BALQUHIDDER BROADBAND
CONNECTING THE GLENS

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RESPONSE TO RFI PIN SEP256710: SCOTTISH GOVERNMENT - REACHING 100% SUPERFAST BROADBAND PROGRAMME

VERSION 1.1, 1 OCTOBER 2016, RICHARD HARRIS

1 SUMMARY OF ISSUES

This document presents the response of Balquhidder Community Broadband (BCB) to this RFI. Although BCB does not currently intend to tender against the R100 procurement, BCB's founders do have very significant experience of internet technologies, the market being addressed by R100, current processes and of the need for the effective framing of strategy, engagement and process. Our concern is to ensure that past and current mistakes are not repeated and that Scotland ends up with a robust, scaleable and genuinely enabling network infrastructure. Our concerns are summarised below, starting with three key elements:

Strategic Considerations: The RFI and such public statements as have so far been made about R100 do not define the strategic goals and framing for the procurement. Such information as is given is limited and suggests a inadequate level of framing and objective-setting. Every other UK public intervention in broadband provision to date has been crippled by restrictive assumptions, poverty of ambition and lack of understanding: precedence therefore suggests that R100 may suffer likewise. For example, goals so far publicly stated[1] still express objectives in terms of delivered bandwidth, when this is very much an arbitrary figure and makes no acknowledgement of the most important metric: the provision of a scaleable, future proof infrastructure, where future service grade scaling is a contractual matter, driven by demand, not one requiring wholesale infrastructure replacement. *The 'future proof' solicitation in the RFI does not define the term and this must be considered a significant shortcoming.*

Market Engagement: Most (but by no means all) areas with poor broadband service provision are rural. They may also be remote. These also tend to be the more activist and self-motivated communities, many of which are either currently building or are prepared to deliver at least part of their local solution themselves, given even a modicum of support. Engaging with this model will significantly extend the value reach of any solution in certain areas[2]. *There is however no reference whatsoever in the RFI to engagement with communities or creating a hybrid "centre-out and edge-in" delivery model of the sort that has served other countries so well[3]. This must be considered a major and limiting omission from current public statements about R100.*

Process: The definition of process for delivery of R100 projects is critical: the lack of a delivery focus in current processes and the inhibiting influence of inter-agency dependencies[4] has crippled even the imperfect goals of extended broadband delivery under DSSB and CBS. It is essential that this be simplified, made focussed on delivery and be inclusive of engagement with the ultimate beneficiaries from the start. *To date, we have seen no sign of this.*

2 MAKING R100 EFFECTIVE

This is not intended to be a comprehensive list of issues for R100 to address, but addressing these robustly will help ensure that the outcome from the exercise is effective, maximises value from public investment, leverages commercial and community initiatives and reduces the need for yet more programmes in the future to address (or compound) the mistakes of the past. We apologise if this falls into the category of "teaching grandmother to suck eggs", but assumptions of basic common sense and planning in previous initiatives have proven erroneous.

- Frame strategic objectives in terms of the long-term goals for an open national infrastructure, for the processes required to deliver it and for engagement with the communities who are the ultimate beneficiaries. Doing so will extend the reach of any given budget, will provide the level of agility required to meet the needs of a wide variety of end-user and will encourage the development of truly competitive alternatives to the monopoly incumbent.

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[1] Includes Clive Downing's presentation at the CBS supplier meeting of 28 September 2016.

[2] cf. the current Balquhidder CBS procurement.

[3] An often quote example being Lithuania's Broadband development strategy pursued coherently and consistently since 2002.

[4] Our attempt at saying, "egregious and Kafkesque bureaucracy", politely.

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- Model the economic uplift (not just cost/revenue of service) for any proposed development, subject to the final split of the procurement. Carrying this out at a local level has revealed very significant differences between technologies and service models in terms of delivered and sustained economic uplift[5]
- Adopt a demand model based on current multi-service, multi-device requirements, not on a demand model that was out of date two decades ago. The UK Broadband Stakeholder Group[6] has done valuable work here, but their own model still appears to have significant gaps and underestimates emerging device and service ecosystems (not least being the impact of Cloud, AI, VR and IoT services).
- Define delivery not on the basis of average or peak Mb/s but on sustainable competitiveness at a high percentage of global best practice and against the fundamental requirement for continuous scaleability without wholesale infrastructure replacement – the rest will then follow.
- Audit the current and planned fibre backbone infrastructure for end-to-end capability against anticipated real demand and uptake.
- Model network capacity and incipient bottlenecks in that infrastructure as demand scales and, in procurement and funding, seek to mitigate these issues before they arise.
- Promote and support the development of redundancy in Internet Exchange (IX) services in Scotland. With a single and currently underused IX in Edinburgh, Scotland currently has little resilience or flexibility in its network routing and interchange.
- Co-ordinate with the UK NCSC[7] to build a secure carrier-grade infrastructure within which wholesale services at every level can be provided.
- Define an architecture and geographical model for standardised open access edge points for network backhaul within effective and economic reach of every community in the country.
- Create genuinely open wholesale access to that network edge: the current model of engagement with Openreach and its infrastructure simply does not work.[8]
- Encourage and support commercial, community and hybrid 'last mile' programmes to link to network edge points and to each other.
- Integrate R100 with the expansion of 4G mobile services and the forthcoming development of 5G services: the availability of fibre networks in proximity to mobile sites will have a significant effect on deployment costs of 4 and 5G services.
- For those few properties that can't be addressed by terrestrial networks, lease a dedicated public service Ka-band satellite transponder or spot beam(s) to ensure that users aren't more disadvantaged by satellite than they absolutely have to be: current satellite services simply do not work reliably, largely due to commercial oversell.

4 THE AUTHOR

Richard Harris is a pioneer of the public internet. He has been an internet developer and researcher since 1984 and has been responsible for a wide range of innovations in online technologies and service models, across terrestrial, mobile, broadcast and satellite networks. He has provided technology, strategic and organisational consultancy to enterprises such as the BBC, Apple, Intel, AT&T Labs and SAS Institut. He has overseen major enterprise procurements in the public and private sectors, was Chief Knowledge Officer of a global organisation and process consultancy and is co-founder and a director of Balquhidder Community Broadband.

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[5] The BCB Uplift Model is available at: http://balquhidder.net/whats-it-worth/#more-414

[6] Broadband Stakeholder Group: http://www.broadbanduk.org

[7] National Cyber Security Centre

[8] The failure of Passive Infrastructure Access (PIA) arrangements is an excellent example here.