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1. Preamble

- 1.1 Developments in Information and Communication Technologies (ICT) are transforming the society in dramatic ways. These developments are creating hitherto unimaginable opportunities and possibilities, even as they pose new challenges for a society like ours.
- 1.2 In the production processes of today's world, information and knowledge mean a great deal more than material resources and physical inputs.
- 1.3 ICT has opened up the possibility of radically different information exchange patterns by facilitating faster and more efficient dissemination of information. It can play a vital role in sustaining the democratic ethos of the Indian society and ensuring a high level of transparency in governance.
- 1.4 Having achieved high physical quality of life index and social infrastructure development, Kerala is ideally positioned to use ICT as a catalyst for the all-round economic prosperity and social uplift of its people.
- 1.5 ICT and Information Technology Enabled Services (ITES) have by now turned into major sectors of economic activity in the country. Over the past one-and-a-half decades, these sectors have shown remarkable growth in the country, both in terms of export revenue and employment generation.
- 1.6 In almost every sector of socio-economic activity ranging from industrial production to education and public healthcare, ICT now plays an important role in optimizing the processes, thereby improving the quality and efficiency of human endeavors.
- 1.7 Growing importance of ICT in the present-day world leads to the emergence of a divide, which can be called the "digital-divide," between those who have access to sophisticated ICT infrastructure and those who do not. This is a matter of concern

to civil society at large; and a challenge that has to be overcome through conscious intervention, both from the Government and the sections on the privileged side of the “digital divide.”.

- 1.8 The Government has a comprehensive view of ICT as a vehicle for transforming Kerala into a knowledge-based, economically vibrant, democratic and inclusive society. By the term “inclusive,” the Government means that the benefits of the socio-economic transformation possible through ICT should reach every single citizen of the State. This policy document defines the Government’s vision, mission and strategy for achieving the same.

2. Vision and Mission

- 2.1 The Government’s vision is to turn Kerala into a knowledge society with sustainable economic growth, social harmony and high quality of life for all.
- 2.2 The Government considers it its mission to achieve this vision through proactive measures meant to accelerate the process of transforming the State into a knowledge society.
- 2.3 In keeping with the democratic traditions of the country, the Government will ensure that all sections of the society are included in this process of transformation and will adopt conscious, positive steps to confirm the inclusion of the disadvantaged sections of society in the transformation process. The Government will also adopt such measures as are necessary to encourage the willful participation of the digitally privileged sections in the efforts to prevent the less privileged sections from getting marginalized in the transformation process.
- 2.4 The Government will make use of ICT to encourage transparency, efficiency and quality of services to the citizens of the State.

- 2.5 The Government shall promote appropriate applications of ICT to rejuvenate and strengthen the primary, secondary and tertiary sectors of the State's economy.
- 2.6 The Government will strive to improve the standard of living of the people through the use of ICT in all sectors, enhance productivity and efficiency, optimize utilization of resources and increase the employment potential of the ICT sector.
- 2.7 The Government shall make all efforts to provide the infrastructure for the rapid growth and adoption of ICT in the state, including, but not limited to access to ICT for all sections of the population, development of high speed communication facilities, infrastructure for the IT industry and development of human resources.
- 2.8 The Government shall endeavor to create a favorable climate in the State for increased economic activity and investments in the ICT, ITeS and knowledge-based industry sectors. In doing so, the State expects to exploit to the fullest extent, the potential of these new sectors to generate stable employment, earn foreign exchange and promote long term investments.
- 2.9 The Government recognizes that Kerala's highly skilled and well-educated workforce is a strategic differentiator as an investment destination. It shall continue to invest substantially in programs and initiatives to sustain this advantage. Government will make Kerala the cradle of highly skilled manpower for the knowledge-based industry.
- 2.10 The Government realizes that Free Software presents a truly unique opportunity in building a truly egalitarian knowledge society. The Government will take all efforts to develop Free Software and Free Knowledge and shall encourage and mandate the appropriate use of Free Software in all ICT initiatives.

3. Strengths

- 3.1 In Human Development Index, Kerala heads the States in India and its achievements are comparable to those of the developed nations. Kerala has also achieved universal literacy.
- 3.2 The State has world-class physical infrastructure in terms of transportation, public utilities and high-speed communication facilities.
- 3.3 Kerala is one of the most vibrant and globalized societies in India, with a strong and mature service sector and one of the highest consumer spending profiles in the country.
- 3.4 The State is a world-class tourist destination that has won many international awards for its tourism attractions. It has a cosmopolitan, yet value-based society of rich cultural heritage. The society has a deep-rooted aspiration for knowledge.
- 3.5 The people of the State hold democratic traditions close their hearts and they value and nurture decentralized and transparent governance models.

4. IT growth drivers

- 4.1 Kerala's distinctive edge in ICT lies in the quality and adaptability of its human resources base. The high quality of manpower available can be leveraged not only for attracting IT investments into the major IT hubs of the State, but also to small towns spanning the entire length and breadth of the State. Kerala has the highest density of science and technology personnel in the country, with its engineering colleges producing more than 23,000 qualified engineers each year.
- 4.2 Kerala is one of the best-networked States in the country in terms of telecom and datacom. The state's tele-density is double the national average and all the telephone exchanges are digital. VSNL's International Communication Gateway, with 2 high-speed

submarine cable landings (SEA-ME-WE-3 and SAFE) offering 15 Gbps bandwidth, is in Kochi. This gateway currently handles more than two thirds of the country's data traffic. Optical Fibre connectivity up to the grass-root level makes high quality, reliable bandwidth available in any part of the State.

- 4.3 The world class IT infrastructure facilities at Technopark in Thiruvananthapuram and Infopark in Kochi make these two IT hubs much sought after destinations within the State.
- 4.4 Probably the biggest advantage that Kerala enjoys is the cost factor. The start-up and operational costs are less than 50 per cent and the rentals/real estate costs less than 60 per cent of those in other major IT parks in the country. The power and water tariffs are one of the lowest in the country. A low cost of living means lower cost to company per employee.

5. ICT in Society

- 5.1 Information transfer and communication were integral part of human existence right from the dawn of civilization. Recent developments in Information and Communication technologies have increased the speed and reach of communication. The volume and diversity of information being processed have multiplied by leaps and bounds in the recent decades. ICT has virtually come to rule almost all activities of the modern society.
- 5.2 Keeping in view the pivotal role of ICT in the functioning of the modern society, the Government will strive to promote the use of ICT in the society and make it accessible to all its citizen.
- 5.3 Digital Divide: The Government has already taken up initiatives to make ICT accessible to all citizens, thereby addressing the issue of digital divide in a holistic manner. Projects such as Akshaya, IT@School, FRIENDS and Citizen Call Center will be strengthened.

- 5.4 The Government will undertake programs specifically aimed at promoting effective use of ICT among the workers, women, and youth.
- 5.5 Government is sensitive to the needs of physically, mentally and socially disadvantaged sections of the society. Special programs will be devised to utilize the possibilities of ICT to address their special needs.
- 5.6 The Government feels that the ability to use ICT is just the basic requirement and not the fully sufficient condition to empower the society through ICT. The Government envisages making each citizen a creative participant and contributor of the Knowledge Society through the use of ICT.
- 5.7 Since the spread of ICT has happened at a rapid pace, Government will initiate regular programs to help people cope with the changes at their workplace and in public life due to its introduction and ever increasing deployment.
- 5.8 ICT can be of value only when locally relevant content is made available in local language. This will be given high priority by the Government.
- 5.9 Libraries in the State will be equipped to make use of ICT and they will be transformed into Knowledge Centres.
- 5.10 Edusat network will be utilised for the dissemination of knowledge and information for all sections of society.
- 5.11 Every village in Kerala will have access to the Internet by 2010. This will increase the relevance of local content in ICT and active participation from all corners in the evolution of Kerala as a Knowledge Society.
- 5.12 Collaborative knowledge development initiatives will be promoted. Translation of available free knowledge resources will be given high priority.
- 5.13 Social innovation and appropriate technology: The Government

will take proactive steps to promote social innovations in ICT to support the traditional industry. Appropriate technologies will be developed to address local needs.

- 5.14 The Government will develop the new media as an economic opportunity as well as a means of strengthening the civil society. New media will be used to give voice to the concerns of the marginalized sections of the society.

6. IT in Government

- 6.1 ICT can improve efficiency and transparency in the working of the Government. The State will try to make maximum use of ICT in governance. The Government will take all the required initiatives to make the State the leader in e-governance.
- 6.2 The State will structure its e-governance projects based on the National e-Governance Plan and suggestions given by the National Knowledge Commission, in addition to locally relevant factors.
- 6.3 Information service: Taking the Right to Information Act in its true spirit, the Government will take up ICT enabled programmes for efficient flow of information between citizen and the Government.
- 6.4 The Government will make use of all the media tools and emerging technologies to ensure proper communication between the Government and citizen.
- 6.5 The Government will promote the use of websites, emails and other news communication facilities in various Government and semi Government organisations. The Government will try to make sure that its websites are actively maintained and kept updated. Websites will be made available in Malayalam. Government Orders and Gazette notifications will be made available through websites.

- 6.6 Technology: Standards are very important in the integration of e-governance services of various government organisations. Open standards like Unicode and Open Document Format and Open Architectures will be followed in e-governance projects to avoid total dependence on select vendors.
- 6.7 Free and Open Source Software will be used in e-Governance projects to the maximum extent possible. Preferential treatment will be given to FOSS as it enables the knowledge to be used democratically, makes software accessible to every one and is economical.
- 6.8 E-Governance Inventory: The Government will set up a knowledge management facility that will maintain an inventory of all e-governance projects in the State and document experiences and best practices from different projects. This facility will provide the intellectual and academic leadership required for e-governance.
- 6.9 A data inventory also will be setup for sharing of data between Government agencies and to avoid duplication of work. Data standards would be created to ensure interoperability. Creation of standardized spatial data set will be a priority area.
- 6.10 E-governance implementation: The Government will ensure that e-governance projects are accompanied by plans for re-engineering business processes and change management systems associated with them, as and when required.
- 6.11 E-procurement: The Government will adopt e-procurement to bring in efficiency and transparency in government purchases.

7. Industry

- 7.1 ICT offers exciting possibilities for radically changing the economic landscape of Kerala. The domain competencies of the State, combined with the infrastructure saturation and burgeoning costs

at the major IT cities in the other States, today offers a never before opportunity for Kerala

- 7.2 The Government aims to make Kerala the destination for knowledge intensive and high value ICT services. Special incentives will be given to companies having proven competencies and reputation in these areas, which want to set up their operations in the State.
- 7.3 Given Kerala's unique demographic spread, a hub and spoke model of ICT development will be the aim of the Government, with the two large IT parks at Thiruvananthapuram (Technopark) and Kochi (Infopark) functioning as the hub for smaller IT parks in other parts of the State. By having IT parks in smaller cities, regional disparities can be minimized, employee attrition and cost of operation lowered, and local talent nurtured. The Government will identify suitable land across the state for this purpose. Special incentives will be given to companies commencing operations outside main IT hubs of Thiruvananthapuram and Kochi.
- 7.4 One of the long-standing demands of the IT fraternity in the state is for better air connectivity, both in the domestic and the international sector. The Government would take pro-active steps to ensure daily morning and evening flights in and out of the State to the Indian metros, as well as flights to major European and American destinations.
- 7.5 Units in the SME sector and startups would be given special incentives like incubation facility, access to venture capital and legal support (Copyrights, Patents and Trademarks). Small and Medium Industries will be encouraged to take up value added services.

7.6

Considering the growing economic opportunities happening around FOSS, the Government intends to develop the State as the FOSS destination in the country. In order to achieve this, the government will provide special incentives to companies developing Free and Open Source Software.

- 7.7 Content industry is developing very fast around the globe. Animation, Educational informatics etc. are some of the fast developing content-based industries. A rich culture and high level of literacy give the State an edge in this sector. Promotion of this sector will be given special focus.
- 7.8 Industry Promotion Cell: Industry Promotion Cell will be established to provide all the necessary information to prospective investors and to assist them in the process of setting up IT industry in the State. The cell will provide information on setting up IT units, VC support, legal issues, HR outsourcing etc.
- 7.9 State IT parks are viewed as incubation facilities and the Government will encourage successful IT firms of these parks to set up their own campus in the state.
- 7.10 Considering the growing demand from IT industry for starting operations from the State, the Government will support private initiatives to setup IT parks. Private IT parks that meet a minimum set of standards shall be promoted by the Government as an integral part of the State's IT infrastructure, provided the parks so desire.
- 7.11 Government recognizes that the very nature of ICT industry requires flexible working conditions and amendments to the existing laws will be made, if required.

8. Knowledge Creation

- 8.1 Innovation and Knowledge building system: In the emerging knowledge economy, the success of the State depends on its knowledge level. Consequently, research, development and a creative environment become vital for the development of the State.
- 8.2 The Government will promote R&D in ICT. As outlined in this policy, the focus areas will be e-Governance, free software and

development of appropriate technologies. The State will network with national & international organizations and industry for knowledge sharing and collaboration in the above field. Collaboration with other developing countries will be given priority.

- 8.3 The Government will actively promote interdisciplinary dialogue and collaboration among various academic institutions within the state and outside.
- 8.4 The Government is of the view that knowledge generated through public funding should be freely available to the public. Facilities will be developed to ensure the same.
- 8.5 International Center for Free Software and Computing for Development: The Government intends to build an International Research and Development Center for Free Software and Free Knowledge in collaboration with other countries. The Center will focus on developing technologies relevant for the social and economic advancement in developing countries. The Center will provide technological and managerial support to ICT projects in Kerala.
- 8.6 Local Knowledge: Government considers that the protection of traditional knowledge is a priority area. With the help of ICT, local knowledge (culture, history, traditional medicine and all other forms of knowledge) will be recorded for the benefit of the citizenry.

9. Human Resource Development

- 9.1 The broad objectives of the HR policy would be to:
 - a. Make Kerala a cradle of knowledge workers.
 - b. Upgrade the productivity, skill and knowledge levels of the citizen

- 9.2 Considering the need for cross-disciplinary education and lifelong learning, the Government will promote online education (formal and informal). Knowledge must be within the reach of anyone interested in acquiring it.
- 9.3 All educational institutions will be networked and connected to the Internet by 2010.
- 9.4 Finishing schools will be established with industry participation
- 9.5 Programmes will be created to impart ICT skills among all students and teachers of both schools and colleges. The Government will give top priority to the task of imparting to students 21st century skills such as communication, media and information literacy, in addition to leadership skills and problem-solving abilities.
- 9.6 Quality improvement programs will be conducted for staff in educational institutions with the cooperation and involvement of professional organisations. Two or three nodal centers will be developed in the State for this purpose.
- 9.7 Collaborative initiatives will be undertaken with national and international agencies for Human Resource Development.

10. Copyrights, and Data Protection

Government understands the need for creating awareness on copyright, patents and trademarks, which play an important role in today's economy. Awareness programs will be developed for general public. The Government shall provide orientation programmes to its law enforcement agencies to understand the intricacies of the laws under the relevant IT Act of Gol to curb unauthorised copying of copyrighted works.

It is also important for the government to strike a balance between the interest of copyright owners and society. There are several new international initiatives that are working on innovative legal frame works

for sharing knowledge resources on less restrictive conditions. Considering the social value of freely available knowledge resources, the Government will support efforts to build free knowledge. Knowledge generated through State funding shall be made available through a suitable non-restrictive license.

11. ICT Infrastructure

- 11.1 Government IT Parks: Technopark in Thiruvananthapuram and Infopark in Kochi are the two IT parks promoted by the Government of Kerala. Both the parks have world-class facilities and excellent growth prospects. Taking into consideration the increasing demand of IT companies to start operations from these parks, the Government shall expand Technopark and Infopark even further on its own accord and also in partnership with private infrastructure providers. The parks shall further enhance the facilities they offer for recreation, healthcare and non-professional needs of those working there. The Government shall also use its good offices to ensure that offices of the Customs and STPI are located within the parks.
- 11.2 Kerala State Wide Area Network: In order to give a fillip to the E-Governance programmes, Government of Kerala has set up an E-Governance Data Centre at Thiruvananthapuram. All Government departments and agencies shall make use of the services from the Data Centre for purposes such as co-location of the servers, website hosting, mail service, automated backup facility, SAN-based mass storage, remote management, monitoring etc. Government is also setting up a State Wide Area Network (KSWAN), linking all the districts, blocks and panchayats to the E-Governance Data Center at high bandwidth.
- 11.3 ITES Habitat: To augment the potential of Kerala as an emerging destination for the ITES industry, the Government has set up an

exclusive ITES training center in Kochi. The objective of the center is to train the youth, thereby producing top quality workforce needed by ITES businesses. ITES Habitat will closely liaise with the local educational institutions and provide training in English language, computer and personality development to the students. Incubation facilities for startup ICT companies shall also be provided at the Habitat.

- 11.4 Indian Institute of Information Technology and Management, Kerala: The Government has set up the IIITM-K in Technopark, as an institute of excellence in education, research, development, and training in basic and applied Information Technology and Management. The institute helps the region's development, not only by producing trained professionals to serve the ICT industry, but also by making its expertise and services available to companies that require such help.
- 11.5 Centre for Development of Imaging Technology (C-DIT): A leading R&D institution in the State, C-DIT is actively involved in science and technology, development communication and the application of IT in de-centralized planning. C-DIT has the capability and expertise to emerge as a resource centre for the dissemination of Information Technology in the state.
- 11.6 Kerala State Electronics Development Corporation (Keltron): The first State Electronics Development Corporation in India, Keltron is actively involved in manufacture and marketing of a wide spectrum of electronic products. Keltron is a leader in communication products and has the proven capability in partnering the State in the programmes to popularise the use of ICT in Government and also in the creation of the State Information Infrastructure.

12. Akshaya Project

- 12.1 To ensure that the benefits of ICT services reach of common man, Government of Kerala will set up around 3000 broadband-enabled information hubs called Akshaya e-Centres throughout the state. The Project provides functional computer literacy training to at least one person from each of 64 lakhs families in the State. Working on a PPP mode, the focus of Akshaya will be for 'making technology accessible to common man'.
- 12.2 ICT enabled Services: The Akshaya e-centres also intend to deliver several value added services to the people. E-payment, e-learning, e-business etc are the priority objectives of the Akshaya e-centres. The Akshaya will tailor its services on locally relevant themes and in Malayalam language, so that it will be directly relevant to the ordinary people.
- 12.3 Career and Skill development of Rural People: Akshaya e-centres will have their presence throughout the State. In association with local bodies, the Government will use these e-centres for Internet based training, education, skill development etc., especially in rural areas of the State.

13. Fiscal Incentives

The Government will announce fiscal incentives towards meeting the objectives outlined in the Policy Document.