

Outline Strategy for the regulation of Next Generation Access Networks

Information Document

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1. Objective and Scope

The purpose of this document is to:

- a) Outline the MCA's envisaged approach to regulating Next Generation Access Networks (NGANs).
- b) Provide some definitional boundaries to the subject matter.
- c) Identify the key tasks that the Authority will need to undertake in light of the roll-out of NGANs in Malta.

These activities are seen as targeting primarily the MCA's Strategic Objective T1, that is:

"Regulating an electronic communications environment that is capable of sustaining competition among existing providers whilst ensuring ease of entry to new undertakings. "

This document serves to provide further insight into the activities identified in the MCA's Annual Plan for 2011 in the context of NGA, and to highlight the linkages between them. Ultimately, the MCA's goal is that of facilitating the deployment of NGAN's in Malta within a framework of continued sector competition, consumer choice and value for money.

In essence this outline strategy addresses primarily the envisaged regulatory impact of NGANs as far as the MCA's remit is concerned. But beyond this narrower scope, it also dwells on the extent to which the MCA can facilitate the proliferation of NGANs via interaction with other institutional players which, by virtue of their remit may, in some way or another, impinge on the progress of implementation or on the access regime. Foremost among potential issues are those relating to rights of way and ducting, as well as wiring in buildings.

By way of clarification, this document deals with the MCA remit regarding NGAN development, as distinct from Government policy direction on the matter. This distinction is clarified further in the subsequent section.

2. Background and Context

Government's Vision and Policy on the proliferation of NGAN in Malta has already been set in motion via the publication, on the part of the Ministry for Information Technology, Transport and Communication (MITC), of a Green Paper entitled 'Next Generation Access Infrastructure'¹. The Green Paper, published for consultation in July 2008, posed three (non-exclusive and cumulative) options with respect to Government's role in NGAN development in Malta. The three options are:

Government as Investor – this is seen as being possible via trenching and ducting, the provision of passive and/or active layers of the infrastructure down to the provision of services over the network to end users.

Government as Facilitator – the Green Paper lists various areas ranging from coordinating cooperation between owners of multi-dwelling units and providers, to facilitating access to ducts, to tax incentives for investment, incentives to households for procurement of end user equipment etc.

Government as Regulator – the Green paper puts forward the proviso that *"network topology choices and the role Government will play in the rollout of NGAN's will influence the work of regulators, whose primary aim is to facilitate the conditions of competition and mimic its effects where it is found lacking."*² The Green paper refers to activities such as market analysis and rights of way, as areas where Government limits itself to the role of policy maker via the creation and maintenance of an efficient and independent National Regulatory Authority.

Government is currently undertaking a study that will form the basis for the eventual direction to be taken vis-a-vis the three options listed above. Whatever that outcome, the need for regulation will invariably subsist (hence the clarification, in the Green Paper, that the three options above are non-exclusive), and it is not considered premature that this Authority clarifies the regulatory principles which it intends to eventually follow vis-a-vis NGAN's. These would still obtain, irrespective of the final choice by Government as to the extent of its participation in the deployment of NGAN's in Malta. Nonetheless, the Government's final direction may have an impact on the prioritisation of workstreams envisaged in this document and due attention to this variable will need to be given in the course of their implementation.

The European dimension of NGAN regulation presents the wider context to be taken into account. The EU has issued a number of key documents on the subject, namely a document dealing with state aid for NGANs³, a Commission Recommendation⁴

¹ <https://mitc.gov.mt/page.aspx?pageid=99&dispLang=1>

² Next Generation Access Infrastructure Green Paper – MITC, Page 20.

³ [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52009XC0930\(02\):EN:NOT](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52009XC0930(02):EN:NOT)

addressing the regulatory access to Next Generation Access Networks and the Vision 2020 strategy document, which includes a Digital Agenda as one of its flagship initiatives. The Digital Agenda lays down a rather ambitious objective for the achievement of high speed broadband by the target year⁵.

Reference to EU guidance on policy matters also needs to take into account any relevant amendments carried out in the latest review of the EU regulatory Framework, which is in the process of being transposed into Maltese legislation. This task should be completed in the course of the current year.

The MCA therefore needs to take the EU position into consideration in the articulation and execution of its programme of works in the area under discussion.

Whilst conformity with EU policies and principles remains a priority, this document is ultimately concerned with how the MCA will support, in a wholesome manner, the development of NGANs, in full cognizance of the key role that high speed data networks will play in sustaining social and economic growth in Malta. The focus of the Authority's activity ultimately remains the consumer. In the final analysis, shorn of all the complex technicalities, NGAN's will translate into value-for-money services of a distinctly higher quality in relation to what economic operators and individual consumers can currently enjoy. This, therefore, is the end goal of this foreseen key development in electronic communications.

Technology will no doubt be a cornerstone of such development, but so will a healthy competitive environment. The MCA's role will be that of maintaining the right conditions for both drivers to contribute effectively.

⁴ The <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/10/424>

⁵ The non-binding aim of the Digital Agenda is – 'to obtain sustainable economic and social benefits from a Digital Single Market based on fast and ultra fast internet and interoperable applications, with broadband access for all by 2013, access for all to much higher internet speeds (30 Mbps or above) and 50%+ households subscribing to internet connections above 100 Mbps, by 2020'.

3. What Constitutes a Next Generation Access Network (NGAN)?

The recently published EU Recommendation on NGA puts forward the following definition:

"Next generation access (NGA) networks" (NGAs) mean wired access networks which consist wholly or in part of optical elements and which are capable of delivering broadband access services with enhanced characteristics (such as higher throughput) as compared to those provided over already existing copper networks. In most cases NGAs are the result of an upgrade of an already existing copper or co-axial access network. "

While a fully fledged Fibre To The Home (FTTH) network is likely to emerge over time as the ultimate NGAN, it is plausible that the evolution of copper/cable networks towards this state of affairs will not be linear or 'big bang' but will rather happen organically and in stages. In the case of existing copper/cable networks, hybrid copper/cable and fibre networks are therefore likely to emerge in the first instance, and eventually move on to fully fibre networks.

Fully fibre optic (FTTH) distribution networks are envisaged to be the end product of the transition of existing copper/coaxial networks to NGANs. The quality of fibre optic networks is such that attainable speeds are, dependent on circumstances, significantly higher than those obtaining for other network types.

From a cost perspective, the main issue is that whereas copper /coaxial networks have been laid over a period of time and are therefore 'sunk' in terms of costs, fibre optic cables need to be laid afresh and therefore represent a very big investment. They are also likely to create a big inconvenience to the public whilst the laying is under way. A mitigating factor is that fibre optic cable is significantly cheaper, on a per metre basis, than copper-based wiring.

In this context the importance of existing ducting, which can greatly reduce deployment costs, becomes paramount. This aspect is addressed at some length in another section of this document.

Fibre Optic Configurations

Fibre optic cable can be laid in several configurations. For the purposes of regulation the two most relevant high-level classifications are Point-to-point and Passive Optical Network (PON) configurations.

Point-to-point configurations present the least problems with respect to regulation, given that they basically consist of dedicated fibres from a central location right down to the individual client. From a regulatory perspective this configuration poses no significant problems as it is open to replication of the unbundling remedy already in place over copper.

A PON configuration is significantly leaner in fibre use and presents less of a capital cost to the deploying operator. At the same time a PON configuration presents greater challenges from a regulatory perspective.

Implications

The application of the appropriate regulatory tools will play an important role in facilitating the deployment of NGANs. The network typology that best fits the description of an NGAN is one based on FTTH. Hybrid copper/coax and fibre networks can also fit the definition and, insofar as such networks constitute an evolutionary stage to FTTH in the case of existing networks, their regulatory treatment is equally important and of more immediate impact at this stage of the game.

At the same time, ensuring that the competitive environment is retained throughout the transition process to NGA will also be the focus of MCA activity in this area. This goal is best served through ensuring the maintenance of an open access regime at the various levels of the access network.

The eventual configurations of fibre networks utilised will play a key role in influencing regulatory solutions to the issues raised by the transition. These issues and their envisaged treatment are addressed in the subsequent sections.

4. The MCA's Regulatory Perspective vis-a-vis NGAN – Asymmetric Regulation

4.1 Overview

NGANs are not seen as presenting a new dimension to ex-ante regulation in the sense that the regulatory principles remain the same. Nonetheless, the fact that such networks entail a quantum leap in technology and resultant service potential, coupled with changing access relationships and concomitant technical arrangements, means that the regulation of the relevant markets concerned will need to take account of the fresh perspective.

One end result of the transition to NGANs can be the potential disruption of existing competitive balances and the emergence of Significant Market Power (SMP) in existing or new markets. Possible new forms of dominance may demand new types of remedy.

In line with the EU Commission's NGA Recommendation, the MCA is putting forward in this section, the principles by which it intends to regulate in the new scenario, bearing in mind the practical elements of such regulatory measures in the local context.

The MCA's regulatory approach will, among others, be influenced by the technology solutions adopted by operators. A situation where operators adopt point-to-point solutions such that access by third-party service providers is facilitated, objectively presents an ideal scenario for competition and innovation. Such an approach is actively encouraged and the MCA would take due consideration of such a state of affairs and adapt its regulatory stance accordingly. The technical solution ultimately adopted will need to be reflected in the nature and extent of remedies adopted by the Authority in case an SMP finding results.

Failing the adoption of a point-to-point configuration by a network operator with SMP, however, the Authority will need to ensure that existing or new access relationships can effectively subsist within an NGAN environment.

The adoption of ex-ante remedies pre-supposes a finding, on the part of the MCA, of SMP enjoyed by one or more operators in a particular market.

Relevant Markets

The two relevant markets that are effectively concerned, are those listed as markets 4 and 5 respectively in the Recommendation on relevant product and service markets (markets 11 and 12 in the previous version of the Recommendation) and are described as follows:

Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location; and

Wholesale broadband access - This market comprises non-physical or virtual network access including 'bit-stream' access at a fixed location. This market is situated downstream from the physical access covered by the first market listed above in that wholesale broadband access can be constructed using this input combined with other elements.

The MCA's efforts in regulating these two markets (and possibly any other related or sub-markets as may emerge) will also need to take into consideration the possible long-term implications that competition (or the lack of it) in these markets will have, both in the current technology scenario as well as in the context of an NGAN environment.

Beyond these two markets, it is felt that another relevant market also needs to be monitored in the context of NGANs. This is the leased lines market (the term is taken to include any related submarket), especially in the case of higher capacity leased lines, which can serve as the medium over which alternative operators can pass backhaul or services to dedicated high-bandwidth customers.

4.2 The Commission Recommendation on regulated access to NGANs

The MCA will, as it is required to, be giving due attention to the provisions of the said Recommendation on regulated access to NGANs in its analysis of markets 4 and 5.

From a regulatory perspective, NGANs will be treated in the same manner as other networks/services and be liable to regulatory remedies in the case of an SMP finding in a particular market. Such a finding would then trigger the necessary remedies required to ensure access to end users. In other words the normal SMP criteria will be used to test relevant markets that are of significance in the context of NGANs. There will, however, be scope for more focused remedies, as highlighted in the Recommendation itself.

Insofar as remedies are concerned the Commission Recommendation provides a fairly straightforward assessment, among others, on the application of price regulation in the markets in question. In this case, as well, there is no departure from the principles currently established for the application of remedies in markets where SMP subsists.

In this instance, however, the Recommendation allows for the building in of a risk premium in the calculation of the SMP operator's WACC rate and related charge-out rates on the basis of the substantial investments involved and the element of uncertainty in the prospected returns. At the same time the

Recommendation cautions against any attempt by the SMP operator's wholesale arm to discriminate in favour of its own downstream retail arm when setting access prices or to benefit from a situation of margin squeeze.

The MCA will need to address the pricing issues posed by NGANs, mainly in collaboration with its European counterparts in the BEREC.

Market 4

Notably in the case of market 4, the MCA needs to ensure that the transition from current to next generation networks will not serve to undo any existing LLU obligation. The MCA will need to take due care to install the necessary regulatory safeguards to achieve this goal. In the event that an access arrangement is still not effectively implemented by the time the transition of existing networks to NGA takes place, the pre-conditions for access need to be ensured in the new NGAN set up.

In line with the Recommendation therefore, the MCA will need to test a series of remedies depending on the outcome of the market analysis exercise. As summarised from the Recommendation itself the available remedies are the following:

- Access to civil engineering infrastructure of the SMP operator

Where duct capacity is available the NRA should mandate access to civil engineering infrastructure in accordance with an established principle of equivalence. Such access is to be provided on a cost-oriented basis on the basis of a reference offer.

Relevant logistical information should also be available. The extent of the remedy will depend on the feasibility of its application and this is an area where the MCA will need to deliberate carefully in terms of an equitable remedy. Irrespective of which model is eventually taken up, timeliness and accuracy of information remain paramount.

- Access to the terminating segment in the case of FTTH

Where an SMP operator deploys FTTH, the NRA should, in addition to mandating access to civil engineering infrastructure, mandate access to the terminating segment of the access network of the SMP operator, including wiring inside buildings.

- Unbundled access to the fibre loop in the case of FTTH

Where the SMP operator deploys FTTH, the NRA should in principle mandate unbundled access to the fibre loop, accompanied by appropriate measures assuring co-location and backhaul. Unbundled access should be mandated irrespective of the network architecture and technology implemented by the SMP operator. Any existing LLU reference offer should be complemented as soon as possible to include unbundled access to the fibre loop.

- Access obligations in the case of FTTN

The NRA should impose an obligation of unbundled access to the copper sub-loop, which should be supplemented by backhaul measures including fibre and Ethernet backhaul where appropriate, and by ancillary remedies ensuring its effectiveness and viability, such as non-discriminatory access to facilities for co-location, or in their absence, virtual co-location. Where copper sub-loop unbundling is imposed, the SMP operator should be required to complement the existing LLU reference offer with all necessary items.

Market 5

A series of remedial measures, hingeing mainly on the provision of technical and commercial information, are considered for an NGAN environment in the case of market 5. However, where the NRA considers that there is effective access to the unbundled fibre loop of the SMP operator's network and that such access is likely to result in effective competition on the downstream level, the NRA should consider removing the obligation of wholesale bit-stream access in the area concerned, where such an obligation exists.

4.3 Migration issues

The Commission Recommendation on NGANs also puts forward the envisaged steps that the NRA should take so as to ensure the effective migration, to fibre networks, of existing LLU arrangements on copper networks. This is done in order to ensure that existing wholesale arrangements on markets 4 and 5 are not undone by changes to existing network architecture and technology. Topics raised in Sections 39 to 41 of the Recommendation deal mainly with:

- Advance notice required to be given to operators currently enjoying access to the SMP operator's network – unless mutual agreement is reached advance notice of no less than five years taking into account national circumstances (which may be reduced if fully equivalent access at point of interconnection is provided).

- The putting in place, by the NRA, of a transparent copper-to-fibre migration framework, ensuring among others that the SMP operator, sets up systems and procedures, including operating support systems, designed in such manner as to facilitate the switching of alternative providers to NGA-based access products.

The MCA considers the resolution of transition issues as a key component of access to NGANs and will give the utmost attention to the matter via the appropriate measures along the above lines. In this respect the MCA has published a consultation document, laying down its position on this matter.

4.4 Access Solutions

The key remedy in Market 4 is the access remedy, which now incorporates access to passive elements of the SMP operator's infrastructure. The MCA needs to elaborate on the ground rules that will eventually characterise such access. This will necessitate a new work-stream of substantial magnitude.

The complexity of the matter does not stop at the passive level. Given that for each access solution there are substantial investments at stake, due care needs to be taken to ensure that all market players are sufficiently informed of forthcoming network changes by an SMP operator having an access obligation, such as to be able to make the right decisions.

On its part, the MCA has reviewed the existing Reference Unbundling Offer, with the aim of making it more detailed and attractive with respect to uptake.

LLU is a solution that is feasible over copper based networks. Inevitably, the transition from copper to fibre-based networks compounds the access issue, and even more so because the transition will take place in stages over an appreciably long period of time. As already highlighted, the likelihood is that copper-based network operators will first migrate to fibre up to the cabinet, and only thereafter make the step to FTTH. This may not necessarily be the case in all locations however. The migration issue is further compounded by the various possible fibre configurations adopted at both FTTC and FTTH level. All the different options will ultimately impinge in a different manner on the costs of access of existing service providers.

Care needs to be taken in order to ensure that adequate safeguards exist such as to reasonably protect the investments made by accessing service providers in an LLU arrangement, in the case of a transition to SLU as a first step, and thereafter to FTTH (or directly from LLU to FTTH).

In anticipation of the eventual migration, on the part of the SMP operator, towards FTTC, the MCA is also in the process of reviewing the relevant provisions in the RUO processes in order to cater for Sub-Loop Unbundling (SLU). In addition, as outlined in Section 4.1, the MCA will establish the ground rules for the eventual migration of any service providers on an LLU product, to an SLU environment. The MCA will install and maintain the required regulatory conditions such so as to keep this access channel effectively open.

It is reasonable to assume that, subject to a finding of SMP in Market 4, the transition arrangements would need to be extended to incorporate the eventual migration to FTTH. What these arrangements will look like very much depends on the technology solution adopted and the SMP operator's foreseen implementation timeframes. Thus, it is premature to speculate further at this juncture. On the basis of the market analysis findings, however, it may be necessary to incorporate an eventual FTTH scenario within the unbundling offer, particularly as regards access requirements and migration conditions.

Among others, it will be necessary to carefully elaborate transition times on the basis of established agreements, bearing in mind the need for access arrangements to be safeguarded from potentially damaging action by the SMP network.

4.4.1 Access to Active elements

LLU and SLU are technically feasible propositions in a (full- or part-) copper environment. In the eventual transition to FTTH they may cease to be so in case of the adoption of certain fibre architectures by the SMP operator. The matter needs to be addressed carefully with a view to ensuring that any mandated obligations in a copper environment are transposed to an FTTH scenario without financial or logistical disadvantages to existing or eventual service providers.

Substantial argumentation to this effect has already been made in the two key EU documents on the subject, that is, the Recommendation on Relevant Markets, and the NGAN Recommendation. Both are amply clear as to the need for the NRA to make sure that the transition from copper to a physically 'unbundleable' technology does not take place to the detriment of any existing service providers hosted by the SMP operator. Secondly, any such transition also needs to ensure that new service providers can obtain access in whatever form is deemed necessary to be able to compete effectively with the SMP operator.

The MCA has published for consultation, guidelines on the application of full and sub-loop unbundling, including the treatment of migration-related issues, by the relevant SMP operator.

The MCA will therefore also be pronouncing itself in detail on sub-loop unbundling (SLU). The intention is to ensure that should such a remedy be taken up the backhaul infrastructure is available and relevant long-term plans are transparent to the interested party/parties.

In the eventual transition to FTTH, a virtual access solution could be considered as one of several remedies, in the case that such a transition poses a barrier to access.

4.4.2. Access to Passive Elements

Duct access is now an applicable remedy under Market 4, in the event of an SMP finding in that market. Access to passive elements of the infrastructure, notably duct access and access to dark fibre (where available), can mean sizeable cost savings to access-seeking operators that may opt for this level of access.

Information relating to duct location and capacity is a necessary component for the effective functioning of the duct access remedy. The MCA intends to give due importance to this element, in line with the additional powers that will now be available in national law, in line with the Access Directive 2002/19/EC as amended by Directive 2009/140/EC.

Among others the amended directive now gives the regulator further scope in seeking information from the SMP operator on the locations of physical access sites 'including cabinets and distribution frames, availability of local loops, sub loops and backhaul in specific parts of the access network and when relevant, information concerning the locations of ducts and the availability within ducts'⁶.

The matter is dealt with further in ANNEX II to the same Access Directive which deals with the minimum list of items to be included in a reference offer for wholesale network infrastructure access, including shared or fully unbundled access to the local loop at a fixed location to be published by notified operators with Significant Market Power (SMP).

In managing the duct access remedy the MCA will need to balance the needs of access-seekers against the costs of maintaining the related information systems, both to the SMP incumbent as well as to the Authority itself. With this premise in mind, it should still be feasible to maintain an information database of this nature, given also its intrinsic

⁶ Note: underlined wording denotes the new additions to the existing directive.

value to the SMP operator. The extent of the database, the scope for its development and the relative implementation timelines and stages, will be subject to of discussion between the parties concerned prior to implementation in line with the proportionality principle.

4.5 Options for Regulation of Duct Access

The MCA will not restrict itself to contemplating duct access from an asymmetric regulation point of view. Neither does duct access need to be considered from a purely electronic communications sector viewpoint. The relevant legal provisions for symmetric cross-utility access already exist under the Utilities and Services (Regulation of Certain Works) Act⁷. However the practical operational detail that needs to accompany such legal provisions is absent, making effective application of the relevant legal provision rather problematic.

The MCA intends to study, in collaboration with Transport Malta, as the entity overall responsible for rights of way and co-location⁸ how the duct access solution can be further opened up to incorporate ducts belonging to utilities in other sectors.

This symmetric approach to duct access is necessarily complex and is not to be construed as a short term initiative, given also the probable involvement of several Government entities. A multi-stage approach may also be warranted starting with duct sharing among electronic communications undertakings and thereafter moving on to a cross-utility arrangement. Irrespective of the challenge involved, it is felt that the initiative merits further study and a dedicated assignment. This argument is pursued further in Section 5.

Among others, the need to ensure that if both approaches (symmetric and asymmetric) are being used concurrently, they should dovetail with one another, although overlap is not necessarily problematic. An immediate distinction is that while the asymmetric solution is significantly wider 'vertically' in scope than just duct access, symmetric regulation tends to be more 'horizontal' in application, given that it involves not just the SMP operator but any other operator that possesses ducts. There can, however, be other elements that make for further distinction in the application of duct access under an asymmetric remedy, as opposed to duct access under a symmetric regulatory approach. The MCA will need to address this aspect as well in the course of its study.

⁷ Cap 81 of the Laws of Malta

⁸ As already highlighted, the term 'co-location' in the Utilities and Services Act is taken to include duct access

5 Symmetric Regulation: Implementation Options

5.1 Overview

Access to infrastructure elements is established as a remedy following a finding of SMP in the wholesale access to network infrastructure market. Conceptually such a form of access is on the highest virtual rung of the 'ladder of investment', in that it is the closest that one gets to establishing a fully fledged independent infrastructure. In other words, this solution can be sought by those undertakings willing to undertake a substantial amount of investment in own-infrastructure.

The provision of access to the 'last drop' via an SMP remedy may not be a fully satisfactory solution in that it deals with merely one requirement, that is, the resolution of competition issues. Aspects such as the need to adhere to town and country planning programmes, and to minimise environmental problems and nuisance to residents, are other key criteria pointing to the need for an approach to 'last drop' regulation that minimises unnecessary duplication and disruption. A solution that is wider in scope than SMP regulation may therefore be warranted. Such an approach assumes greater significance in the face of the prospective roll-out of one or more FTTH networks.

The application of the two possible modes of duct access, that is, via asymmetric or symmetric regulation needs to be studied, with a view to determining how they may be complement each other without unnecessary overlap or ambiguity. This is one of the various aspects that the MCA will be looking at in relation to this area.

The role of Government-owned ducting and related access policies, will also play an important role in shaping the final picture. This, in itself, constitutes another major work-stream that Government⁹ may need to undertake.

The MCA may not always be directly empowered at law to deal with issues related to in-house wiring. Nonetheless these issues overspill into the electronic communications arena and can impinge on competition and user choice. Thus they cannot be overlooked. A review of the related legal framework may therefore be necessary.

⁹ The ideal entity to represent Government in this role is conceivably Transport Malta

5.2 Symmetric Regulation of Infrastructure Access – Core Issues to Address

5.2.1 Rights of way and Infrastructure Access

Rights of Way in Malta are governed by the Utilities and Services (Regulation of Certain Works) Act (Cap 81). The administration of the relevant legal provisions is incumbent on TM. Art 4(1) of the said Act gives all authorised operators the right to benefit from rights of way, against payment of the relevant fee.¹⁰

The powers conferred on the TM are fairly clear. These powers apply to rights of way over both public and private property. They also relate to other utilities, in addition to electronic communications infrastructure and therefore have a relatively wide 'reach'.

5.2.2 Infrastructure Access: Regulatory Options

Relevant obligations incumbent on operators enjoying rights of way are currently articulated in the subsequent sub-articles of the article 4 of Cap 81, wherein the TM, in consultation with the MCA, can impose duct sharing and access to other related facilities on such operators.

The recent update of the EU Directives relating to the Electronic Communications Regulatory Framework is now being transposed into Maltese electronic communications legislation. The new article 12(1) being proposed in the context of amendments to Cap 399¹¹ deals specifically with facility sharing and is reproduced hereunder for ease of reference:

Where an undertaking providing electronic communications networks has the right under other national laws to install facilities on, over or under public or private property, or may take advantage of a procedure for the expropriation or use of

¹⁰ Art 4(1) reads as follows: ***For the purposes of this Act, it shall be lawful for the Authority for Transport in Malta to order that cables and wires be placed or other works be carried out either below, above or by the side of any tenement and that trenches, pits, poles, stays, brackets and all other accessories essential to the proper working of the electrical power and telecommunication systems be cut, placed, erected in or affixed to any tenement; and any such order shall be notified to the owner of the said tenement at least ten days prior to the carrying out of any of the works aforesaid.***

¹¹ See Bill Number 74 currently before the House of Representatives. The Bill is currently at committee stage. See clause 13 which proposes the inclusion of new article 12 as part of the proposed amendments to the Electronic Communications [Regulation] Act [Cap. 399 of the Laws of Malta].

property, the Authority shall, taking full account of the principle of proportionality, be able to impose the sharing of such facilities or property, including buildings, entries to buildings, building wiring, masts, antennae, towers and other supporting constructions, ducts, conduits, manholes, cabinets.

For the purposes of this document only the electronic communications aspects are taken into account. However, the fact that rights of way (and, as a result, duct access and other facility sharing) can cut across a number of sectors, needs to be taken into consideration when it comes to reviewing the respective roles and relationships of the regulatory entities concerned.

In a situation where cross-utility infrastructure sharing is possible, a workable solution would be for a two-tier system of symmetric regulation to take place as follows:

- 1) The MCA deals with infrastructure sharing between Electronic Communications networks on one plane and
- 2) TM handles cross-utility infrastructure sharing matters, with the collaboration of all the respective sector regulators.

This arrangement will call for the set-up and maintenance of the necessary institutional arrangements, which seem simple at face value but will necessitate substantial time and effort to install and maintain.

The fact that the MCA may actually be on the way to taking up the responsibility for cross-ECN infrastructure sharing would point to the need to reflect this new arrangement in Cap 81 and establish the framework relative to the working relationships.

5.2.3 Govt owned ducts and poles

An important component in the equation is the government owned infrastructure of ducts and poles. Any study to be undertaken as to the availability and future utilisation of the passive network infrastructure will need to take Government owned networks into account. Subsequent to the study, it would be ideal for Government to tailor its policy position on this matter accordingly, in that this can carry significant weight in the context of NGA proliferation.

5.3 In-house wiring and other in-building matters

The application of a workable access framework for in-house wiring¹² is likely to present a significant challenge, particularly in an NGAN environment potentially characterised by multiple operators and, increasingly, the participation of building owners in some form or another.

A series of access issues that have recently arisen in large multi-dwelling complexes would point to the need for a sufficiently watertight set of rules that would, to the extent possible, provide clarity and obviate as many inter-operator or operator-developer disputes as possible.

Beyond inter-operator issues, one also needs to address the relationship between operators and building complex owners. This will be necessary in the interest of equity between parties concerned, healthy competition and the right of users to be able to access the service provider of their choice.

5.3.1 Regulating the laying of Fibre in the 'last drop'

The eventual laying of in-house wiring in fibre needs to be controlled in such manner as to ensure that areas to be 'wired' are subjected to as few interventions by operators as possible. An ideal way to regulate such works is to mandate that the first fibre laying operator also caters for the future needs of other infrastructure operators by laying / leaving space for an adequate number of fibres such as to cater for the occurrence.

Quite obviously any such process has to be devised in such manner as to ensure that the first laying operator is not unduly burdened with the task and that no unnecessary fibre laying takes place. Moreover it is understood that the first mover needs to be adequately compensated by any third party access seekers.

Any such regulation will inevitably have to cater for the different treatment of existing and new build, in order to take due account of likely limitations in the former case.

Alternative options to physical fibre laying may involve the sharing of the last drop by two or more operators using techniques such as VPNs, with the main intent of saving on costs and disruption. Such a solution would need to be studied in detail in order to assess its feasibility as well as to workout the offer details both technically and financially.

¹² In-house wiring – or the 'last drop' - falls under the general label of 'infrastructure access' discussed in the previous sub-section.

5.3.2 Building Regulations

A clear articulation of what electronic communications infrastructure should be readily available in private dwellings - especially multi-dwelling units - during the building phase, is another aspect that needs further looking into. There may be a need to ensure that any infrastructure, including fibre, that is laid by dwelling owners, for subsequent use by operators, conforms to certain set standards or guidelines. The ideal course of action would be for any such established standards or guidelines to be included in building regulations.

The latest draft of Bill No. 50 entitled "The Building Regulation Act", currently under discussion in Parliament, now makes provision for the making of guidelines with respect to electronic communications installations in buildings.¹³

Specifically, in the Schedule of Bill No. 50 (article 6(6)), which deals with matters for which building regulations may prescribe Standards or recommend Codes of Practice, the following provision to make guidelines has now been added¹⁴:

"Postal and electronic communications services installations, ducts, ancillary fixed equipment and materials associated therewith".

This addition, when enacted would give the competent Minister, in consultation with the Building regulation Board, the *vires* to make specifications with respect to new buildings such as to take advance account of electronic communications installations, mainly ducting and wiring, which may need to be addressed. Among others, a commonly accepted standard for fibre layout would obviate the potential for inter-operator and owner-operator disputes as to the acceptability of standards and configurations used in building wiring and offered to third parties.

Retro-fitting of wiring requirements in existing buildings will turn out to be a more problematic issue which needs to be set and studied apart.

5.3.3 Operators and Building Owners: 'Rules of Engagement'

It is increasingly likely that infrastructure in gated communities will be provided by the respective owners. This means that issues arising will not

¹³ The original draft, which was issued for consultation, did not make provision for guidelines with respect to electronic communications but was later inserted in the draft legislation as reflected in Bill No. 50, which is currently before parliament, presumably following representation by the MCA on the need to make such provision in the Act.

¹⁴ See paragraph 18 of the Schedule to the draft Act.

necessarily be limited to undertakings providing electronic communications services but may also involve real estate owners.

The revised Art 12 of the Framework Directive (also art 12¹⁵ in the draft Cap 399) should now be applicable not only to undertakings providing electronic communications but also to the owners of such wiring (e.g. real estate owners).

The next step that needs to be considered is therefore the setting of 'rules of engagement' dealing with the settlement of operator/building owner issues in relation to ducting and wiring.

Apart from the articulation of such detailed rules and procedures directly under the ECRA, the building regulation guidelines in relation to electronic communications (see item 5.3.2 above) could also be put to good use and complement any such rules set under the ECRA.

5.3.4 Tying and Exclusivity

The resolution of physical infrastructure issues may not necessarily be the panacea that ensures ubiquitous availability of networks and services to the user.

The increasing trend towards multi-dwelling private estates coupled with the advent of competition, now makes it necessary to look closely at this phenomenon and ascertain to what extent one needs to ensure that retail competition can continue to exist via the unencumbered access on the part of all electronic communications service providers to all potential customers.

The MCA will assess whether there is need for ground rules to be set with respect to possible instances of exclusivity agreements arising between real estate developers and electronic communications undertakings, without prejudice to any competition rules that already regulate the matter.

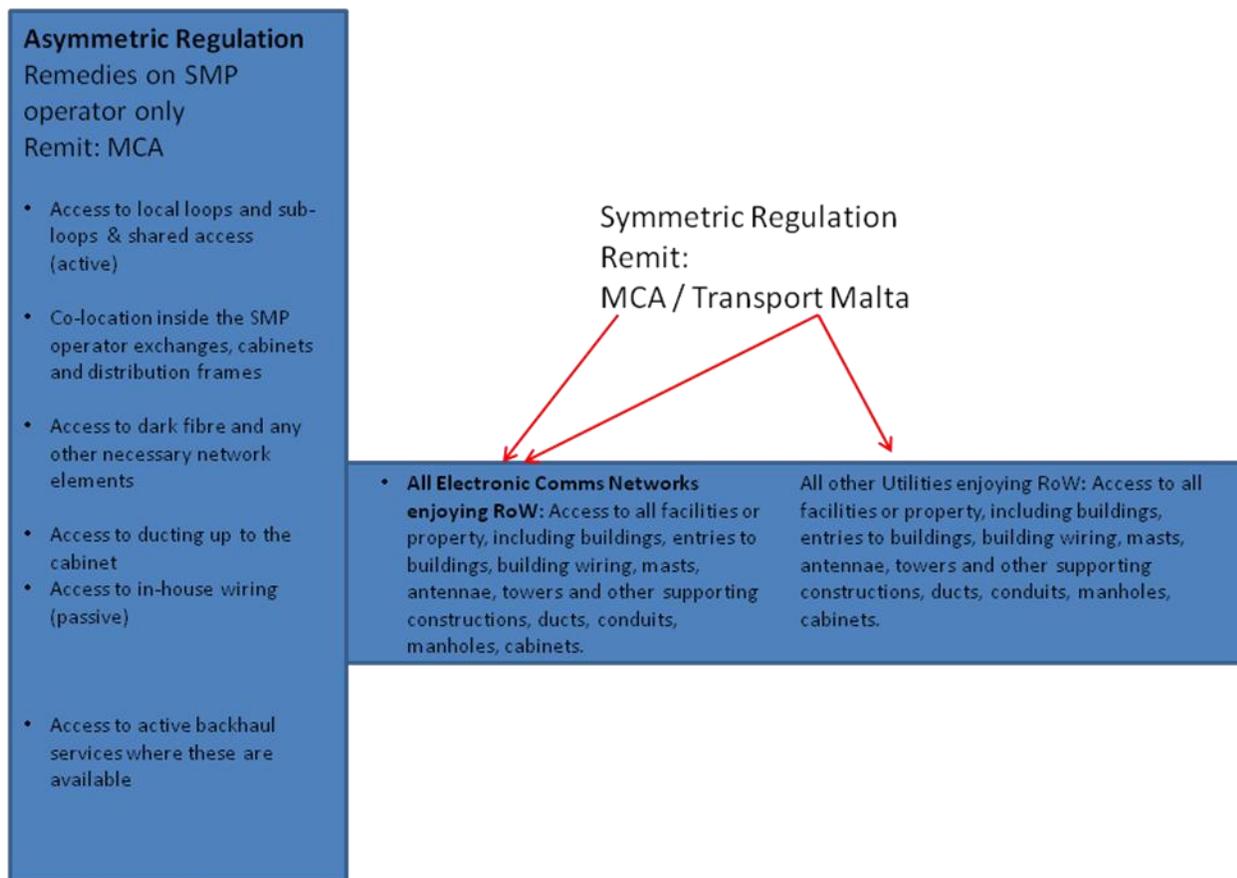
It is premised that the setting of building regulation guidelines that effectively make provision for adequate space and wiring in buildings, will mitigate the extent to which this issue can subsist.

¹⁵ Power to impose obligations in relation to the sharing of wiring inside buildings or up to the first concentration or distribution point this is justified on the grounds that duplication of such infrastructure would be economically inefficient or physically impracticable.

5.4 Way Forward

In dovetailing symmetric and asymmetric regulation the institutional players concerned will need to ensure that any overlap (with potential inefficiency in application) of regulatory activity is well coordinated and kept to the minimum necessary. A conceptual rendering of the respective areas of responsibility can be seen in the diagram below.

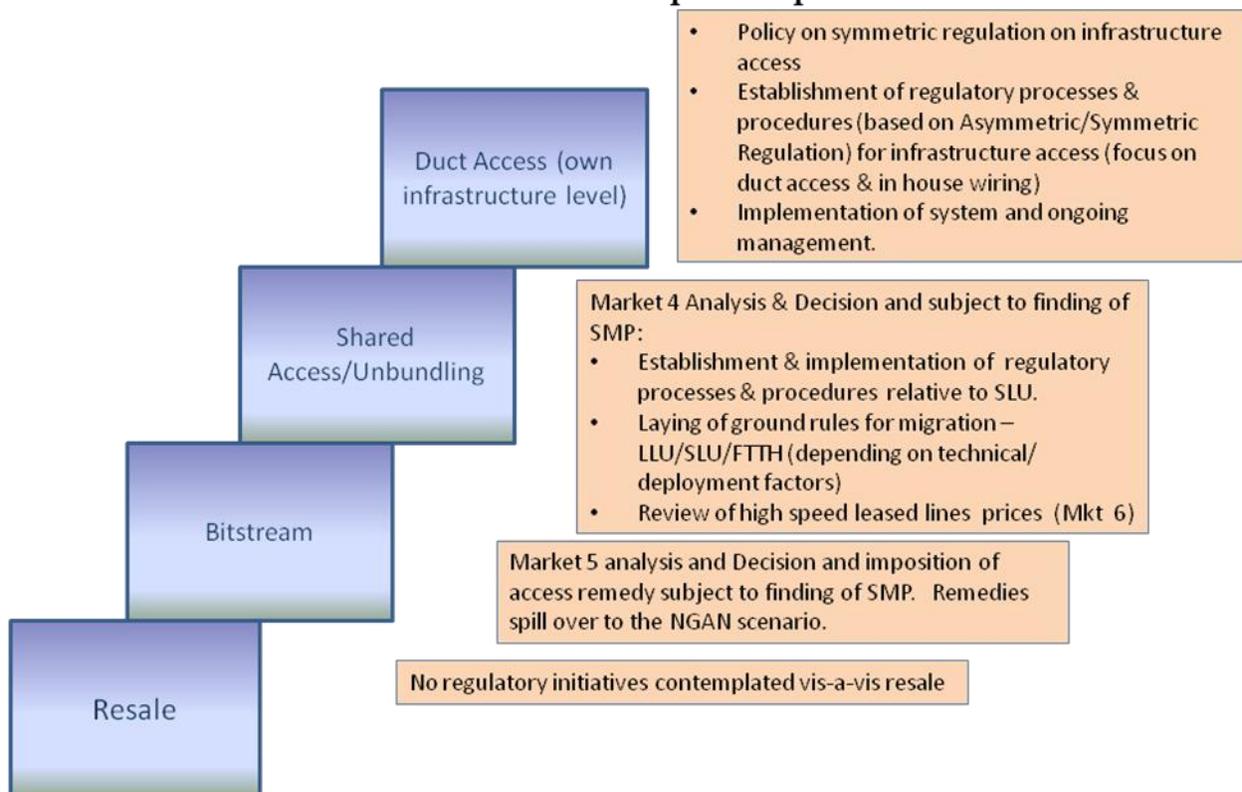
Beyond the organisational issues a conscious implementation strategy will have to be devised such that exposure by all stakeholders to excessive regulatory burdens is minimised. For example, a distinction will need to be made between information that is necessary up front or that should be readily available, and information that is required on a 'need to know' basis.



6. Summary of Strategic Thrusts

In presenting a summary of the strategic thrusts that have been addressed in this document, the ideal depiction of the various initiatives contemplated is via the so-called 'ladder of investment' concept. The relevant conceptual model, showing MCA's planned activities in relation to each 'rung' may be seen below:

MCA planned activities on broadband along 'ladder of investment' principle



The initiatives contemplated will commence in 2011, and it is plausible to assume that a number of these will spill over into 2012. The MCA will update and amend its plans according to emergent developments, keeping end user welfare as its focal point.

By way of summing up the tasks that the MCA needs to embark upon, it is worthwhile to reiterate the key principle underpinning the entire initiative, which is that of ensuring that competition thrives in the new environment characterised by NGAN. In this respect all available avenues up the ladder of investment will need to be explored such that no operator is precluded from successfully participating in the new environment.