

# The IRASS Newsletter

Incyte's Regulatory Advice and Support Service (IRASS) is a consultancy service tailor-made to meet the needs of ICT regulators in small and emerging nations. As well as this quarterly newsletter, IRASS subscribers have the chance to discuss contemporary issues with Incyte's regulatory experts during monthly conference calls. For more information email [info@incyteconsulting.com](mailto:info@incyteconsulting.com).

## Theme: Policy and Practice

The last issue of the IRASS Newsletter focused on items in the regulatory toolkit – a “how to” guide to some basic procedures that regulators often face. In this issue we move into the more rarefied air of sector policy, but we have tried to retain a pragmatic perspective – to ensure that policies are not just documents with fine words but manifestos for “smart” action – specific, measurable, achievable, realistic and timely. Many a policy has sat unused on the shelf because it has failed to stoop into the real world of challenge, compromise and the art of the possible. Effective policies have to be implementable and have to be implemented.

Three of Incyte's core team have taken up the challenge to write something valuable on some of the biggest themes of our day ... but to do so on a two-page budget! I hope you feel they have succeeded. In this issue of the IRASS Newsletter we offer you articles on:

- ICT policy and Covid-19 ([David Rogerson](#))
- ICT policy and the Climate Emergency ([Pedro Seixas](#))
- Why having a policy is not enough ([Kerron Edmunson](#))

I hope you enjoy reading these articles. There is, of course, a lot more to be said on each of these topics, and you may wish to follow the links given in each article to find out more. You may also wish to contribute to the debate: e.g. by sending comments or questions to the authors directly. If you would be interested in contributing more extensively, we will include space in the next edition of the IRASS Newsletter for letters and articles that we receive. Please also let me know if you have suggestions for topics to be covered in future issues.

*David Rogerson*

**David Rogerson**  
Editor



## ICT policy and Covid-19



*David Rogerson, an Incyte Director, has been advising ICT regulators and policymakers for over 30 years.*

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*The sectoral response to Covid-19 has been led and co-ordinated by the ITU*

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As with the climate emergency (see next article), the first question that information and communications technology (ICT) regulators and policymakers need to task in relation to ICT policy and Covid-19 is whether they are part of the problem or part of the solution. In the case of Covid-19 it is all too easy to jump to the conclusion that the ICT sector played little if any part in causing the problem but has contributed enormously to the solutions that have curtailed the health and economic impact of the pandemic. That is a comforting narrative for those of us who make our living out of ICT policy and regulation. It is also an oft-told story: overwhelmingly the relevant articles on the Internet consider digital technology only as part of the armoury to combat Covid-19 and reboot the global economy. But is it true?

The response of the ICT sector to the coronavirus pandemic has indeed been impressive. Two things stand out:

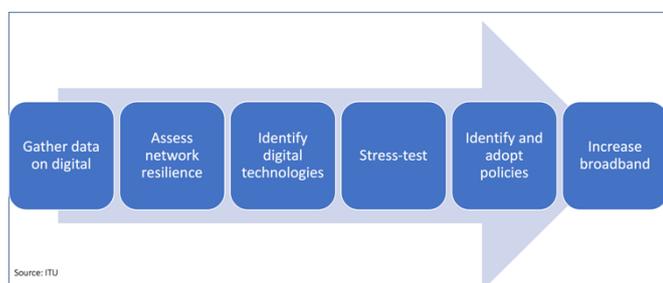
- the contribution of cloud-based “big data” applications both to track the development of the disease and collect the genetic information that has enabled the development of effective vaccines, and more recently to manage and audit the vaccination programme;
- the effective migration of business, education, health and government services to online delivery, so that the detrimental economic impact of the lockdowns necessary to contain the virus has been much less than would otherwise have been the case.

The sectoral response has been led and co-ordinated by the ITU through two major initiatives:

- The Global Network Resiliency Platform ([#REG4COVID](#)) is a place where ICT regulators, policy makers and other interested stakeholders can share information, and view what initiatives and measures have been introduced around the world designed to help ensure communities remain connected, during the COVID-19 crisis. At first this work concentrated on the exceptional measures that were required during the emergency phase. More recently it has focused on recovery: What next? Are these measures sustainable? How have regulatory frameworks evolved? What long-term policy and regulatory trends have been introduced for and by the different groups of stakeholders? What works and what doesn't work?
- [Connect2Recover](#) is a global initiative that aims to reinforce the digital infrastructure and ecosystems of beneficiary countries. In addition, its objective is to provide means of utilising digital technologies such as telework, e-commerce, remote learning and telemedicine to support the COVID-19 recovery efforts and preparedness for the 'new normal' (and potential future pandemics) and prevent the spread of COVID-19 infections while maintaining socio-economic activities.

These two initiatives have highlighted the critical role of ICT for the functioning of society and provide a repository of good practices for utilising digital technology to respond to and recover from COVID-19, and to build preparedness for similar future global emergencies. As ITU Secretary General Houlin Zhao has said: “Now more than ever, the world needs to be able to rely on ICTs and ITU's leadership in promoting universal, secure, reliable and affordable connectivity”.

The *Connect2Recover* programme is especially useful for policy makers. It has devised a methodology, soon to be road-tested in a number of jurisdictions, to identify gaps and bottlenecks that hamper the utilisation of broadband networks and digital technologies that help respond to and mitigate the consequences of the COVID-19 pandemic. The methodology involves six steps starting with comprehensive data collection on broadband coverage, adoption and usage, specific sites such as schools, healthcare facilities and government



facilities, and specific groups such as women and girls or persons with disabilities. The methodology then assesses the resilience of existing networks and identifies technologies that might enhance resilience. All of

this must be stress-tested to check the real experience of users under different load conditions, and only then can policies be considered to address the identified gaps and shortcomings.

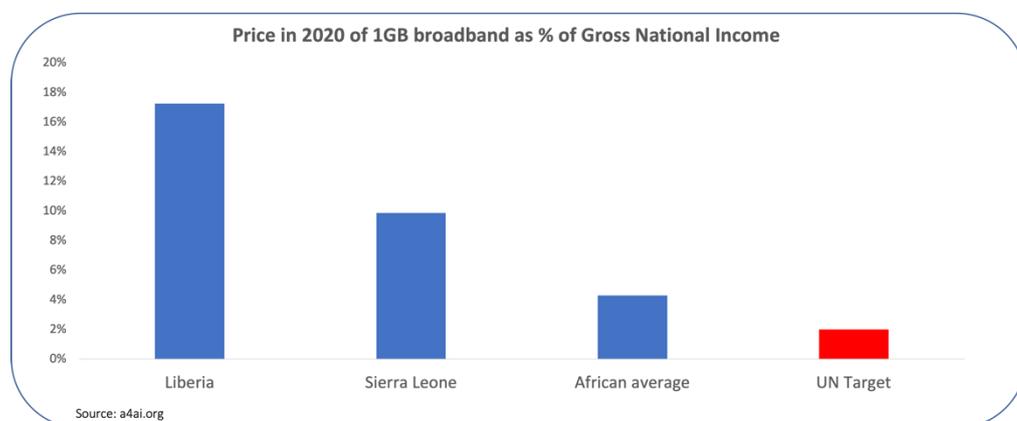
Solutions from the *Connect2Recover* programme need to be tailored to national circumstances. But many of the recommendations are common to all countries and familiar from the national broadband plans that have been developed over the past 10 years or so. These include the critical importance of avoiding digital inequality, which in turn means that broadband services have to be universally available and broadly affordable. The ITU rightly stresses the need for these plans to be “re-invigorated”, but this begs the question as to what has been going on during the period since the initial plans were developed, often accompanied by detailed strategies, roadmaps and implementation plans. Has there been a lack of vigour in many national broadband plans?

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**Why do broadband plans need to be “re-invigorated” - unless they have failed?**

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Asking this question leads to the thesis that ICT – or more specifically the lack of it - has been part of the Covid-19 problem as well as part of the solution. The need for affordable and universally available broadband was a key finding of research into the causes of the Ebola epidemic in Western Africa in 2013-16 (e.g. see this [USAID report](#))... but not enough was done to implement that recommendation, neither in the countries worst affected by Ebola (e.g. Liberia and Sierra Leone) nor across Africa more generally. See the chart below. There was a degree of complacency and there was a widespread practice of establishing policies but failing to manage their implementation: the result was that the world was not as prepared as it should have been for Covid-19. *Connect2Recover* is in part an admission of those erstwhile failings. But, if lessons are learned this time, it could also be a key part of a co-ordinated commitment to minimise the impact of the next pandemic.



## ICT policy and the Climate Emergency



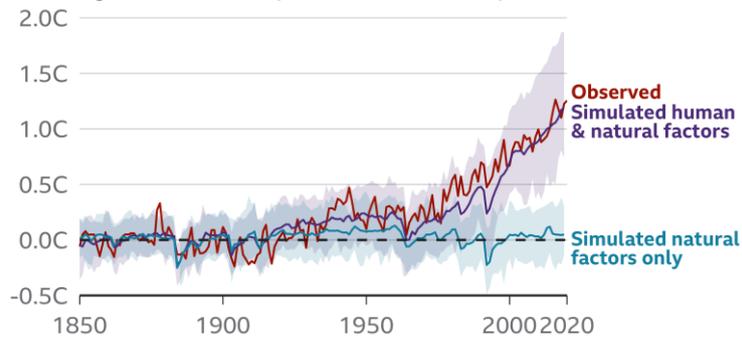
*Pedro Seixas, Principal Associate, is trained as an engineer and economist. He is based in Germany.*

The [COP 26](#) United Nations Climate Change Conference, hosted by the United Kingdom (UK) in partnership with Italy, will take place from 31 October to 12 November 2021 in Glasgow, Scotland – not far from Incyte’s UK headquarters. As part of the event, Heads of State and Government from most countries, invited by the UK Prime Minister, will attend the World Leaders Summit from 1-2 November.

What will be decided in COP 26 is still unknown, but important political decisions could be announced during the event, such as the commitments needed to limit global warming to no more than +1.5°C by mid-century. What is known is that greenhouse-gas (GHG) emissions, in which CO<sub>2</sub> emission is the main element, are major contributors to global warming. The [report](#) released on 9<sup>th</sup> August 2021 by the Intergovernmental Panel on Climate Change says that over the past decade the Earth has been between 0.95°C and 1.2°C hotter than it was in the second half of the 19th century, mainly due to human influence.

### Human influence has warmed the climate

Change in average global temperature relative to 1850-1900, showing observed temperatures and computer simulations



Note: Shaded areas show possible range for simulated scenarios

Source: IPCC, 2021: Summary for Policymakers

BBC

There is evidence that the widespread use of ICT is among the sources of the increasing levels of GHG emissions. These may originate from the production of machinery and devices, their energy consumption (e.g. large data centres), cryptocurrency mining, enterprise systems or the recycling of (electronic) waste. Peer-reviewed [studies](#) estimate current ICT’s emissions to be 1.8-2.8% of global GHG, and even these estimates may be understated as they often do not account for supply chains and the full product lifecycle.

On the other hand, it is also often mentioned that ICTs can contribute to the reduction of greenhouse gases. Contributions to the decrease may arise from several sources of ICT development and innovation such as smarter cities, transportation systems, electrical grids, industrial processes and Big Data tools. [Research](#) from the Global e-Sustainability Initiative (GeSI) suggests that ICT can enable a 20% reduction of global CO<sub>2</sub> emissions by 2030, holding emissions at 2015 levels.



*Data centres are part of the problem*

A third interaction between ICTs and climate change relates to adaptation. As early as 2010, in the Plenipotentiary Conference in Guadalajara, the International Telecommunications Union (ITU) adopted [Resolution 182](#): “The role of Telecommunications/Information and Communication Technologies on Climate Change and the Protection of the Environment”. The Resolution identified the need to assist developing countries to use ICTs to tackle climate change and committed the ITU to work alongside other stakeholders to develop tools to support developing countries use of ICTs. In a [paper](#) in collaboration with GeSI, it describes a number of actions that may be taken on a local or country level to adapt to climate change. Examples cited include remote sensing for monitoring of natural disasters

such as earthquakes and tidal waves, and improved communications to help deal with natural disasters more effectively.

### Case Study: Wildfires in Portugal

Throughout 2017, a significant number of large forest fires occurred in Portugal, in June and October. Between 17 and 21 June 2017, large-scale forest fires took place in several municipalities of central areas of Portugal, which seriously affected the electronic communications networks and services in those regions. More than a hundred kilometers of fiber optic cables, more than 150 kilometers of copper cables and more than five thousand wooden poles were destroyed or damaged. ANACOM, the sectoral regulator for electronic communications, has authority:

- “To ensure the maintenance of the integrity and security of public communications networks and services accessible to the public, including national and international interconnections ” and
- "Ensuring that the integrity and security of public communications networks is maintained.”

ANACOM decided to carry out an investigation into the impact of forest fires on the infrastructure of electronic communications networks. Based on the results of the survey sites carried out, ANACOM drafted a [document](#) containing a set of proposed actions, entitled “Forest Fires – Protection and Resilience Measures for Electronic Communications Infrastructures”, in which the main results were presented, including the observations made on site and the characterization of the existing situation in terms of vulnerability to forest fires of radiocommunication stations, aerial routes, poles and cables. This document also included a set of measures proposed with the aim of improving the protection and resilience of electronic communications infrastructures and some of the weighting aspects to be considered in their implementation.

ANACOM identified the need to establish a new legal and regulatory framework for the planning, construction, reconstruction, conversion and installation of electronic communications infrastructure and the conditions suitable for their accommodation. This new legal framework should define technical standards, including the protection of infrastructure in case of fire and other natural disasters. The other measures identified by ANACOM aim to protect radiocommunication stations, poles, cables and aerial communications routes. ANACOM also suggests the establishment of requirements that promote the replacement of aerial routes of communication cables by underground routes or by radio beams, in access to the station; and the sharing of paths in the aerial routes of communication cables and power supply cables, to create and maintain a fire protection strip of adequate width. Perhaps if done before the event a lot of damage could have been avoided.



*Underground cables  
can resist forest fires*

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In order best to serve citizens and consumers, National Regulatory Authorities (NRAs) must respond in a timely manner to economic, technological and political change. Therefore, NRAs need to:

- assess the risks that climate change presents to their relevant functions and duties as the regulators of the communications sector;
- determine what actions need to be put in to address these risks; and
- set priorities in relation with ICTs and climate change issues.

Climate change is causing more frequent and more severe storms, heat waves, droughts and floods, while worsening the quality of our air. These phenomena may in turn severely affect the communications infrastructure of a country and disrupt the availability of services. Increases in temperatures, uncontrollable fires, flooding from storms and high winds - all can affect the resilience of the communications networks. Such events have already happened in several countries around the world; and they are happening with much greater frequency. NRAs must assess such potential risks considering the location and nature of existing networks and what sort of measures need to be put in place, working alongside governments. NRAs also need to co-ordinate and co-operate with network operators as they have access to critical information which is often not known by the NRAs.

Another perspective is how ICT companies can become neutral in relation to carbon emissions. A new [ITU standard](#) encourages ICT companies to become carbon-neutral by 2050. In collaboration with GSMA, GeSI and the Science Based Target initiative (SBTi,) the ITU released a new standard in February 2020 that aims to reduce ICT's GHG emissions by 45% by 2030, and net zero by 2050, in line with limiting global warming to 1.5°C. The "voluntary" standard comes with reduction targets for each ICT sub-sector for the next decade. Different sub-groups will need to make different contributions based on their current emissions: data centre operators will need to reduce emissions by at least 53%, mobile network operators by 45% and fixed network operators by 62%.

## Policy doesn't solve problems



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ICT specialist lawyer  
based in South Africa.*

There are so many possible headings for this article, among them 'policy is a problem' and 'policy creates problems'. This is only because, in our experience, it is the case that policymakers often regard policy as a solution: write a policy, and we can tick that box. In ICT, policy can be and has often been the touchstone for real change, but equally we have seen one policy after another aim too high and fail to recognise that any vision needs to be grounded in the here and now, and that those tasked with policy implementation may only have a limited number of tools.



The ICT sector lends itself to policies well – the advances of technology mean that governments and regulatory authorities with policy-making powers can genuinely imagine a different world in a matter of years. But it is not always the case that the changes will be felt in all corners of the country in the same way.

Sometimes the people tasked with policy implementation fail to recognise that their job is to give effect to policy themselves, rather than relying on third parties like operators, investors, service providers, suppliers and consumers behaving like policy is binding on them.

This may, in fact, be one of the reasons policies are not always successful. Policies are generally regarded as visions for the future, an indication of how leaders and regulators intend to act, and a yardstick for success in this sector; for example, how close can the sector come to effecting real price drops for consumers, how quickly can a government make 5G spectrum available, and will allowing a new entrant to apply for a licence improve competition? However, none of these visions is likely to be realised in a 1-year period, or even a 2-year period, without proper planning and supporting structures in place.

For example, in South Africa, the Constitution requires a "whole of government" approach to law-making and implementation, and so too it is with policies. This means that, to the extent that a policy might require support from other government departments or other institutions,

the policy should ensure the means to secure that support is available and, ideally, in place prior to passing the policy, rather than leaving Ministers to fight it out afterwards: whose budget will be used, who will take responsibility for what, who will make the key decisions, and when and in what circumstances will the policy be reviewed.

However, policies may well say all the right things, have made reasonable preparations for implementation and secured reasonable levels of support, and still fail. Literature offers many reasons why a policy may fail. A policy may be poorly designed and fail to tackle the problem it was intended to solve or largely be symbolic (see, for example, this [article](#) by Jens Newig, 2007). Alternatively, a well-designed policy may unexpectedly fail due to unforeseen circumstances or simply not have the effect intended.

In a real-life example, in 2010 the then Minister of Communications made a Radio Frequency Spectrum Policy. It said,



*Neither can work  
without a functional  
spectrum policy*

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*“To ensure efficient use of the radio frequency spectrum in South Africa, it is necessary for Government to issue policies and policy directions in order to ensure that this resource is used in the best interests of the Republic of South Africa. This national radio frequency spectrum policy has been developed to ensure efficient spectrum usage and to provide over-arching guidance for the utilisation of radio frequency spectrum in the broad national interest.”*

So far so good. The policy then stated,

*“ICASA [the national regulator] is responsible for the implementation of this policy”.*

Also good. But then it goes on to say,

*“National spectrum management must ensure that adequate spectrum is provided over both the short and long term in order that all potential spectrum users, both public and private, are able to achieve their objectives. Spectrum management shall make use of state-of-the-art practices, recognise latest technical standards/advances, and continuously trying to use computer-aided tools and techniques. Spectrum management shall encourage sharing radio frequency spectrum among different radio users and services, where appropriate, making use of proper sharing criteria and suitable mitigation techniques.”*

In 2021, the government, through ICASA, has yet to make spectrum in so-called 4G and 5G-bands available after three failed attempts, beginning in 2011. In 2021, ICASA launched an online spectrum licence application portal for some services, which still requires human intervention. In 2021, there is no spectrum-sharing in terms of law, despite regulations being published in 2015 to permit this. In 2021, analogue broadcasters have yet to migrate off their spectrum in the 700 and 800MHz bands, which are needed for the allocation of the 4G/5G spectrum, specifically for rural coverage, despite the digital migration policy having been published in 2008.

It is not easy to determine what about that policy was wrong or inadequate, or to conclude that it was simply that the expectations of the policy were overly optimistic. Institutional failure is often referred to as a reason for policy failure – the system just didn’t work the way it should have, there may have been conflicting interests or, in South Africa’s case, a change in Minister meant the emphasis moved to different things. Socio-economic circumstances may change – like the intervention of COVID-19, making it more difficult to achieve laudable policy goals, or making it necessary to achieve them outside of the structure envisaged in the policy.

Again, in the South African scenario, ICASA decided in April 2020 and as a direct result of COVID-19, to grant 4G/5G spectrum to a limited number of applicants based on a hastily devised application process, for the purpose of making broadband services available specifically to connect virtual classrooms and zero-rate COVID-19 sites, and to SMS those

licensees' subscribers with COVID-19 messages about the prevention of the spread of the virus. This important decision took place outside of any policy environment and has since caused a problem for the formal process of licensing 4G and 5G spectrum. This has landed ICASA in court.

So, what lessons can be learned from this about constructing policy that will be “successful”, or that can be regarded as having assisted in achieving a national goal, or a public good? We believe the following may be helpful:

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*Five lessons can be learned about constructing policy that will be “successful”*

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1. Really understand your market – what is the situation on the ground? Is access to broadband critical for every citizen when pit toilets and water delivery are not available in many places? Or should the policy recognise that this is a goal that should be achieved in stages, with particular focus on the under-served, moving in tandem with other public services?
2. Don't underestimate the time and cost to achieve a policy goal. Rolling out broadband to rural areas that do not have electricity or tarred roads could be immensely costly. Realistically, most operators will balk at having to be the sole funder for all of these services or having to provide services in these circumstances at all. Incentives in the form of state-funding or reduction in tax for that proportion of services made available by the private sector could be helpful.
3. Ensure that there is accountability – establish reporting timelines with appropriate review if those timelines cannot be or are not met. There is little point in making a policy without a review date, or without recognising that it may not be fit for purpose if circumstances change in the market, in the country, or even internationally.
4. Start smaller than you would like. What are the most likely ‘wins’ in the near term that policy can anticipate, gain support for, create budget for, and build on? Aim for consensus on something that is recognised to be important by multiple stakeholders and then envision where that problem, vision, or issue could be in a year or two with very specific actions and funding and importantly, if there are any other ways to achieve success in addressing it.
5. Never publish a policy for the sake of it, or to fill a gap, or to tick a box. You'll be wasting your and your constituents' time and your government's money.

If you have any other advice on policymaking, we would love to hear it. You may also like to read this article on [Policy failure and the policy-implementation gap: can policy support programs help?](#)