

The Council of Ministers

**Resolution No. (39) of the year 2012
Promulgating the Third National Telecommunications Plan**

After perusal of,

Legislative Decree No. (48) of the year 2002 promulgating the Telecommunications Law, and particularly Article 15(a) thereof,

And based on the recommendation of the Minister Responsible for Telecommunications, after his consultation with the Telecommunications Regulatory Authority,

And after approval of the Council of Ministers,

Determines the following:

The First Article

The attached Third National Telecommunications Plan, and the accompanying Action Items Document, are approved and shall take effect for three years from the date of their publication.

The Second Article

This Resolution and the attached Third National Telecommunications Plan shall be published in the Official Gazette, and shall take effect on the day following their publication.

Khalifa Bin Salman Al Khalifa
Prime Minister

Issued on: 3 July 2012

The Third National Telecommunications Plan

Unofficial Translation Only
Third National Telecommunications Plan

Table of Contents

1.	The Legal Context	4
2.	GOVERNMENT’S VISION FOR THE TELECOMMUNICATIONS AND RELATED ECONOMIC SECTORS	4
3.	Definitions	4
4.	Introduction	5
5.	Competitiveness, Readiness and the role of the Telecommunications Sector	6
6.	The Assessment by Government	6
6.1	<i>Mobile service disadvantages</i>	6
6.2	<i>International supply disadvantages</i>	6
6.3	<i>Ultra fast broadband</i>	7
6.4	<i>The Internet ‘Eco-system’</i>	7
6.5	<i>Progress to effective competition</i>	7
6.6	<i>Sector definition and governance</i>	8
6.7	<i>Digital security</i>	8
7.	General Policy and Strategic Measures that arise	8
7.1	<i>Policy and strategic measures related to mobile service disadvantages</i>	8
7.2	<i>Policy and strategic measures related to international supply disadvantages</i>	9
7.3	<i>Policy and strategic measures related to ultra fast broadband</i>	10
7.4	<i>Policy and strategic measures related to the Internet eco-system</i>	12
7.5	<i>Policy and strategic measures related to progress to effective competition</i>	12
7.6	<i>Policy and strategic measures related to sector definition and governance</i>	13
7.7	<i>Policy and strategic measures related to digital security</i>	14
7.8	<i>Appropriate government response to assistance provided to the telecommunications sector</i>	14

The National Telecommunications Plan

1. THE LEGAL CONTEXT

This Third National Telecommunications Plan is issued in compliance with Article 15 of the Telecommunications Law, which was promulgated by Legislative Decree No.48 of 2002.

Article 15 requires that the Minister publishes, periodically, National Telecommunications Plans that have the approval of the Council of Ministers. Published Plans must encompass both the strategic plan for the sector, and the general policy of Government toward the Telecommunications sector.

Article 3 of the Telecommunications Law requires the Telecommunications Regulatory Authority (TRA) to act as follows:

“in a manner that is consistent with the objectives of the National Plan for Telecommunications; provided that this shall not be construed to derogate from the independence of the Authority in accordance with the provisions of this Law.”

Accordingly, statements within this Plan that are described as Government Policy, together with those described as Required Actions, have status under the Law. Government Policy sets the course and direction of the economic sectors that are referenced within this Plan, to the extent set out in the Plan, for a period of three years from the date of its publication.

2. GOVERNMENT’S VISION FOR THE TELECOMMUNICATIONS AND RELATED ECONOMIC SECTORS

The vision for the telecommunications sector is that it should play an enhanced stimulation and enabling role in the development of Bahrain, both economically and socially. Government recognises that to fulfil that ambition there must be investment in improved infrastructure and capabilities, the removal of remaining barriers to fully efficient supply markets, together with the modernisation of legal and regulatory environments. Initiatives in telecommunications must be exploited in other areas of the economy through focused innovation and entrepreneurship, particularly in those areas that are most directly enabled by telecommunications, which together may comprise the Information and Communications Technology (ICT) sector.

A desired outcome is that new means and opportunities are created for employment and social cohesion, and that Users enjoy a new era of multi-faceted services. Services can be expected to extend beyond communications and entertainment, to encompass education and personal development elements that together contribute to a knowledge economy and social advancement.

3. DEFINITIONS

For the purposes of this Plan, any word or expression shall have the meaning given to it in the Telecommunications Law, and the following terms and expressions shall have the following meanings, unless the context otherwise requires

Unofficial Translation Only
Third National Telecommunications Plan

Critical National Infrastructure (CNI) – assets that are essential to the functioning of society or the economy.

LTE – 3GPP Long Term Evolution – an international standard for wireless communication of high-speed data.

4. INTRODUCTION

Government instigated a process of liberalisation of the Telecommunications sector by means of the Telecommunications Law of 2002, together with the First National Telecommunications Plan. The Law established an independent regulatory body with a mandate to introduce and ensure competition within the sector, and to enhance and protect the interests of Users of telecommunications services.

The Second National Telecommunications Plan, published in 2008, took as its policy themes:

- Involving the User
- Continuing to develop the potential of competition
- Creating the right environment for investors
- Enhancing the use of the Internet and broadband
- Developing the regulatory environment to take account of convergence

Government recognises the valuable body of work undertaken by the TRA, and considers that considerable progress has been made in several of the areas that are listed. However, more can be achieved in the elimination of inefficiencies in some market structures, as described later in this document, and in ensuring the proper allocation of relevant resources to serve both the reasonable aspirations of all citizens, and the development of the economy of Bahrain.

Government further recognises changes within the environment toward which its Policy must be directed. The development of what has become known as the 'Digital Economy', and the 'eco systems' that enable and support it, have particular significance.

The 'Digital Economy' is a global phenomenon enabled by various digital communications means, but which gives rise to value creation beyond the basic communications level.

Value creation is typically associated with trends toward supply of products and services that represent 'convergence' through the combination of elements from separate, and often disassociated, streams of activity. Further, if equipped with appropriate communications means and supporting eco-systems, the creation of value is not bounded by national frontiers. Thus small states, such as Bahrain, may prosper in some global markets, provided that adequate investment is made and institutions established.

In the context of the digital economy, Government policy must recognise not only convergence factors but also addressable global market dimensions, technology trends, changes in demand and consumption influences, and the impact of such areas on the wellbeing of citizens. Within that context the relative competitiveness and readiness of Bahrain to exploit opportunities and meet challenges must be a primary concern for Government. Those factors give rise to a need for urgent action.

The principal themes of this Policy are economic and social advancement.

5. COMPETITIVENESS, READINESS AND THE ROLE OF THE TELECOMMUNICATIONS SECTOR

It is a primary responsibility of Government to take steps to ensure that the competitive position of Bahrain is preserved and preferably enhanced, particularly in relation to neighbouring States. It is only through its competitiveness and capability to generate economic growth that Bahrain can ensure the welfare of its citizens. Welfare is recognised to extend beyond economic achievement, to encompass the meeting of reasonable social, educational and personal development aspirations.

The historic role of telecommunications as an engine of economic growth and relative competitiveness is universally acknowledged. It is, for example, typically a prerequisite of inward investment to any state, that the state has communications infrastructures that will facilitate the businesses of investors. The infrastructure must be at least equal to that available in other states where the investor may alternatively establish its business, or a branch of its global business. This prerequisite has particular importance when the home market of the state seeking investment is small in size, as it is in Bahrain.

The Digital Economy places heightened emphasis on the availability of telecommunications infrastructure and services. Not least because telecommunications is a key enabler of the activities of the wider Information and Communications Technology (ICT) sector, and without an effective ICT element within an economy, opportunities presented by the global digital economy will be lost, internal efficiencies cannot be achieved and the aspirations of citizens, including those related to employment, cannot be met.

Within the above environment, Government has, in consultation with responsible organisations, made an assessment of areas within the telecommunications and related economic sectors. Assessments have considered issues relating to competitiveness and readiness, in terms of both the needs of sector participants, including most particularly, Users of services, and the National economic interest.

6. THE ASSESSMENT BY GOVERNMENT

The assessment has recognised that many of the issues reviewed are closely interlinked, one with another. However, in the interest of clarity, Government summarizes its conclusions under the following separate headings, as set out below.

6.1 Mobile service disadvantages

Government has concluded that Bahrain is presently disadvantaged by the inability of its providers of mobile services to create infrastructure that complies with Long Term Evolution (LTE) standards in a technically efficient manner. LTE is a technical standard within a range of technologies that may be described as Post 3G. Post 3G technologies typically make highly efficient use of radio spectrum, and have higher data throughput capabilities than the 3G technologies that are presently deployed in Bahrain.

Services provided by means of LTE based systems are now available in neighbouring states. Lack of efficiently provided Post 3G based services is likely to deprive citizens of attractive mobile functionality, and diminish the external perception of Bahrain as a leader in the adoption of technical innovation, especially in comparison with neighbouring states.

6.2 International supply disadvantages

Government is aware that the volume of data communications traffic generated in Bahrain from all sources will, should observed global trends be replicated in Bahrain, exhibit exponential growth in the next five years. Because of its geographic location Bahrain has

Third National Telecommunications Plan

an enhanced dependency upon international telecommunications cables and links. Provision of access to those links has historically been subject to influences associated with exclusivity of supply. Sources of supply have recently increased, which improves this element of the supply-chain in terms of access and capacity, but elements of the supply process may have to be addressed in order to enhance the competitive position of Bahrain, and improve services to businesses and consumers.

6.3 Ultra fast broadband

Advances in service functionality and capability, often associated with previously noted convergence trends, together with the functional imperatives for full participation in the global digital economy, mean that Users must have access to devices and networks that support data throughput speeds that exceed those presently available in Bahrain, and at prices which are affordable.

Governments around the world have concluded that the provision of access to ultra fast broadband services to substantially all premises is both a social and an economic imperative. Governments have no doubt been influenced by the publication of a series of studies that indicate a correlation between the penetration of broadband services within various economies and the achievement of incremental growth within those economies. One example is a study of 140 countries by the World Bank that indicates that for every 10% increase in broadband penetration, 1.3% incremental growth in GDP has been observed.

A typical response to that conclusion is the construction of National Broadband Networks (NBN), largely employing fibre-optic technology. The World Bank characterises the construction of broadband networks as investment that “creates jobs while building a foundation for productivity and growth”.

States that neighbour Bahrain are in the process of building ultra fast broadband infrastructure, utilizing various technical and financing methods.

Government has concluded that Bahrain will be severely disadvantaged if it too is not provided with a secure ultra fast broadband fibre optic infrastructure.

However, Government recognises that the provision of affordable access to ultra fast broadband services to substantially all premises may prove to present particular challenges. Normal market dynamics and mechanisms may not yield the desired infrastructure and services in a minority of cases. Government recognises that it may be ultimately appropriate, when the extent of organic provision has been assessed, to establish formal enabling mechanisms, that include obligations and/or incentives applied to Licensees, to ensure that as far as is practical the economically or geographically disadvantaged within society are not excluded from receipt of ultra fast broadband services.

6.4 The Internet ‘Eco-system’

In a modern state access to, and use of, the Internet is a social and economic necessity. Bahrain is served in this area by a number of licensed access providers. However, the mechanisms that support services, encompassing data exchange, local and international bandwidth provision and various other institutional and organisational mechanisms (together, the eco-system) are in some instances inefficient, because they are not fully functional or lack the competitive dynamic. Government concludes that the Internet eco-system must be made efficient if Bahrain is to prosper both socially and economically.

6.5 Progress to effective competition

An assessment by Government is that recent progress toward the attainment of effective competition, within relevant markets, has been successful in several areas, but that more action has to be taken before the goal is reached. Government considers that the ultimate

Unofficial Translation Only
Third National Telecommunications Plan

advancement to a position where all relevant markets can be predominantly governed by the application of ex-post regulation, in the context of competition assurance legislation, is hampered by certain imbalances. Imbalances, in some cases, arise from un-remedied historical ownership and asset control factors that distort certain markets and which may call for corrective or remedial action.

To the extent that necessary corrective or remedial action can be taken through market regulation, the precise measures to be applied must be determined by the TRA.

As a result of its assessment, Government recognises that in some instances it may be concluded that correction of intractable imbalances must be met by remedies that could entail the separation of the business units, or certain classes of assets, of Licensees, together with the management of those units or assets, in accordance with applicable legal frameworks. Government further accepts that, in certain very limited instances, it may be concluded, in the interests of consumers and economic development goals, that compliance with the wider competitive principles that Government supports may only be achieved, in the short-run, by time-limited restrictions imposed at certain levels in the service supply chain.

6.6 Sector definition and governance

Government recognises that the relationship between telecommunications and elements of the supply of ICT products and services, together with broadcasting, has become increasingly close and inter-dependent in recent years. It is further recognised that such trends toward interdependence will continue and may increase. In such circumstances Government considers that it may be appropriate to designate an Information and Communications Technology (ICT) economic sector, and to create a legislative and governance framework that seeks to enable and enhance the efficient development of businesses within that sector.

6.7 Digital security

Government is aware of the rising digital threat posed to Critical National Infrastructure (CNI) within the Kingdom, particularly information and communications infrastructure, and the negative impact that such threats pose to the overall economy. Government is further concerned, following the TRA's State of the Nation Review of Online Safety, for the wellbeing of consumers, particularly younger users of technology. Government is determined to address such issues on an ongoing basis.

7. GENERAL POLICY AND STRATEGIC MEASURES THAT ARISE

Certain elements of Government Policy arise from the assessments made. Policy recognises, where stated, the inter-relationships between the various elements that have been assessed.

7.1 Policy and strategic measures related to mobile service disadvantages

Government recognises radio spectrum to represent a scarce, and therefore valuable, National resource.

The withholding of appropriate frequencies within the radio spectrum has proven to be a hindrance to the efficient establishment of LTE infrastructure and the provision of services beyond trial levels. LTE based systems may be implemented employing frequencies in various areas of the radio spectrum. However, the international norm that has emerged is implementation in the 2.6GHz, 2.3GHz and 800MHz bands. Manufacturers of terminal equipment have focused on these bands, and thus terminals for these bands may exhibit the highest economies of scale.

Unofficial Translation Only
Third National Telecommunications Plan

Accordingly Government Policy in this area is as follows:

- 7.1.1 Government requires that efficiently provided LTE based services are made available in Bahrain, under competitive conditions, as a matter of National priority, in order that the introduction of those services may contribute to an early stimulus to the telecommunications and related sectors, and the economy of Bahrain generally.
- Appropriate radio frequencies must be made available for the purpose of enabling the introduction of LTE-based services. The various concerned agencies will determine the appropriate method of allocating rights to use of radio spectrum having regard to national security and economic factors, the promotion of competition and the interest of Users. In the event that the concerned agencies determined that any present use of frequencies must be terminated in order to accommodate the LTE requirement, appropriate compensation as required shall be paid with provision of alternative radio spectrum to the parties whose use must be terminated.
- 7.1.2 Government requires that in the event that there are not at any time sufficient active suppliers of LTE based services, or at any other time it is determined, as a result of an assessment carried out by TRA, that the number of suppliers should be otherwise increased, initiatives be undertaken to attract additional entrants.
- 7.1.3 Without detracting from the prerogative of the concerned agencies to determine the appropriate method of allocating rights of use of spectrum to enable the provision of LTE based and any other services, Government requires that Bahrain directly benefits financially from any allocations, at levels that properly reflect the scarcity value of the allocated part of the radio spectrum.
- 7.1.4 Government further requires that all radio spectrum that has been designated within the National Frequency Plan for uses related to the supply of public telecommunications services, whether currently allocated to Licensees or not, be subject to review. The review, and actions arising from it, must ensure that the further development of the telecommunications sector is not unduly prejudiced by the occupation of radio spectrum for uses other than those determined by the National Frequency Plan, and that overall, the radio spectrum is appropriately utilized, managed and valued, to the benefit of Bahrain.

7.2 Policy and strategic measures related to international supply disadvantages

The sale of access to, and capacity upon, international telecommunications links in Bahrain has historically represented an activity in which monopoly influences have applied. The availability, or potential availability, of international telecommunications links in Bahrain has significantly increased in recent years. A Government supported initiative has resulted in an agreement to create alternative access to capacity on certain international links. Other market participants have established further independent arrangements for the carriage of international traffic and the provision of capacity to other Licensees. Government considers that, in an emerging environment where international data traffic can be expected to exhibit very high growth, it is appropriate to view access to, and capacity upon, international links as separate and distinct activities.

Accordingly, Government Policy in this area is as follows:

- 7.2.1 Government requires that the supply of capacity on international connectivity links, whether via landing stations or other facilities of any kind is available at competitive prices to any appropriately licensed Bahrain entity, and any international cable operator that is licensed or otherwise approved by the TRA. The TRA will review the functioning and state of the supply of international capacity and apply appropriate remedies consistent with the Law to address any competition problems identified.

Unofficial Translation Only
Third National Telecommunications Plan

Government further requires the establishment of independent free markets in the supply of international capacity and services, and the removal of all obstacles in supply chains, either structural or administrative, to the achievement of that objective, provided the relevant tests under the Telecommunications Law are met.

7.3 Policy and strategic measures related to ultra fast broadband

Government has identified the Kingdom-wide provision of access to ultra fast broadband services to be an imperative for both economic and social development. Notwithstanding indications of its economic necessity, the provision of fixed capacity to enable ultra fast broadband services on a Kingdom-wide basis has not materialised through the operation of normal market mechanisms. The provision of fast broadband capacity, with limited geographic scope, has been effected to some extent by operators and also as the result of a funding initiative approved by Government. Government has received various representations to the effect that the attainment of a timely and acceptable level of return on the provision of the required Kingdom-wide capacity can be expected to prove so problematic as to deter any commercial organisation from undertaking its provision on a full risk basis. Government understands that this finding has also emerged in a number of other countries.

Bahrain has certain advantages, relative to most other States, in the creation of a ultra fast broadband network, arising from its small geographic size and concentrated spread of population. However, Bahrain faces a particular structural difficulty in that certain access services supplied over its fixed-wired narrow-band infrastructure, which will be ultimately superseded by any new fibre-optic ultra fast broadband network, are for historic reasons, supplied at significantly less than their cost of provision. Such a distortion of pricing inevitably compromises the normal competitive market mechanism and such a compromised situation should not be carried forward into the era of ultra fast broadband service provision. It is accordingly recognised that these circumstances could present particular challenges for sector participants when making any financial case for the broadband infrastructure that will supersede the existing narrow-band network. Specifically, two discontinuities may prove to have to be addressed simultaneously; that related to a rebalancing or rationalisation of access pricing, and that related to adoption of a new technology.

Government has determined that should market forces fail to provide the desired access to ultra fast broadband services, it must intervene to ensure provision on a Kingdom-wide basis.

The issue for Government has been to determine how any intervention could be achieved without major distortion both to telecommunications markets, and to the investment and other incentives of suppliers within them.

The prevailing uncertainty as to the financial viability of the provision of ultra fast broadband services, when measured only in conventional commercial terms, may point to the fact that its provision must be, at some level, through Government funding. This fact, together with recognition that any supply of services by means of Government funded initiatives could distort markets and prejudice investments already made by Licensees, leads to conclusions that the role of the facilities and services provided with Government assistance must be strictly limited in scope, and should be restricted to the wholesale level of any service supply chain.

Unofficial Translation Only
Third National Telecommunications Plan

Beyond the issues described, Government has had to be concerned with the potential negative environmental impact and economically inefficient duplication of assets that could be associated with a wholly new build of a Kingdom-wide network or networks. Those potential disadvantages must be weighed against potential cost advantages but also risks, security-related or otherwise, associated with utilizing the assets of an existing Licensee, or multiple Licensees, to build a network. Government would seek to deploy the NBN in the optimum manner from the perspectives of market competition, consumer interests, security requirements and technological development.

Government recognises that the provision of ultra fast broadband services to all that desire them could, in a minority of circumstances and locations, prove problematic, owing to cost of provision or affordability factors. If such circumstances arise Government would wish to reasonably ensure provision through amendment of present universal service obligations and funding arrangements. Government considers it premature to define such amendments at this time.

Within the described context, Government Policy is as follows:

- 7.3.1 Government requires that a fixed National Broadband Network (NBN), providing wholesale services to licensed operators on a non-discriminatory basis, is created and that work associated with that creation should commence as soon as is practicable.
- 7.3.2 Government further requires that the NBN should be principally constructed using fibre-optic cables and associated technologies that yield the capability, in optimal circumstances, to provide physical connections that enable data-throughput speeds up to and beyond 1 Gbps to the majority of business premises, and 100 Mbps to the majority of domestic premises as required. The NBN must be, at all times, managed in such a way as to ensure reliability of service and protection from attacks to its security, to a level that is determined by Government.
- 7.3.3 Government requires that the NBN is created in an economically optimum manner, relative to prevailing circumstances in Bahrain. It further requires that negative environmental impacts (such as Electronic Waste etc) are minimised. Government will provide funding or otherwise enter into arrangements that secure funding from third-parties for the construction of the NBN, if, and to the minimum extent, that such Government support proves necessary.
- 7.3.4 The NBN arising with Government financial support must provide only wholesale services at Layers 1 & 2, as described by the International Standards Organisation (OSI) model definitions, to all other licensed operators that wish to buy them for onward sale, within their own products, to end Users. NBN shall not directly supply the ultimate end Users of telecommunications services. Users must only be supplied by Licensees operating under fully competitive conditions.
- 7.3.5 Government requires that, should it so determine, following due consideration of relevant factors, including the period required for correction of historic price imbalances and competitive distortions, and financial, security and environmental risks, an NBN arising with Government financial support shall be the only such network that is constructed, for a time-limited period. Other licensed operators may be enabled to self-supply fibre-optic and other links for the purpose of connecting their infrastructures to the NBN, but they shall not be permitted to seek to employ self-supplied fibre links to bypass the NBN or in any way undertake activities that undermine the viability or security status of a Government supported NBN.
- 7.3.6 Government requires that an NBN created with its support shall be governed by an entity that is wholly separate, and carries on no activities other than those directly

Third National Telecommunications Plan

related to the NBN. The entity shall deal with all Licensees equivalently and transparently according to trading and operational policies that are approved by Government, and thus act to minimise any competitive or investment distortions arising from Government intervention.

- 7.3.7 Government requires that affordable and appropriate Ultra fast broadband services, in addition to voice services, are made available to all that reasonably require them. Government shall determine, at a time when the extent of availability of Ultra fast broadband services may be reasonably assessed, whether the existing arrangements related to universal service provision and obligations should be withdrawn and replaced by arrangements that include Ultra fast broadband services. In the event that Government determines that assistance with provision is both justified and may be adequately targeted so as not to distort the working of markets, it may define revised universal service obligations, with appropriate funding and competitive participation mechanisms.

7.4 Policy and strategic measures related to the Internet eco-system

Government recognises that significant progress has been made in achieving resilience and diversity within the Internet eco-system. Some concerns remain related to barriers to a fully competitive international capacity supply market that impact upon the eco-system, and that element has been addressed in an earlier section of this Plan. Government remains concerned at reports that much traffic between Bahrain entities and individuals leaves Bahrain for traffic exchange purposes. Government considers it to be in the interests of the Bahrain economy that traffic exchange is maximised in Bahrain, and that Bahrain achieves a higher profile in the regional internet eco-system.

Accordingly, Government Policy in this area is as follows:

- 7.4.1 Government requires that inefficiencies and incentives for Licensees to operate contrary to the interests of the Bahrain economy are addressed within the Bahrain Internet eco-system. Government particularly requires that all traffic between Bahrain entities and individuals in Bahrain is exchanged in Bahrain. To those ends Government requires that concerned agencies and authorities identify such measures, organisational or otherwise, that will encourage further use of Bahrain eco-system facilities, eliminate unjustified costs, barriers to development or inappropriate practices, and ensure the enhancement of the standing of Bahrain in the regional eco-system.

7.5 Policy and strategic measures related to progress to effective competition

Government has indicated its assessment that more progress is needed toward more effective competition within some telecommunications markets in Bahrain. This would give rise to a reduction in reliance upon ex ante regulation and greater reliance on normal competitive market mechanisms, supported by ex post regulation. Government believes that progress toward those outcomes is essential to the furtherance of national economic and social interests.

However, Government observes that there continue to be structural imbalances within the telecommunications sector that prevent the achievement of effective competition, resulting in Bahrain lacking infrastructure and services that are essential to its development, and potentially gives rise to a need for Government intervention, as described elsewhere in this Plan.

Government considers that it can, in objectively justifiable circumstances, be appropriate that structural adjustments are made within the telecommunications sector to ensure the proper operation of markets that yield adequate incentives to infrastructure investment and

Unofficial Translation Only
Third National Telecommunications Plan

business development within Bahrain. Government will approve and enable any well founded programme of structural change, through appropriate institutional and legislative mechanisms.

It follows that Government policy in this area is as follows:

- 7.5.1 Government requires that actions should be supported by a regulatory, institutional and legal framework that recognises current and foreseeable circumstances and developments within telecommunications and related sectors, and which contribute to both the perceived competitiveness of Bahrain in the global economy and its attractiveness to investors. In addition, Government requires that action is taken, which may extend to separation of business elements and units of Licensees, in accordance with applicable legal and regulatory frameworks, to remove barriers to the efficient operation of markets, leading to a reduction of the burden of ex ante regulation. Government further requires that such actions ensure that proper economic incentives exist for investment by all suppliers in markets, and for those that would contemplate entry into Bahrain markets.

7.6 Policy and strategic measures related to sector definition and governance

Government recognises that the implementation of Policy requirements, as set out in this Plan, is likely to enhance the trend whereby elements or components supplied by what are presently separate economic sectors are combined within products and services that are offered to the public and businesses. This process of ‘convergence’ will give rise to new supply markets and thus opportunities for growth within the Bahrain economy.

It is essential that growth opportunities should be seized and optimised by the private sector, assisted, where appropriate, by a coherent governance framework that inspires both public and investor confidence. The desired outcome being the further development of focused industrial clusters, in parallel with the development of pools of Bahraini human talent, that are equipped to further the interests of Bahrain in the Global digital economy. At the same time this growth should be fostered in the context of environmental sustainability, for example in the management of electronic waste (e-waste).

However, the natural evolution to new market formation and definition, whilst absolutely desirable, may undermine the necessary governance of some markets, so regulatory and legal frameworks must be adjusted to recognise changed circumstances.

Overall, Government is convinced of the case in principle for the definition of an ICT sector to encompass the combination of ‘telecommunications’, ‘broadcasting’, ‘information technology’, and ‘associated content’, with a coordinated governance framework for the converged sector that shall encompass promotional, industrial development and regulatory responsibilities for the ICT sector, in coordination with the Information Affairs Authority (IAA), eGovernment Authority and other concerned agencies.

Government Policy in this area is as follows:

- 7.6.1 Government requires that, in recognition of the trends toward convergence as outlined above, a coordinated governance framework is created to enable and encourage the private sector to invest and pursue opportunities within those markets, both within Bahrain and globally. It is accordingly required that practical means of establishing such a coordinated governance context are identified through consultation between stakeholders. It is further required that proposals for any enabling legislation related to the coordinated governance context be submitted to the Council of Ministers for its consideration.

7.7 Policy and strategic measures related to digital security

The prevalence of technology in everyday lives and in the conducting of business, coupled with always-on high-speed connectivity, introduces security risks to Users, businesses, and the Critical National Infrastructure (CNI) of the Kingdom due to exposure to numerous digital threats. Government, through this Policy, seeks to continue improving Bahrain's digital footprint and international competitiveness, while maintaining the safety of Users and critical assets.

Accordingly Government Policy in this area is as follows:

- 7.7.1 Government requires that measures must be introduced to improve the online safety of Users, of all types, and CNI, by instating mechanisms that provide a continuous security posture review, improve regional and global collaboration in digital security, and put in place the necessary early warning and outreach mechanisms of digital threats. Government further requires that plans are put in place to respond and recover from disasters, whether natural or man-made, that impact the national communications infrastructure, and that such plans are supported by sufficient communication and testing processes on an on-going basis.

7.8 Appropriate government response to assistance provided to the telecommunications sector

Government policy toward the Telecommunications sector since 2002 has sought that its development should be by means of principles relevant to the private sector, and the operation of free markets.

However, statements of Policy within this Plan have made reference to the possibility of Government intervention in the creation of infrastructure, notably the creation of an NBN, because, to date, the private sector has not indicated a willingness to provide ultra fast broadband infrastructure that will serve substantially all premises in Bahrain. To the extent that funding for infrastructure that is demonstrated to be to the advantage of Licensees, by limiting risk or otherwise, is provided from public funds, Government has a duty to consider whether, in the interests of the wider population, some level of recurring charge should be levied on Licensees in recognition of benefits accruing to those Licensees.

In its considerations of whether to levy a charge and its level, Government must consider the extent and size of any intervention from public funds, the potential for any recurring charge to prove market distorting, inflationary or inequitable, and the wider fiscal policies of Government.

Accordingly Government Policy in this area is as follows:

- 7.8.1 Government requires that should there be any financial intervention by Government to ensure the provision of telecommunications infrastructure, it is recognised to give rise to some level of diversion of public resources to the potential benefit of suppliers within the Telecommunications sector. Government considers that, in the absence of any alternative fiscal initiative by Government or other factor that makes the levy of charges impractical or undesirable, a recurring charge may be imposed upon suppliers within the Telecommunications sector. The nature and extent of any imposition shall be equitable and determined by the precise extent and circumstances associated with the intervention by Government, together with conditions prevailing within the telecommunications sector.