

A INTRODUCTION

1. The only reason to regulate is market failure, but that has not occurred in the competitive environment appropriate for consideration here. The Commission has focussed on what it perceives to be failure relating to the local loop, and the desire of some competitors to have cheaper access to it. However, the local loop is only one part of the market and one form of competition, and outside that copper based network alternative technology based networks have developed and are developing in competition with the local loop as the basis for provision of broadband and voice services.
2. The submission by TUANZ on the Issues Paper at pages 8 to 9 correctly noted that: “[w]ireless solutions are showing real promise and there is a likelihood that in the immediate future [Woosh] and other wireless vendors will offer a real alternative to DSL. This should result in a choice of technologies in many parts of New Zealand once the technology is proven and the rollout gathers momentum. There are many positive indicators that wireless will make a significant contribution to the widespread availability of affordable broadband,…” These competitive effects are occurring right now. The Commission fails to give this appropriate weight in its competitive analysis, and it is inconsistent to discount the effect of these alternative technologies in favour of promoting just one technology: DSL based upon the copper local loop. The “choice” of technologies will be diminished by that discrimination, not enhanced.
3. Woosh Wireless Limited’s (“Woosh”) broadband wireless technology is deployed and a competitive participant in a number of countries around the world, including Hawaii, mainland USA, Canada, Germany, and now being deployed in South Africa, UK, China, Japan and Malaysia. Its development in New Zealand (to which it is particularly suited by reason of demography and topography) has been as a result of significant investment and trialling over 5 years, to the stage now where it has been rolled out and available in Auckland and Southland and is planned to be progressively available in the further areas of Wellington, Christchurch, Dunedin, Hamilton, Tauranga, Rotorua, Hastings, Napier, Palmerston North, Taupo, Northland, Wairarapa, Canterbury and Otago by 2005. It has advantages over technology based on the copper network both immediately upon deployment (ease of uptake, flexibility, portability) and in future as the basis for development of further technology and added service features.
4. Woosh has introduced products in competition with Telecom which are significantly cheaper, so as to drive demand and achieve scale. Over time it can be expected that prices will be driven down further as that succeeds and as Telecom and the other competitors respond (including other alternative technology competitors such as BCL, as well as traditional technology based suppliers such as TelstraClear). The Commission’s endeavours, in the time it would take for unbundling to be introduced anyway (two years from recommendation) would be better focussed on other matters which would enhance, rather than diminish, competition from alternative technology based networks (such as number portability and interoperability).
5. The Draft Report proceeds on the basis of a belief that unbundling will encourage investment and competition based on and around the incumbent copper wire network, and on the basis of an assumption that has not been adequately explored, namely, that

alternative telecommunications technologies do not and will not provide equivalent benefits in the long term. As a result, it is considered to be better if cheap access is provided to the copper based local loop, regardless of whether this will have a negative impact on the provision of a diverse range of competing alternative technologies. This approach is misconceived for a number of reasons.

6. Firstly, it is a fallacy to assume that the alleged benefits will come about, and to assume that providing cheap access to the local loop will sustain cheaper prices to end-users in the long term. Experience overseas suggests that even if there is an initial lowering of prices as competitors cluster aboard the incumbent network, inevitably their pricing stabilises and rises as the duplication of investment and the need for them all to make a return influences prices higher.
7. Secondly, it is acknowledged in the Issues Paper and in the Draft Report (but dismissed) that a disadvantage of unbundling can be a diminution of stimulus of competing technologies. Insufficient weight is given to this disadvantage and insufficient reasons are given for its dismissal. There is, in fact, a real likelihood that this disadvantage will become manifest in the event there is wholesale unbundling of the kind proposed, and that will have a real and significant negative impact on the shape of the competitive landscape for a very long time.
8. Alternative new technologies are risky, require large amounts of capital and generally have an investment cycle spanning 5 to 10 years. Examples of telecommunications initiatives that in their infancy looked an unlikely prospect for the success they later achieved include mobile, fax and internet. Many, if not all, these presently successful technologies would not have achieved their maturity if, part way into their investment cycle, the ground rules had changed by virtue of regulatory intervention in the manner proposed in the Draft Report. Such a fundamental change in the business case upon which an investment is modelled would undermine the ongoing viability of existing and further investment according to that business model.
9. Thirdly, quite apart from the inhibition on further development of alternative telecommunications technologies, unbundling on the broad scale proposed will expropriate the significant existing investment which Woosh has already made in its network. The Draft Report acknowledges that a number of areas are competitive and Woosh has embarked upon an aggressive rollout into other areas, increasing competitiveness there as well. To the extent that untargeted unbundling of the kind apparently proposed will apply in those areas, it will be a form of regulatory predation, which will undermine some competitors such as Woosh and favour other competitors. Where they are not the focus of regulatory intervention (Telecom is), it is not appropriate for a regulator to undertake actions which have the effect of expropriating "bystanders' rights by favouring some competitors over others. The effect of unbundling in an indiscriminate manner, in areas which are plainly competitive, simply favours large old world technologies, such as TelstraClear land based switched environments, over emerging new and dynamic technologies such as wireless IP networks of the kind Woosh is deploying.
10. Moreover, the significance of PROBE has not been given appropriate weight in terms of its likely impact on increasing telecommunications reach and increasing competition on a broader basis. The process is under way whereby Government is sponsoring (effectively by underwriting the capital cost of start-up) the development throughout New Zealand of regional networks. Once established for the purpose of providing broadband services to schools, they will be able to provide broadband services to customers throughout those regions, and the regional networks will necessarily be linked to other networks throughout New Zealand.

Not only does this bring new broadband services but Woosh has introduced new voice pricing that takes away toll boundaries within the region. In Southland's case, for

instance, there are currently 9 toll areas estimated to cost the region \$30m annually, which will be saved by Woosh's network.

11. New Zealand presents unique and difficult features (small population, spread over islands with difficult terrain) yet is a technologically advanced telecommunications market. It has embraced new technology (eg, mobile) and there is a diversity of products available which belies its size. Technological solutions such as wireless are suited to this environment and are viable, if there is not an artificial economic bias toward inefficient incumbent technology. The market has and will continue to make appropriate efficient choices on the basis of technology, and competition through technology, not through regulatory assistance, should be allowed to continue. A bias towards investment in local loop network-based technology will undermine this.

B WOOSH BACKGROUND

Woosh - A Brief History

12. Woosh Wireless is the new name of Walker Wireless, which was established in 1999 to meet the emerging demand for faster, more efficient information transfer. The most cost effective and flexible way to deploy a new network to meet this demand is by using Wireless Broadband Access (WBA). A network of this type is able to be rapidly deployed and is capable of delivering high speed, flexible and secure data and voice communication services.
13. Walker Wireless, founded by Rod Inglis, emerged from Walker Datavision, one of New Zealand's most successful technology companies, which had been carving out a reputation on both sides of the Tasman, creating wireless local area networks, and data acquisition and identification systems.
14. After building one of New Zealand's largest EFTPOS networks, Walker Datavision realised that wireless could solve the problems of high speed, secure data carriage and Internet access.
15. Testing started in March 1999, and Walker Wireless was established nine months later. By May 2000, Walker Wireless had secured the backing of key shareholders Todd Capital, Stephen Tindall, Craig Heatley and Rod Inglis. Clarity Partners, a US based private equity fund came on board in May 2002.
16. Walker Wireless initially rolled out a network of 22 base stations in nine cities, and has attracted large customers such as Restaurant Brands, Metlifecare, Burger King, Diagnostic and Medlab.
17. In January 2001 Walker Wireless purchased 58 MHz of spectrum in the 1098 band through the Government auction, taking its total spectrum to 74 MHz.
18. Walker Wireless then began a worldwide search for a leading technology to extend its network and settled on IPWireless, of the UK and USA. This equipment was tested in a six month, \$6m test deployment on four base stations in Auckland using 400 test customers. The trial was funded 50% by Vodafone and was completed in December 2002.
19. The test deployment was a significant success and Woosh Wireless is now in the process of rolling out the IPWireless network nationwide, starting with the major metropolitan areas.

Where to From Here?

20. Woosh Wireless is currently in the process of rolling out a national IP based broadband network. We are starting with our roll out for the Greater Auckland region.
21. The Woosh Wireless broadband network roll-out plan will provide high speed always-on Internet access, phone services, and virtual private networks.
22. The service is truly portable, in that users with laptops can roam in the coverage area and access the Internet and their fixed premise computer systems on a wireless basis. Woosh Wireless will provide quality of service voice over IP (VoIP) early in the new year that will be fully interconnected into all other networks. Customers will then be able to purchase a phone line and portable high speed Internet service for prices significantly lower than those they currently pay for their current fixed line rental and dial-up connection. This lower cost will result in a real saving of 26% to the consumer today. Woosh will also provide significant savings of approximately 40% on national toll calls. These figures can be confidentially substantiated by Woosh if requested by the Commission.
23. This technology will change the way people communicate, access the Internet, and use a host of new applications at home, at the office or on the road.

It is noted that the draft report indicates that unbundling is to apply across the whole of Telecom's DSL network regardless of whether there is competition in a particular area or not. The reality is that in a number of the markets strong competition already exists and in the other markets competition is planned by a variety of other operators.

The chart below summarises the competitor position.

LOCAL ACCESS COMPETITION

Market	Telecom	Telstra Clear	Tangent	City Link	BCL	Woosh	PROBE (Further Announcements)	
Auckland	✓	✓	✓			✓		
Wellington	✓	✓	✓	✓		2004/05		
Christchurch	✓	✓			Planned	2004/05		
Hamilton	✓	✓				2004/05		
Tauranga	✓	✓				2004/05		
Rotorua	✓	✓				2004/05		
Napier/ Hastings	✓	✓				2004/05		
Palmerston North	✓	✓				50 cell	2004/05	
Nelson	✓	Some				sites	2004/05	
Dunedin	✓	✓				rural	2004/05	
Taupo	✓						2004/05	
Queenstown	✓						2004/05	
Regions (PROBE)						Roll		
Northland						out	✓	
Auckland							✓	
Waikato	✓						To be confirmed	
Bay of Plenty	✓							
Gisborne/ Hawkes Bay	✓							
Manawatu							To be confirmed	

Taranaki	✓					✓	
Market	Telecom	Telstra Clear	Tangent	City Link	BCL		PROBE (Further Announcements)
Wellington	✓						Pacific.Net
Nelson							To be confirmed
West Coast							To be confirmed
Canterbury						✓	To be confirmed
Otago							To be confirmed
Southland						✓	

C WOOSH NETWORK/TECHNOLOGY

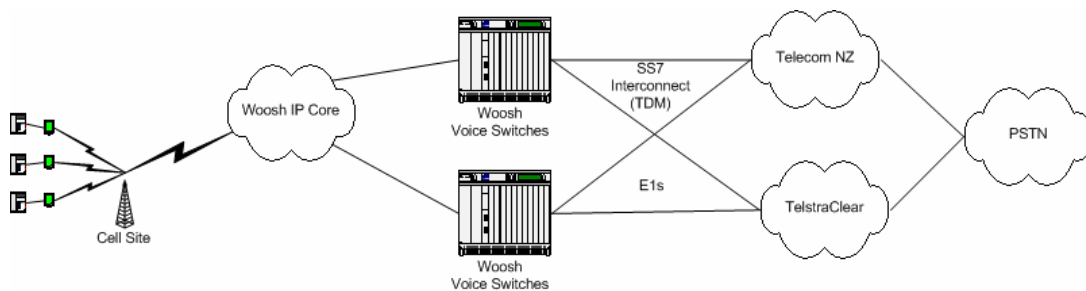
Technology Overview

24. The Woosh Broadband technology is a packet data implementation of the international 3GPP Universal Mobile Telecommunication System (UMTS) standard. Time – division – duplex (TDD) is used, according to the 3GPP UMTS UTRA TD – CDMA standard.
25. The Woosh network consists of technology from IPWireless and industry standard core network. Woosh technology operates in a non-line-of-sight environment allowing fast wireless data access indoor, outdoor and in portable environments.
26. Transport format selection (rate adaptation) is implemented on a per-subscriber basis, varying coding and modulation to provide the highest possible data rate to each user in the cell, depending on channel characteristics and interference.
27. Being packet based, the air interface is statistically shared by users in a very efficient manner. Customers are able to experience an “always on” Internet connection and do not use any system capacity while not transmitting or receiving data.

3GPP Standards

28. IPWireless equipment is built on, and complies with the 3G Project Partnership (3GPP) TD-CDMA standard.
29. 3GPP is the international standards body that develops, publishes and maintains standards for third generation wireless. It is made up of the standards bodies in each of the major countries – T1 (US), ETSI (Europe), ARIB (Japan), ETRI (Korea), and CWTS (China). As well as the standards bodies, 3GPP is attended by all of the major technology companies.
30. IPWireless has chosen to implement the TD - CDMA branch of standard, for the following compelling reasons:
 - (a) It is the branch of the 3GPP standard specifically intended for high data rate services
 - (b) The burst structures defined in the standard are designed to support advanced signal processing, which IPWireless implements to achieve exceptionally high performance (joint detection / multi-user-detection).
 - (c) Wide channels (5 and 10 MHz are supported), permitting higher data rates;

- (d) “Shared channels” are supported in the standard. This is essential for achieving high throughputs with broadband packet data, through efficient on-demand assignment of resources.
31. IPWireless’ current product uses Release 99 of the standard. The latest release (Release 5) includes important enhancements and will be implemented once available.
 32. The standard permits interoperability between customer equipment and network infrastructure from multiple vendors, providing the competitive market that will drive down costs and increase innovation. Furthermore, standard interfaces between network elements are defined.
 33. A key benefit of using an international standard is the economies of scale resulting from the huge international market for the 3GPP standards.
 34. The Woosh network operates like a cellular network. Data is transmitted across a network of antenna on geographical points (called cell sites) using private spectrum frequencies. The signals are picked up by a portable modem, which is connected to the Woosh network and the Internet. The diagram below shows from a high level how the Woosh system operates.



35. The Woosh network is an extension of the Internet directly to a portable user device that is located with the end-subscriber. This means that any new service that is delivered over the Internet or an IP network can be offered directly to Woosh subscribers. The Woosh IP Core also allows for the deployment of closed networks (VPNs) for business subscribers who want the security and flexibility of their own wide area network. The design of the Woosh network is such that adding capacity in a particular area for increased demand is a simple exercise.
36. The ability to deliver voice over an IP infrastructure has advanced greatly in the last few years. Woosh is currently installing a voice solution that will enable local and toll calling by subscribers from their own home phone using the Woosh Wireless broadband network. This service will be operated by the subscriber over the same physical link that their broadband data connection is delivered over. Woosh also has the ability to deliver voice services separately from broadband.
37. The technology has the ability to prioritise the voice traffic over the air interface to ensure that the data component of a subscribers traffic does not cause a degradation of service. The portability of the Woosh technology also allows the user to be portable with respect to the receipt and delivery of voice calls.
38. The wireless technology which Woosh uses is supplied by IP Wireless and has or is being deployed in:
 - Hawaii
 - Canada

- USA
 - Germany
 - South Africa
 - United Kingdom
 - China
 - Japan
 - Malaysia
39. These deployments have involved significant investment in \$100 millions of US\$ per country in some instances with further substantial roll outs planned to follow the initial deployment. This mirrors our plans for New Zealand. Further information on these deployments can be obtained at the following URL addresses:
- <http://www.mobiliser.org/article?id=67>
- http://business.cisco.com/prod/tree.taf%3Fasset_id=90473&ID=48301&ListID=44692&public_view=true&kbns=1.html
40. In New Zealand, Woosh deployed in metropolitan areas using its wireless transmission equipment, but has also in recent years partnered with Vodafone to use its existing and developing cell sites. In addition, Vodafone agreed this year to retail Woosh services through its retail operations (as has Dick Smith) and has an option to take up a significant minority investment in Woosh. Vodafone entered into this arrangement after performing detailed due diligence on Woosh's technology and business model.
41. Wireless technology is particularly suited to the New Zealand environment. Telecom and Vodafone both built up wireless infrastructures, upon which mobile telephony has been based with great success in terms of market penetration. Due to a small population spread out over two main islands, with difficult terrain, New Zealand has not been able to sustain the investment in cable based networks which appeared in jurisdictions such as USA and Europe in competition with the incumbent copper networks. Moreover, with Sky TV providing the sort of media content which cable developed to provide initially (on the back of which broadband could then be delivered), the economic justification for investment in cable network was further diminished. On the basis of those market conditions, significant investment has been made in and by Woosh over the last five years of approximately \$60m with substantially more investment planned for the coming months and years.
42. Broadband wireless is rapid to deploy, and cheaper to set up, operate and maintain as a network than cable. It is easy to use, self-installed, flexible and portable (there being no need to involve operators or technicians in any move). The technology also allows Woosh to quickly and relatively easily enter and provide services to any geographic area. It is IP based, integrating both data and voice, which is the market trend. This ongoing convergence of data, voice and video, will inevitably happen over IP networks such as Woosh's unless the market conditions upon which its business model is based are interfered with.
43. Woosh's voice over IP technology will allow consumers to talk over the Woosh network to friends and family anywhere in New Zealand and overseas. The service will be easy to operate and easy to install. A small telephone gateway unit, connected to the Woosh wireless modem, will plug into the consumer's existing telephone cabling or directly into their phone. Consumers can use their existing telephone to use the Woosh phone service.
44. Voice messages and faxes can be delivered as an email, and Woosh's "universal inbox" will allow Woosh customers to clear their voice mail, fax and email messages wherever they have Internet access. This is a superior service over what the PSTN is capable of

and is a convergence example of why the whole communication market has to move to VoIP as the future means of handling voice traffic. The Woosh VoIP service will also be able to be used via 'telephone' software loaded on a consumer's laptop or PC. Using a headset consumers can chat 'through' their computer as if they were using a phone. This allows consumers the flexibility to take their home or business 'telephone' with them anywhere within the Woosh coverage network and speak to anyone.

45. The Woosh network is based on international standards and it will be interconnected with other telecommunications providers.
46. As part of the PROBE initiative phone calls between Woosh subscribers in Southland will incur no additional charges. This means a large toll free calling area for Woosh customers within the Woosh network in Southland. A welcome solution for the Southland region, which has nine toll calling areas. Calls to people who use other landline based telephone companies, and who are within their current free calling area, will continue to be free. Competitive rates will apply for all other national, international and cellular calls.
47. In other jurisdictions such as USA, it was the alternative technology based networks such as cable which provided the real competition to the incumbent copper based networks and drove pricing competition. It was not the competition from CLEC's (Competitor Local Exchange Carriers), most of which went out of business after a short period of time, and simply offered the same DSL technology based upon the incumbent network.

D PRICING

48. Woosh has introduced pricing structures for its products which are necessarily designed to generate demand so as to achieve scale. In simple terms, as a network developer it is necessary to make the investment and build the network, then hope that the demand can be generated to support it in the numbers projected. Woosh benchmarked the cost of providing wireless broadband against the incremental cost of DSL, and it is favourable (without even taking account of the investment in the copper network).
49. Woosh's prices are significantly lower than Telecom's for equivalent products. Comparing Woosh Home & Small Office plan, Woosh Everyday with unlimited MB (subject to a reasonable use clause), with the nearest Telecom residential plan, JetStream Home 2000 (2G data cap), Woosh is *faster* (250Kbps compared with an average of 128Kbps for Telecom's product) and still cheaper (\$64.95 compared with \$79.00 for Telecom's product). This represents a saving of 17.8%. For comparative purposes only, if the customer's monthly MB usage was 7 gigabytes, Telecom would charge \$1079.00 based on JetStream Home 2000, while the Woosh Everyday charge of \$64.95 would still apply.
50. Comparing Woosh Business products with Telecom JetStream business products, the price difference range is between 24% and 60% cheaper with Woosh, with Woosh products again being faster. The lowest price difference is between Woosh Enterprise 5 (500Kbps, 5G data cap) and Jetstream Business 5000 (256 Kbps, 5G data cap) and highest price difference is between Woosh Business 10 (350kbps, 10G data cap) and Jetstream Business 10,000 (256 Kbps, 10G data cap).
51. It is expected that pricing will be driven down in the medium to long term by competitive response and diminishing returns required to cover the cost of investment (certainly over the five year timeframe the Commission is considering). The business model upon which investment is based expects that to occur in a predicted and sustained manner. Unbundling, however, is likely to cause an unpredictable, short term reduction in prices, unsustainable in the long term, but which would have the dual effects of:

- (a) Expropriating the value of Woosh's investment to date, and
- (b) Deterring the same level of further investment in future.

E PROBE

- 52. The Government, as part of its 2002 Budget, announced the Project PROBE policy initiative to have all schools in New Zealand provisioned with broadband access by the end of 2004. Many schools do not have Internet access and most of those that do, only have slow dial-up access. Broadband access is seen as an important policy platform to provide the tools for a first world education system and also to bridge the digital divide.
- 53. As part of the project PROBE scheme, the country has been divided into 14 regions, each of which has been tendered individually based on a wide range of criteria. Woosh Wireless supported by Vodafone, has been successful in winning the Southland, Wairarapa, Northland and Canterbury regions.

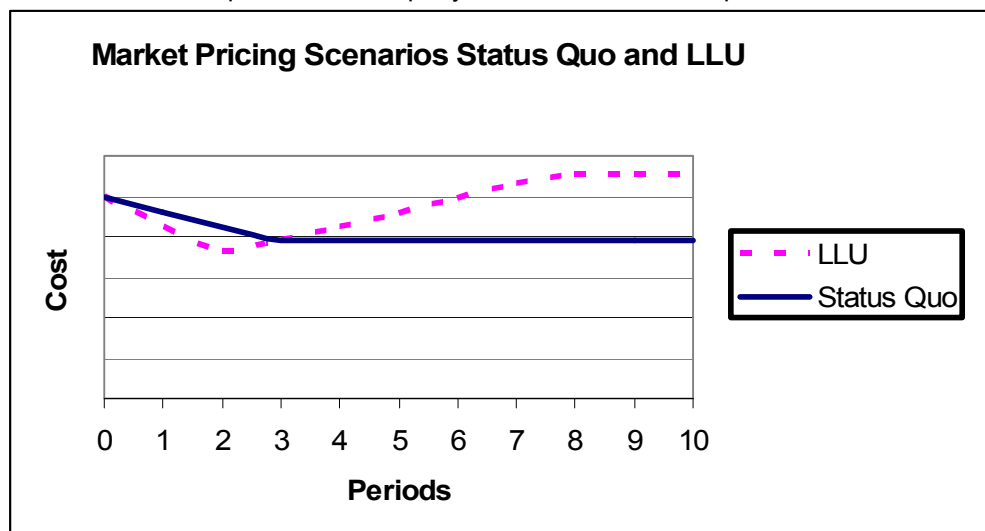
Case study: Southland

- 54. Venture Southland has stated that the \$50 million Southland investment in broadband internet is expected to return \$190 million a year within five years, more than \$400 million a year in 10 years and create at least 490 jobs. The Southland PROBE roll-out will involve 22 sites and will cover 100% of schools and approximately 93% of the total population and is targeted to be completed by the end of 2004.

F IMPACT OF UNBUNDLING ON INVESTMENT

- 55. Investment in and by Woosh has been based upon market conditions as they have existed. The business model for projections is one where Woosh will compete through technology, on the terms described above. If regulation in the form of unbundling is introduced, it will undermine that model and the investment.
- 56. Telecommunications investment is a high risk investment as it requires significant up front investment with a long payback period. It is doubly risky in that also during this payback period new technology could be introduced which makes the investment obsolete.
- 57. Regulation such as unbundling will make the investment environment even more high risk as it will attempt to provide cheaper costs favouring certain types of competitors in a competitive environment (ie traditional technology providers based upon the copper local loop, such as TelstraClear) and in our opinion is a form of regulated predatory pricing.
- 58. This will therefore discourage investment in alternative infrastructure which is the only means by which true competition and long term sustainable competitive pricing will be attained. In the USA for example it is the cable TV operators who are providing the competition to the incumbent Telco's and not the CLEC's (competitive local exchange carriers) which temporarily flourished through unbundling and then the majority of which have gone out of business because it was proven not to be a sustainable business model.
- 59. Woosh has obtained a report which states that there were approximately 50 public companies in the US specialising in providing competitive local telecommunications services at some time from 1996 to 2001, many of which were formed shortly after the passage of the Telecommunications Act of 1996. An analysis of 24 of these companies (selected on the basis of availability of consistent and reasonably complete financial data reported to the SEC) shows total funds raised of US\$44b of which US\$32b was spent on capital items and US\$12b spent on operating losses.

60. Of the US\$44b spent, US\$30b came from debt. Only 1 of the 24 turned a profit over the five year period and all but 7 have been declared bankrupt or been acquired (generally at a steep discount) by other firms. This sample is quite representative of the CLEC sector as whole.
61. According to the Association for Local Telecommunication Services (ALTS) total spending by CLECs in the period 1997 to 2001 was US\$65b. At the end of this period market capitalisation (the net value of those assets to investors) fell to US\$4b, investors only recognising about \$0.06 in the dollar of investment in real assets booked by publicly traded CLECs. The market's verdict is that cash used for capital expenditure has not generated, to date, substantial value.
62. The regulatory environment following the passage of the Telecommunications Act in the US effectively "mandated" competition in the local exchange market place. Competition therefore had the weight of law and by inference new competitors were wrapped in a cloak of legislative protection.
63. There is a strong view that Congress and the FCC bear a significant responsibility for helping create the CLECs through the regulatory environment and thus have some continuing responsibility to support them through additional further intervention. In retrospect it is probable that public policy contributed to the higher levels of market and financial risk in the telecommunication sector as managers and investors assumed some of it would be offset by increasing regulatory protection.
64. The fact that the market currently values CLECs at less than \$0.10 in the dollar suggests that resources invested to build them were not put to the highest value use.
65. Therefore our concern is that unbundling in the short term will drive capital investment into business models that have proven not to be viable and then in turn drive down prices in the short term that will not be sustainable. The market will then seek to regain its lost investment through higher longer term pricing which means the consumer is worse off through not only higher pricing but also lack of choice of alternative services.
66. This increased risk profile to a company like Woosh can be depicted as follows:



67. In addition unbundling is difficult from an operations perspective in that the network is being shared amongst a number of operators. This is fraught with difficulties in terms of customer provisioning, fault management and capacity planning. Unbundling adds another level of complexity to this environment which will drive operating costs up and

will therefore have the impact of eroding margins and degrading service levels to customers.

CONCLUSION

68. In summary a regulated unbundling of the local loop is not required because:
- There will not be market failure within the time frame it takes to achieve it.
 - Woosh is a credible competitor across most relevant markets.
 - Unbundling doesn't work anyway.
 - Other players will also provide natural competition.
 - Unbundling will stifle natural competition rather than foster it.



Rod Inglis
Chairman
Woosh Wireless Limited