ISPA response: Science & Technology Select Committee Inquiry into the UK telecommunications infrastructure and the UK's domestic capability

About ISPA

1. ISPA is the trade association for providers of internet services in the UK. ISPA has approximately 150 members, 90% of which are SMEs, and includes several large multinational companies. We are proud to be an organisation which represents the whole Internet value chain, including companies that provide internet access, hosting and other online services. We cover the full ecosystem including communications providers that serve consumers and businesses, those that build their own networks and those that resell the infrastructure and services of others to end users. Our focus is primarily on fixed rather than mobile services which puts us well placed to comment on the supply chain security of the fixed network, rather than specifics of the 5G network that has tended to dominate discussions to date.

Summary of main points

2. A summary of main points is as follows:

    - Our members are embarking on a significant upgrade of the UK's infrastructure, removing High Risk Vendors (HRVs) and relying on the establishment of a domestic supplier over a short time period has the potential to delay the rollout of gigabit capable broadband across the UK
    - The industry recognises the importance of supply chain security and is alive to concerns around HRVs. The UK has high cyber security standards to manage risk and these are being significantly strengthened through new Telecoms Security Requirements in part to meet the challenges of HRVs
    - Establishing a domestic competitor and encouraging greater diversity in the market are useful longer-term ambitions but will not be in place to help with current rollout plans and the 2025 manifesto commitment of nationwide gigabit capable broadband
    - There are a number of significant barriers to establishing a domestic supplier some of which we identify in our response. Government intervention would be more effective in supporting new and emerging technologies in a targeted manner with similar allied countries
    - To minimise the impact on current and future network rollout plans, we believe there is a case for maintaining the proposed status quo of a 35% cap on HRVs as long as the risk can be managed. Any further intervention from this should be in consultation with industry, consider the different impact on fixed and mobile networks, and be delivered over a proportionate time period
    - There has been much speculation around supply chain security and HRVs, we now need certainty from Government to enable our members to carry out vital upgrades to the UK's infrastructure, an essential part of our recovery from Covid-19.

Market overview

3. The UK is a leading digital economy, with the digital sector alone contributing £149 billion to the UK economy in 2018[1]. This is underpinned by communications infrastructure that provides the UK with a good level of fast and reliable connectivity. This was demonstrated recently during the

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[1] https://www.gov.uk/government/news/digital-sector-worth-more-than-400-million-a-day-to-uk-economy

Covid-19 crisis, where our members successfully managed increases and changes to network demand, allowing the country to work from home and communicate with friends and families.[2]

4. The industry is embarking on a significant infrastructure upgrade, rolling out the next generation of technology and services through gigabit capable broadband in the fixed space via full fibre and other solutions, and the next generation of mobile connectivity through 5G. This is happening on a national, regional and local level led by a variety of providers, from large established names to newer independent networks. Industry's plans will be complemented with funding from Government, as it aims to meet its manifesto commitment of nationwide gigabit broadband by 2025. This huge engineering project will be an essential part of the UK's recovery post-Covid-19 and primarily led by industry. We have long called for a consistent, stable and proportionate regulatory framework from Government to support this.

Supply Chain Review

5. The Supply Chain Review was launched in 2017 with the intention of reducing the role of High-Risk Vendors (HRVs) in UK telecoms infrastructure, improving security standards through new Telecoms Security Requirements (TSRs) and encouraging further diversity in the market. In 2019, the review concluded that HRVs would be capped at 35% and banned from sensitive parts of mobile networks (HRVs are not present in the core of fixed networks), but ultimately it was decided that the risks could be managed without an outright ban. The TSRs themselves are a significant strengthening of the security framework to meet the evolving landscape, and operators will have to meet substantial and stringent security requirements to manage risk and meet compliance overseen by DCMS, NCSC and Ofcom.

6. A subsequent proposed shift in policy suggests this will be reduced to zero over an unclear timeframe. The ongoing uncertainty and speculation around telecoms supply chain policy, both for future investment decisions and the impact on current infrastructure, has the potential to delay the rollout of gigabit capable broadband across the UK.

What led to the current lack of market competition among telecommunications equipment suppliers and the absence of a domestic supplier in the UK?

What are the major barriers to entry into the UK telecommunications market are and how these could be overcome?

7. Telecommunications networks are complex systems that utilise a range of different technologies, solutions, standards and vendors across an international supply chain. Telecoms companies are judged on the delivery of effective, reliable and innovative services, and they need to have the confidence that their supply chain will enable them to meet these high standards.

8. This means there can be a number of major barriers to entry, including:
   - R&D costs – significant investment is needed in R&D to ensure products remain market-leading, often as high as 20% of total revenue. Leasing suppliers in the telecoms supply chain invest billions of pounds and have huge innovation hubs and research centres across the globe.

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[2] https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2020/broadband-networks-during-pandemic

- Assurance and compliance complexity – the UK, like other markets, has its own regulatory and compliance system that suppliers must follow and be tested on. Telecoms operators are also already subject to their own security requirements under s.105A-D of the Communications Act 2003. Further layers of compliance have been or are being introduced with the likes of the Telecoms Security Requirements (TSRs) and TBEST (a "threat intelligence-led penetration testing scheme" run by Ofcom). These new policies and measures are mostly non-public and uncertain, which increases the risk of further costs for providers and potential suppliers.
- Interoperability requirements - to ensure vendors work effectively in new and existing networks and with other operators that can include proprietary hardware, suppliers have to meet significant interoperability requirements
- Supply chain – supply chains are global and complex and components are produced internationally, including from countries associated with HRVs. If there are to be restrictions on HRVs, may need to find a new way of producing components from new sources, this would not be a straightforward undertaking.

9. The UK has not had a substantial domestic supplier for many years. Yet this lack of a domestic supplier has not stifled the UK telecoms market as operators have dealt with an international supply chain, a system supported by the appropriate government technical authorities. Telecoms operators source equipment from global suppliers while ensuring that such equipment would not harm the security and resilience of their network – this is not just good business practice it is to meet customer's expectations. This approach has supported the current market's rollout plans that are upgrading the UK's communications infrastructure. Yet the market has also seen significant consolidation globally in recent years leaving only three main end-to-end access vendors (Nokia, Huawei and Ericsson).

10. Rather than looking back, ISPA sees value in exploring how the UK could support the development of emerging technologies. The UK has many strengths in telecoms and technology, such as software-defined services and virtualisation. Government could look to complement and support existing R&D spending from UK telecoms companies, which the ONS reports is seeing large increases in investment.[3] Government leading on a coordinated approach to R&D development for future technologies may be a better use of resources. In all cases though, we believe that security policy should be risk-based; draw on existing, interoperable and global best practices, standards and certifications; and define principles rather than prescriptive measures to allow those regulated the flexibility to meet the principles in the format that is most relevant to their business and risk assessment.

The feasibility of the Government supporting the establishment and growth of a UK-based vendor of 5G equipment;

How the UK can work with international partners (such as the 'Five Eyes' countries) to build a domestic capacity;

11. As in any market, competition is welcome, particularly in markets with high barriers to entry that have witnessed consolidation. Operators will generally take a multi-vendor approach, utilising different suppliers to help with price, risk and innovation. We can therefore understand the

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[3] https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/businessenterpriseresearchanddevelopment/2018

attraction of supporting a UK-based vendor and can see the value in exploring this. However, it would represent a significant shift in policy, with Government supporting a sector it has not previously looked to intervene in. For example, the current Industrial Strategy includes targeted help for several sectors but does not contain support for establishing a UK telecoms vendor. More importantly, a domestic supplier would not be established in time to support delivery of 2025 aims and current rollout plans.

12. There would likely need to be significant investment over many years to establish a domestic supplier, in addition to meeting some of the challenges outlined above. Existing knowledge gaps would have to be overcome, and expertise would have to be developed to compete against giant multinational companies that benefit from significant history and investment. The Committee needs to consider the effect of relying on a domestic capacity could have on delays to current rollout plans, and should instead look to the future and what a domestic capacity could support.

13. The Government should work closely with allies and like-minded nations. As we leave the EU, we should seek to respect global norms as far as possible, and ensure standards remain compatible with those in place in the EU and similar countries, including those in the Five Eyes. Furthermore, in the NCSC, the UK has a leading security authority to lead efforts with our partners and should continue to do so. Indeed, a common approach globally or, at least, regionally to the issue of supply chain security would be beneficial as it would remove the need for multiple flavours of national-specific requirements and thresholds which cause complexity and additional costs, often without appropriate justification. Such national requirements are often hard to juggle for our larger multi-national companues whose security and procurement policies are global in nature but who operate in multiple markets.

Measures the UK Government could take to encourage additional, established vendors to enter the UK market;

14. As part of the Telecoms Supply Chain Review, Government has been exploring how best to encourage established vendors to the UK market. We feel the UK should focus on the following points to support established vendors to enter the market:
    - Consistency – a clear and consistent policy framework
    - Regulatory certainty – the UK's regulatory regime should reflect international norms and best practice, striking the right balance between security and market access
    - Consider support though public procurement – incentives could be put in place to encourage diversification of the supply chain where public money is funding roll out
    - Utilise existing Government support networks – further support from DIT and other Govt bodies to target support at companies who could provide services

In what timeframe the Government should look to build domestic capacity and remove all "high risk" vendors.

15. The timeframe in which domestic capacity would need to be built up ultimately depends:
    - on how quickly and to what degree high risk vendors are to be removed from UK networks;
    - whether interoperability with existing equipment can be achieved; and
    - what level of unintended economic and societal side-effects are deemed to be acceptable.

16. Given the already low number of end-to-end access vendors, a further reduction down to two would have immediate cost implications. These could only be avoided if domestic capacity was built up in lockstep with the reduction of HRVs in the UK to maintain the competitiveness of the market.

17. Interoperability with current network architecture and equipment would also need to be ensured to avoid the need for retrofitting current infrastructure. This implies that the relevant standards would need to be in place before a significant reduction in high risk vendors to avoid unnecessary disruption.

18. Ultimately, the timeframe would also need to take into account the impact on the speed of current and planned infrastructure upgrades for both fibre and 5G connections. Fibre and 5G rollout are largely privately funded and a less competitive supply chain could have a significant impact on the business case for rollout programmes across the UK. This could risk making some areas less commercially viable than they are now and delaying much needed upgrades to particularly rural or other under-served communities.

19. Equally, if new kit was not interoperable or if there was a need to change existing equipment in the current broadband network, additional pressure would be put on labour supply and engineers might need to be redeployed from rollout to retrofit, thus potentially delaying rollout to parts of the country.

20. We fully recognise the concerns of Government and Parliament around high risk vendors and believe the proposed strengthening of requirements through the TSRs and proposed cap on HRVs will go some way to meeting this. However, we believe the potential impact on the cost of speed of infrastructure rollout need to be fully taken into account when making decision about how quickly the presence of HRVs can be removed in the UK and a domestic supplier established. If a decision is taken to reduce the proposed 35% HRV cap, any further intervention from this should be in consultation with industry, consider the different impact in could have on fixed and mobile networks, and be delivered over a proportionate time period.