

PUBLIC SUMMARY

MEETING OF THE TECHNOLOGY DEVELOPMENT GROUP

Friday 11 March 2022

| | | | |
|-------------------|-------------------------|-------|---|
| Present: | Andy Keeling | CE | Chief Executive (Chair) |
| | Geoff Baxter | DDDCS | Deputy Director of Development & Commercial Services |
| | Simon Young | aCR | Acting Communications Regulator |
| | Christian Williams | CW | Information Technology |
| | Ian Stewart | IS | Construction Sector |
| | Justin McPhee | JMP | Sure |
| | Lewis Clifton | LC | Rural Business Association |
| | Lee Summers | LS | Chamber Technology/Retail Lead (<i>Representing GG</i>) |
| | Paul Brewin | PBWN | SAERI (<i>Representing PB</i>) |
| | Rachael Crowie | RC | Falkland Islands Tourist Board |
| | Sian Davies | SDVS | FIDC (<i>Representing LE</i>) |
| Apologies: | Catherine Silva Donayre | DDCS | Director of Development & Commercial Services |
| | Gareth Goodwin | GG | Chamber Technology/Retail Lead |
| | James Bates | JB | Falkland Islands Fishing Companies Association |
| | Lou Ellis | LE | FIDC |
| | Michael Ford | MF | Community Representative |
| | Paul Brickle | PB | SAERI |
| | Pippa Christie | PC | Hydrocarbons Representative |
| | Stephen Dougan | SD | BFSAI Representative |
| Minutes: | Meghan Law | EA | Executive Assistant & TDG Secretary |

CE opened the meeting highlighting that a conversation will take place at the end to discuss the product of the TDG and what can be done to collate all of the information provided as part of the sector presentations; reflecting on comments raised by JB, GG and LC outside of the formal meetings. CE suggested that the recommendations of the TDG could be shared with portfolio members or all of the MLAs. This was discussed further within Item 7.1.

1.0 Confirmation of the Minutes of the Meeting Held on 17th December 2021

The minutes of the meeting held on the 17th December 2021 were confirmed as a true and accurate record with one amendment to Item 6.0.

2.0 Matters Arising from the Minutes of the Meeting Held on the 17th December 2021

2.1 All actions were complete. With the following updates given:

2.2 Matters Arising: Sure Improvements Presentation – Item 2.2

JMP confirmed that a graph of off-peak data usage spikes has been included in the presentation for this meeting.

2.3 Matters Arising: AOB: Public Domain – Item 2.3

EA confirmed that the TDG website is now functioning with the link being shared amongst TDG members:

<https://www.falklands.gov.fk/technology-development-group>

2.4 User Habits Survey – Item 3.0

The former CR, John Whitby, provided updates to be given at the meeting as follows:

- Cross correlate Census and User Habits Survey (UHS) data: action complete, User Habits Survey data passed to Policy Statistician.
- Identify BFSAI involvement in the User Habits Survey: Action complete, a total of 13 households from MPC responded representing 3.26% of survey respondents. John Whitby detailed in his update that he was unsure how many households at MPC are Sure residential customers.

2.5 Sure Improvements Programme – Item 4.0

DDCS stated that he had not been given an update from DDCS regarding the inclusion of communications service requirements within planning and building applications. Action carried.

2.6 Sector Presentation – Chamber of Commerce – Item 5.0

CE confirmed that the sector presentation for the Chamber has been included as part of the agenda.

2.7 Sector Presentation – SAERI – Item 6.0

CE confirmed that he had met with SAERI to discuss how FIG could make better use of the data available, a series of workshops will be arranged so that the data captured can be used to help inform policy making where applicable.

2.8 Proposed Meeting Dates for 2022 – Item 7.0

EA confirmed that the dates for 2022 have been circulated and are published on the website, including detailing the rota for sector presentations.

2.9 Any Other Business: TDG ToR – Item 8.2

CE confirmed that the next review of the TDG ToR is in July (changed from June to do the amendment of the meeting dates).

3.0 Sure Improvements Programme

Please see presentation attached.

JMP gave an overview of the recent activity and the projects that have been carried over from 2021, noting that Sure's financial year runs in parallel to the calendar year due to the parent company structure. JMP highlighted that Sure are still being impacted by delayed shipping and lead time for equipment.

JMP outlined that the 12 Quality of Service probes (QoS) that have been installed are now sharing the initial data, this will generate a continuous measurement of the broadband network across various locations. The information gathered will be shared with the aCR and from that a quarterly report can be created as an independent measure of the network quality. CE queried if any information to date has been surprising; JMP explained that it is still an early stage of information gathering and then that data will need to be converted so that it is readable to laypersons.

JMP informed TDG that the fixed line expansion is continuing with works around Tussac House and on Philomel Hill. JMP reminded all that if building works are planned please inform Sure so that the property can have connections installed at an appropriate stage of construction.

JMP updated the TDG on the generators.

JMP updated TDG on the hotspot changes, 40 sites have been upgraded/swapped and it is now much easier for users to sign in. IS stated that in general connection to hotspots are very poor for both upload and download in Stanley and in Camp. JMP commented that some hotspots are restricted by the age of the kit. JMP informed TDG of the intended changes to the Wi-Fi cards. It was noted that often hotspot areas become congested with multiple users accessing the same hotspot. RC queried if more capacity could be made available on cruise ship days to support the influx of activity; JMP commented that there will always be constrained services when a

large spike of people visit on a particular day, this affects a number of businesses including hospitality not just communications. IS noted other technologies available that could solve capacity issues and these should be explored for the benefit of good service to the customer; JMP commented that Sure still hold an exclusive licence with FIG and any other options would need to be within the constraints of the licence.

JMP outlined projects planned for 2022 highlighting the following:

- Changes to the WiMAX system.
- MLAs have been briefed regarding the capacity review with JMP giving a broad update to TDG members. CE added that without going in to the commercial sensitivities the process has been very thorough with technical capability being considered before the price of the service.
- Works will continue to shorten customer line lengths within Stanley.
- Core network enhancement via installation of a new core router and switching equipment.

JMP noted that this will be another busy year with the biggest corporate risk being the current supply chain restrictions from Covid-19 and the war in Ukraine.

PBWN requested an update on the VHF radio upgrades; DDCS advised that this is an ongoing project by the FIG Harbour Master and is separate to Sure.

JMP detailed the top traffic types with the same predominant four websites being Netflix, YouTube, Facebook and Facebook Video.

JMP shared a typical 48-hour internet utilisation graph, which clearly identifies peak times at breakfast, lunch, early evening and midnight. SDVS queried if the graph captures both domestic and commercial; JMP confirmed that it shows the total internet connectivity combined across the Islands. JMP highlighted that now bandwidth has increased the midnight period tapers off fairly quickly.

JMP also showed a graph for the last 24-hour period noting the change in behaviour with it being a school holiday, this shows the network as being much more congested and has flat areas where capacity has been reached (this is the first in a long time this behaviour has been seen).

JMP explained that capacity for the Islands is 600M download and 200M upload, the amount of upload is beginning to increase with various applications and changes in user behaviour, generally as a country there is much more download than upload. IS queried if there are plans to increase upload capacity; JMP stated this has been included in the capacity review discussions with MLAs/FIG.

LS commented that it is likely if the capacity was available people would engage with uploading more frequently; traditionally this hasn't been used in the Falklands due to the restrictions on capacity. LC queried if through shortening the line length there would be an element of improved efficiency; JMP advised this improvement is customer driven.

CW queried if 4G modems could be an option for customers as there are some who need to pay for a landline connection that they don't use; JMP stated that this is dependent on customer density. CE queried if models and samples could be created; JMP stated at this time it is not possible.

CE thanked JMP for his presentation.

4.0 Sector Presentation – Chamber of Commerce

Please see presentation attached.

LS explained that he and GG sat down together to discuss what is required from a Chamber perspective. LS commented that it would be easy to send out a survey to members however it was felt that it was better to link previous work against other nations progress, case studies and FIG strategies.

CE queried if the last exclusive licence was established following the 2015 FIG Strategic Telecommunications Review; JMP confirmed it was. LS noted the Cartesian Report in 2015 whereby it referenced our “closest” neighbours in terms of broadband options. LS informed TDG of the updated that the following countries have made since 2015:

- St Helena – soon to get fibre optic
- Svalbard – population size is similar to the Falklands but have always had fibre optic
- Christmas Island – now fibre optic
- Montserrat – now fibre optic
- Nauru – orbit satellite negotiation led to a move to fibre optic
- Norfolk Island – satellite
- Cook Islands – now fibre optic
- Niue – now fibre optic
- Tuvalu – US \$29 million grant to support investment in fibre optic

LS summarised that the Falkland Islands have not kept pace with the “closest” neighbours previously identified; which then suggests who are our “closest” neighbours now? AG suggested that the Falklands are more akin to remote rural areas, such as in continental US, rather than Islands as previously thought, adding that those areas usually use satellite provision. JMP commented that fibre optic cable is the best option however it comes at a large cost. CE queried how partnerships were formed to provide funding for the examples LS had given; LS stated that there are various reasons: developing economies, UN grants, overseas territories support and branching off options.

LS queried if Sure look at various markets; JMP commented that due to the large geographic area it is very difficult to find direct comparisons, however O3B satellites have been looked into. LS queried if there was any scope for a future independent report to be carried out; CE stated that conversation has not yet taken place given the current licence, however it should be considered in the future to help inform those phases.

LS outlined the economic impacts from broadband, highlighting the report by Pantelis Koutroumpis, and stating that the Falklands need to ensure that the right amount of investment is made. LS explained that Koutroumpis developed a series of equations to work out how GDP was accounted for against broadband provision: higher speeds bring more gains. Noting that the report was produced in 2018 when it was recognised that 9.8Mbps/s was the sweet spot for economic gains and the data has moved on again since then. AG commented that former Regulator, Susannah Nightingale, was critical of applying OECD to a small island economy due to the big impact and that it was unlikely there would be big new industries based on broadband that will alter the GDP. CW highlighted the greater cost that would be passed on to customer, the TDG discussed the balance between what FIG would subsidise and what cost would be picked up by the customer.

TDG also discussed in detail the potential opportunities that would open up if there were more capacity and improved speeds. AG noted that the typical 48-hour graph as shown by JMP highlights that bandwidth capacity is not being reached during the working day and queried why people aren't using that at the moment. LS queried what business packages were available; JMP advised that this can be discussed directly with Sure.

JMP commented that perhaps as part of the next review, based on the comments as provided by the TDG, a focus could be made on speed not just quota. CW queried if a dynamic model would be available; JMP advised this would not be possible due to the variance in line rates.

LC commented that behaviours would significantly change if Starlink was used, with IS adding that generally most would stay with Sure and a select group would move over. IS stated that the group should be thinking in terms of what would be best for the customer. AG commented that the current licence it is not as straightforward as that as the customer would need to demonstrate that Sure cannot provide the service.

LS queried the possibility of unlimited data; JMP commented that Sure have modelled what unmetered data would look like and what level of investment that would require from FIG.

LS noted the [limited] data produced for the Economic Impact of Broadband on Least Developed Countries, Land Locked Countries and Small Island Developing States. The TDG discussed the 4G provisions as used in Africa

which showed a significant improvement for the customer; JMP commented that he can pull together data on the number of 4G subscribers in the Islands for the next meeting.

LS raised some questions around mobile data packages and the number of days in which data needs to be used. JMP stated that bespoke contracts can be developed and suggested that LS point any members of the CoC in the direction of Sure.

LS noted the penetration on mobile broadband; JMP explained that the Falklands have between 100-110% penetration as there are a large number of customers at MPC using the services who are not ordinarily counted in the population statistics, JMP advised this figure is not unusual in the telecoms industry.

LS detailed the strategy jigsaw emphasising that a National Broadband Strategy is key to supporting the other strategies within FIG. AG quoted part of the ToR which would apply to resolving this; TDG discussed the meetings prior to the re-formation of the Group in 2022.

LS shared a case study for Gibraltar.

LS summarised the presentation with CE thanking him for the contribution from the CoC.

5.0 Sector Presentation – Hydrocarbons

This presentation has been delayed until further notice.

6.0 Sector Presentation – FITB

Please see presentation attached.

RC explained that the presentation has been split in to the following categories: requirements of the Tourist Board, requirements of our national stakeholders and tourist expectations.

RC stated that for the Tourist Board there is a requirement to maintain the website, online shop and the EPOS system within the shop. The FITB also have social media channels across four different platforms which require uploads of videos and images. As well as this a great deal of online training and meetings are held with other tourism operators.

RC explained that FITB have a cloud-based email back-up, this can sometimes prove difficult when connection is poor.

RC commented that the Falklands are one of the countries with border restrictions still in place as a result of Covid-19 and therefore virtual meetings are necessary to help highlight the tourism opportunities in the Islands. RC commented that the reliability of phone and internet as a safety assurance is essential for visitors and improvements to these services will help to promote the Islands as a tourism destination. JMP commented that some cruise ships land on remote islands which can make coverage difficult.

RC outlined the requirements from a national stakeholder perspective, notably hotspots as previously mentioned within the presentation from Sure. JMP updated the TDG on hotspot system improvements. CW queried if a maximum capacity could be applied to some hotspots so that the quality remains consistent through use, with LS agreeing that a hard limit would help to keep a good quality of service; JMP stated that they could provide locations with general guidance on how many people can use the hotspot at a given time. JMP commented that cruise ship days are difficult to justify the level of investment needed due to minimal number of days that level of infrastructure would be required.

RC suggested that remote payment options for tourist drivers would be very beneficial if possible; JMP outlined the options available via 4G.

RC detailed the tourist expectations such as the use of mobile roaming; JMP explained that roaming is complex due to the arrangements with other providers. JMP commented that for visiting yachts Sure can provide bespoke packages as their situation is unique.

RC summarised that the priority items from FITB are online payments, good hotspot accessibility/connection and improved roaming capability.

7.0 Any Other Business

7.1 What is our purpose and what is product?

CE commented that when he took over the TDG is was on the understanding that the Groups' purpose is to collect cross-sectoral views and have a conversation with the provider; JMP commented that the matters raised to date by the various sectors have been very useful to Sure, and as a result some planned improvements and services have been altered to reflect the feedback.

The TDG discussed their views on the former TDG meetings and those since the Group has been reinstated.

CE commented that it is important to corral the information together, for the TDG to arrive at a collective set of priorities which can then be fed back to MLAs and wider FIG. CE added that the group need to establish the 3-5 midterm priorities and the short, medium and long-term goals.

LS noted that there is no reference to the Broadband Strategy within the draft Islands Plan 2022-2026. SDVS commented that until the strategy is formative it cannot be put in to the public domain; adding that there should be some background information from the former TDG meetings. LC noted the frustrations felt by the earlier TDG members.

7.2 Communications Regulator

IS queried which email is active for the Regulator as he is receiving bounce backs. AG commented that it is being monitored by admin staff but requested IS to email him separately so he can check what the issue is.

AG gave an update on the recruitment to the Regulator post.

8.0 Confirmation of Date of Next Meeting

8.1 It was agreed that the next meeting of the Technology Development Group will be held on the 13th May 2022, 13:30-15:30 in the Liberation Room, Secretariat. Sector presentations will be given by the community representative and FIG. Items for inclusion on the agenda should be submitted to the secretary by the 29th April 2022.

There being no other business the meeting closed at 15:49hrs.

Sure Falklands

TDG Briefing

March 22



Projects – 2021 carry over & Recent activity

- WiMAX replacement
- Rural MSAN expansion
- In Country Transmission links
- QoS Probes
- Fixed Line expansion
- Standby Power/Generators
- Wi-Fi hotspot update – 40 sites

2022 Projects

- Continue Camp upgrade work - FWA
- Capacity review
- Access Network expansion(Stanley) – line shortening
- Public Wi-Fi refresh
- Core Network Refresh
- Mobile Expansion 2G/4G
- 2G Mobile expansion
- BAU activity – buildings/vehicles etc

Internet Utilisation



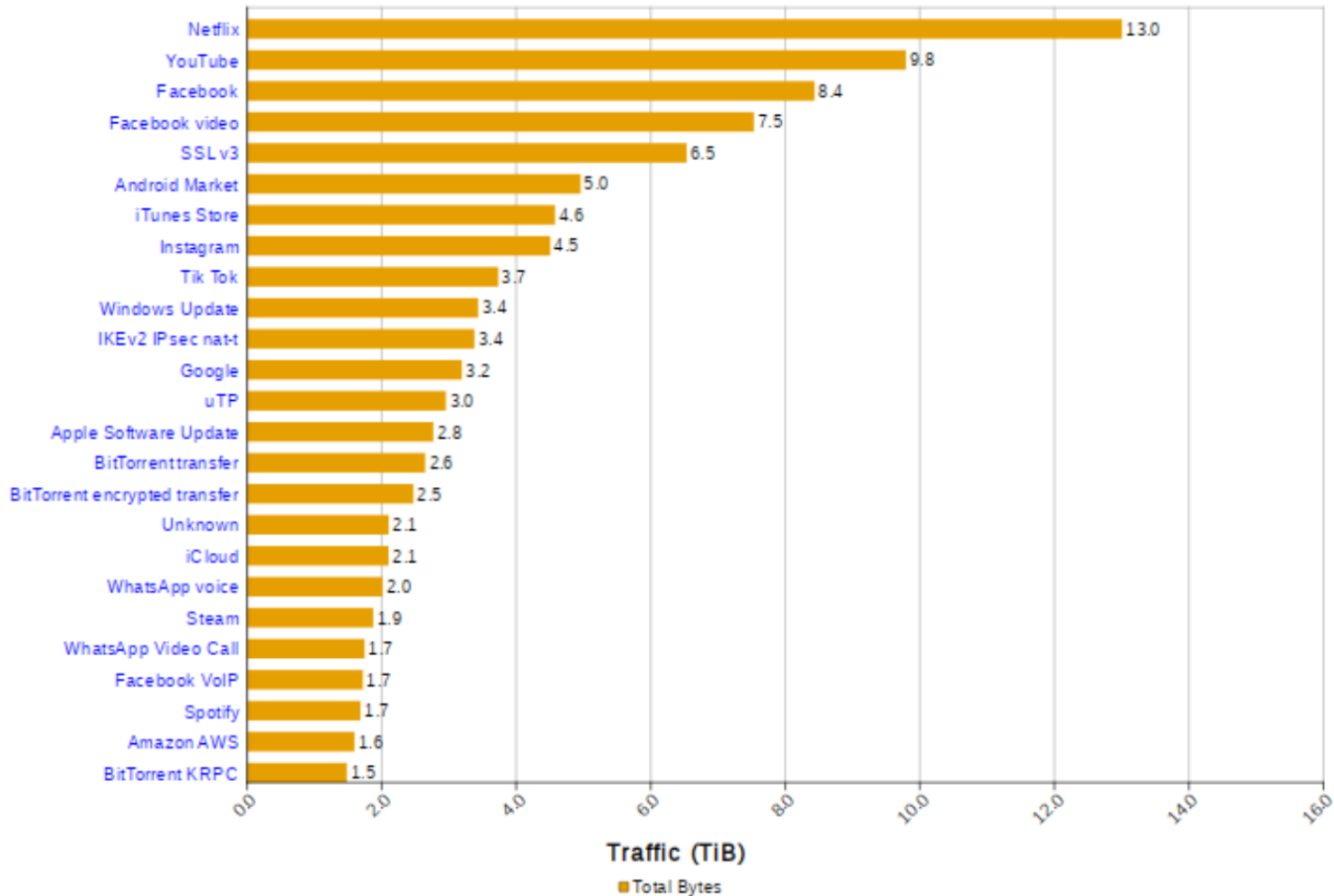
Top Traffic Types – Feb 2022

Traffic Statistics – All Services / All Subscribers

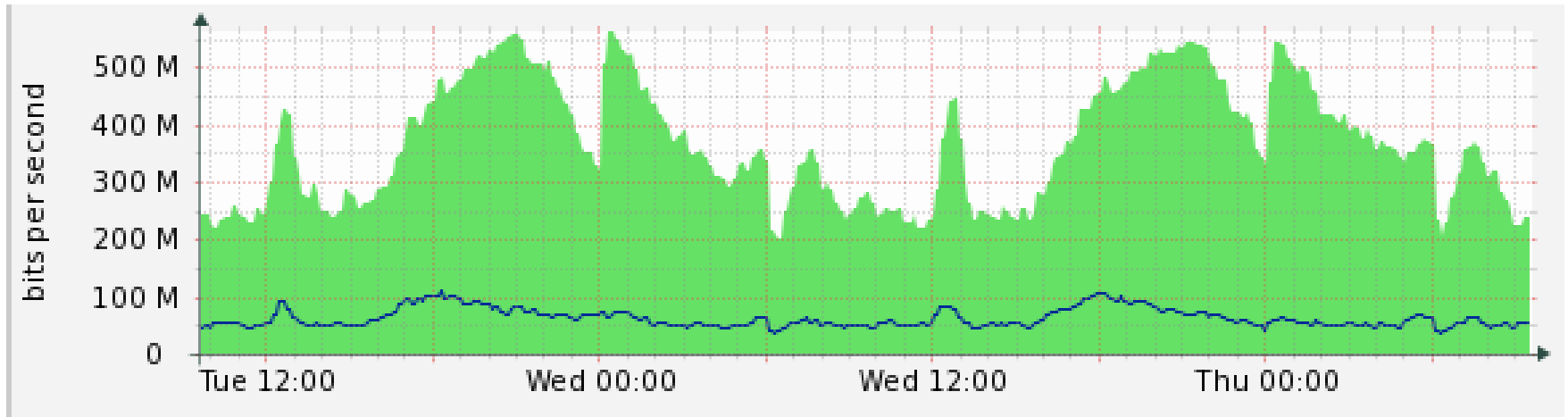
Feb 2022

Service

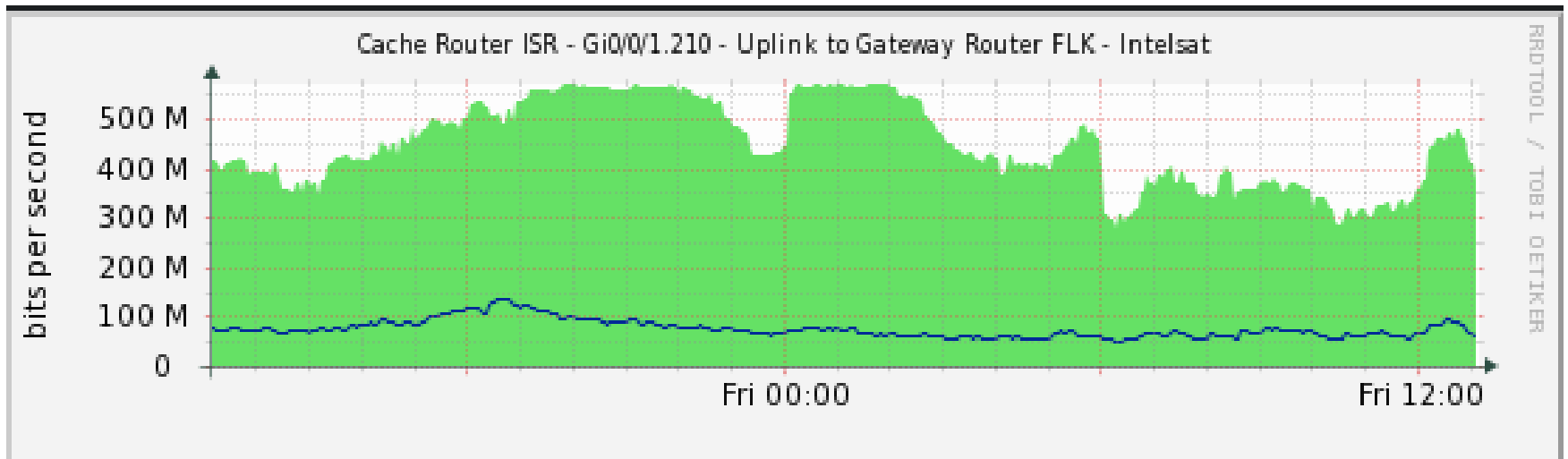
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Typical 48-hour internet utilisation



Last 24 Hours internet



Questions?



Falkland Islands
Chamber of Commerce

**TECHNOLOGY DEVELOPMENT GROUP
SECTOR PRESENTATION**

11 MARCH 2022

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Falkland Islands
Chamber of Commerce

introduction

What do we want to achieve?

We don't want to repeat ourselves...

Survey fatigue is a real thing!

Quality, timing, aims, communications, outcomes
and actions from future surveys need to be reviewed

1 What have other Island
nations done and what
were the results?

2 How could broadband
enable or influence
existing FIG strategies?



our “closest” neighbours

FIG’s Strategic Telecommunications Review in 2015 identified nations similar to the Falklands

How have they changed over the last few years?

Have we kept pace in development?

St. Helena

Svalbard

Christmas Island

Montserrat

Nauru

Norfolk Island

Cook Islands

Niue

Tuvalu

economic impacts

Broadband has a measurable effect on economic output – it increased GDP by an average of 0.38% each year for OECD countries

A country at the highest broadband speeds would gain 0.08% more on its annual GDP compared to an identical country at the lowest speeds

At that point 9.8Mbps/s was the sweet-spot for economic gains

The upper threshold of speed related gains is moving higher as a result of the “readiness” of economies. This should affect broadband strategy



Falkland Islands
Chamber of Commerce

The economic impact of broadband: evidence from OECD countries

Pantelis Koutroumpis

April 2018

“I estimate that increasing speeds from 2Mbps/s to 8Mbps/s adds 0.9% on GDP. If this change happens over a period of 10 years it leads to an annual GDP increase of 0.10%

...

A country that achieves this transition in 5 years will increase its annual GDP by 0.22% leading to a higher annual GDP increase for a shorter period of time.”

the island factor

The Falklands is unique in its population size, remoteness and level of economic development

Data on effectiveness of increasing broadband speeds in small island and developing nations is limited, but penetration is understood

A 10% increase in mobile-broadband penetration leads to an increase in GDP of between 0.6 and 2.8%

This is all based on data pre-2020. How has COVID-19 affected these trends? Not yet fully understood, but definite acceleration



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Thematic reports

ITU Publications

Economic impact of broadband in LDCs, LLDCs and SIDS

An empirical study



the strategy jigsaw

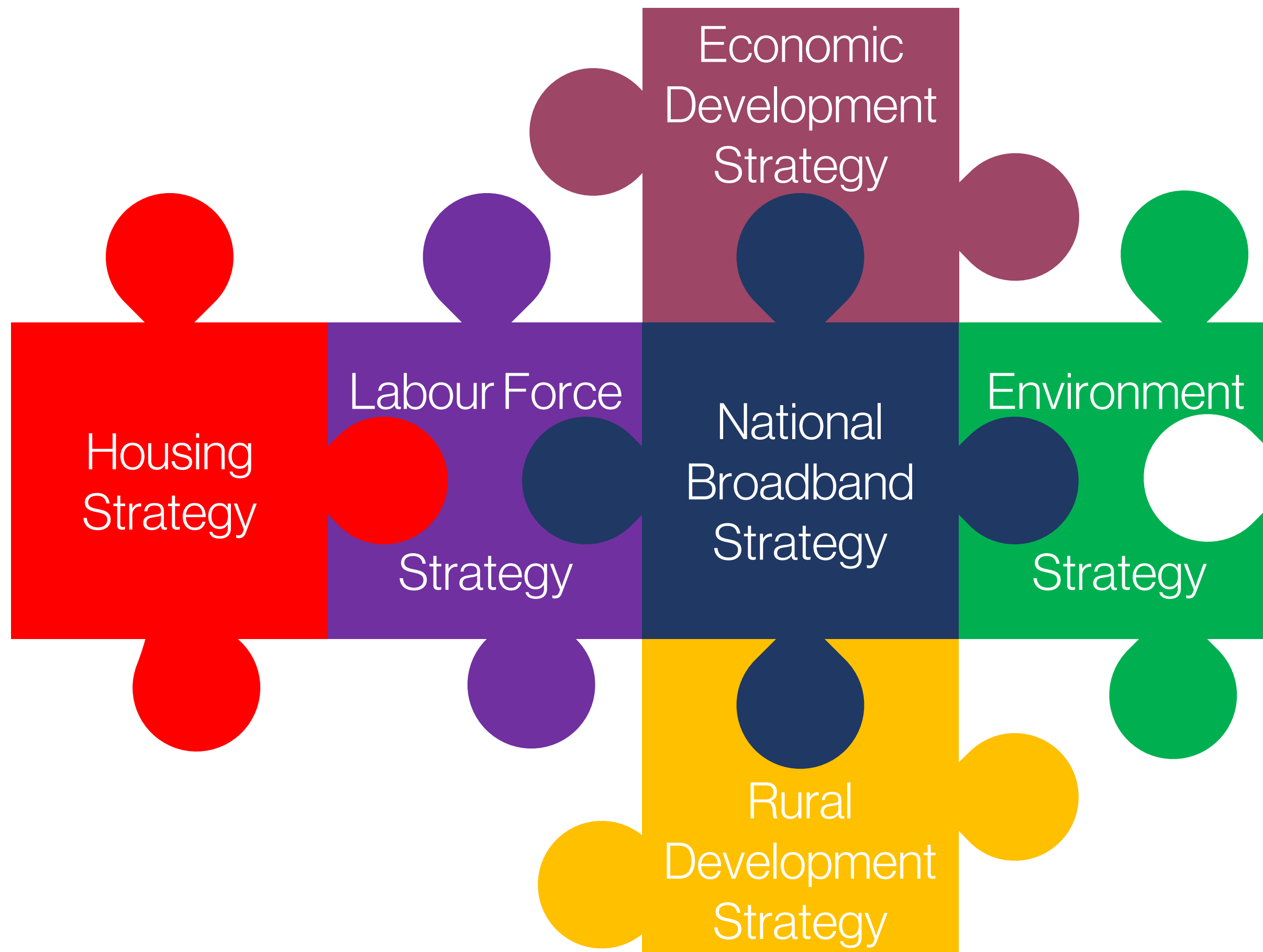


FIG has published or is developing strategies

Our communications infrastructure will be key to allowing all of them to achieve their outcomes

FIDC is under review – How should its activities be focused?

If not FIDC, where does the leadership to diversify our economy come from and who absorbs the risks?

gibraltar

A small BOT, economy used to be based around MoD (60% in 1984)

Well developed taxation and regulatory systems coupled with good internet – allowed swift pivot into the, then new, online gaming sector

Resulting GDP quadrupled from 2004 – 2020 and now a technology and finance hub in Europe

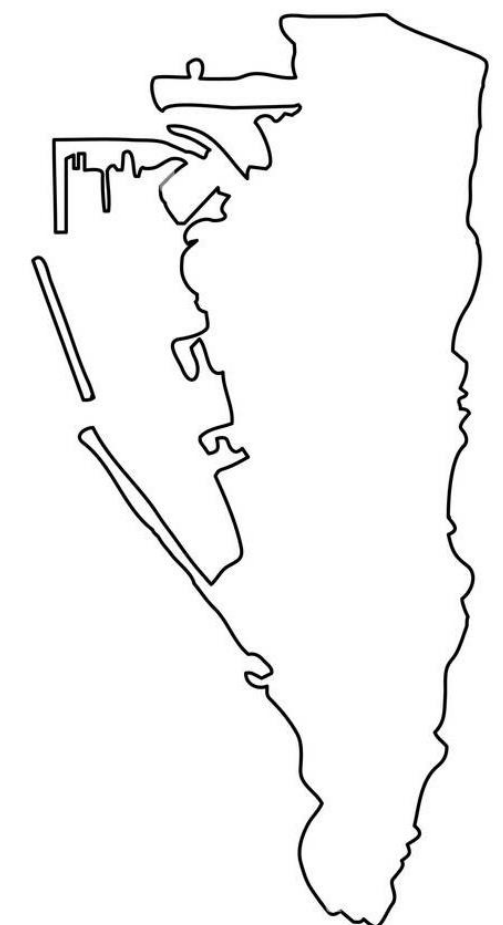
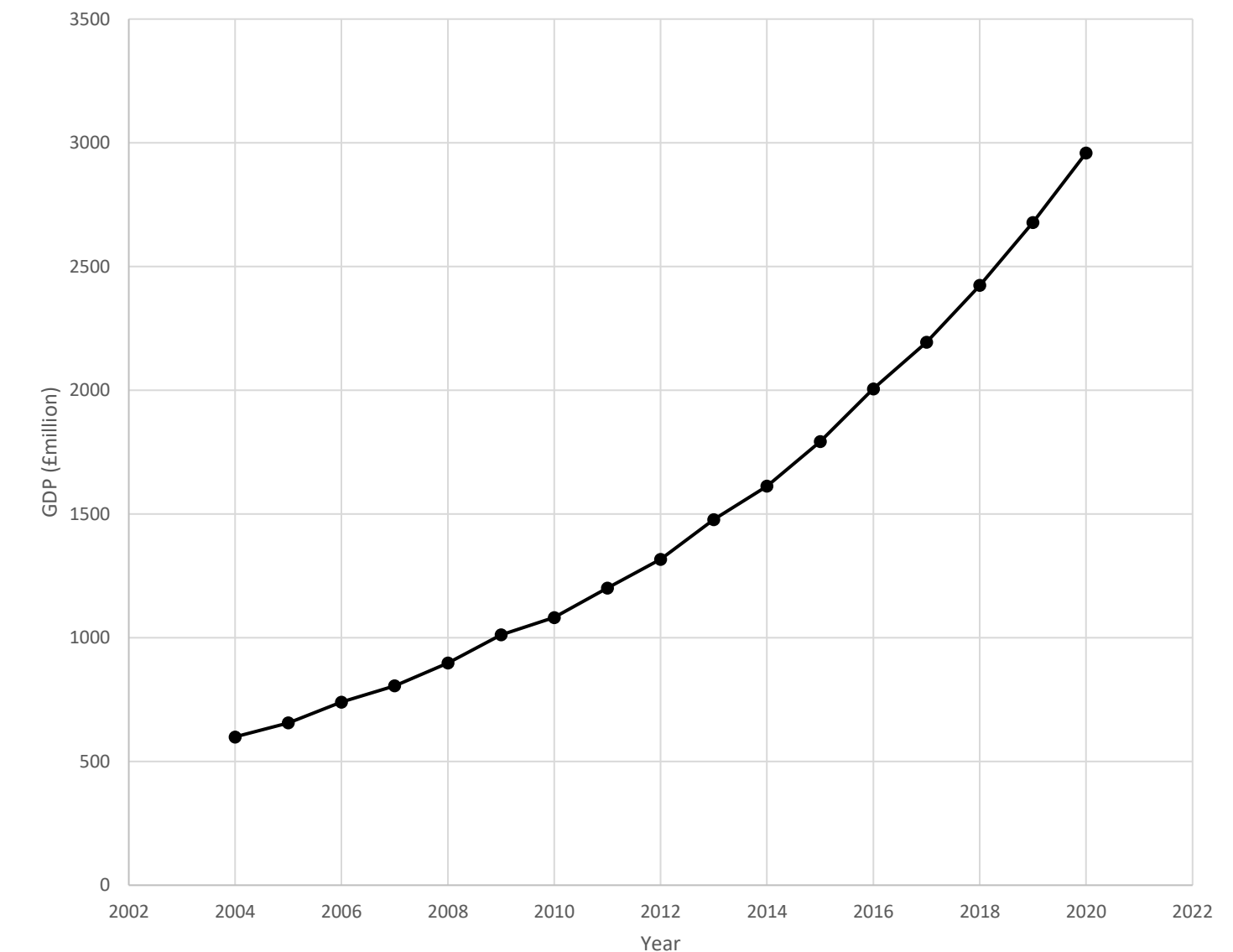
Digital economy now permeates all aspects of society – globally

How can the Falklands participate?



Falkland Islands
Chamber of Commerce

Gibraltar GDP 2004-2020





Falkland Islands
Chamber of Commerce

SO! (almost done)

- Broadband speed and penetration has a real and measurable effect on economic and social wellbeing
- Since 2015, we have been eclipsed totally by other remote, island nations – and those that haven't are negotiating for fibre
- We need the correct infrastructure and legislative frameworks in place to take advantage of identified future opportunities
- A fully developed National Broadband Strategy that works in conjunction with other strategies is essential



Falkland Islands
Chamber of Commerce
Thank you for listening

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How IT and communications affect the Tourism Industry



Requirements at the Tourist Board

Marketing and general office needs

- The ability to upload high quality images and videos
- Maintain the falklandislands.com website and online shop
- Run social media campaigns
- Virtual conferences and meetings
- Reliable phone and internet access
- Use cloud based technology
- Mobile roaming Sure agreements when working overseas

Visitor Information Centre

- Operate two POS systems (Square)
- Broadband Hotspot

Requirements of our national stakeholders

- Reliable phone coverage – also for safety, particularly for the walking/hiking market and cruise vessel landings in remote destinations
- Promotion and communications (national & international) of business and bookings (reliability and speed)
- Sufficient hotspots (which can deal with heavy usage and high volume of users on cruise ship days) – there are new businesses unable to offer this service at the moment due to a shortage
- Reliable internet for payment systems
- Reassurance of internet security
- Intranet service for local purposes
- ATMs and Merchant banking throughout the islands
- Reliable mobile data

Tourist expectations

- Access to free Wi-Fi
- The ability to use mobile roaming
- Easy access, upload photos and videos as their holiday is happening (this is free advertising and destination awareness for the islands)
- To keep in touch with loved ones
- Carry out business needs and technology updates (usually these are by visiting yachts)
- ATM facilities
- Carry out travel arrangements before departing the islands (especially when delayed)