
   d) Call Center Business
   e) Medical Transcription

9. The special incentive given by the policy of Central Government is also increase the scope for development of IT industry in the state. These are :-
   a) Income tax exemption under Section 80 HHE on profits from export software and IT-enabled services
   b) Special Import License (SIL) against export.
   c) Zero customs Duty on import of IT software
   d) 100% FDI permitted in IT Remote services
e) 10 year total tax holiday for Industries in North East India

10. Apart from the above the state IT policy gives extended benefits for IT sector in the state. Some of the salient features are:-

   a) Subsidy on leased line connectivity
   b) Subsidy on Captive Power Plant
   c) Subsidy on Diesel Generating Set
   d) Subsidy in Manpower Training and Development
   e) Incubation facility for Software Exporters
   d) Subsidy on capital equipment
   f) Sales tax exemption to new and existing units for 10 Years
   g) Subsidy on Infrastructure
   h) Subsidy on Quality certification

11. The Software Technology Parks of India (STPI) has been one of the leading agencies in the state providing the basic infrastructure and Gateway for export of software and Software related services. The STPI Guwahati which has started functioning only from a few years ago widen the scope of IT industry in Assam and North East.
12. Assam has the great scope to attract investment in Electronics and IT sector. This is because of the commissioning of 'Lukopriyo Gopinath Bordoloi' (LGNB) Airport as an International Airport, which enter the state in the global map.

In addition to it, the climate and the development of quality housing and other recreational facilities has added extra mileage for an investor to look towards Assam. Moreover, the present transportation facilities of Assam removed the inaccessibility to a large extent.