

DEPARTMENT FOR
ENTERPRISE 

NATIONAL TELECOMMUNICATIONS STRATEGY

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**Isle of Man
Government**

Reillys Ellan Vannin



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FOREWORD

HON. HOWARD QUAYLE, MHK
CHIEF MINISTER

The Isle of Man Government is determined to support the development of a telecoms infrastructure which meets the needs of both business and the public, now and into the future. We must have this if we are to be an Island of enterprise and opportunity, a special place to live and work.

This strategy will support growth and productivity and give everyone the opportunity to engage in a modern connected world. The need for high speed broadband is a question being addressed by every developed and many developing countries around the world. It has been shown that high quality, high speed communications are essential for economic growth and social inclusion. They are no longer considered a luxury item.

A robust telecommunications infrastructure provides a platform for the Isle of Man Government to deliver its digital services and

supports the economy as a whole. It sends a clear message that the Island is forward-looking in its approach and is actively looking to grow digital related industries such as Fintech and Digital Health.

The Island, as an internationally respected and trusted Crown Dependency, has a long history of reliable and stable telecommunications infrastructure. The Island has been a world leader in telecoms innovation, with 3G technologies tested here and one of the first countries in the world to offer ADSL. We must regain that advantage.

The Isle of Man can be recognised once more as being at the forefront of telecoms innovation. A fully connected Island with access to choice, value and a sustainable telecommunications infrastructure.

My Government fully supports this strategy and I am determined to see it deliver real benefits for all those who live and work on our special Island.

"Superfast broadband is not a nice to have, it is a must for business, for Government - for all of us. Government has a role to play in enabling this for everyone."



FOREWORD

HON. LAURENCE SKELLY, MHK
MINISTER FOR ENTERPRISE

Our overarching vision is to be recognised as being at the forefront of telecoms innovation. Our Island should be fully connected with sustainable and affordable telecoms infrastructure.

We should be an inclusive island where all households and businesses can access reliable, fast and secure broadband and other essential telecoms services.

Easy access to global telecommunication networks are essential for future economic growth and are an increasingly important part of our national strategic infrastructure.

In May 2018 the Chief Minister's National Telecoms Infrastructure Sub-Committee delivered its report to Tynwald. Its purpose was to guide the development of strategy and policy relating to the future of telecoms infrastructure for the Isle of Man.

We already boast a strong telecoms and digital offering for a small Island, however, increasingly we need to set our ambitions on a global level.

Government has a key role to play as an enabler, developing and driving strategy and policy, supporting delivery, ensuring open access to modern and secure infrastructure and effectively managing a flexible, responsive and intelligent legislative and regulatory framework.

Our focus must now be on supporting a strong national telecoms infrastructure with global connectivity where innovation is seen as the norm.

The creation of a strategic vision, with Government financial intervention where needed, is required to drive the Island forward and deliver modern sustainable infrastructure. Infrastructure that will support our businesses, underpin economic growth and enrich the lives of our people.

"This strategy sets out a direction of travel to realise a fully connected Island and supports the delivery of fibre and 5G."



EXECUTIVE SUMMARY

To develop his ambitious vision the Chief Minister established a National Telecoms Infrastructure Sub-Committee in March 2017. The purpose of the committee was to guide the development of strategy and policy relating to the future of telecoms infrastructure for the Isle of Man. The Committee returned with a number of options for the Council of Ministers to consider which were received by Tynwald in May 2018.

To realise the opportunities highlighted within the Committee report the Department for Enterprise has committed resource to support and deliver it through the creation of a full National Telecoms Strategy.

The Committee heard evidence from a wide range of on and off Island businesses and the message from all those who participated was clear. Easy access to world-class telecoms is essential for the future economic growth of the Island and they should be classed as a key national asset and an important part of the Island's strategic infrastructure.

The National Telecoms strategy, laid out in six themes, looks to set a direction of travel by which the Island's telecom infrastructure can be recognised as being world class. It defines strategic outcomes to make it happen, in regulation and legislation, a national broadband plan, subsea

cables and planning and wayleaves. The Government has made it clear that enhanced telecoms infrastructure is a top priority.

"Government should lead on a National Telecommunications Strategy"

(Council of Ministers)

There will need to be investment from Government through a number of channels including financial, human resources and the sharing of infrastructure assets. The benefits will be available to all our residents and businesses on the Island and will underpin and support economic growth.

Digital businesses operating from our Island are dependent on access to telecommunications networks and the internet. These networks have become recognised as forming part of the critical national infrastructure. Government must protect and enhance these networks if it is to remain competitive on a global stage, attracting people and businesses to live and work here. The Government has aspirations to grow the tech sectors including Digital Commerce, Data Centres, Fintech and Digital Health. Fast, reliable, competitively priced infrastructure is at the heart of these goals.

This strategy is vital in delivering new ultrafast, resilient infrastructure for the Isle of Man. Across the globe governments are tackling the issue of slow legacy telecom networks. The Isle of Man must not fall behind if we are to be taken seriously as a world leader in digital technologies. We are at a crossroads and the time to act is now.

OUR TELECOMMUNICATIONS GOAL AND STRATEGIC VISION

Goal: A world leader in telecoms which supports the Isle of Man as a special place to live and work

Recognised

Given the small Island context, we will be recognised as providing business and households with high quality, high speed and affordable broadband access trending in the top 10% of league tables.

Partnership

The vision should be delivered through a true partnership approach, facilitating collaboration, joint funding, where needed, and the sharing of expertise between the government and private sector. Regulation is effective and balances the needs of consumers with the ability for licenced operators to effectively compete.

Forefront

The Isle of Man will be seen to be leading the way as a world leader in the top quartile for telecommunications.

Innovation

As a digital test bed for innovation, business and residents should have access to cutting edge and emerging technologies. Creativity and entrepreneurial innovation are valued and encouraged.

Connected

Resilient, global, always on connectivity is vital for the Island, providing access to global markets, media services and shopping through both local and undersea fibre infrastructure. Every premise on the Island will have available a fibre connection providing a trustworthy, reliable broadband connection which is constantly available.

Choice

Everyone will benefit from a choice of suppliers and products to meet their business or personal needs. Whether it be fibre connectivity or using the latest mobile technologies such as 4G+ or in the future 5G.

Sustainable

Government has a key role to play as an enabler, developing and driving strategy and policy which supports the delivery of access to modern, secure and sustainable telecoms infrastructure. This is a long term vision which will need long term support and commitment from Government.

Value

High quality telecommunications at a reasonable, affordable cost is seen as an important measure against similar jurisdictions to ensure the Island is competitive and digital services are available to all.

Vision: The Isle of Man will be *recognised* as being at the *forefront* of telecoms *innovation*. A fully *connected* Island with access to *choice*, *value* and *sustainable* telecommunications infrastructure delivered in a *partnership* approach.



THE STRATEGY SETS OUT SIX KEY THEMES.

1 MAKING IT HAPPEN

For any strategy to be successful it needs political support and executive resource to achieve quick, tangible results. The Council of Ministers has agreed that this strategy will offer a clear commitment that telecoms policy should have clear ownership and be fully resourced.

2 REGULATION AND LEGISLATION

Modern, adaptive and responsive regulation are seen as key in encouraging market confidence, innovation and investment. We will deliver regulatory reform which will be a powerful stimulus.

3 NATIONAL BROADBAND PLAN

World class broadband is essential to ensure the Island's future prosperity. Working with partners we will support a solution which provides ultrafast fibre broadband to >99% of premises.

4 SUBSEA CABLES

Connectivity to global markets and services through our undersea infrastructure is critical to the success of our Island. The economic reliance on modern and resilient undersea cables cannot be underestimated and we aim to deliver two new fibre routes as part of the strategy.

5 PLANNING AND WAYLEAVES

The installation of telecoms services and infrastructure on both public and private owned land are controlled through planning legislation. We will support the modernisation of legislation to facilitate the implementation of new telecoms initiatives such as 5G.

6 GOVERNMENT OPERATIONS

Government has, through e-Ilan, helped drive down the cost of on and off Island fibre connections. Its place in the market going forward is unclear and needs clarification. We will work with e-Ilan to support the delivery of the strategy, maximising the use of Government assets.

WHY DO WE NEED A TELECOMS STRATEGY?

If we are to achieve our strategic goal as a World leader in telecoms which supports the Isle of Man as a special place to live and work then we will need to address or consider:

- That the Island has been at the cutting edge of technology and has the opportunity to lead once again.
- Despite private investment in new infrastructure, such as the Isle of Man teleport, we are at risk of falling behind other jurisdictions who have clear strategies and a direction of travel. We are competing in a global field.
- That a strong telecoms sector supports a sustainable modern future for a digital Island and the delivery of the Programme for Government.
- That it will help support a strong growing economy where business and people are connected.
- That the Island continues to slip down industry league broadband speed tables.

The Programme for Government 2016-2021 set out five year strategic objectives. The National Telecoms Strategy will support the Programme for Government strategic objectives in a number of ways including:

ENTERPRISE AND OPPORTUNITY ISLAND	
OUTCOME	ACTION
We have utilities that support our Island communities and businesses.	To lead the development of a new National Telecoms Strategy by October 2018
	Ensure we are a digital Island, ready for new technologies like 5G, so we remain competitive now and in the future
	Set out a more active role for the Communications Commission in the pricing and quality of our telecoms provision
RESPONSIBLE ISLAND	
OUTCOME	ACTION
We have more responsive legislation and regulation. We engage, participate and are respected internationally.	Introduce new legislation for national telecommunications which creates a more effective regulatory framework in this area
	Rationalise regulation and ensure it better supports our economy, environment and community
SUSTAINABLE ISLAND	
OUTCOME	ACTION
We have a planning system which supports sustainable growth.	Make it easier for Government's priorities to be reflected in the way planning applications are considered
	Shape & design a planning system informed by recent reviews & consultation
	Extend permitted development rights



MAKING IT HAPPEN

Government should lead on a National Telecommunications Strategy

(Committee Report 2017)

Any wide-reaching strategy needs resource, money and political support to achieve quick tangible results. The Council of Ministers agreed that the Department of Enterprise should lead on the production of a national telecoms strategy. They also agreed that resource should be committed to ensure telecoms is explicitly owned and supported.

National Telecoms Infrastructure Committee

The Committee found that there was a need for a strategic vision which was owned and appropriately resourced. A clear Government-owned strategy would promote a sense of security and could be a powerful selling point. Council of Ministers agreed that telecoms policy should be explicitly owned, have clear ownership and support for implementation.

The Committee believed that Government should lead on the production of a National Telecommunications Strategy. In December 2017 the Department for Enterprise committed to produce a National Strategy and to bring it before Tynwald.

"Telecoms policy should be explicitly owned and appropriately supported, ensuring clear ownership of strategy and implementation"
(Council of Ministers)

MAKING IT HAPPEN	STRATEGIC ACTIONS
<p>Principles: Government should lead on a National Telecommunications Strategy.</p> <p>Goal: That the right resources will be deployed at the right time to support the implementation of the strategic aims of the strategy. Government must ensure it can respond to change and treat the strategy as a living document over the next five years and beyond</p>	<p>1.1 The Department for Enterprise will commit permanent resource to lead, support and implement the national strategy agenda with regards to telecommunications.</p> <p>1.2 All government Departments will support in all areas of delivery to help implement the strategy.</p> <p>1.3 The Department for Enterprise will, going forward, be responsible for telecommunications policy.</p>



2

REGULATION AND LEGISLATION

A streamlined and stable regulatory framework monitors, evaluates and supports strategic delivery of the shared vision

(Committee Report 2017)

The importance of the telecommunications market in the Isle of Man cannot be overstated. Telecommunications services are vital to almost every aspect of daily social and economic life; a fact which is further underlined by the nature of life on an island.

In addition to the social benefits brought by telecoms services, they are also a key economic input for the majority of the businesses that contribute to our economy. With this in mind developments such as 5G and next generation fibre networks have brought the issue of investment incentives to the fore for Government, regulators, and regulated entities alike. In the Isle of Man the Communications Commission, as the National Regulatory Authority, must strike a balance between fostering competition and fostering investment and more often than not these are competing forces. Regulatory certainty is central to encouraging investment while remaining cognisant of competition issues in the short-term.

As the stability of the regulatory environment is one of the key considerations for investors, having consistent regulation and static regulatory structures is one tenet in ensuring the Island remains competitive. This was rightly identified by the National Telecoms Infrastructure Committee in its September 2017 report in which it cited this as amongst the islands strengths. Furthermore,

the Committee found that the Communications Commission could do more in terms of clarifying its role and purpose; this would also help to build regulatory certainty in the market.

The Committee also looked to promoting the Island as a test bed for innovation allowing residents and business to have access to cutting edge technology. The Island offers many attractive benefits for businesses to test and trial products including a stable and supportive regulatory environment, favourable spectrum availability, as well as an easily accessible market. Such an initiative may provide an avenue for raising the profile of the Isle of Man in a positive way within the global technology community and the Communications Commission is ideally placed to support these ambitions. It should be kept in mind that the Isle of Man was at the forefront of many telecoms developments in the past, such as 3G and ADSL, and with the appropriate support it is conceivable that this could be achieved again in the future.

Having a consistent and robust regulatory environment will also be required to assist in the effective delivery of the National Broadband Plan being devised by Government.

"The Island is open for business globally and has a strong negotiating position based on a powerful digital infrastructure, a reputation for innovation, and an enviable regulatory framework"

(Committee Report 2017)

While the Communications Commission would understandably not be directly involved in the implementation process, it would nevertheless have an important role to play. An investment such as that proposed by the Government would undoubtedly have significant long-term benefits for the telecoms market on the island, however there needs to be a balance to ensure there is no distortion to competition in the

short-term. Government believes that the Communications Commission is the body best placed to ensure that balance is achieved.

As part of its efforts to foster competition and investment the Communications Commission needs to ensure that the regulatory burden on businesses within the telecoms industry is kept to a minimum; this also reflects the fast-paced nature of technological developments within the industry.

Finally, the ultimate beneficiary of any of the measures undertaken has to be the consumer. From a business perspective telecoms consumers play a significant role in our economy, for example e-gaming and insurance are users heavily reliant on telecoms services, whereas domestic consumers now rely on telecoms services more than ever before. As such it is important

to ensure that there are adequate measures in place to ensure that consumers' needs are being met, especially in relation to broadband internet access. The Government believes it is important to ensure service providers make available adequate information to consumers with regards their broadband offering; given its expertise in this area it is recommended that the Communications Commission undertake this work with operators to provide consumers with average achievable broadband speeds.

During the lifetime of this strategy it is likely that how people and businesses view telecoms and the services they use on a regular basis will change. As the industry regulator it is incumbent on the Communications Commission to ensure that all consumers' views are sought and taken into account when making decisions on issues that affect the telecoms industry.

For its part the Government, while acknowledging the importance of the Communications Commission's independence, will support the activities of the Commission in delivering on the items set out in this strategy. In a more general sense, and bearing in mind the importance of the telecommunications market to our economy, the Government will also work with the Commission to ensure that it is adequately resourced to execute its functions in a timely and consistent manner.

"The regulator's role needs to be seen as going beyond checking compliance"

(Committee Report 2017)

REGULATION AND LEGISLATION	STRATEGIC ACTIONS
<p>Principles: Work to ensure that consumers are protected and have their needs met. Foster investment while at the same time seeking to protect competition within the Island's telecoms market. Promote the Island as an open, secure and responsible test bed for trials of new technology. Seek to make the regulatory environment on the Island as stable and streamlined as possible.</p> <p>Goal: To update and strengthen the regulatory and legislative frameworks which underpin a flexible and adaptive regulatory environment. Raising the profile of the Island within the international tech community will help attract inward investment. Have consistent, streamlined, and adaptive regulatory processes for doing business in the Isle of Man. Greater levels of engagement with all stakeholders to ensure regulatory decisions reflect the views of our society as possible.</p>	<p>2.1 The Communications Commission should seek to ensure broadband providers provide average achievable broadband speed information for consumers; Government will monitor progress and intervene as required.</p> <p>2.2 Implement a test and trial scheme which seeks to raise the profile of the island on the international stage. Government will work with the Communications Commission in facilitating this.</p> <p>2.3 The Communications Commission should work to raise its profile and better engage with industry and consumers to better explain its role and purpose.</p> <p>2.4 To help develop regulatory certainty within the Isle of Man telecoms market the Communications Commission should seek to review its process, procedures and structure on enactment of the Communications Bill.</p> <p>2.5 There should be an ongoing focus on ensuring that regulation facilitates investment and competition.</p>



NATIONAL BROADBAND PLAN

3

In principle the Government supports the aim of 100% superfast broadband coverage

(Council of Ministers)

The implementation of high speed broadband is an issue currently being tackled by every developed and many developing countries around the world. It has been identified that high quality, high speed communications are a strong enabler for economic growth and social inclusion. They provide a key conduit of modern society – retail, entertainment, learning and health. Just as communities a century ago found electrification essential to their survival and quality of life, communities today have increasingly come to recognize that their citizens can survive and thrive in the modern economy only if they have affordable access to high-capacity internet connections.

The UK Government has committed to the delivery of full fibre broadband to the majority of the UK by 2033. As the table in the following page shows the global trend is for governments to push the delivery of fibre infrastructure to as higher percentage of the population as possible.

Fibre networks are the digital arteries of our society just as the roads, ports and airports are. These digital highways are the means for people to win jobs from anywhere in the world, provide a means for education, healthcare, shopping, trade and provide society with new found independence and communications channels.

This strategy aims to ensure that fibre networks are available to as many of those on the Island that want access to them. However there will be parts of the Island in rural and remote areas with low population density or topographic challenges which the market would never reach. High costs and low returns mean that Government support will be needed in these areas to ensure sections of society are not left behind.

National Telecoms Infrastructure Committee

The Island has 100% ADSL coverage and >70% coverage of superfast 30Mbps broadband delivered at no cost to the public purse. To get better and go further will need our intervention. The Committee concluded that if the Island is to stay ahead of its competitors and achieve its vision of becoming a world leader in telecoms it will require appropriate sustained investment. They found

**"The Government's
timeline for delivery
of this project is
maximum five years"**

(Council of Ministers)

the need to increase the speed of broadband services was clear. Building a world class, sustainable, future-proof telecoms infrastructure is within our reach and now is the time to deliver it.

Research by Analysys Mason

The Department for Enterprise appointed Analysys Mason to review options to deliver both the Committee's and the Council of Minister's desire to implement ultrafast fibre broadband to >99% of the Islands residents and businesses.

They found:

- Operators want to play a part in product development and the delivery of new telecoms infrastructure.
- Cost for the delivery of Island wide ultrafast broadband are in the region of £33m.
- Full fibre for the Island, of which much will be commercially viable, will require some form of government subvention in rural & remote areas.
- Speeds on the new fibre network will be up to 1Gbps download and 200Mbps upload.

NATIONAL BROADBAND PLAN

Almost all Governments around the world are investing in the installation of fibre networks capable of providing super and ultrafast speeds. National league tables show countries recognised as providing high-tech digital services are topping the tables.

RANK 2018	COUNTRY	MEAN DOWNLOAD SPEED	CHANGE SINCE 2017	TIME TO DOWNLOAD 5GB
1	SINGAPORE	60.39	NO CHANGE	00:11:18
2	SWEDEN	46	NO CHANGE	00:14:50
3	DENMARK	43.99	UP 1 PLACE	00:15:31
4	NORWAY	40.12	UP 3 PLACES	00:17:01
5	ROMANIA	38.6	UP 13 PLACES	00:17:41
6	BELGIUM	36.71	UP 2 PLACES	00:18:36
7	NETHERLANDS	35.95	DOWN 2 PLACES	00:18:59
8	LUXEMBOURG	35.14	UP 25 PLACES	00:19:26
9	HUNGARY	34.01	UP 6 PLACES	00:20:04
10	JERSEY	30.9	UP 4 PLACES	00:22:06
22	MADAGASCAR	24.87	UP 67 PLACES	00:27:27
35	UK	18.57	DOWN 4 PLACES	00:36:46
36	IRELAND	18.22	NO CHANGE	00:37:28
44	GIBRALTAR	14.71	DOWN 6 PLACES	00:46:24
54	GUERNSEY	11.58	DOWN 2 PLACES	00:58:57
62	ISLE OF MAN	10.54	DOWN 12 PLACES	01:04:46

Figures Compiled by New America Open Technology, Google Open Source Research, and Princeton University's PlanetLab. (May2018)

WHAT DO WE MEAN BY FAST BROADBAND & HOW IS IT DELIVERED?

Standard Broadband
Less than 30Mbps

Superfast Broadband
Minimum 24Mbps



"Private investors, working alongside governments, can play a profound and positive role in the delivery of world class infrastructure"

(PwC – Global Infrastructure Investment 2017)

- Full fibre already delivered. Government leading the way in supporting business to get the most out of digital adoption, innovation and automation.
- The government's vision is a completely connected Sweden by 2025. By 2020 95% of premises will have access to 100Mbps. Stockholm has a city wide fibre backbone generating €27b since switch on. The European Investment Bank is supporting the rollout with €125m in debt financing.
- Digital Belgium plans for 50% of the connections to be of speeds of at least 1Gbps and next generation access for all by 2020. €3.5b is being invested to deliver ultrafast speeds.
- Government investment of £410m in support of a 30Mbps USO. Incumbent telco working with government to reach rural areas. 2Gbps service launched.
- Government investment of £740m in local full fibre networks. £67m voucher scheme launched to support installation costs and drive adoption. £600m fund to deliver 10Mbps USO. £1.7b Gap funding available.
- If approved the Island will aim to have >99% FTTP connected, for all those that want it, at speeds up to 1Gbps within 5 years.

Ultrafast Broadband
Minimum 300Mbps Max

Hyperfast Broadband
exceeding 1Gbps

FIBRE TO THE PREMISES (FTTP)

Isle of Man National Broadband Plan

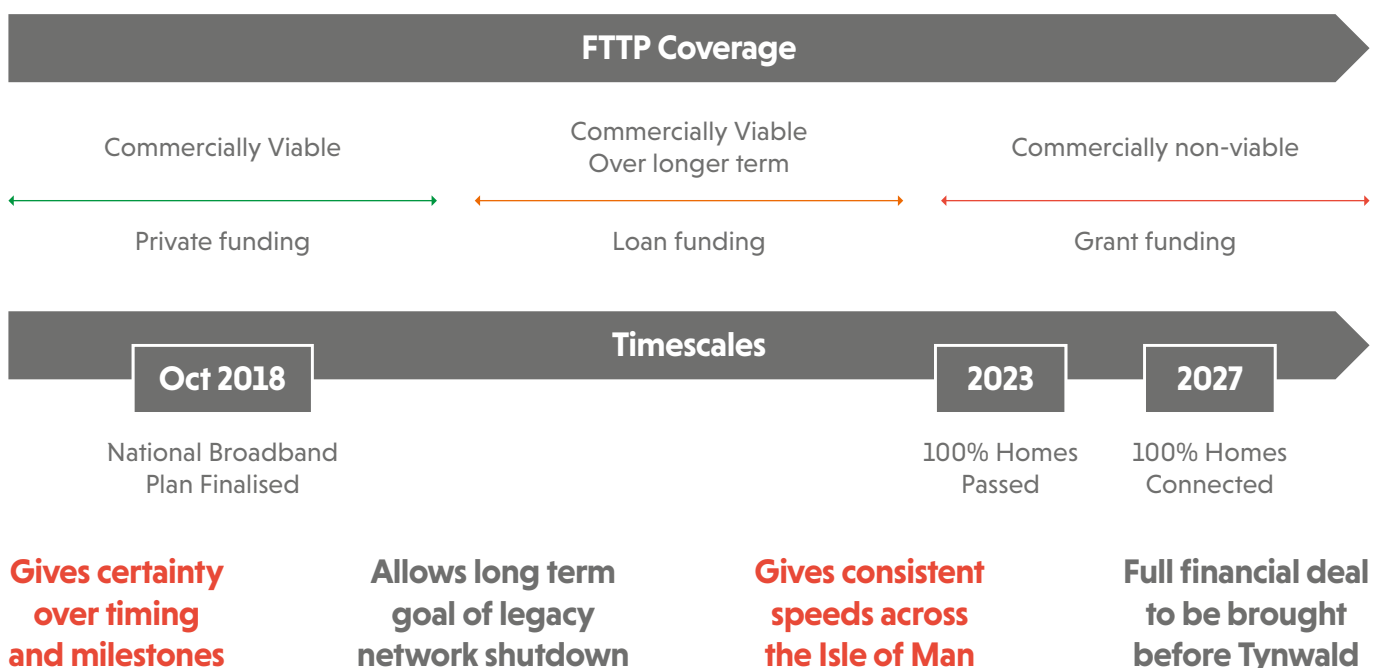
NATIONAL BROADBAND PLAN GOVERNMENT INVESTMENT

There are several different ways in which Government can support the financing of enhanced broadband delivery. These include direct monetary grants to build, manage and commercially exploit a broadband network, tax rebates and loans with below-market rate interest loans and access to Government-owned infrastructure such as ducts, poles and land.

All around us we could see that without some form of intervention the move to an all-Island fibre network could take decades. The Department for Enterprise engaged with Analysys Mason to provide options for consideration in the funding of enhanced broadband services which would meet Councils objective of reaching >99% of properties with fibre infrastructure.

Given the way in which other jurisdictions are approaching the issues highlighted with fibre deployment, a private design, build, operate (DBO) model is the preferred option. This model supports a private network operator to design, build and operate the network with the operator also providing finance. Government offers financial support based upon

a pre-agreed set of KPIs, milestones, coverage and quality criteria. The level of access to a new network for other licenced operators would be included as part of any financial support package. State aid rules would include clawback mechanisms which would return funds to the Government in the event of excessive profits being realised via the new network.



NATIONAL BROADBAND PLAN - MOBILE

WORLD LEADER IN MOBILE CONNECTIVITY

The Island is well served with high quality, high speed mobile coverage from two operators with both investing in 4G+ networks. The Island currently has 99% 4G and 75% 4G+ coverage. The Communications Commission has supported the roll-out further with additional spectrum allocations provided to both MT and Sure in June 2018. Access to mobile connectivity complements fixed broadband services, providing telephony and internet services where people live, work and travel.

We want the Island to benefit from 5G and satellite communications technologies and take early advantage of the benefits it will bring. 5G offers higher data rates, lower latency and improved performance. These benefits will support mobile broadband, media services and industrial applications such as automation and robotics. This could include driverless cars and smart city concepts.

5G will need fibre-based infrastructure to deliver its benefits to the Island.

Given the need for a greater number of cell sites required for 5G the traditional model for deployment will need to be challenged. Operators will need to work together to make the installation more efficient as it will be expensive and it may be impractical to implement two separate 5G infrastructures.

No timescales have been confirmed for the deployment of 5G at this time. However, it will most likely not be until 2020 at the earliest. Both South Korea and China are aiming to be the first with new networks planned for 2019 although no 5G standard has been agreed as yet. The Government will need to plan how it will support the implementation of 5G which creates an environment which allows a sufficient pace of delivery that makes the Island a world leader in mobile connectivity. A recent EU study estimated that in

2025 benefits from the introduction of 5G could reach €113.1b per year across the region.

The Communications Commission, in conjunction with OFCOM, will need to lead on the allocation of spectrum to facilitate the implementation of 5G.

The Government can support the delivery of 5G by making it easier and cheaper to deploy mobile infrastructure. This can be helped by reforms in planning, wayleaves and amendments to the Electronic Communications Code. Given 5G will use spectrum in the 3.5GHz to 26GHz range, which can carry more traffic but is shorter in range and more easily blocked by physical obstructions, we are likely to need clusters of smaller masts at a higher density than those used today.

Any Government investment in a fibre broadband network must ensure it facilitates the connectivity of any future 5G network requirements which will need full fibre to meet the data demand. Investment in fibre, 5G and satellite technologies provides a comprehensive infrastructure well-placed to support a wide range of business activities.

Access to Government-owned infrastructure (buildings, land, ducts, poles and masts) could bring down installation costs and speed up the delivery of any 5G or fibre network.

DfE will develop a strategy in partnership with operators and the Communications Commission in support of 5G by June 2019.





NATIONAL BROADBAND PLAN

NATIONAL BROADBAND PLAN	STRATEGIC ACTIONS
<p>Principles: Government supports the aim of >99% ultrafast broadband coverage, subject to affordability and that the DfE and Treasury initiate formal discussions with local operators to develop further detail with engagement with additional stakeholders where necessary.</p> <p>The Government's timeline for delivery of this project is maximum five years.</p> <p>Goal: All of the Island's residents and businesses have access, should they want it, to ultrafast fibre broadband within five years.</p> <p>Licensed operators have open access to a new fibre network to deliver innovative products and services.</p>	<p>National Broadband Plan</p> <p>3.1 Government will engage in an open market process to determine its preferred partner and demonstrate value for money to deliver its aim of achieving >99% of premises passed by fibre.</p> <p>3.2 The Department of Enterprise will lead the budget bid to support the roll-out of this fibre broadband network ensuring availability to >99% of premises within 5 years.</p> <p>Government Investment</p> <p>3.3 The Department supports the proposal that an outline business case in support of such a scheme be progressed as part of the broader telecoms strategy.</p> <p>3.4 The Department for Enterprise will report annually on the roll-out of the national broadband plan, take up and adoption including options to support faster adoption.</p> <p>3.5 Government will invest in areas that are currently economically unviable and closely follow EU state aid rules and best practice.</p> <p>5G Mobile Connectivity</p> <p>3.6 DfE will work with local operators and the regulator to develop a strategy for 5G adoption on the Island, where possible encouraging early trials.</p>



4

SUBSEA CABLES

We maximise our geographical, legislative and political strengths and reinforce our position with robust subsea cables to the East and West, facilitating connection between a range of jurisdictions

(Committee Report 2017)

Connectivity to global markets through undersea cables is critical to the success of the Island. High-growth businesses place great importance on the quality of the off-island connectivity. Businesses are unlikely to locate where international connectivity risk is perceived to be high.

A number of market reviews have identified that whilst costs of off-island connectivity seem high they are comparable to those of other Islands. They are however higher than the equivalent UK-International links.

National Telecoms Infrastructure Committee

Whilst the Island is well served by undersea cables in terms of a small island the Committee found that due to the critical nature of the subsea network it should be classed as part of our national strategic infrastructure. They concluded that a feasibility study should be commissioned to develop options and recommendations for a new subsea cable. 87% of businesses felt the Island needed a new subsea cable. The Committee recognised the critical nature of having a well-connected Island which could maximise its geographical, legislative and political strengths with robust subsea cables east and west to connect us to a range of jurisdictions.

Subsea Cable Fact File

- **Five subsea cables serve the Island today. Two BT, Two Vodafone, One e-llan**
- **Island cables are 26 years (BT), 24 years (Vodafone) and 17 years old (e-llan).**
- **99% of international data is transmitted by undersea cable networks.**
- **545,018 miles of undersea cables exist today.**

New Subsea Infrastructure

Advanced discussions have taken place with Aqua Comms, an Irish carriers' carrier specialising in the building and operating of submarine cable systems. Aqua Comms approached the Isle of Man Government with the aim of delivering new subsea cable infrastructure without the need for public funding. As part of the new network the Isle of Man would

benefit from the additional resilience and capacity of two new landfall cables. The new network, Celtix Connect-2, forms a fully diverse ring between Dublin and Manchester with onward connections to the UK, Europe, Ireland and the U.S.A.

- Access to the cable would be on an open basis with carrier neutrality, providing diversity, resilience and competition.
- Isle of Man Government will seek to retain an option to have access to fibre pairs in future years.
- Go-live planned for 2020.

Government Facilitating Action

Installation of subsea infrastructure is notoriously expensive and difficult to achieve. Both technically and around the approval of permits, licenses and planning needed to progress. To fully benefit from this opportunity Government Departments should be seen as enablers in the process, supporting the developer to meet its statutory obligations.

Access to Government assets such as ducting and land for local access equipment will be encouraged to allow local operators and businesses open access to the new infrastructure.

SUBSEA CABLES	STRATEGIC ACTIONS
<p>Principles: As a matter of urgency a feasibility study to develop opportunities, options and recommendations should be commissioned regarding existing and future undersea cables.</p> <p>Goal: The installation of two new subsea fibre routes to support resilience and the availability of additional bandwidth.</p>	<p>4.1 The Department for Enterprise will coordinate and support proposals for the introduction of new undersea infrastructure by the end of 2019.</p> <p>4.2 Should the proposed new infrastructure fail to be realised the Department of Enterprise will lead on the production of a feasibility study to develop further opportunities.</p>



5

PLANNING AND WAYLEAVES

Planning requirements are aligned with the national strategic requirement to grow and support the fibre network and the introduction of new technologies, such as 5G

(Committee Report 2017)

The installation of Telecommunication services and infrastructure on and under publicly and privately owned land are controlled through primary and secondary legislation. These include Wayleave provisions and code powers as defined in the telecommunications code.

Wayleave provisions form part of the Electricity Act 1996 under Schedule 2 section 5. A wayleave provides a right of way granted by a landowner, generally in exchange for payment and typically for purposes such as the erection of telegraph wires, laying of pipes or installation of telecommunications infrastructure including ducts and masts. Under the current Act it is the role of the installation body to negotiate a fair and reasonable fee with the landowner for access to the land. Once agreed the wayleave will remain in place and bind any owner at any time to allow access to the installed infrastructure. This is subject to the provisions laid out in the Registration of Deeds Act 1961 and the Land Registration Act 1982.

Due to the complex nature of how wayleaves are currently negotiated there are several large amounts of unlit fibre in the ground. Operators may be held to fixed agreements which mean they can't commission additional fibre, already installed, without large payments being made to landowners, even if the landowner has already been compensated for the disturbance of the original installation.

National Telecoms Infrastructure Committee

The Committee found that planning is part of the evolutionary journey in the delivery of 5G and will require different planning rules. The Committee concluded that existing planning rules are not sustainable or scalable. The Committee concluded that wayleaves, in their current provision, are unsustainable and regulations require urgent updating. This will be needed to support the installation of future telecoms infrastructure. The Committee felt planning policy should be updated to increase the code powers and mandatory mast sharing.

The Committee also concluded that obligations should be placed on any new development to install appropriate infrastructure by default that will future-proof installation of telecoms infrastructure.

Council of Ministers

Council of Ministers agreed a number of policy statements, considered from the Committee report, which would support telecoms infrastructure installation and maintenance.

BT Open Reach in the UK does have statutory powers under the Electronic Communications Code (ECC) that allow it to install equipment without the need for a signed wayleave agreement. These powers are only generally used when they are left without an alternative. Similar powers could be enacted through the new Communications Bill and the equivalent ECC.

"Align Easements and Wayleaves legislation and consider placing new obligations on building developers to support the installation of appropriate ducting for fibre in new estates"

(Council of Ministers)

“Planning policy should explore the use of code powers (for telcos) and mandatory mast sharing”

(Council of Ministers)

Finally, one of the initiatives of this strategy is the so called, “dig once,” initiative. This calls for fibre optic internet providers to have access to underground facilities whenever the roads are opened up by those replacing water pipes, cables,

electricity infrastructure and the like. Nearly 90% of all cost related to installing fibre optic cabling is related to digging costs. If we can eliminate or drastically reduce digging cost we can provide consumers with higher bandwidth, lower cost internet access.

PLANNING AND WAYLEAVES	STRATEGIC ACTIONS
<p>Principles: Current and future infrastructure should be shared where appropriate, ensuring the maximum use and reuse of resources to optimise delivery potential.</p> <p>Planning policy should explore the use of code powers (for telcos) and mandatory mast sharing where possible.</p> <p>There should be a ‘dig once’ policy. Where appropriate ducting for fibre should be shared.</p> <p>Align easements and wayleaves legislation and consider placing new obligations on building developers to support the installation of appropriate ducting for fibre in new estates.</p> <p>Goal: Telecommunication infrastructure is straightforward to install and maintain for the benefit of the Islands residents and businesses.</p>	<p>5.1 The Department for Enterprise will support the Cabinet Office to introduce new planning legislation and policy which supports the delivery and maintenance of telecoms infrastructure.</p> <p>5.2 The Department for Enterprise will support the introduction of new secondary legislation, in conjunction with the regulator, to support the delivery of new telecoms infrastructure via enhancements to the Electronic Communications Code.</p> <p>5.3 The Department will support the modernisation of Wayleave legislation which recognises telecoms as part of the critical national infrastructure.</p>





GOVERNMENT OPERATIONS

Further clarify the role of e-llan to ensure that it is clear, relevant and aligned to the telecommunications strategy

(Committee Report 2017)



The role of e-llan

e-llan Communications Limited (e-llan) is a wholly owned subsidiary of Manx Utilities, the Isle of Man's electricity, water & sewerage services supplier. The company was created in order to leverage the commercial potential of the spare fibre optic capacity in the UK-IOM interconnector cable and other on Island fibre installed for the command and control of the primary service networks owned by Manx Utilities. e-llan began commercial operations in December 2007 and provides telecommunications services to licensed telecommunications service providers and data centre operators on a wholesale basis. They provide a range of point to point or point to multi-point high bandwidth solutions over a high capacity network comprising the interconnector cable and the on Island metropolitan network.

Since its inception in 2007 e-llan has played its part in challenging wholesale market prices. Off-Island transit prices have dropped from c.£1m per annum for a 1Gbps service in 2007 to c.£25,000 for a 10Gbps service today which is unmatched

by the other wholesale providers. Whilst the Island would have seen a natural downward trend in pricing as technology improved and markets evolved, the effect e-llan has had and continues to have on wholesale market prices and the impact this has subsequently had on the retail sector cannot be ignored. Both e-llan and Manx Utilities has invested in fibre and fibre delivery assets over a long period of time; the most recent refresh coming in 2016. The Committee concluded that e-llan was ideally placed to support the implementation of the National Broadband Plan and so maximise its infrastructure assets for the benefit of the Isle of Man residents and businesses. E-llan is also well placed to support the delivery of new undersea cable infrastructure, providing on Island transit between landing points and supporting access for all operators to local termination equipment.

The Committee found that the role of e-llan is unclear to local operators and that they would welcome open, transparent plans by which they can align their own strategies. Therefore, the way in which e-llan supports the

delivery of the National Broadband Plan in addition to any future wholesale product delivery will need to be open and transparent enabling the investment decisions of local operators are aligned to the outcomes identified in the telecoms strategy.

e-llan is part of local stakeholder forums such as the Licenced Operators' Forum facilitated by the Communications Commission. This enables it to remain informed about retailers' requirements. E-llan currently holds regular meetings with its suppliers and clients so that new innovative products, such as those offered in 2016, can be offered where there is a market need.

GOVERNMENT OPERATIONS	STRATEGIC ACTIONS
<p>Principles: Further clarify the role of e-Ilan to ensure that it is clear, relevant and aligned to the telecommunications strategy.</p> <p>Department for Enterprise should work with the e-Ilan Board to consider economic outcomes which support the strategy.</p> <p>Goal: The role of e-Ilan is understood and its medium and long term plans and objectives are transparent. Local operators can make reasonable investment decisions based on these plans.</p>	<p>6.1 e-Ilan will support the telecoms strategy by enabling access to its fibre and delivery assets and helping reduce implementation costs.</p> <p>6.2 e-Ilan will also support the provision of fast undersea data networks creating a positive Island reputation with resilient infrastructure and global connectivity.</p> <p>6.3 As the strategy develops the role of e-Ilan will be made clear, relevant and aligned to the telecommunications strategy, maximising the use of currently deployed infrastructure assets.</p>



SUMMARY

1. MAKING IT HAPPEN ACTIONS

- 1.1** The Department for Enterprise will commit permanent resource to lead, support and implement the national strategy agenda with regards to telecommunications.
- 1.2** All government Departments will support in all areas of delivery to help implement the strategy.
- 1.3** The Department for Enterprise will, going forward, be responsible for telecommunications policy.

2. REGULATION & LEGISLATION ACTIONS

- 2.1** The Communications Commission should seek to ensure broadband providers provide average achievable broadband speed information for consumers; Government will monitor progress and intervene as required.
- 2.2** Implement a test and trial scheme which seeks to raise the profile of the Island on the international stage. Government will work with the Communications Commission in facilitating this.
- 2.3** The Communications Commission should work to raise its profile and better engage with industry and consumers to better explain its role and purpose.
- 2.4** To help develop regulatory certainty within the Isle of Man telecoms market the Communications Commission should seek to review its process, procedures and structure on enactment of the Communications Bill.
- 2.5** There should be an ongoing focus on ensuring that regulation facilitates investment and competition.

3. NATIONAL BROADBAND PLAN ACTIONS

- 3.1** Government will engage in an open market process to determine its preferred partner and demonstrate value for money to deliver its aim of achieving >99% of premises passed by fibre.
- 3.2** The Department of Enterprise will lead the budget bid to support the roll-out of this fibre broadband network ensuring availability to >99% of premises within 5 years.

GOVERNMENT INVESTMENT

- 3.3** The Department supports the proposal that an outline business case in support of such a scheme be progressed as part of the broader telecoms strategy.
- 3.4** The Department for Enterprise will report annually on the roll-out of the national broadband plan, take up and adoption including options to support faster adoption.
- 3.5** Government will invest in areas that are currently economically unviable and closely follow EU state aid rules and best practice.

5G MOBILE CONNECTIVITY

- 3.6** DfE will work with local operators and the regulator to develop a strategy for 5G adoption on the Island, where possible encouraging early trials.

4. SUBSEA CABLES ACTIONS

- 4.1** The Department for Enterprise will coordinate and support proposals for the introduction of new undersea infrastructure by the end of 2019.
- 4.2** Should the proposed new infrastructure fail to be realised the Department of Enterprise will lead on the production of a feasibility study to develop further opportunities.



5. PLANNING & WAYLEAVES ACTIONS

- 5.1** The Department for Enterprise will support the Cabinet Office to introduce new planning legislation and policy which supports the delivery and maintenance of telecoms infrastructure.
- 5.2** The Department for Enterprise will support the introduction of new secondary legislation, in conjunction with the regulator, to support the delivery of new telecoms infrastructure via enhancements to the Electronic Communications Code.
- 5.3** The Department will support the modernisation of Wayleave legislation which recognises telecoms as part of the critical national infrastructure.

6. GOVERNMENT OPERATIONS ACTIONS

- 6.1** e-Ilan will support the telecoms strategy by enabling access to its fibre and delivery assets and helping reduce implementation costs.
- 6.2** e-Ilan will also support the provision of fast undersea data networks creating a positive Island reputation with resilient infrastructure and global connectivity.
- 6.3** As the strategy develops the role of e-Ilan will be made clear, relevant and aligned to the telecommunications strategy, maximising the use of currently deployed infrastructure assets.

CONCLUSION

A World leader in telecoms which supports the Isle of Man as a special place to live and work

To be **recognised** as a place that is at the **forefront** of **innovation** and fully **connected** the Island must embrace the opportunity before it. An opportunity to deliver **sustainable** subsea infrastructure and on-Island ultrafast fibre broadband to every home and business. High **value**, high quality telecoms at an affordable cost in a well-regulated regime, delivered in a **partnership** approach.

Government must commit to supporting the development and implementation of the strategy through the use of the financial, human and infrastructure resources at its disposal to fully realise the economic and social benefits. Commitment is needed if we are to achieve our aspirations of becoming a truly tech-enabled Island with digital commerce, data centers, fintech and digital health at its core, all delivered over a fast, reliable telecoms infrastructure.

Digitalisation is changing the way businesses operate. Websites, apps, social media, cloud computing, big data, tablets, e-commerce - these technologies are among the trends of today that are change the way our residents and businesses live and work now and into the future. The Island must prepared to embrace and have an infrastructure that can support them.

The Committee found that the regulator had few powers to penalise or fine providers and that the forthcoming Communications Bill was vital to provide the additional powers needed to better regulate broadband quality and speed and should expedited. This included allowing residents and businesses access to detailed information regarding the broadband speed available to them and how that compares to general trends.

Measuring the success of the strategy is essential to ensure the benefits are realised for both residents and businesses on the Island. Progress will be measured and reviewed through regular consultation and setting stringent success criteria and milestones.

We will have succeeded in our strategy when:

- Government has clear ownership of, and committed long term resource to support, the continued evolution of the telecoms sector.
- We have a modern, enabling regulator supporting open competitive telecommunications markets.
- We have deployed access to ultrafast broadband, using fibre, for all the Island's residents and businesses that want it.
- New subsea cables have been delivered, providing additional resilience and bandwidth.
- Planning and wayleave legislation facilitates the introduction of new telecoms infrastructure such as 5G which we are an early adopter of.
- e-llan has a clearly defined role and long term plans shared with the Island's telecoms community.

GLOSSARY

ADSL	Asymmetric digital subscriber line
CC	Communications Commission The Isle of Man's telecommunications regulator
DfE	Department for Enterprise – Isle of Man Government
DoI	Department of Infrastructure – Isle of Man Government
DWDM	Dense Wavelength Division Multiplexing
ECC	Electronic Communications Code
e-llan	Wholly owned subsidiary of Manx Utilities Authority
FRAND	Fair, reasonable and non-discriminatory
FTTC	Fibre to the cabinet
FTTP	Fibre to the premise
Gigabit	Network speeds of at least 1000Mbit/s
Gigabyte	Quantity of data. 1 Gigabyte = 1024 Megabytes
ISP	Internet service provider
MNO	Mobile network operator
MT	Manx Telecom
MUA	Manx Utilities Authority Statutory Board, Isle of Man Government
NBP	National Broadband Plan
SDH	Synchronous Digital Hierarchy
TSR	Typical speed range
ULTRAFAST	Speeds up to 1Gbps download and up to 200Mbps upload
USO	Universal Service Obligation
VDSL	Very-high-bit-rate digital subscriber line



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