NATIONAL INFORMATION AND COMMUNICATION TECHNOLOGIES STRATEGIC PLAN OF BARBADOS 2010-2015

AN EFFICENT NETWORKED ISLAND

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MINISTER'S MESSAGE

The years 2010-2015 are to be considered a defining period in the technological landscape of Barbados. From the perspective of a volatile global economy that presents myriad challenges for small island developing states. Any individual or grouping that is entrusted with the authority of driving this process and in a position to take decisions in the interest of our nation and its people, must seek to engender a greater sense of awareness among the general public and the business community to the numerous benefits that can be derived from the use of Information and Communication Technologies (ICTs).

ICTs help to fuel efficiency, drive competitiveness, stimulate knowledge creation and sustain economic, social and cultural development. Of course, at the root of this is the desire for all citizens to have an improved quality of living. The benefits of ICT come not only from the aforementioned but through the greater benefit which results from the facilitation of new types of progressive solutions and economic opportunities that ICT deployment makes possible.

As we transition into a more ICT advanced economy, it has become clear that all players within the domestic sphere will be key to making this endeavour a success.

Over the last twenty years the world has witnessed an explosion in the use of ICTs. This situation would demand that we take a look at Barbados' legacy systems. These systems must be replaced in order to exploit the greatest benefits of existing and emerging technologies. Now is the opportune time to formulate policy initiatives that would facilitate not only new investment in communication technology but to provide the

enabling environment that would foster competitive industries and enhance the wealth of the nation's citizens.

The Internet and other networking technologies can be used to enable small developing societies such as ours in the Caribbean to benefit from new economic opportunities emerging from the global information economy. Developing societies such as ours can use these technologies to market and sell our goods and services to a global market.

The National ICT Strategic Plan has defined the type of environment that will stimulate entrepreneurial activity, innovation and creativity, spur the growth of the country and generally add value to the lives of all citizens. The vision is for Barbados to become a major information, communications technologies and services hub within the regional and international arena. The vision therefore envisages the conversion of Barbados into an "E-country".

In terms of its relationship with the overall national development goals, the National ICT Strategic Plan is in sync with those national policies as set out in the Manifestos and Throne Speech that give reality to a national vision and broad goals i.e. the transformation of the infrastructure, through investing heavily in modern information technology and facilitating e-commerce and the growth of the informatics industry. The National ICT Strategic Plan provides the policy framework and impetus for the advancement and promotion of Barbados as an E-country.

Government intends to further expand its leadership role in ensuring timely and effective execution of programmes and projects formulated under the National ICT Strategic Plan. The Ministry of Trade, Industry and Commerce as facilitator for the attainment of e-country status must vigorously pursue matters relating to the timely delivery and utilization of the various elements of such Plan. This is critical for successful harmonization of efforts to develop

Barbados into a full-fledged information society, with a competitive information economy based on the innovative use of traditional, new and evolving ICTs.

The National ICT strategic Plan of Barbados 2010-2012 is designed to bring together the disparate national efforts and to address such issues as interoperability, security, data protection and privacy concerns, technological neutrality, convergence, and public access. The Plan also articulates a clear strategic direction that will assist the development of projects within Government and the private sector.

The objectives of the Plan are to create an efficiently networked island and deliver a wide range of information and services from both the public and private sectors to all citizens. In addition, it is intended to create an environment that stimulates entrepreneurial development and creativity, thereby widening the choice of economic activity, increasing the rate of economic growth while improving social services and deepening social cohesion and interaction.

I am extremely pleased to be associated with this effort of presenting a road map which recognizes the importance of ICTs for the future development of Barbados. I am equally heartened by the fact that the Plan represents a continuation of the process started by the Government of Barbados in creating a medium for all citizens to work together on matters of national importance.

As we move towards a greater regional economy it is imperative that we do not lose sight of the need to elevate our services and product delivery and we need to understand that Barbados and the rest of the region, even as small developing states, can attain a competitive edge that may be hard to beat; in fact it may be that our small size and our unique traditions may redound to our advantage.

The safeguarding and protection of our citizens in all endeavours and the creation of a healthy business environment is the responsibility of every citizen. Let us take on the challenge to build a better Barbados.

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EXECUTIVE SUMMARY

The National Information and Communication Technologies (ICT) Strategic Plan of Barbados 2010-2015: *An Efficient Network Island: Exploiting the Power of ICTs to Benefit All Barbadians And Improve the Quality of Life* provides the necessary mechanisms and framework that will transform Barbados into a major information, communications technologies and services hub within the regional and international arena.

The ICT Strategic Plan has been conceptualized against the background that with technologies as an enabler, the provision of services to Barbadian citizens, both at home and abroad, can be revolutionized.

Section II of the plan encapsulates the current strengths, weaknesses, opportunities and threats and the resulting findings support a firm belief that it is very possible to create an environment that makes ICTs available and accessible to all citizens and residents, in order to drive competitiveness, stimulate local knowledge creation and sustain economic, social and cultural development.

The Plan embodies a theme which signifies an intention to create an environment that stimulates entrepreneurial activity and creativity that widens the choice of economic activity, increases the rate of economic growth, while at the same time improving social services and deepening social cohesion and interaction.

The National ICT Strategic Plan presents at Section IV ten (10) core values and ideals which constitute the philosophy for the pursuance of the National ICT Vision and the overall objectives to accelerate national growth and development in all facets of life.

In articulating a clear strategic direction for the use of ICTs as a tool of national development, six (6) broad national goals have been envisioned in pursuit of the national vision and are anticipated to be fully realised by the year 2015. These goals are as follows:

Goal 1 - Develop an ICT literate society that enables Barbadians of all segments of society to participate fully in the Information Society;

Goal 2 - Utilize ICTs to encourage and promote a culture of innovation and entrepreneurship in Barbadian society;

Goal 3 - Ensure that ICTs are available to all Barbadians;

Goal 4 - Use ICTs to position Barbados as a competitive jurisdiction;

Goal 5 - Transform the public and business sectors to an e-environment; and

Goal 6 - Facilitating the continuity of Governance in national disasters

To accomplish these goals a number of objectives and strategies are required in order to appropriately give effect to the goals and by extension the national vision. In general the objectives and strategies highlighted in the ICT Strategic Plan can be described as having two roles which aim to 1) enhance the delivery of services within the government and private sector through the application of ICTs and 2) promote and facilitate greater access and the wider use these technologies.

The Plan also features a number of sectoral initiatives. These initiatives are tailored to the respective sectors needs and are set within the context of the vision. The initiatives identified suggests that change will be undertaken and is a critical component that will etched out in undertaking the national vision.

I.   INTRODUCTION

The World has invariably transitioned into a global market place and one of the major contributors to this phenomenon is the wide scale use and application of Information Communication Technologies (ICTs). Developing countries such as Barbados, has in the past not been able to quickly streamline its ICT developments with that of the developed world. In this regard, the plan of action to integrate ICTs in all spheres of society fills a critical void and outlines the ways in which ICT strategies could stimulate change and foster opportunities for sustained growth and national development.

Information and Communication Technologies Defined

For the purposes of this National ICT Strategic Plan, the term ICT refers to any information storage and/or communications device including radio, television, the telephone, computer and network hardware and software, and multimedia tools, as well as the delivery devices, services and applications associated with them, such as satellite or cable TV systems, videoconferencing and distance learning, to name just a few.

ICTs combine information technology and telecommunications infrastructures and the applications that support how they function with information processing power and connectivity to enable greater access to information and more effective communication.

Importance of Information and Communication Technologies in Business

Information is a resource that can stimulate various economic and social sectors. A lack of information has the potential to create certain imbalances that can disrupt the efficient functioning of economies and societies. This phenomenon is referred to as information asymmetry and occurs when one party to a transaction has more information or better information than another

party. Clearly, for purposes of efficient decision making, information asymmetry should be avoided.

ICTs can help businesses in their efforts to cope with ever-increasing challenges emanating from the impacts of trade liberalization and globalization. They can especially facilitate outsourcing which in turn can facilitate improved operational efficiency and enhance competitiveness.

ICTs can also offer particular benefits to Small and Medium-sized Enterprises (SMEs), enabling them to compete more effectively with their larger counterparts. They further assist businesses in gaining access to distant markets, thus offering considerable scope for export development.

More importantly, just as foreign companies set up call centres in the region to leverage the Caribbean's competitive advantage, Barbadian companies can use the power of the new technologies to draw on skilled human capital within the region and around the world. They can collaborate with each other, using ICT frameworks to boost their capacity so as to be able, inter alia, to compete for contracts and projects at the regional and international levels.

It is increasingly apparent that ICTs play a significant role in services and trade, although they also provide the infrastructure all economic sectors need to function efficiently. ICTs may be considered as the value-added in modern economies; they "connect the dots" between people, companies, and sectors. They also fulfil a dis-intermediary function, meaning that they have the ability to get rid of middlemen or third-party companies and individuals that operate between suppliers and buyers, between producers and consumers.

In this way, ICTs enable other forms of interaction between service providers and their clients. ICTs facilitate on-demand availability, seamless transactions, deeper relationships and greater personalisation of goods and services. They

pave the way for two-way/multi-way interaction that supports effective implementation based on transparency and openness.

The world is in the midst of rapid transformation and the revolution in digital ICTs is creating dramatic shifts in traditional activities. Opportunity is everywhere whilst competition is fierce. Threats are numerous and markets are unforgiving. Relationships are complex. Nevertheless, collaboration is possible and success for small-island states is achievable.

The ability of nations to manage the challenges and exploit the opportunities of this new age will depend heavily on their ability to understand the digital information and communications revolution and adapt their people, institutions, systems, laws, policies and processes to respond to what is truly a changed global environment.

This Plan will help to mobilise the nation of Barbados – its people, its public and private sectors, and its civil society – towards innovative thinking and imaginative action in response to the opportunities and threats that are a part of the new digital age.

II. SITUATION ANALYSIS

The Government of Barbados has recognized that with technology as an enabler, the provision of services to its citizens both at home and abroad could be revolutionized.

To date there has been a relatively disparate application of ICT projects in both the public and private sectors without a clearly enunciated national goal of developing an information society and a knowledge based economy. The National ICT Strategy is designed to address this issue in a holistic sense. It is designed to integrate disparate national efforts and establish the need to

address such issues as interoperability, security, data protection and privacy concerns, technological neutrality, convergence and public access. In addition, the Strategy articulates a clear direction that will assist the development of both ICT projects within the private and public sectors.

Key Trends

ICTs are now playing a major role in the provision of health care, management of diseases, delivery of education and in combating terrorism and transnational crime.

The region's small economies must therefore transition to new ways of operating and must do so in a sustained manner. They must, in this regard, seek to develop other sectors, including their services sector in order to become globally competitive. They must develop into knowledge or information economies/societies if they are to grow and prosper. This will not occur naturally and therefore positive action is needed on the part of policy makers to create an appropriate framework for the development of the information economy.

Statistical data on ICT usage

The 2000 population Census revealed that with respect to Information and Communication Technologies that there were on average 93% of households with television sets, 83% with land line telephones, 22% with computers and 14% of the population surveyed had access to the Internet.

A study conducted by the National Council for Science and Technology in 2004 revealed that with respect to computer access from home there was a 39.6% penetration rate while for access workplace the penetration rate was 56.7%. In terms of Internet access the penetration rate was 34.3% at home and 49.8% at work. For cellular phones the penetration rate was 61.2% and for television, it

was 96.1%. The survey also indicated that there was a 26.6% penetration rate for online shopping and a 38.8% penetration rate for e-mail use.

Information disseminated by the Telecommunications Unit of the Development Division of the Ministry of Economic Affairs and Development shows that currently there are 134,261 fixed telephone lines, 41,151 of which are business lines, 257,596 cell phones, 47,133 Internet subscribers and 6 Internet Service Providers.

Based on the above analysis Barbados has an opportunity to improve its usage and application of ICT within the society, and therefore take its development to a higher level. Conversely, it can see the gains it has made since independence diminished as a result of national complacency and an unwillingness to make the critical structural and other changes required to function in an increasingly complex and unforgiving global economy.

SWOT ANALYSIS

The SWOT analysis which follows summarises Barbados' **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats in the context of Information and Communication Technologies.

a. <u>Strengths</u>

➢ Small Size

Barbados' tiny size makes it possible to design, successfully implement and effectively monitor projects, policies and programmes that might be difficult for larger countries to undertake.

➢ Education

While there are recognised deficiencies in Barbados' educational system, particularly related to its ability to nurture critical thinkers,

there can be little debate that the country has laid the key foundational elements in education necessary for stable socio-economic and political development.

➤ Institutional Traditions

Barbados' strong, pervasive socio-political and economic institutions are the bedrock of the nation. Many countries hoping to create information societies are limited by the scarcity of institutions and by their inherent weakness.

➤ Political Stability

As the digital information revolution challenges institutional models that have existed since the birth of the modern nation-state, political stability is becoming more central to the creation of an effective information society. Barbados' tradition in this regard strengthens its ability to respond to the challenges of the digital age rationally and efficiently.

b. **Weaknesses**

➤ Fragmentation

Although the new digital ICTs make meaningful collaboration over great distances possible, Barbados is witnessing growing fragmentation in its polity as the population ages, immigration increases, religious diversity grows, and racial issues become more perceptible. Also, within various economic sectors, including the public service, collaborative networks are underdeveloped and divisions apparent.

➢ Economic Efficiency

The economy of Barbados has performed creditably when compared with that of other developing countries. However, when compared with small, world-class leader economies, it has a significant amount of ground to cover to raise its level of competitiveness.

➢ Performance

Since 1994, Government has proposed and/or begun to implement several innovative projects that have enjoyed varying degrees of success. The complexity of modern life, the incredible pace of change, and the global information explosion are placing tremendous pressure on the public and private sectors to deliver on their strategic goals no matter the obstacles. In a demanding global marketplace, the ability to "close the deal" means the difference between thriving and merely surviving. Greater attention therefore has to be given to realizing agreed goals and objectives.

➢ Service

Advances in science and technology and the growth of the Internet are elevating the notion of service to dizzying heights. Customers are demanding, their tastes are refined, their expectations are great. Barbados markets itself as a service economy with a premium tourism product and a growing offshore sector. There is need to significantly improve the quality of service being offered in various sectors of the economy.

c. <u>Opportunities</u>

➤ Service Excellence

ICTs can play a significant role in service economies. They can connect the dots between people, companies, and institutions, and have the ability to eliminate third-parties that operate between producers and consumers. Digital ICTs facilitate on-demand availability, seamless transactions, deeper relationships and greater personalisation of goods and services, and pave the way for effective implementation based on transparency and openness. Services offer tremendous scope for realization of sustained growth and development in the Barbadian economy.

➤ "Death of Distance"

The revolution in ICTs can enable Barbadian small and medium-sized enterprises (SMEs) to overcome the economic disadvantage of small size and realise what is referred to as the 'death of distance', in which outsourcing can serve as a means of managing increasing complexity and the pressures of global competition. Resources freed up by outsourcing and the efficiencies achieved through ICTs allow individuals and companies to pay for only those products and services which they need. Additionally, ICTs can facilitate SMEs and other businesses in their efforts to penetrate distant markets.

➤ Human Capital

Just as foreign companies can set up call centres in the region to leverage the Caribbean's competitive advantage, Barbadian companies can use the power of the new technologies to draw on

skilled human capital from around the world. They can collaborate using ICT frameworks to boost their capacity and compete immediately for contracts and foreign-exchange-earning projects at the regional and international levels. Most importantly, however, they can utilize available local human capital to develop and produce products and services which are in demand.

➤ Entrepreneurship

The digital information revolution liberates workers in many service-related industries from the limitations of geography and confining institutional structures. It can therefore enable Barbadians to telecommute and thus expand their employment opportunities within a global labour market. With the right mix of research and development as well as institutional support, financing, and legal frameworks, the information revolution also facilitates innovation. It allows creative companies and entrepreneurs to emerge and to partner with each other in imaginative ways that support competitiveness and encourage free enterprise, thus contributing positively to the process of growth and development.

d. **Threats**

➤ Institutional Traditions

While Barbados' strong institutional traditions are one of the country's most enduring strengths, the pervasive culture of rigidity, control and failure to exploit the creative talent of persons within the Barbadian society has the potential to stifle the country's internal transformation before it can reach critical mass. Indeed, the Barbadian private sector is famously known for its fear of risk taking. Coupled with the inertia inherent in many public sector

organisations, Barbados' institutional framework might quickly move from being a strength to constituting a weakness in very short order, if not adequately addressed.

The challenge, therefore is for service providers, be they individuals, companies or Governments, to maximize the opportunities for their customers, clients and citizens to benefit from the myriad opportunities provided by the ICT revolution and the resulting information and knowledge age. Place in swot.

➢ Mounting Globalization

Difficulties relate to ever-increasing challenges associated with trade liberalization and globalization, including increasing competition in international and domestic markets as well as the need to cope with the internationalization of crime and terrorism. However, one result of the revolution in ICTs is the creation of a global marketplace where opportunities abound.

➢ Environmental Upheaval

The phenomenon of global warming may result in significant changes in climate patterns. These changes may increase the incidence of natural disasters. Barbados' relatively flat landscape makes it particularly susceptible to such disasters. In addition, the undesirable practices by some citizens, can exacerbate the effects of the natural disasters.

The current practices in regard to waste disposal and production systems also contribute to pollution and degradation of the environment.

> ➢ Scientific Transformation

Over the course of the last decade, innovations in science and technology have pushed the horizon of discovery beyond bounds previously imagined. Today, new paths in global research are leading to more and greater advances in agriculture and food production, medicine and health care, services, manufacturing, environmental protection, and just about every field of human endeavour. Barbados must therefore position itself to take advantage of these developments.

III. SETTING THE STAGE

Government as a Model User of Information and Communication Technologies

Access to information allows people to contribute to their own governance, to engage in public dialogue and be part of decision-making processes. The technologies that improve people's access to information also have the potential to improve the delivery of Government's social services and diminish negative impacts associated with natural disasters or geographic isolation.

ICTs will be used to improve transparency and create opportunities for applying new administrative processes, management methods, and implementation techniques in public enterprises that can empower even as well as increase levels of efficiency. Government must therefore become a model user of ICTs in the delivery of its own services by creating secure, user-friendly e-government and e-commerce frameworks that can themselves influence the private sector to become more efficient and responsive to the needs of all consumers.

Leadership

The literature suggests that as a country recognises the need to transform itself to harness the potential of the digital information and communications revolution, it is often critical for that country to identify national champions who are able to work collaboratively across various key sectors to foster innovation and develop creative approaches to shaping the information society.

Countries and regions as diverse as China, Brazil, India, the United Kingdom, Ireland, South Africa, and Silicon Valley in the United States demonstrate how leadership can play a critical role in transforming an economy, using the power and potential of new digital ICTs. Digital leaders or champions also have the ability to galvanise the imagination and effort of people around the transformative possibilities of the new digital technologies. If it is to achieve its stated developmental vision in the coming years, Barbados must identify its digital champions and empower them to utilise their considerable skills to further advance the process of national economic, political and social transformation.

Convergence

Convergence can be defined as the "union of audio, video and data communication into a single source, received on a single device and delivered by a single connection." It is resulting in the decline of distinct industries and the emergence of several blended economic and social sectors and media. Beyond the technology, convergence is occurring in policy and legal frameworks, equipment manufacturing, and merging business models within previously distinct sectors like telecommunications, computers, broadcasting and the media. Convergence is eliminating traditional barriers, forging new alliances and creating new commodities and services as innovative opportunities materialise for productive effort.

An understanding of these changes is vital since old mental models of management based on separation, fragmentation and rigid control are far less effective in the digital world than in the analogue world that is fast becoming a thing of the past. The challenge for Barbados lies in restructuring its operations to organise, produce, deliver, manage, and evaluate its effectiveness in the face of digital convergence and all it presently implies. Traditional or ineffective organisational and management models have to change, policy fragmentation has to be diminished and people have to be empowered to think creatively if Barbados is to reap any real benefits from the revolution in digital ICTs that is sweeping the rest of the world.

The implications of digital convergence must be fully appreciated. Policy makers have to design digital information and communications policy frameworks that embrace the notion of convergence. This action will help to ensure that the full benefits of the technologies can be realized.

Security

Security is a critical element in an effective digital communications and information infrastructure. Secure frameworks that support privacy and safe communication and that contain elements of disaster planning and service continuity, are essential as threats to national security and stability increase. In this regard, Barbados must undertake a National ICT security audit to establish its ICT security status and to provide a sound base on which an ICT security plan can be formulated. It is imperative that a national ICT task force be created to monitor security issues in the ICT field and especially to ensure an early response to threats to the national ICT system. Additionally, the country must design and implement ICT security protocols to which all sectors of the economy should adhere.

Innovation and Entrepreneurship

Innovation and entrepreneurship are the engines fuelling the technological revolution. Given the right mix of continuing education, research and development, financing, science and technology policies; innovation and entrepreneurial activity can flourish. In order to promote and facilitate a culture of innovation there is need greater collaboration between all stakeholders, in order to build a sustainable foundation for productive activity.

The approach to innovation should reflect both a regional and international perspective. This will enable the country to identify and attract the human, creative, financial, institutional and other resources it needs to enhance its overall competitiveness.

Intellectual Property Rights and Responsibilities

There is general recognition that countries around the world need to revisit the basic tenets of intellectual property rights as they have so far evolved. This is especially so given that some provisions in intellectual property legislation in some developed countries appears to be restrictive beyond what is practical in an economic sense, particularly for small-island states.

In a digital environment, there are conflicting privileges that must be balanced as policy makers seek to weigh the ability to innovate, which comes from fair use of intellectual property against the right of an inventor to reap financial benefits from his or her invention. The use and application of intellectual property rights is a challenge, which has to be examined. Barbados must come to grips with this challenge, as powerful interests in developed countries attempt to write the rules of the game for knowledge creation and protection in order to maintain their competitive advantage in the global trade arena.

The Way Forward

The National ICT Strategy provides a mechanism to support Barbados' developmental vision by encouraging the utilisation of ICTs as essential tools at all levels of society and in every sphere of economic activity in ways that improve the quality of life of all Barbadians. It must create an enabling environment that allows Barbadians to embrace the new technologies to improve efficiency, diversify, expand economic activity, strengthen the social fabric of communities, enhance security, build a resilient knowledge-based society and an electronically integrated government.

Consequently, Barbados must develop a culture of continued education and learning that enhances the skills of its people and extends their horizon of possibility. It must also encourage the development of multi-skilled professionals and mid-level workers able to respond creatively to change in a dynamic environment. What is more, Barbados must develop new organisational structures and business processes by maximising the use of new technology systems that improve the quality of life of all Barbadians.

In order for Barbados to realise its developmental vision, it has to create a networked society that frees workers from fixed locations and promotes telecommuting as a means of expanding the global employment of residents in Barbados, thus projecting their economic activity far beyond the island's shores. Furthermore, in order to support the innovative use of technology, the Government must create a user friendly business environment that stimulates investment through the creation of a sophisticated national communications infrastructure that provides affordable ubiquitous broadband connectivity for the healthcare, environmental, education, community development, commerce and public sectors, to name just a few spheres of activity.

Given the rapid pace of technological innovation and change, the national ICT Plan will require periodic review to respond to emerging opportunities and

threats. The review should be undertaken on an annual basis in the context of Government's annual planning and budgeting process.

In the final analysis, the National ICT Strategic Plan must represent a way of thinking and must lay out an approach for unleashing the potential of the Barbadian people through effective use of new digital information and communication technologies.

While the challenges are tremendous, opportunities abound with considerable scope for effecting meaningful transformation of the economy. Government will seek to achieve the objectives laid out in the ICT Plan by ensuring that all segments of society, work together to build a networked nation.

IV. THEME

AN EFFICIENT NETWORKED ISLAND: EXPLOITING THE POWER OF INFORMATION AND COMMUNICATION TECHNOLGIES TO BENEFIT ALL BARBADIANS AND IMPROVE THE QUALITY OF LIFE

The theme represents the aspirations for the creation of an efficiently networked country where the delivery of a wide range of information and communication technologies services are of paramount importance to the quality of life for all Barbadians. The theme also signifies a passionate intention to create an environment that stimulates entrepreneurial activity and creativity that widens the choice of economic activity, expands the rate of economic growth while at the same time improving social services and deepening social cohesion and interaction.

V. CORE VALUES

The guidelines set out hereunder form the pillars on which the national ICT strategy is built:

- Appreciation for the **value of information and knowledge**, and their importance to national development;

- **Awareness** of digital technologies and emerging ICT frameworks and the potential they hold to transform the economy and society;

- **Leadership** on the part of key decision makers, with champions who excite and inspire the collective consciousness to action;

- **Access** to technologies, networks, training, financial resources, information, knowledge, content and creation through secure frameworks by means of sound policies;

- National **ownership** of critical investments in technology, information and knowledge so that their value is recognised and care is exhibited in their utilisation;

- **Openness** to innovation, interconnection, effective partnerships and constructive change;

- **Transparency** in decision-making, administration, policy-making and management;

- **Network collaboration** in the interest of information sharing, open communication and collective learning;

- **Assessment** that is continuous and aimed at improving the implementation process at every level and through every stage, including technical and policy-making cycles; and

- Effective **integration** of activities, processes and projects to support the principles of awareness, access, openness, transparency, collaboration, and assessment.

VI. NATIONAL ICT VISION

The vision which will inform the process of ICT development is as follows:

"**To utilise ICTs to transform Barbados into a globally competitive society**"

VII. NATIONAL ICT MISSION

ICT development will be guided by the mission set out below:

"To facilitate and create the environment that makes ICTs available and accessible to all in order to drive competitiveness, stimulate local knowledge creation and sustain economic, social and cultural development."

VIII. BROAD NATIONAL GOALS

Goal 1

Develop an ICT literate society that enables Barbadians of all segments of society to participate fully in the Information Society;

Achievement of a Knowledge Economy is supported by the country's education and training base, its information and telecommunications infrastructure, the innovation system and the overall business and governance framework.

Barbados has "laid the key foundational elements in education necessary for stable socio-economic and political development". The approval and
implementation of a national ICT plan will advance the country's infrastructure and processes further along the continuum.

The challenge is how to leverage previous and current investments in human capital development through the use of ICTs so as to ensure that Barbados continues to be competitive in the current global economy. The knowledge, creativity and innovation of the people of Barbados must be nurtured, challenged and rewarded on an ongoing basis.

To drive the achievement of a knowledge economy, Government "must challenge established interests and institutions, stimulate change and initiatives and act as a policy integrator. The new approach complements, rather than replaces, the liberalization and modernization views" of development.

Goal 2

Utilize ICTs to encourage and promote a culture of innovation and entrepreneurship in Barbadian society

The new use or application of existing technology or methodology for a completely different purpose from which it was originally used or intended and its transformation into a successful commercial undertaking.

The goal is to engender a culture of innovation and entrepreneurship utilizing ICT. Barbados should enhance support for innovators and undertake ongoing development of their research and technology infrastructure.

In the implementation of its development agenda, Barbados should reiterate and give greater practical effect to the following which are proven strategies to boost innovation:

- Supporting market development,
- Enhancing in-house innovation capabilities of all key national institutions;
- Strengthening existing public Research and Development
- Provide incentives which encourage domestic innovative capacity
- Encourage Joint ventures and support intellectual property rights.

Goal 3

Ensure that ICTs are available to all Barbadians

The Government of Barbados has recognized that with technology as an enabler, the provision of services to its citizens both at home and abroad could be revolutionized, transaction costs reduced, the way its business is conducted significantly changed with the result of a more engaged, creative and prosperous nation whose main source of wealth is the knowledge of its people, support for the ongoing creation of knowledge products; the provision of ICTs which are ubiquitous at competitive rates within a modern

regulatory environment which provides for greater government accountability, easier access to information, data security, trust and confidentiality.

The challenge, therefore is for service providers to maximize the opportunities for their customers to benefit from the myriad opportunities provided by the ICT revolution and the resulting information and knowledge age.

Goal 4

Use ICTs to position Barbados as a competitive jurisdiction

There are a number of skilled and educated Barbadians living and working abroad in various professional fields especially in science, technology and innovation. It is imperative that we draw from this professional pool of resources to assist in the development of Barbados' competition position in the World.

The goal is to harness the diverse, disperse and largely untapped talent of the Barbadian Diaspora especially in the areas of science and engineering.

The use of ICTs can be considered an economic sector which requires the development of an enabling environment that serves as a catalyst for competing in the global economy. This environment will include political will, investments in human capital and legal and regulatory frameworks.

There is also a need for a fundamental redesign of business structures and processes for maximum alignment with the enabling technology and more creative use of the increase in new opportunities which become evident as progress is achieved.

In recent times, businesses have attempted to achieve a more balanced working environment for employees by increasing employee flexibility in working location and hours. The teleworking phenomenon (also known as telecommuting, e-working, e-commuting, working at home, or working from home) is one such measure that has received international attention from employees, employers, and policy makers. Teleworking is defined as the act of working outside the conventional workplace (e.g. at home) and communicating with the conventional workplace by way of computer-based technology.

- Proponents across all industries have lauded teleworking as having the potential to generate economic, social and environmental benefits. These benefits include:
- Productivity gains since employees experience greater flexibility in work schedules and autonomy which allows them to work during times they work best.
- Improved employee motivation: Employees are perceived to respond well to the signal of trust and confidence by an employer's adoption of a more independent work style.
- Access to employees who might not otherwise be available (e.g. individuals with mobility problems or caring responsibilities, employees on maternity leave)
- Cost savings achieved by lower office overheads and labour.
- Reduced air pollution because employees are commuting less.

Goal 5

Transformation of public and business sectors to e-environment;

In order to encourage use of ICTs, it will be necessary to protect users from abuse and fraud as well as to protect their privacy. This will help to build trust among users.

In an effort to achieve an e-environment it will be necessary for business persons to have access to the required technology, under reasonable terms and for consumers to be fully aware of its benefits. It will also be necessary to provide an efficient, modern and widely telecommunications system. Further, the financial services sector will have to facilitate the business community in its effort to use the technology. It must be made clear to the business community the way in which e-commerce can assist in improving productivity and expand their market share.

Goal 6

Facilitating the continuity of Governance in national disasters

Establishing and maintaining continuity of Government is critical in all societies particularly those which place knowledge at the center of their developmental strategies.

The issue of Government Continuity embraces the following:

- Enhancing provision of Government services to the population; Ensuring the continuity of the operations of the Government;

- Disaster Mitigation; and

- Restoration of normalcy.

Sustainable communication and interoperability are vital for the security of the nation during a catastrophic event, thus ICT has a critical role in Continuity of Government

(COG). It creates the critical infrastructure needed for the survival and preservation of the nation when faced with vulnerabilities and threats.

IX. NATIONAL ICT OBJECTIVES, STRATEGIES AND TARGETS

1. To establish an efficient national ICT infrastructure throughout the country with easy and reliable access to regional and international networks;

2. To deploy affordable, high speed, broadband telecommunication service throughout the country;

3. To provide an effective legal and regulatory framework to facilitate and encourage the development of ICTs;

4. To promote and facilitate the use and application of ICTs by all segments of society for economic, social and cultural development;

5. To integrate ICTs fully into environmental disaster management plans and programmes;

6. To encourage the business community, especially SMEs, to utilize ICTs for improving competitiveness and productivity;

7. To promote and facilitate establishment of a culture of innovation and entrepreneurship within Barbadian society;

8. To encourage the development of cultural industries and the inclusion of local content in radio and television programmes;

9.	To preserve historical records and treasures;

10.	To provide a secured national environment for the use of ICTs.

11.	To establish benchmarks for measuring ICTs development

12.	To create the critical infrastructure needed for the survival and preservation of the nation when faced with vulnerabilities and threats, thereby ensuring the continuity government.

13.	To promote Barbados within the international community as a jurisdiction which embraces the latest cutting edge technologies.

Strategic Objective 1

To establish and deploy an efficient and reliable national ICT infrastructure throughout the country which offers easy access to regional and international networks.

In order for individuals, educational establishments and businesses to use ICTs effectively, appropriate infrastructure has to be put in place so as to facilitate the provision of quality services. The technologies also have to be accessible to all segments of society, including small businesses, low- income earners and persons with disabilities.

Ref.	Strategic Objectives
1.1	Ensure that Barbados is supplied with the necessary international connectivity (including redundancy connectivity) at an equitable price. Explore the different options available to secure the best conditions
1.2	Develop and maintain a national broadband strategy containing both supply- and demand-side policies, with the objective of rapidly increasing the penetration of broadband in households and SMEs
1.3	Develop and strengthen the local broadband network infrastructure and competitive environment to help in providing the supply-side capacity to match the connectivity requirements for the delivery of high bandwidth

	services resulting from the demand-side initiatives
1.4	Whilst promoting the strengthening of competition in the local telecoms market, strive to attain synergies and optimize connectivity among major information networks to reduce interconnection costs and broaden network access
1.5	Partner with the key players in the telecoms industry to produce a regular inventory of the best telecommunications technologies in order to optimize ICT-access costs
1.6	Development of an ICT infrastructure which encourages and supports an E-commerce web presence for other agencies, private sector enterprises and key productive sectors and facilitates security and other innovations to enhance their quality of service
1.7	Renewal and revision of the Information and Communications Technology policy framework which supports the achievement of national aspirations for technological efficiency, effectiveness and international competitiveness
1.8	Formulation of a comprehensive collaborative framework to ensure cost effective solutions for the wider utilization of ICTs across Government Ministries, the private sector and civil society
1.9	Transformation of Barbados into a major ICT services destination for Caribbean and global traffic
1.10	Ensure new technologies are embedded in the infrastructure so that broadband access for multimedia content i.e voice, data and video are accessible to every citizen by designing and implementing an architecture which supports affordable access to homes and wireless community access via broadband
1.11	Develop several international gateways with diversity, in technology, geography and connectivity, for survivability to ensure that Barbados becomes a regional and international hub for integration into global economy creating links to global markets
1.12	Develop projects that are compatible with and can leverage the nation's current telecommunication infrastructure
1.13	Maintenance of continuous improvement of the quality of the local telecommunications infrastructure
1.14	Continuous review of taxes on all computer hardware and software as well as replacement parts bearing in mind the World Trade Organisation's definition on computer manufacturing parts
1.15	Promotion of the use of international standards in the provision of ICT services
1.16	Design and implementation of programmes to help the elderly, disadvantaged persons and persons with disabilities to access appropriate ICT equipment and services
1.17	Revamping of current arrangements for regulating telecommunications and broadcasting to address the challenge of convergence of technology

Strategic Objective 2

To provide an effective legal and regulatory framework to facilitate and encourage the development and use of ICTs

In order to encourage use of ICTs, it will be necessary to protect users from abuse and fraud as well as to protect their privacy. This will help to build trust among users. Additionally, it will be better to encourage sharing of information within the society. It is noted that Government has already enacted an Electronic Transactions Act, which gives legal recognition to electronic records, provides for the use of electronic signatures on electronic documents and places a restriction on the disclosure of personal information and a Computer Misuse Act, which seeks to provide protection for computer systems and the information contained in them.

Ref.	Strategic Objectives
2.1	Ensure effective telecoms, electronic communications, e-commerce, data protection and computer misuse legislation is always in place and in line with the prevailing EU directives and international conventions
2.2	Develop and implement the necessary legislation, policies, programmes and initiatives necessary to protect the rights of creators, always keeping a balance between the intellectual property rights of owners and the consumers of the information
2.3	Engage on a series of awareness and education campaigns aimed at increasing the knowledge of electronic legislation both for the general public and special- interest groups
2.4	Take the necessary steps to enhance security and system/network integrity in order to avoid risks of disruption, destruction of networks and business discontinuity
2.5	Develop a national baseline of ICT security safeguards that all the major organisations (whether by sales revenue, capital investments, number of employees etc,) must adopt in order to protect their ICT infrastructure and data
2.6	Develop secure and trustworthy electronic communications with other public services in the CARICOM region and the international arena
2.7	Collaborate with the commercial banks to increase further secure and reliable applications to facilitate online financial transactions over the Internet
2.8	Upgrading of the legal framework to address the security and privacy

	policies and trust issues associated with a modern networked society, citizen participation and other critical success factors
2.9	Enactment of an Intellectual Property Protection Act
2.10	Design of a more proactive role for the Telecommunications Unit as the IP address issuing authority in the implementation of the policy related to internet governance, domain name and space management
2.11	Design of modern e-commerce legislation for electronic dealings with Government agencies
2.12	Develop distance selling and buying legislation to protect consumers in local, regional and international trading transactions
2.13	Protection of users of ICT devices from abuse and fraud and invasion of privacy
2.14	Protection of child users of ICT devices from sexual and other related forms of abuse
2.15	Work with the International Community to ensure that national development is not unduly restrained by policies relating to intellectual property rights being pursued by industrialized countries
2.16	Provision of an electronic signatures service for use by individuals and businesses
2.17	Partnerships with businesses to assist in provision of a secured environment for the conduct of e-commerce and for protection of their information systems from unauthorized access

Strategic Objective 3

To promote and facilitate the use and application of ICTs by all segments of society for economic, social and cultural development.

All segments of society must be equipped with the tools and skills necessary to utilize ICTs. Education and training opportunities must therefore be made widely available to accommodate persons interested in acquiring ICT skills. In this connection, the needs of disadvantaged groups and persons with disabilities must also be taken into consideration. Public sector and private sector institutions must be restructured and reformed to promote and facilitate the use of ICTs in everyday life.

Ref.	Strategic Objectives
3.1	Disseminate basic information on ICTs through all possible media
3.2	Embark on national communication and education campaigns aimed

	at raising the level of awareness, confidence and understanding of benefits of ICTs for citizens
3.3	Proliferate the provision of basic ICT awareness training in the local communities by sustaining the Barbados Vocational Training Board Skills Training programme and the running of the Community Technology Program in the community centres, public and private secondary schools
3.3	Collaborate with the local hardware suppliers to facilitate the learning experience of te new entrants to the usage of ICT
3.4	Collaborate with public and private players to propagate the setting up of Internet centres, public Internet access points, including community centres, and public Wi-Fi hotspots, with the aim of offering public access to broadband Internet on a national level
3.5	Explore and promote the use of alternative service delivery channels (including mobile devices and TVs) as both substitutes and complements to the PC
3.6	Strive to provide the basic ICT awareness, accessibility and education facilities at the lowest cost to the public, sustaining free access to email services for all citizens
3.7	Development and deployment of an ICT backbone infrastructure and security enterprise infrastructure (internet, intranet and extranet) to connect all organs for Government and permit an E-government/ I-government online multimedia presence for any place, any time service availability for the people of Barbados
3.8	Engagement of citizens in the ongoing process of national development
3.9	Strengthen the financial and equity markets to improve the business environment by facilitating the mobilization and development of venture capital to finance national development in particular, ICT, renewable energy initiatives, research and innovation
3.10	Expanding special economic zones
3.11	Improve the efficiency of Government, tax collection and expenditure with improved governance
3.12	Design and implementation of ICT training programmes for disadvantaged persons and persons with disabilities to ensure achievement of the highest possible level of ICT literacy
3.13	Increase the number of scholarships available in the field of ICT training and research
3.14	Encouragement of local universities and other educational and research institutions in the engagement of ICT research and development
3.15	Continuous evaluation and expansion of the Edutech Programme to build capacity and reform the education system
3.16	Promotion of the digitization of public administrative and historical records
3.17	Promotion of the production and sharing of local cultural and

	educational content and the development of the cultural and entertainment industries
3.18	Improvement in the capacity of educational institutions to improve their capacity for offering distance learning opportunities
	Auditing of all recognized training institutions that deliver certified ICT training programmes

Strategic Objective 4

To encourage the business community, especially SMEs, to utilize ICTs for improving competitiveness and productivity at all levels

ICT is a tool that can be used to improve efficiency, reduce costs, and improve productivity among other benefits to organizations. In Government it can be used to improve the efficiency and effectiveness of government processes and in society ICTs can be used to improve the quality of life of individual citizens. However, ICTs in and of themselves can be used to provide useful and meaningful employment for citizens. This is the case in informatics where the computers, along with other communication devices are the main tools of business.

4.1	Use e-business and e-commerce to contribute towards the development of small businesses and SMEs, which have an extremely important social function in job creation and economic growth
4.2	Promote the participation of the local commercial community in international organizations, with the view of promoting the benefits of combining international trade with e-business
4.3	Continuously align the local e-commerce scenarios with the corresponding dynamic global environment focusing primarily on issues related to consumer policy, alternative/online dispute resolution, authentication and taxation
4.4	Strive to remove the legal, technical, operational and cost barriers for SMEs to apply e-business in the conduct of their export and import operations
4.5	Set up a specialized support function within Government, aimed at supporting and encouraging local SMEs to take up e-business as an integral part of their operations and also to provide the necessary guidance to safeguard their rights and fulfill their obligations as

	international e-commerce retailers
4.6	Promote the identification and dissemination of best practices along the entire e-business value chain, focusing on engendering quality and reliability of service and the strengthening of the e-business community reputation
4.7	Provide institutional arrangements that facilitate collaboration among the private sector, Barbados academia, and Government which will provide an impetus and support (financial and human resources) for innovation in the production process
4.8	Develop micro-enterprise models to provide connectivity to underserved areas to ensure sustainability, development and growth via community access points, including Wi-Fi and Wi-Max at post Offices, Community Centers and Community Libraries
4.9	Develop sustainable, renewable, environmentally friendly energy to power ICT infrastructure technologies at the individual citizen, business and commercial levels, including solar energy

Strategic Objective 5

To promote and facilitate establishment of a culture of innovation and entrepreneurship within Barbadian society

Innovation and Entrepreneurship

There is a general consensus that a national ICT strategy is critical to stimulate local innovation. Government should facilitate technological innovation by judicious deregulation of the ICT sector and the removal of barriers to private sector participation, establishment of an electronically integrated government as well as develop systems and enact legislation which allows access to data. Furthermore, there has to be a greater focus in the use of ICTs for education research, training and capacity building which will serve to fuel local innovation.

Ref.	Strategic Objectives
5.1	Ensure an effective set of e-business-friendly legislation is in place promoting a safe business environment and consumer confidence in electronic transactions
5.2	Monitor the international ICT industry to provide direction to the local

	ICT industry on the necessary skills sets which it requires to be competitive in the global ICT environment
5.3	Support the development of an ICT incubation and proof of concept centre by forging alliances with major multi- nationals to provide their technologies in a lab environment for the commercial development of ICT innovations by Barbadian and foreign ICT SMEs
5.4	Nurturing an appropriate technical culture and establishing incentives to support and stimulate entrepreneurship
5.5	Pursue utilization of global knowledge to achieve national development objectives
5.6	Promote the application of ICT knowledge as a critical factor in achieving innovation and economic outcomes for national development
5.7	Provision of consultancy and technical assistance support for protection of intellectual property rights, licensing and patenting
5.8	To encourage Barbadians to use their creative talent to expand domestic output, create job and improve productivity
5.9	Work with financial institutions to increase the availability of funding for business persons and persons with innovative ideas for use for project development and implementation
5.10	Consolidation and restructuring of the existing Innovation Fund with similar funding mechanisms to render resources more accessible to potential innovators
5.11	Promotion of the use of venture capital and similar mechanisms by startup businesses, especially Small and Medium-sized Enterprises
5.12	Strengthening of training programmes designed for persons interested in self-employment and entrepreneurship

Strategic Objective 6

Transformation of Public and Business Sectors to E- Environment

Information and Communication Technology is revolutionizing the way Governments operate around the world by enabling them to improve the delivery of services to their customers and to streamline their operations. The Government of Barbados intends, as part of its strategy for public sector modernization, to utilize all available new and emerging technologies to improve the various processes of Government and enhance the quality of life of its citizens. It will therefore be necessary to provide an appropriate

environment that will enable businesses to participate in the transformation process.

6.1	Design of ICT solutions which create linkages with the energy and environment sectors and have imbedded initiatives to reduce the country's carbon pollution
6.2	Design an extensive ongoing, consultative and participatory process to transform the Barbados economy
6.3	Rationalization of the responsibility for various aspects of the implementation of the National ICT Strategy
6.4	The identification of an ICT "Champion" with overarching responsibility for coordinating the disparate elements of the ICT strategy and to facilitate the required transformation process
6.5	Establishment of a National Steering Committee for the harmonization and implementation of an approved e-Government and I- Government Policy
6.6	Back office integration of government network facilities for Interoperability I-Government using common standards throughout the Government to ensure compatibility
6.7	Adopting a common IT infrastructure for the Government which encourage data sharing and cooperation between Government departments
6.8	Streamline record keeping processes to make the transformation to online publication easier
6.9	Creation and standardization of meta-data so that timely and successful data searches across institutions and networks are possible
6.7	Build an electronically integrated government (E/ I-Government) i.e. a private, well-designed, reliable and scalable network using cutting edge technology to serve three levels of operations: Government-to-Government (G2G) including Intra-Ministry communication, I-Government Storage Area Network, redundant data centers; Government-to-Business (G2B) and Government-to-Citizen (G2C)
6.8	Equip public officers, especially supervisors and managers with change management skills, in order to help minimize resistance to the introduction of changes to business processes and procedures as a consequence of the adoption of ICTs in the workplace
6.9	Building partnerships with regionally and internationally renowned ICT software and hardware development companies and researchers
6.10	Facilitation of the use of open source as well as proprietary software
6.11	Facilitation of greater transparency in the governance of the country

Strategic Objective 7

Development of Critical Infrastructure for Continuity of Governance and Preservation of the Nation during Natural Disasters

ICTs are growing in use within the business community as well as by individuals. Indeed many businesses are now heavily dependent on ICTs in their day to day operations. Individuals also utilize ICTs on a regular basis in several aspects of their lives. Unfortunately, however, the use of ICTs opens businesses and individuals to numerous threats. These include viruses and worms which can be transmitted over the Internet as well as over communications networks. There are also problems of phishing and hacking whereby unauthorized persons can gain access to private or confidential information, to the detriment of the business or individual. Additionally there is the problem of identity theft whereby unscrupulous persons can steal the identity for the purpose of engaging in criminal and other activities.

Another consideration is the geographic characteristics of the Caribbean, which is prone to the occurrence of hurricanes and to a lesser extent other natural disasters. ICTs can facilitate implementation of more effective Disaster Management Systems, including early warning systems, which serve to mitigate against the impacts of these disasters.

7.1	Design of a disaster mitigation and management mechanism
7.2	Design of standard procedures for continuation of essential government operations
7.3	Development of systems to strengthen and protect critical national communications infrastructure and storage of important information
7.4	Institutional strengthening of early warning systems
7.5	Establishment of a National ICT Security Task Force
7.6	Development of educational programmes on the safeguarding of individual information systems
7.7	Development of appropriate linkages to facilitate the continuity of business operations

X. RESOURCES

Substantial human resources, financial and technical assistance will be required to drive the ICT developmental process. As a consequence, Government will have to approach international funding agencies and other external sources for assistance. In this regard, the details of several projects have been communicated to the European Commission under a Barbados Sugar Adaptation Programme where a multi-annual indicative programme allows for the use of funds in support of three sectors, one of which is information and communication technologies. A precondition for the release of funds under this EC arrangement is the approval of a National ICT Strategic Plan.

XI. PLANNING, COORDINATION, INTEGRATION AND IMPLEMENTATION

The successful design and implementation of the national ICT Plan is dependent on the involvement of stakeholders in the private sectors, civil society and academia.

The National Council for Science and Technology has been designated as the coordinating agency with the status and the requisite resources to coordinate the national goals and implementation of the ICT plan.

This new comprehensive strategic plan will be reviewed, monitored and managed by the coordinating agency. To this end, emphasis will be placed on the coherence between the various ongoing and planned initiatives supported by different government departments and where possible, by development stakeholders such as telecommunications service providers and Internet service Providers.

The operational framework for the implementation of the strategic national ICT Plan requires structured relationships, partnerships and alliances among the identified entities and stakeholders. The framework should be based on the following strategic factors, which are:

- Strengthening the National Council for Science and Technology with the resources, both financial and human, required to coordinate the execution of the initiatives under the national ICT Plan. It must have the authority to lead and be empowered to influence collaborative action among all stakeholders;

- Strong Political Leadership: This national ICT Plan will require strong political leadership at the highest levels of Government;

- Ownership of the Plan by all stakeholders: The ICT Plan must be widely disseminated and understood among the stakeholder community. The community of stakeholders should accept ownership of this Plan and have a strong sense of responsibility for the accomplishment of the planned objectives in their respective domains;

- Implementation of a regime of incentives to encourage service providers to build out critical infrastructure utilizing appropriate technology.

- A rationalization of the responsibility for various aspects of the implementation of the National ICT Strategy;

- The identification of an ICT "Champion" with overarching responsibility for coordinating the disparate elements of the ICT

strategy and to facilitate the required transformation process. This person should have the confidence of the key decision makers in the Government;

- Establishment of a National (Steering) Committee for the harmonization and implementation of an approved e-Government and I-Government Policy.

- Elaboration of the strategic and tactical plans for all aspects of e-Government implementation;

- Definition of the strategic roles of education institutions in the implementation of this Plan;

- Designation of the critical ICT infrastructure and plans for its development and protection;

- The implementation of a security regime for the protection of the critical national ICT infrastructure;

- A proactive, multi-faceted public awareness and education for ICT for development initiatives;

- Increased public access for households, the public, communities, schools and libraries to the Internet;

- Availability and training of ICT staff, skills and technology transfer and development;

- Procurement of requisite infrastructure, hardware, software and peripherals for implementation of the e-Government environment;

- A review of the status of Public Sector Reform and alignment of its strategic change management initiatives to support the dynamic transformation of the sector to achieve the full benefits of leveraging ICT for development; and

- Ongoing adherence to the principles contained in the UN Millennium Development Goals, WSIS Declaration of Principles and

XII. SECTORAL INITIATIVES AND PROGRAMMES

The key objectives and strategies associated with the wide range of economic, social, governance, environmental and infrastructural activities that will help to realize the vision, are presented below under the various sectors. The sectoral plans will be formulated by the respective agencies which also have responsibility for executing these plans.

The government is committed to making available the resources necessary to successfully implement the programmes under the sectoral initiatives highlighted below.

a. Health

1. Establishment of an improved information system to better facilitate monitoring and control of communicable diseases. This system will also feature enhanced privacy arrangements aimed at protecting patients.

2. Utilize ICT-based systems for providing medical care during and after disasters as well as integrate ICTs into the delivery of health care services to the Barbadian population.

3. Strengthen public health research and prevention programmes making full use of ICTs;

b. *Agriculture*

1. Provide ICT training programmes specifically targeted to farmers and fishermen; whilst simultaneously informing them on the benefits of using ICTs in their operations.

2. Develop and implement a technology driven market research and development programme to facilitate the exchange of information between buyers and sellers in the sector.

3. Institute a web-based programme for sharing weather information with farmers, agricultural researchers and the public.

c. *Education*

1. Continue to reform the educational system and integrate ICTs fully into the revamped curriculum.

2. Upgrade the ICT training programme for students at primary and secondary schools and extend the programme to all schools. This would also include the provision of special ICT training programmes geared toward children who are physically challenged.

3. Continue the schools' refurbishment programme to ensure that they can house computer hardware and software in a secured environment.

d. *Culture and Entertainment*

1. Provide training courses on the use and application of ICTs for practitioners in both industries;

2. Encourage and facilitate the digitization of cultural and historic records to ensure improved quality during storage. This initiative also aims at equipping National Libraries and Archives with the facility to making information on local Culture more easily available to the public through the use of ICTs;

3. Facilitate and support efforts by television and radio stations as well as media houses to develop and utilize local content in their productions and publications;

e. *National economy*

1. the deployment of ICTs in providing early and reliable information on movements in the levels of key economic indicators to feed into an ***Early Warning System*** for Barbados (the purpose of this system will be to convey information for the timely assessment of the prevailing economic and financial situation and trends in order that timely and appropriate diagnosis can be made to correct any harmful developments within the economy as a result of un favourable external developments)

2. *Develop a **System of Information And Management For Governability** (*SIGOB*) to facilitate and ensure maximum operational efficiency. SIGOB*

3. Put ICT systems in place to allow for the effective inter-agency co-ordination which will improve the information flow between the Public Investment Unit (PIU), Research and Planning Unit (RPU) and their stakeholders (Ministry of Housing and other members of the private sector involved in the development of governmental projects.);

F. *Family, Youth and Sports*

1. The Development of ICT portals for the **family**, the **youth** and for **sporting** arena. The portals will provide a 'one-stop portal' for each category on all related information, data and services which can be captured under the respective subject matter for the general use of the public. The purpose of applying the use of ICTs in these areas serves to i.) improve access to relevant information for good moral, emotional, spiritual, social and economic development; ii) to prepare and youth of today for the challenges of tomorrow and iii) to facilitate the development of a viable sporting industry, to enhance and encourage healthy sporting excellence and competitiveness.

2. To use ICTs to encourage and promote a culture of innovation and entrepreneurship in families and youth in Barbados.

3. To promote and facilitate tele-working to provide greater job opportunities.

G. *Transport and Works*

1. Implementation of appropriate traffic management systems to reduce Traffic Gridlock.

2. Upgrade of various processes for conducting business at the Licensing Authority

h. *Transport and Works*

1. Implementation of appropriate traffic management systems to reduce Traffic Gridlock.

2. Upgrade of various processes for conducting business at the Licensing Authority

3. Encourage the compliance of persons in respect of payment of fees and taxes

i. *Labour*

1. To improve the capacity to compete for jobs in the labour market the Ministry responsible for Labour will continue the upgrade of the Computer Resource Centre of the National Employment Bureau (NAB)

2. Continue to sensitize persons regarding services offered under the Resource Centre of the NAB via various ICT media.

j. Postal services

1. Provide a more Efficient System to the Public by integrating the use of ICTs into the sorting and delivery processes of Barbados Postal Service;

2. Improve the track and trace functionality for the Postal Service

3. Enhance the provision of an adequate level of communication between postal offices and the public.

K. Emergency management

1. Employ ICTs To strengthen and ensure effective delivery and management of event warnings, logging, tracking, resource allocation, logistics, damage assessment and needs analysis,

2. To facilitate continuous communications between emergency management agencies by removing all barriers to the continuous flow of communications which are occasioned by problems of local telecommunications service providers

The Division of Trade, Industry and Commerce through the National Council for Science and Technology (NCST) will assume overall responsibility for ensuring that the review, monitoring and implementation of the goals, objectives, strategies and targets captured within this document are effectively implemented. This exercise will be undertaken in collaboration with the various stakeholders associated to the Barbados National Strategic Plan.