ROLE OF ELECTRONICS AND INFORMATION TECHNOLOGY
FOR THE BETTER PROSPECTS OF KERALITES

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Kerala has always been at the forefront in the field of electronics and information technology in the country. With the state having the highest literacy rate in the country, high density of science and technology manpower, unending talent pool of English speaking personnel, excellent IT infrastructure, the future of Electronics and IT enabled industries are evergreen. With the government promising the state an IT led growth over the next couple of years, the primary drive towards establishing Kerala as the preferred Electronics and ITES (Information Technology Enabled Services) destination has already begun. The Kerala Government acts as a catalyst to successfully facilitate an enabling environment for Electronics, IT, IT products and ITES with the path breaking policies of the government. In this light this article would provide a glimpse of the Electronics and IT industry in the state with focus on the various state run enterprises and IT parks and their successes in establishing Kerala as the most favoured Electronics and IT destination.

ELECTRONICS INDUSTRY IN KERALA

Kerala was one of the few states in the country to have an early boost in the electronics industry which took off around 1965 and was traditionally oriented towards space and defense technologies and rigidly controlled and initiated by the government. This was followed by developments in consumer electronics mainly with transistor radios, Black & While TV, Calculators and other audio products. Colour televisions soon followed.

KELTRON or the Kerala State Electronics Corporation is the major Public sector Electronics Company in the state of Kerala engaged in the design and development of electronics and electronic products in the state.
KELTRON (Kerala State Electronics Development Corporation Ltd) – The Pioneer

KELTRON’s history is a saga of innovation in electronics. From being a pioneer in 1973, to the role of a trend-setter today, Keltron has been the catalysis for the development of electronics industry in Kerala. Within five years of its inception, Keltron had set up a production centre in every district of the State. More than 5,000 people are engaged directly or indirectly by Keltron for the manufacture of electronic goods. The model of a State-owned electronics corporation was so successful that several other States in India followed suit - launching their own electronics corporations. A quarter century later, Keltron after having contributed substantially to the industrialisation of the State, set about transforming Trivandrum, the capital city of Kerala, into one of the major electronics hubs of the country. Today, the city is home to Technopark, the internationally known technology park where thousands of talented young men and women participate in the development of a burgeoning information technology industry. Thus, Keltron has in effect triggered a revolution that still keeps churning out its benefits to individuals and institutions in different parts of the world, continuing in its quest to innovate products and processes that would add further value to life and to the industry.

Keltron is India’s first and the largest electronics corporation in the State sector located in the state of Kerala. Headquartered in the capital city of Kerala, Thiruvanathapuram the company is under the direct control of the state Government of Kerala. Keltron specializes in the assimilation, adoption and integration of technology for creating innovative solutions. Its strength lies in the stable foundation and experience built over the years, its strong human capital, its nation-wide network and its ability to adapt itself to change. During the early days of globalisation, Keltron faced severe crisis, and became a loss making unit, due to the failure in competing with multinational companies. Recently the company has started recovering from the crisis and is currently operating in profit. Keltron is famous for its automatic traffic regulation systems. In early days, Keltron traffic signals were used in all the major metro cities of India. Currently it is mainly used in Kerala and few neighbouring states.

Keltron entered the IT arena way back in the late 70s with the manufacture of computers and accessories, and micro processor based products such as attendance monitoring and recording systems. Keltron launched its ID Card Project (IDCP) in 1991 seeing an opportunity in the decision by the Election Commission of India to provide Electoral Photo Identity Cards to the voting population of India. Keltron was then in possession of the right technologies and the right people to carry out this mission. Today, IDCP is identified as the State Level Agency of the Chief Electoral Officer of Kerala. In addition to providing ID cards for the entire voting public of Kerala, IDCP also maintains the Electoral Rolls Management System of the State. IDCP maintains 77 Touch Screen Kiosks in every district and Taluk Offices in Kerala for providing online verification
facility of electoral rolls by the public. Keltron is presently in the process of converting the electoral database located at 140 LACs to a single database. This precedes the creation of a central database of electors for each State which would be integrated into a national database. For the first time in India, an Interactive Voice Response System (IVRS) enabling the public to verify the electoral rolls over telephone has been designed and developed by IDCP in 2002. IDCP also produces various types of Cards such as SMART Cards, RFID Cards, Bar Coded Cards, Employee Identity, Traders Identity, Beneficiary Identity, Driving License, Ration Cards as per customer requirement.

Riding on the IT boom in the country towards the close of the twentieth century, Keltron formed its own software development facility in 1999 focusing on areas such as e-governance, industrial automation and web based applications and services. Keltron has contributed substantially to the e-governance initiatives of the Government of Kerala as well as in implementing several key projects for the Government. Keltron’s clientele includes government departments, quasi-government institutions and some of the high-profile R&D institutions such the VSSC and ISRO. Right from the start Ketron has been an ardent supporter of Open Source technologies and has a development team continuously evolving cost-effective solutions for different domains in open source.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) – THE INITIATIVE IN THE STATE

The repute of the country as a favoured IT destination has been growing phenomenally even in times of recession. The size of IT-BPO industry has crossed 70 billion USD, contributing 5.8% of country’s GDP. In the last 5 years Kerala too has witnessed the emergences of the IT business as a key contributor to the economy. The growth of the knowledge economy has been beneficial for the state as it enjoys many natural advantages that can be utilized effectively. The high density of technology graduates; lower salaries and lower employee attrition rates have also helped the state progress. Initiatives taken by successive governments to promote Kerala as an IT destination have been very fruitful. The state government has invested nearly 2000 crores during 2010-11 and 2011-12 to develop the infrastructure required for the sector.

The IT sector in Kerala includes IT parks and IT enabled institutions which are set up for the help of the laymen.

The major IT investments in Kerala include:-

- **Kerala State IT infrastructure Ltd**
  - Major IT Parks
    - Technopark
    - Infopark
    - Cyberpark
    - ITes Habitat Centre
    - Rural IT parks / Techno lodges
• IT for the masses
  - INSIGHT
  - Akshaya
  - FRIENDS
  - Ente Gramam
  - Village documentation
  - E-Krishi

Kerala State Infrastructure IT Limited

Kerala State Information Technology Infrastructure Ltd (KSITIL) is a public limited company formed for the creation of infrastructure for IT in the state. The company was incorporated under the Companies Act on 31.01.2008 and commenced business on 05.03.2008. The business model for the company is to acquire land, create value addition by providing basic infrastructure like electricity, water and road, obtain SEZ status and such other Government approvals that may be required and then allot land to private developers for development of either IT SEZ’s or IT parks, realizing value of land based on market prices. Revenue so generated is reinvested in projects it promotes as company’s share capital.

Major IT Parks in Kerala – An Eye view

Information Communication Technology has become a part and parcel of the lives of the common man. The states in the country compete among themselves to become the best in this field in order to create a higher standard of living and technology. IT Parks play a crucial role in the development of this area of science and technology.

Aims and objectives of IT Parks

The IT Parks are set up with the following objectives in view
1. They serve the purpose of technological advancement.
2. They aim to bring up the economic standard of the country in which they position themselves.
3. Through foreign investments and infrastructure build- ups, development of IT Parks would create job opportunities for the domestic people.

The various IT Parks are –

1. TECHNOPARK

Technopark, Trivandrum, an autonomous society promoted by the Government of Kerala, is India's first technology park and among the three largest IT parks in India today. Spread over 330 acres, and about 4 million sq.ft. of built-up
space, Technopark hosts over 180 IT and ITES companies employing over 25,000 IT Professionals. The select list of companies working at Technopark include Tata Consultancy Services, Infosys Technologies, Mckinsey & Co., Ernst & Young Middle East, Tata Elxsi, US Technology Global, Network Systems & Technologies, IBS, RR Donnelley Global BPO, Sunte Business Solutions, Collabera, TCS, Allianz Cornhill, RM ESI, Alamy Images, Kanoo Group, Saudi Engineering Group, Toonz Animation, Accentia technologies, SeaView Support Systems, etc.

Technopark provides world class, robust and failsafe physical, power and datacom infrastructure, offering a no compromise yet low cost enabling environment for IT industry that is leveraged by its occupant companies for a competitive advantage. Technopark has the best of nature’s infrastructure complemented by the most modern man-made facilities. International standard infrastructure, a comprehensive umbrella of support services, a significant cost advantage, and easy access to excellent human resources and remarkable ease of starting up make Technopark, Trivandrum India's largest IT Park, the most promising IT destination.

2. INFOPARK

Infopark Kochi is located in 100.86 acres of land at Kakkanad village, Kanayannur Taluk, Ernakulam district. Around 80 acres has been notified as an IT sector Specific Economic Zone by Ministry of Commerce, Government of India. Apart from Infopark owned infrastructure, parallel developments by co-developers such as Leela Soft, L&T Techpark and Brigade Enterprises are also taking shape in the campus. Major Private IT campus by Wipro, TCS and IBS Software are also in progress. The campus includes amenities such as food courts, banking counters, ATM, shopping arcade, etc.

3. CYBERPARK

Cyberpark a Government of Kerala organization planned in the lines of Technopark at Thiruvananthapuram and Infopark in Kochi to build, operate and manage IT parks for the promotion and development of investment in IT and ITes industries in Malabar region of Kerala has been registered under the Societies Act 1860 on 28–01–09. Cyberpark is in the process of setting up IT parks at Kozhikode, at the SEZs approved at Kannur and Kasargod and may set up other such parks planned in future. Cyberpark offers a unique confluence of advantages, not found elsewhere in comparable destinations in India - robust and failsafe
physical infrastructure, power and data connectivity; highly trained technical manpower; most flexible regulatory framework; highest incentives (up to 180,000 USD); and the best law and order environment in India.

4. ITeS Habitat Centre

To augment the potential of Kochi as an emerging destination for the ITeS industry, the Department of IT, Government of Kerala, has set up India’s first exclusive ITeS training center in Kochi. ITeS Habitat Centre is a training and facilitation centre for IT/ITeS industry. ITeS Habitat is located in the heart of the city of Kochi with approximately 15000 sq ft of built up space. ITeS Habitat Centre conducted various training programmes for students in Spoken English, Business English Certification (BEC), and Call Centre aimed to enhance the Communication skills required for IT/ITeS industry. In addition to the regular training programmes the Centre conducted a one month training programme for a team of 8 students from South Korea.

5. Rural IT Parks / Technolodges

With the BPO industry flourishing in India, more and more companies began establishing their operations in metropolitan cities to capitalize on available human resource talent and physical infrastructure. But the prodigious expansion of BPO companies in select metropolitan cities has caused intense pressure on available human resource in these areas as well as physical infrastructure which has led to shooting up of costs for manpower as well as infrastructure. Due to these factors some IT, ITeS and BPO companies are now looking at smaller towns and villages. The low cost of operations and lower employee attrition levels are the key benefits that these companies derive from their rural operations.

In order to provide an impetus to this advantage, Government of Kerala decided to set up Rural IT centres namely Technolodge Scheme, typically advantageous to IT companies which are looking for reducing operational costs. This scheme of Techno-Lodge envisages developing a small building which has a capacity of seating about 25 employees for IT, ITeS and BPO operations.

The main objective of this Scheme is to encourage ITeS and BPO companies to operate from low cost rural centres and thereby to create employment in rural areas. The Technolodge Centres will be set up in old unused Government buildings, buildings belonging to Government organizations, panchayaths or other local bodies. Preference shall be given to Panchayaths, who provide their existing buildings/ community halls free of cost for the scheme. Technolodges can be setup in small towns and rural Panchayats in buildings with a built up area of about 10000 sq. ft. or land measuring at least one acre. This
Scheme will provide employment to rural youth, taking IT to smaller towns and cities and making use of utilized Government/local bodies buildings etc.

The IT Policy 2007 declared that IT Parks will be set up in all districts except Thiruvananthapuram and Ernakulam. Proposals were also received for the setting of rural IT Parks / Technolodges in small towns and Rural Panchayats wherever unutilized land/ buildings are available with Government / Local bodies. Some IT companies also expressed interest in migrating to rural areas to reduce their operational costs. Accordingly, sanction has been accorded for the setting up of IT Parks in the Districts of Kollam, Alappuzha, Kasargod and Kannur.

The Government has accorded in principle sanction to Kerala State Information Technology Infrastructure Limited (KSITIL) for setting up rural IT Park / Technolodges in small towns and rural panchayats wherever unutilized land/buildings are available with Government /local bodies free of cost. These lands/buildings will be jointly identified by Revenue and IT Departments. The value of land/ buildings shall be treated as share capital contribution of Government in the equity of the KSITI Limited and the value of land/ building will be fixed by Government in consultation with the District Collector concerned.

Kerala State IT Infrastructure Limited (KSITIL) will be the main implementing agency for this scheme. The KSITIL, may wherever it is not directly able to set up Technolodges, nominate an agency like Technopark, Infopark, Cyberpark or other IT related non-profit organization to operate the scheme on it's behalf. The selected buildings will be renovated and refurbished by the implementing agency. Necessary power back up and broadband facility will be provided by the implementing agency and they will also market these Techno-Lodge centres to IT, ITeS and BPO companies.

**IT for Masses**

The common man needs the assistance of IT sector in his daily life. With this intention, the Government of Kerala has set up certain institutions for rendering services to the local community. These institutions help the public in the following ways.

1. Making technology accessible and available for hassle-free use by the target group
2. Modernizing and upgrading skill sets of ordinary citizens
3. Creating awareness of ICT tools and usage
4. Generating e-content useful to the common man in local language
5. Generation of service delivery points even in the remotest areas
1. INSIGHT

An initiative of KSITM in association with SPACE (Society for Promotion of Alternative Computing and Employment), INSIGHT uses the possibilities offered by Information and Communication Technologies to make the differently abled people of Kerala active participants in the development process. Established in May 2007, the project embodies the Kerala Government's IT Policy 2007 that the benefits of ICT should reach all sections of the society. A first-of-its-kind initiative in Kerala, INSIGHT aims at enabling the differently abled through the deployment of free software.

The major objectives behind the setting up of INSIGHT are:

- To use technology as an interface to increase the quality of life of the differently abled
- To make technology accessible and available for hassle-free use by the target group
- To enhance the employability of the differently abled

2. Akshaya

An e-literate citizenry is a key component of a successful e-governance strategy. The first step in taking ICT to the masses has been rolled-out in Kerala with Akshaya. KSITM is credited with conceptualising Akshaya, the first in the list of initiatives in Kerala, and perhaps in India, to reach out the benefits of ICT and IT to the masses. Pilot in the one of the most backward districts of Malappuram in Kerala in 2002, the Akshaya initiative has evolved into one of the most dynamic interventions in public-private partnerships in the State. This project has transformed Malappuram from being one of the backward districts of Kerala to a cent per cent e-literate one. The success of the pilot programme encouraged similar centres all across the State. A path-breaking venture, there are now 2200 Akshaya centres across the State that can support a host of services including payment of utility bills like telephone bills, e-filing, railway ticketing etc. The add-on services have been possible because Akshaya has been able to meet its principal objective of providing e-literacy. Modalities are being worked out to provide facilities like providing educational courses in association with Indira Gandhi National Open University (IGNOU), cash transfer, etc. through Akshaya centres.
Akshaya's deliverables include:

- Creating & expanding economic opportunities in the knowledge economy
- Modernizing and upgrading skill sets of ordinary citizens
- Integrating communities through creation of e-networks
- Creating awareness of ICT tools and usage
- Generating e-content useful to the common man in local language
- Generation of service delivery points even in the remotest areas
- Generating at least 15,000 job opportunities
- Generating direct investment of over Rs. 500 crores

The Government of India has sanctioned the request of Government of Kerala to integrate the Akshaya Centers with the Common Service Centers scheme under the National E-Governance Programme (NeGP). Accordingly all Akshaya Centers are now Akshaya Common Service Centers. With this integration, all Akshaya CSCs are eligible for the CSC Broadband Concession Tariff.

3. FRIENDS

Adopting an easy-to-recall acronym, FRIENDS (Fast Reliable Instant Efficient Network for Disbursement of Services) has been designed as a single-window facility where citizens can make Government related transactions at ease and comfort, without having to inch forward in serpentine queues. Now operational in all 14 districts of Kerala, FRIENDS accepts payments of the Kerala University, Local Body, Kerala State Electricity Board, Kerala Water Authority, Revenue, Civil Supplies, Motor Vehicles, Electrical Inspectorate and BSNL. Each counter follows a ‘token management’ system which eliminates the need for queues and inordinate delays in making remittances. At each centre, there is a special Help-Desk to guide the public who are not well conversant with the payment procedures. Facilities also exist to record suggestions/complaints, which are reviewed on a regular basis. An average of 800-1000 people visits each center every day.

Railway reservations can also be made in the three centres at Wayanad, Pathanamthitta and Malappuram. The computerized counters manned by customer friendly officials operate between 9 am to 7 pm on all days, including Sundays. Pilot at Thiruvananthapuram in June 2000, this centre has now earned the benchmark ISO 9001: 2000 certification. KSITM joins
hands with the IT Department of the Government for the project implementation. A year after, all 14 districts had one centre each. Centre for Development of Imaging Technology (C-DIT) is the Total Solution Pro payments to the following departments are accepted at FRIENDS -

- Kerala State Electricity Board
- Kerala Water Authority
- Local bodies
- Revenue Department
- Civil Supplies Department
- Motor Vehicles Department
- Kerala, MG and Calicut University
- BSNL - Land line and Mobile bills.
- Electrical Inspectorate - Thiruvananthapuram, Kollam, Malappuram, Palakkad, Thrissur and Ernakulam

4. Entegramam - My Village

A flagship project funded by UNESCO in association with Akshaya and SPACE is now drawing attention all around. 9 Panchayaths and 1 Municipality in Kannur District are today connected to Internet.

Kerala lacks locally relevant content in the web sphere. Digital divide is manifested not only in access and tools of access but also in the inability to provide locally relevant information. Here the portals come with solutions. All the web portals under development are in Malayalam. Unicode encoding is used to adhere to the universal standardization, which in return will make it searchable content in the web. Each web portal covers detailed information of the Panchayat. The history of the land, governance, information on public services, to mention a few is detailed in the web portal. Locally relevant news and announcements also find its way to the portal. The project is aimed at bringing forth web portals that cater the needs of the citizens locally. In the course of time the portals will be used for local transaction, enabling in it with more business features. If successful, such portals can be set up every village/panchayat of the State.
Project Objectives

- To build portal for panchayaths with locally relevant information in local language through local community participation
- To convert the portal into a forum of community interaction.
- To empower the local community to use the web portal and start contributing to the portal
- To create web based services which are of commercial or social interest.

Project at a Glance

- 200 unique visitors on average per month
- Most popular site with 1000 unique visitors per month
- More than 2000 articles published
- Topics include – Agriculture, Health, Labour Bank, Culture, Local History, Tourism etc.

CONCLUSION

With India emerging as the ‘services hub’ of the world with a sizeable share in the Electronics and ICT market, the path for these areas are bright with plethora of opportunities. Also with large domestic market having an ever increasing demand for electronics and IT products the future of Kerala as a hub for both the industries is ever promising. But it calls for careful policy formulations to attract better investment, development of better infrastructure to cater for the increasing demands and to generate skilled manpower in both the areas. The need of the hour is to bridge the demand supply gaps by upgrading technologies.

The electronics industry will face huge changes over the next few years. Some of these changes will stem from technological advances and shifts in the marketplace. The electronic components also play a critical role in many other industries, including the telecommunications, information technology, media/entertainment, medical device and automotive manufacturing sectors. Electronics companies will also need to bolster their change management skills, by grooming a new generation of leaders and building the capabilities required to operate in a completely different environment.

As digital convergence, common IT standards and increasing competition continue to reshape the industry, many electronics companies will need to adopt new business models to capture the opportunities that emerge. Some of these opportunities will require collaboration with companies in other industries; and some will lie in the development of software and services rather than new devices, as the competitive advantage shifts from
hardware manufacturing to the provision of compelling services and experiences. Both these trends mean that electronics companies will need to invest in forming partnerships to pursue new technologies, markets and customer segments. They will also need to hire visionaries who can think beyond their own sub-industry and challenge the status quo; pilot new products in the market place, using real time feedback to make iterative improvements; and create an adaptable workforce that can embrace changes in the way business is done. In the era of globalization and knowledge economy propelled by the phenomenal growth in IT, a paradigm shift in productivity and economic development and in management thought is clearly discernible.

Today, Kerala’s share in IT exports stands around Rs.3500 crores, a miniscule when compared to its neighbouring states. IT is one of the key areas, given the potential of Kerala, which supplies a great number of skilled professionals to all major IT hubs in the world. The Government of Kerala should acknowledge the critical importance of Information Technology as an instrument for the State’s overall development and must deeply commit to its dissemination, both as a crucial engine of economic growth and as a tool for increasing productivity, speed and transparency in governance and improved quality of life for the common man. Till today, it has been successful in doing so, in the years to come also, may it continue to do so.

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