

The slide features a background with a large white arrow pointing right, overlaid on a blurred image of a server rack and a stack of white hard drive platters. The title text is centered in a bold, dark blue font.

WAN Information Request Response Overview

Contents

- Overview
- Consumer impact
- Benefits and costs
- Timescale
- Risk
- Conclusions

Overview

- 11 responses received
- Range of technologies covered
 - GPRS
 - Radio (long range, mesh)
 - PLC (licensed and unlicensed frequencies proposed by different respondents)
 - Combinations of above
- Some options based on existing infrastructure, others on new infrastructure

Consumer impact

- Coverage
 - Consensus is that high level of coverage is possible
 - Near 100% coverage possible with mix of technologies
 - Individual technology coverage broadly 70% to >95%
 - In many cases economics rather than physics limits coverage
- Availability / reliability
 - Many respondents stated that availability >99% is possible
 - Target of 4 hours to repair generally possible
 - caveats about longer time in remote areas
 - Many options described include an element of resilience / redundancy

Benefits and costs

- Performance
 - Small message transfer time down to about 1s possible, 5s+ typical
 - Setting requirement better than 5s may well limit number of potential providers
 - Note that HAN performance may limit true end to end performance
 - Large messages appear problematic
 - Some options can meet Scenario C requirement – but HAN may not be able to
 - Other technologies require a few hours to potentially days
 - Some questioning if real requirement – is it better to update small blocks
 - Some suggestions that should restrict large message transfer to quiet times on the network (ie early morning)
 - What would the impact be on suppliers of
 - Small message round trip time (including HAN) of 20s
 - Large message download time (for 2MB):
 - 4 weeks? 2 weeks? 2 days? 2 hours? (HAN time might be >30 hours)
 - Any greater benefits for shorter times?

Benefits and costs

- Power consumption
 - 1W is possible, though development needed for some options
- Costs
 - Wide range of costs / premise
 - Some ambiguity in cost data provided in terms of WAN module inclusion
 - Contract length assumptions
 - 5-7 year contract for existing infrastructures
 - 15 years for new infrastructures
 - Cost drivers
 - Coverage – difficult premises will cost more and pull average cost up
 - Data volumes / time of day for some options, not for others
 - Numbers of meters / premises
 - Contract length

Benefits

- Smart grid
 - Some options could facilitate smart grid capabilities at little extra cost
 - Others incur additional cost for licensing and/or data volume charges or cannot achieve the performance requirements
 - Understanding value of benefits needed to inform overall CBA

Timescale

- Options based on existing infrastructure
 - Roll out could start now
 - Roll out can be nationwide
 - No constraints imposed on smart meter roll-out
- Options based on new infrastructure provision
 - Some can start rolling out very quickly
 - Others plan mobilisation phase before roll out accelerates
 - 50% coverage in between 1 and 2 years from start of rollout
 - 100% coverage in between 2.5 and 7 years
 - All recommend geographic roll out
 - Work from high population density areas to get maximum rate rollout
 - May constrain ability to support customer pull

Risk

- Most solutions have been used in other countries at large volume
 - PLC supporting up to 30m meters
 - GPRS used in national scale deployments in NZ
 - Other technologies used on > million meter contracts
- Different technologies have different risks / dependencies
 - Some options need agreement of DNOs to access or use substation site
 - Some options require DNO permission to use power cables for data (and associated wayleave issues)
 - Some options depend on spectrum availability (provisional agreement in place)
 - Some risks around agreement of technical standards to avoid stranding
 - Lock-in to single supplier with new infrastructure options
 - Potential performance issues if sharing existing infrastructures

Conclusions

- Objectives were to understand
 - What level to set the requirements at
 - To validate the Cost / Benefit Analysis
- On requirements
 - Generally requirements are broadly achievable
 - Large message transfer time discriminates between technologies
 - Need to consider user requirement carefully
 - Some solutions better suited to Smart Grid requirements
 - Better understanding of benefits is needed to understand impact
- Timescales and roll-out constraints
 - New infrastructure options may prefer geographic roll-out and could take 2 – 7 years
 - This may make supporting consumer pull more difficult
 - Existing infrastructure options need not constrain smart meter roll out
- If DCC is required to provide/adopt 'interim solutions' to facilitate early adopters, transition from interim communications providers to DCC needs to be considered