Response to the
Select Senate Committee on the
National Broadband Network

By

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Introduction

In line with the many telecomms-based submissions that I have previously submitted to the DCBDE and its predecessor, this submission provides yet another array of highly plausible solutions to advance the telecommunications industry in Australia and optimally develop Australia's economy. Unlike most other submissions to the DBCDE, this is not a self-interest submission!

The biggest stumbling block that Australia is facing with regards to Australia's developing communications and transport economy is the stable positioning of the NBN so that it will be highly beneficial to the Australian community and business alike. To correctly position the NBN in a stable and synergetic environment, it is first necessary to make some radical surgery to change the structure of the existing telecommunications industry within Australia, and with some of these changes in place, a stable infrastructure platform will be in place that will provide the foundations for wise NBN investment and give the Australian economy by far the biggest 'bang for the bucks' for the invested revenue.

The radical surgery that I am proposing involves Telstra spinning off Bigpond as the stand-alone competitive retail reselling business together with Telstra's Board. This radical surgery then leaves Telstra as a Government managed infrastructure business that is focussed on providing wholesale telecommunications services, which includes the NBN infrastructure.

With Bigpond on the ASX as a large company focussed on making shareholder profits, this provides Australia's financial investment market with the telecommunications business they could only dream for; as it has a very well known brand name, a very large customer market, a business structure that has a very strong potential to increase its profit margin with time, and the freedom to develop a range of much shorter-term retail products that are bundled to suit the geographies around Australia and New Zealand.

With Telstra as a Government Commission reporting to the DBCDE, this infrastructure business will be tightly focussed on providing maximised telecomms services with maximised service standards (something that completely evades all totally privatised telecomms businesses worldwide). Also, because the focus is on providing telecomms-based services, and the amortisation time is now considerably greater than in a privatised sense, the wholesale prices can be considerably brought down over time – making the retail / reselling businesses (including Bigpond) far more profitable – as alluded to above.

This spinning off of Bigpond and nationalisation of the Telstra infrastructure then provides two synergetic initiatives where in the first case, other privatised (or other government owned) telecomms businesses in Australia and New Zealand will be able to spin off their infrastructures and focus on the far more profitable retail and reselling of telecomms products and services; and in the second case the nationalised Telstra Infrastructure Commission will be the perfect foundation / platform for the NBN to install the necessary infrastructure, as the NBN is then positioned to utilise the Telstra infrastructure and all other existing telecomms-oriented infrastructures as they too become nationalised.

Positioning the NBN

The NBN has had more than one start and the real reason for the rocky road to its evolution is that the foundation for financially building the NBN is on financially and politically unstable ground as in Australia the telecommunication industry foundations are in a state of flux. So the NBN can start to be built in little pieces, like parts of Tasmania, but seriously, the financial and industry foundations need to be firmly set before the NBN is launched.

In my opinion, the ideal place for the NBN to be positioned is as part of a Federal Government Commission and synergetically using the existing telecomms infrastructure wherever possible.

The first problem is that apparently the NBN is to be set up as a company, and while that might sound good, as a (competitive) company the NBN will be looking to maximise its profits. The imperative surgery here is that the NBN needs to be established as an infrastructure business (company), with a very strong focus on providing the infrastructure, and look to amortising its returns over a much longer period than is used in private (competitive) telecomms businesses.

The second problem is that no matter which way you look at it, **not** utilising the existing Telstra infrastructure is a travesty of financial stupidity. In my opinion, the commercial pressures of the competitive regime have seriously delayed the advancement of the telecomms industry in Australia. It is high time this competitive regime took a back seat, as the inefficiencies that are inherent in a competitive environment are far in excess of that in an infrastructure environment where synergy replaces competition.

If the NBN were to be as positioned as a Government Commission then the NBN would be far more focussed on ensuring that the competitive businesses that resold the wholesale products would be more profitable, as taxes from competitive businesses would directly fund the national revenue, which in turn would further fund the NBN. Although this way is the long way around, but the well concealed advantage is that the focussed retail resellers will be on the ASX, and these businesses will also provide further investment diversification for institutional and community investors – together with real returns – which means that their share prices will not be in constant painful freefall as they have been for Telstra, virtually since it was launched on the ASX.

There is no doubt that the Capitalists / Monetarists will cry foul very loudly as they will see that this surgical change in Australia's telecomms industry could well impinge on several other infrastructures in Australia that are currently in the private / competitive market and are a constant thorn in the side of the everyday Australian because of the excessive end-user costs that are charged from a monopolistic situation. Examples of these so-called competitive infrastructures include Motorways, Airports, and some Electricity Power Generation / Distribution services.

With the impending end of available oil within the next two decades, many of these oil-based infrastructures will no longer remain highly profitable, and as these private infrastructure owners will be looking very seriously to offload these infrastructures back in government hands and move into other infrastructures that remain profitable including Water and Telecommunications, and those that will again become profitable like Railway networks.

So the basic problem about getting the NBN launched is that it needs to be maximally utilising the existing Telstra infrastructure, and be minimally involved in the retail reselling business component. For this NBN positioning to happen, there has to be a major surgical restructure within Telstra so that the NBN becomes synergetic with Telstra's infrastructure business, while the retail reselling component of Telstra is focussed on reselling as a competitive entity, and this can't happen while Telstra remains as an infighting Goliath, so Telstra needs to be more than structurally split – it needs to have the competitive arm split off as described below:

Sparring Agendas: Bigpond v Telstra

There are several economic agendas and political views that make it seem rather difficult to structurally separate Telstra, or functionally split Telstra, because no matter how it is seen, the Telstra Board will naturally see that their business position will be compromised.

What has to be understood is that Telecom Australia grew out of the Department of Transport and Communications as a Commission from the then Post Master General's Department. Telecom Australia was then moved onto being a Corporation and rebadged as Telstra.

In this transfer from PMG to Telstra, there were several genetic errors that were deliberately sidestepped by economic Monetarists (economics that strongly favour privatisation of almost all government departments), whom I believe had hijacked the World Trade Organisation's agenda (circa 1970) on free trade between countries, and globally forced many governments to privatise their infrastructures or face financial exclusion from free trade. I believe that the Monetarists economic intention was to totally command all the globes infrastructures and capitalise on these huge money velocities for themselves.

The recent USA (and now global) financial meltdown caused by a short supply of oil in the USA due to hurricane Katrina taking out most oil production in southern USA in 2007, resulted in a downturn in the USA economy while most USA-based large Banks had sold 'futures on futures', (in a similar fashion as the Enron debacle in 2002 and the GE debacle in 1928) is continuing proof beyond any doubt that Capitalist / Monetarist greed exceeds our wildest thoughts. Capitalism is entrenched in all human societies, but it needs a balance of Socialism to manage the infrastructure, and that balanced political and economic structure minimises the need for heavy-handed regulation as we have with our ACCC and ASIC.

Telstra is the combination of two businesses that have diametrically different business agendas. One part (I like to call 'Telstra') is the Network / Wholesale / Infrastructure component, and this has an inherently slow infrastructure turnover of about 30 years and is distributed with human civilisation all over Australia. The other part (I like to collectively call 'Bigpond'), which is the retail / reselling component, and this has an inherently much faster product turnover of about 2 to 10 years. This 'Bigpond' part is inherently much smaller, and with Internet, much of its business can now be done on-line.

No matter how the various business units in Telstra are sliced or diced, the same answers keep coming up in that there is one group that is focussed on providing infrastructure for services, and another group that is focussed making a profit with a confusing arrangement of products.

These two groups (or teams) are like two sets of Rugby forward packs vying for the ball and field position; while it makes an interesting spectacle, and an awful lot of energy is expended between the two teams in travelling the ball from one end of the field to the other – far less energy can be expended if the team packs are separated into two distinct areas on the field, and each team runs their ball from end to end of the field without any interference from the opposing team. One team might sprint in a virtually continuous relay arrangement (with a small and light ball probably shapes like a baton), while the other team may simply walk their medicine ball in a wheelbarrow. (There are no rules about the ball remaining the same size, shape and/or density!)

When the PMG was in its last stages (late 1960s) it was focussed on providing services, and it had a shopfront in the Post Offices. Further, as customer and network equipment was far more prone to maintenance, there was at least another order of magnitude more maintenance staff than there are currently in the total telecomms industry in Australia, and so it was common practice to talk directly with those field staff and technicians, and customer service / maintenance was done largely without senior management involvement. With the splitting of Telecom Australia and the Post Office out of the PMG's Department, this left Telecom Australia with virtually no customer interface other than roaming field staff.

As digital technologies were introduced from about 1980, and as globally manufactured equipment was introduced from about 1990, so the need for ongoing maintenance dramatically dropped and the 'family' interface of Telecom Australia was lost with a massive drop in maintenance staff numbers on the 1990's. In the early 1990's Telecom Australia / Telstra introduced shopfronts in an attempt to re-establish a connection with the general public who were by then largely alienated by advances in technology.

Telstra now has several public, on-line, commercial, enterprise, government, and big business retail interfaces that are all focussed on providing a range of retail products that in turn resell wholesale services as retail bundled products. Telstra also has a massive telecomms infrastructure that connects to virtually every human settlement in Australia, with connections to many other countries and some infrastructure in other countries (eg New Zealand).

Through no fault of its own, Telstra has grown these two business arms that unfortunately have diametrically different business charters, and consequently, the constant internal fight is not doing Telstra or Australia any good – so there has to be an entirely different frame of reference brought in to visualise and resolve this problem with an amicable solution.

The Unworkable Frame of Reference
The Telstra Board is naturally totally opposed to any form of separation within Telstra as from the Board's perspective, any change from their structural holding will lessen the share price, because the profitability will be compromised. Even functionally splitting Telstra would be viewed very seriously as this reflects badly on the Board on their professional-ability to optimally structure their own business.

I believe that Telstra is already functionally split, but Telstra is not split along IT and building lines, and I believe that these changes could be implemented with consummate ease so that Telstra could be operated as a building and IT functionally

split business, and this would not affect the bottom line profitably. If Telstra is viewed along its business units then it becomes obvious that some are profitable and others are cost centres.

Although I have not forensically studied the accounting books on this I have a very strong intuition that the network / infrastructure business unit side is not as profitable as it shows. Consequently, telecommunication facilities (exchange sites, ducting, etc) artificially have very high rental rates in the knowledge that competitors will have a very big entry step and a limited funding budget – forcing competitors to pay the high rental price. The flow-on from this skewed accounting approach is that these prices are carried over to Telstra for its internal infrastructure accounting (or vice-versa), and consequently the wholesale pricing is artificially high, making entry as competition rather difficult and the profit margin from Wholesale to Retail is an unnaturally small.

With this frame of reference, it makes complete sense that the Telstra Board would be loathed to separate the Telstra business structures in any form because the retail price is set as a percentage over the wholesale price to more than cover for the retail reselling costs (marketing, advertising, sponsoring, shop fronts, management etc.) and so this area too, shows a healthy profit.

With this old frame of reference based on Competition Regime, every business unit must show a profit – and this is the core of the problem when using this frame of reference! Clearly then, if this core problem is to be resolved, then the Competition Regime mentality has to be put to one side, and the profitably problem has the be viewed through a radically different frame of reference that also includes the some of the Infrastructure Regime.

Unfortunately the Monetarists (Economists based primarily in the USA that have the philosophy that all businesses must be not in government hands as that is 'inefficient' and the only really efficient business structure is one that operates in 'robust competition' with other competitive businesses), have pedantically wiped all literature and teachings of infrastructure business from economics texts in the western world, and they have notoriously branded such teachings as Marxist / Socialist.

(Note that Sweden is a socialist country that has operated exceedingly well over many decades, although many other socialist countries have been isolated from world trade and have had their economies deliberately ruined by 'financial sanctions', instigated by the WTO – which is now controlled by Monetarists!) Professor Sharon Beder (University of Wollongong) has several publications that detail the Monetarists' Competitive Regime strategies – along with the many associated functional flaws.

A Synergetic Frame of Reference
It is very clearly understood that the Competitive Regime has extremely serious structural flaws, and the fact that the Competitive Regime is only successful where there is an equally large Infrastructure Regime to support the extreme inefficiencies inherent with the Competitive Regime. With this in mind, it has to be realised that Telstra – operating under the Competitive Regime, is in a bind where it is trying to be 'efficient through competition' and in doing this, it is hurting the very foundation that it thrives on – customers!

This hurt comes in many forms – particularly through putting the Shareholders interests above the Customers. The Synergetic Frame of Reference needs to put

Customers on the same footing as Shareholders and although neither side will always be happy, there will be far more common ground for win-win situations than there is currently.

If Australia's telecommunications industry (Telstra in particular) is to lose its dysfunctionality, then the Competitive Regime Board members have to identify which business units are naturally profitable, which business units are cost centres, which business units are customer focussed, which business units are infrastructure focussed, and which business units have no place in the telecomms arena.

My brief synopsis of this is that: Enterprise and Government, Metro Consumer, and On-Line Services are the business units that are customer focussed and naturally make profits and are customer focussed, and all the rest lose profits (are cost centres). Countrywide (Non Metro Consumer) is also customer focussed and would in my opinion make a loss, and this is substantiated by the USO (Universal Services Obligation) which the Federal government pays out about $150 M annually to keep this business operational. Personally I believe this figure to keep it operational is substantially higher (like about $300 M annually) because the wholesale /network pricing seems to be held artificially high, as described above.

Telstra Wholesale, Network Technology and Network Design and Construction (NDC) are not retail customer focussed – and would be seen as cost centres – but their rental user costs have been structured (as described above) so that they do not appear to be making a loss. These business units are in reality infrastructure focussed, and/or other wholesale industry focussed, and as such, does not have public customers as their prime focus.

Using this frame of reference in place, it clearly separates Telstra into two distinct areas that have radically different prime foci, radically different mission statements and radically different approaches to doing business. In fact, with this new frame of reference in place, it shows that the crack in business direction is so great that puts senior / executive management and the board in an untenable position where everything is compromised.

Whatever fits very comfortably with the Competitive Regime (the customer focussed business units) is totally unacceptable with the Infrastructure Regime (the infrastructure focussed business units) and vice versa.

This situation means that functional separation is a lose-lose situation, (because the warring Business Units and the warring Board will still be co-domesticated) structural separation is another lose-lose situation (because the warring Board would still be co-domesticated) and so the remaining choice is to spin Telstra apart so that the customer focussed Business Units and its Board are together in a friendly environment; and the infrastructure focussed Business Units and its new and separate Board are also together in their friendly environment.

Spinning Bigpond out of Telstra

With the synergetic frame of reference in place it becomes obvious that Telstra is a two-headed monster that has diametric business initiatives and that by spinning Telstra much further than a structural separation, a Win-Win situation is readily achievable and it does not in any way compromise the Board.

The Bigpond Brand Name

For about a decade, Telstra has grown a brand name in Bigpond, and with a little lateral thinking, this brand name can be used to advantage to be the brand name for all business units that are customer focussed and all On-Line business. There is very little difficulty in changing all the shop signs to be Bigpond instead of Telstra.

Taking this scenario a little further, Telstra has many building sites that are business offices, so it is not that difficult to make a selection of buildings and dedicate these to either Telstra or Bigpond, and move the staff accordingly, and under that bring in another Website that is specifically customer based and have it re-labelled and addressed as Bigpond (not Telstra). In line with these changes, the IT structure can be marginally changed so that Bigpond works with its own servers that are not 'behind the Telstra firewall'.

While this IT and building/ shop relabelling and positioning is going on in Bigpond, Telstra Wholesale should be building its IT interfacing so that Bigpond (and other telecomms resellers) can interface with Wholesale. There are a number of big productivity gains here because the Wholesale side will have to pass customer faults through a service management centre (which is effectively part of the Global Operations Centre (GOC) in Melbourne), and metering will become substantially a wholesale product that is passed into Bigpond as a Retail Reselling process in product bundling.

Locating Head Offices and Buildings

Taking the spin-off a little further, as the GOC is already located in Melbourne (Clayton), and as the corporate centre is in Exhibition Street Melbourne, it makes sense to locate the head office of Telstra Infrastructure Wholesale in Melbourne with a number of satellite offices in other capital cities, along with all the exchange sites etc. With Telstra in as rather prominent positions in Sydney's CBD, one of these buildings could be nominated as the head office for Bigpond Retail Reselling, and the staff could be moved accordingly so that they are in a Telstra nominated building or a Bigpond nominated building.

The direct follow on from this physical repositioning is that the IT system can be openly split so that Telstra / Telstra Wholesale becomes Telstra, and that Bigpond has its own Website and mail server. Once the business units are decided, and the people moved to defined buildings with their own email accounts and files, this then leaves separate company security, pay sourcing and minor business protocol issues to be resolved in the background.

Stock Splits – TLS and BPD

As far as the Australian Securities Exchange (ASX) is concerned, a trading halt should happen and the TLS securities need to be split – probably on a 4 into 3 + 1 basis where every 4 TLS securities become 3 TLS securities and 1 BPD (Bigpond) security; all at equal values. So the total value of the securities will be equal after the

share split, but all TLS share holders will now have a 25% holding in BPD and a 75% holding ion TLS.

Initially the TLS and BPD securities will hold their value because the wholesale price has (I believe) been set artificially high. The Board of TLS being focussed on installing services and operating these at a minimum overhead and profit, will undoubtedly reduce the wholesale price and reduce their dividends, while concurrently, the Board of BPD will maintain their dividends yield, and as the wholesale price comes down, this will give more room for profit in the retail reselling business, so the dividend will increase – which will cause the security price of BPD to dramatically increase. The result is that the TLS security prices will not hold value and these prices will fall away and be sold off (probably back into Telstra itself), while the BPD security price will continue to rise as the wholesale prices are continually lowered.

Now, what has not been said is that Telstra will through this process become government owned, and therefore the infrastructure will become government owned, and run as a Commission and report to the DBCDE. This process takes away the competitive nature of the infrastructure and therefore moves Telstra Infrastructure Wholesale into a position where its critical mass makes it very cost efficient to manage telecomms infrastructure. In fact, this infrastructure will be come so cost efficient that competitive telecomms businesses will find it not-profitable to compete and would probably call foul – but there is an escape clause for these competitive businesses 'get out of goal' (for free)!

Building Competitive Retail Businesses

Continuing the Win-Win
Taking this development of splitting Telstra Corporate into Telstra Infrastructure Wholesale Commission and Bigpond Retail Reselling a step further, there will be several other telecomms businesses (for example Optus) that would be calling foul and looking for lawyers to fight their cause. To avoid this situation, it would be prudent to hold out big olive branch to these companies and let then sell off their infrastructure into Telstra, and here is another big Win-Win situation!

In competitive telecomms businesses selling off their telecomms infrastructures to Telstra, this frees these competitive telecomms businesses up in the same way as Bigpond to entirely focus on selling customer focussed products as services, while buying wholesale services agreements from Telstra.

The other very big win is that the infrastructure that is sold off to Telstra is no longer used in competition against Telstra, but used in synergy with the existing telecomms infrastructure, and this can result in a considerable grooming of the network structure on a national basis. In a grooming exercise that Telstra did at about 1992, Telstra was able to save several billion in otherwise new long-haul equipment. These savings amounted to more than a years' total budget in new equipment. That grooming was done about 18 years ago so merging say; Optus' infrastructure with the Telstra infrastructure would again save several billion in otherwise wasted infrastructure investments.

Starting with the NBN

The NBN Imperative

We know that inside a few decades the worlds oil reserves will have run out and our worlds will be very small except for the Internet, so we have to radically change our way of doing business – think globally and source locally. The cost of oil will rise significantly in the next few years and in that time globalisation, as we know it will start to die out because transport costs will be too high, and this is why we have to proactively re-learn to source locally.

To compound this issue, we are now fully aware that the world's climate is changing – it is getting significantly warmer and we now know that this is being caused by the oil and coal that we have burned in the past couple of centuries to provide our energy and transport requirements. By far the lowest transport cost will be that using various electronic mediums particularly fibre optics and one of the main products that uses optical fibre is Broadband Internet. Australia is an isolated continent, and therefore we have to proactively position ourselves globally to take every advantage possible with electronic transport or we will be isolated from the other world economies to our disadvantage.

The Australian Government therefore has a time-constrained imperative that within about 5 years to get almost all of Australia connected with Broadband Internet such that business through teleconferencing is the norm everywhere. This is the imperative of the NBN.

A $42 Billion Question

Considering that the typical telecomms infrastructure spend (investment) in Australia is in the order of $5 Bn per year (1990 – 2008), then over eight years $42 Bn is in the ball park if all these funds were put into telecomms infrastructure, and this infrastructure was owned and managed by one business.

Take into account that Telstra needs to spin off Bigpond within say 24 months (as described above), then with Telstra as the body that is putting in the telecomms infrastructure, the investments of $5 Bn annually is probably a bit too low, but as I have shown earlier, telecomms equipment prices have fallen by about 10% annually (or in reverse you get an extra 10% bandwidth annually for the same investment), so over say 8 years the bandwidths are about 214% larger by then, meaning there will be technology breakthroughs that will substantially reduce the per capita investment requirement.

The Missing Inland Backhaul Backbone

In 2008 I submitted a substantial (36 page) paper to the Expert Committee on http://www.archive.dbcde.gov.au/2009/april/national_broadband_network/submissions/Malcolm_Moore.pdf Telecommunications about the NBN, and on pages 24 to 27, I outlined the scope for the basic structure for an inland eastern continental high capacity backbone that would provide the synergetic backbone for international connection to China and South Asia, and provide the necessary backbone for inland cities and towns to connect with considerable backhaul capacity, while providing a mesh of alternate routing for the eastern coastal cities.

I still consider this to be central to providing the core backhaul for many inland cities, towns and villages through NT, QLD, NSW, VIC, and SA. The engineers behind the development of the NBN need to have this knowledge, as without this backbone

there is virtually no way that FTTP can be provided with any comparative degree of efficiency, even if Next G and Wimax solution are available to provide radio Broadband to the most isolated customers.

Conclusion

There is no doubt that the world's oil supplies are fast drying up and Australia has a pressing imperative to get itself well entrenched in the Broadband Internet mode of transport or be literally isolated from the rest of the world, as physical transport will become very expensive and time consuming in the next 20 years.

The Federal government's NBN initiative is well founded but it has a major hurdle in that building yet another telecommunications network over what is already in place is a fools dream, and a far more economical solution must be arrived at and in the near term. The problem is that Australia already has a very extensive telecommunications infrastructure, but it is in private hands and in another government's hands (thanks to short term thinking about privatisation and following the folly that the competitive regime is far more 'efficient' than government business). The immediate imperative is that the NBN needs to be aligned with the existing national telecomms infrastructures before the NBN is constructed.

This submission has provided a series of answers from an alternative frame of reference that let the NBN programme be positioned on a solid footing within a nationalised Telstra Infrastructure Wholesale while Bigpond Retail is the rebadged Telstra on the ASX without the infrastructure baggage.

Many answers to impending questions have been provided in good faith. My experience and expertise in telecomms industry covers several decades and being an active securities investor has rekindled my interests in economics. I hope that these conclusions are taken seriously on board and that the NBN gets properly footed before it is subcontracted out and/or installed and commissioned by NDC

Biography

Malcolm Moore was raised in Blayney in Central NSW Australia, and later educated at The Kings School 1960-1965. He trained with the Post Master General's (PMG) Department and qualified in 1971 as a Telecommunications Technician, specialising in Radio and TV Broadcasting Equipment, Long Line Transmission, and Network Switching. Concurrently, he also completed the "Electronics and Communications Certificate" in North Sydney Technical College (TAFE), then passed the Senior Technician Barrier exams in Research, Transmission and in Radio, advanced through Senior Technical Officer.

Malcolm qualified with a BE (Elect.) at NSWIT/UTS in 1983 and worked in Telecom Australia as an Engineer in Network Construction, Forward Network Planning, Network Switching, Transmission Planning, then Long Line Maintenance. He was headhunted in 1987 by Network Investigation to resolve transmission related intractable customer service issues, and introduced several Quality process improvements to nationally minimise echo and stabilise transmission levels throughout the national switched network.

Being an active member of the Telecommunications Society of Australia (TSA) - (now the Internet Society of Australia) he took on the role as NSW Branch Secretary for three years (1991-1994).

As Manager Service Quality Improvement, 1993, he headed teams of specialists in Brisbane, Sydney, Melbourne and Adelaide to proactively improve customer service standards and this program involved all Telstra Business Units and most technologies. He was instrumental in nationally specifying and quantifying the Customer Access Network (CAN), and developed a range of proactive network-based testing techniques that minimised customer service issues in that area. He also worked with EDL Australia to develop a very cost-effective hand-held Voice-band test instrument (Netlink EDL-423) that proved the connection and tested the service so that difficult Voice-band faults could be identified and immediately acted on.

His several Specialist Technical/Engineering teams proved very powerful in minimising the switched voice channel level variations in the Inter-Exchange Network (Backhaul); making Dial-Up Internet both practical and reliable. Two of the Specialist teams were coordinated to harness the power of Network monitored Common Channel Signalling (CCS7) in the Backhaul through the development of a distributed computer-based monitoring system to perform live-analysis that processed about 30 Million live CCS7 mature sequences daily and produced a wealth of leading information to enable network faults to be addressed well before customers were even aware of problems.

Apart from being able to provide focussed call tracking data (primarily to identify and resolve customer fraud situations), this system also measured call metering to the one thousandth of a second as a reference for customer metering and customer billing issues. He produced the business case to extend the trial system to a full working system with an investment of about $16 M.

Because of major technological advances over these years, it became possible to establish one Global Operations Centre (GOC) in Melbourne and primarily because of family commitments Malcolm decided not to move to Melbourne, so he left Telstra in 1996.

While with Nortel, from 1996 as a Project Engineer, Malcolm was part of the team that commissioned the New Zealand South Island (Wellington - Christchurch) Optical Fibre SDH / ATM ring with wayside TV and telecom network structures. Later, as a hands-on Project Manager he successfully negotiated, installed and commissioned Australia's first working telephony on CATV services at Ballarat in 1997. As a Bid Manager in Nortel Networks, Malcolm gained a wealth of financial and corporate relations knowledge as well as extending engineering expertise in several areas including SDH, PDH, VoIP, Frame Relay, Internet, TCP/IP, Digital Video, CATV/HFC, Internet on HFC, ISDN, PABX, IVR, Call Centres, Servers, Routers and wide range of IT infrastructures and business models. Because of the severe downturn in the Asian economy in 1998, and the impending 'reverse takeover' with Bay Networks, Malcolm again found himself redundant in late 1998.

Following a few years voluntary teaching seniors how to use computers at the Turramurra Seniors Centre, Malcolm took on the role of the Development Manager for the Australian Seniors Computer Clubs Association (ASCCA) in 2004, where he gave it a national focus, a simple Trademark logo, which then led to standardised processes and a simplified Website layout; championed Broadband for seniors and aligned various club notes into course structures in teaching seniors how to use and get the best out of personal computers. While there, Malcolm increased the

membership from about 40 clubs mainly in NSW to well over 90 clubs Australia-wide within 18 months.

Malcolm has responded to several Senate Hearings relating to the telecommunications and IT industry in Australia. Some of these responses are included in his Website and they have been shown to be accurate predictive forecasts and reports because of his extensive experience in many parts of the telecommunications and IT industry in Australia. In compiling these reports and attending several Senate Hearings, Malcolm identified that Competition is not the panacea of poor productivity, and that this argument too thin to be believed. He then 're-invented' the term "Infrastructure Business" and created a series of short papers on this Business Management style and some of these papers are also included in his Website.

Over several years, Malcolm developed a comprehensive in-depth knowledge of how to use Technical Indicators in the Australian Securities Exchange, and then created a focussed range of Technical Indicators specifically optimised for live data trading, medium term trading and medium-long term investing. He has since then created and developed a VB6 software program that captured and analyses live ASX trading data on the fly.

In January 2006 Malcolm joined Silcar Communications assisting the Health, Safety, Environmental and Quality area, where he used his organisational and computing expertise to radically simplify the reporting process, then developed a Training/Qualifications database to coordinate and raise the companies staff training levels; these Quality process improvement were nationally adopted, cutting the processing time from several days per month to a few hours per month.

In mid-2006 he moved across as a Project Engineer to manage the User Acceptance Testing (UAT) for Telstra's High Speed IP Broadband Multimedia Services (BMS) platform in NSW - which was contracted to Silcar Communications. He developed Quality process improvements to simplify the testing and reporting procedures. He then moved across to be a Project Supervisor for new BMS installations - installing the Broadband IP infrastructure in Sydney's metropolitan Backhaul. Malcolm then followed through with Supervising major Telstra installations and commissioning of DDN / DMO / IP / SCN equipment in Telstra's telephone exchanges within NSW - building the Broadband IP Backhaul infrastructure beyond Sydney metropolitan areas so that country (regional, rural and remote) areas could better utilise proposed Broadband IP CAN technologies. Malcolm chose to leave Silcar Communications in July 2007.

In February 2008 Malcolm was asked at Market Clarity to provide expert opinion on the geographic coverage of ADSL in Australia - down to street address level, by all competitive ISPs. Following this rather complex analysis, Malcolm then developed a set of comprehensive database tables that described the network coverage and connection capacities of the Advanced Australian Research and Educational Network (AARNET), and this was finalised for Market Clarity by mid August 2008.

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