

**Response to the
Senate Inquiry into the
Australian
Telecommunications
Network**

2002,

Malcolm Moore
PO Box 147
Turrumurra
NSW 2074

A: Regional and Remote Network Capacity

Reference:

The capacity of the Australian Telecommunications network, including the public switched telephone network, to deliver adequate services to all Australians, particularly in Regional and Remote areas.

Response:

There is no doubt in my mind, and from my more than 35 years of experience with the Australian Telecommunications network (including Technical, Engineering, Management, and Sales) that the telecommunication standards have changed and the public perception of what is a satisfactory service have also changed. These changes are largely technology driven, and introducing technology into any arena is an expensive exercise, so it is usually done with caution, careful planning and timing, so that the needs of the end users are met with the least perception gap possible.

Since telecommunications competition has been actively introduced and carried through by successive Governments and Oppositions, there has been a continuing pressure for Telecom/Telstra to perform equal to or better than more recently introduced competitive forces. These more recently introduced competitive carriers have no legacy equipment or policies at initiation and as they age they all develop legacies that reduce their capacity to perform without limitations, so this practice is in reality a no-win situation.

Simultaneously with this drive for better telecommunications service and standards, telecommunications technologies have substantially changed from extremely analogue and electromechanical to extremely digital for the inter-exchange network and the customer access network (CAN) is becoming digital too. [The many mobile networks are also digital (and have been) for their network switching.]

This series of technology breakthroughs has provided several outs for political parties to distance themselves from full competition model, no-win situations, but to date, no political party has seen the light and used the changing technologies as a stepping stone to move away from the competitive model. Maybe this is too complex for economics philosophers to actively analyse and put into simple political rhetoric, and in so doing, drop the business / full-competition model, in favour of a community infrastructure model.

It would reduce the companies on the ASX and that would be viewed as negative, even though Telstra and Optus are losing value, One-Tel has cost Australians hundreds of millions in its failure, and other small telcos are now looking very sick or have already sunk. I wonder how many times politicians need to be told before they actually understand that telecommunications is not a only a business infrastructure but it **is** the lifeblood of the community infrastructure.

Technology Changes

The moves to digital transmission switching, digital transmission and digital management were not due to competitive forces, but by engineering decisions driven by vastly reduced overhead maintenance and operational costs, along with much higher and far easier to maintain higher levels of performance.

As with all physical components in any system, for example: clothes, trains, cars, televisions, computers, yes – even transmission and switching equipment, and cables, there is a finite physical life, beyond which the maintenance costs exceed the running costs and at that time, installation of new equipment is mandatory. This all comes under the term of “Life Cycle Management”. In another language this is called ‘legacy systems’

In the case of digital telecommunications equipment, not only does this equipment now lend itself to very cheap mass production methods, through it's synergy with computer based technologies, but the reliability of these technologies is at least an order of magnitude (10 times) over the earlier electromechanical and analogue techniques. The consequence of mean time to fail (MTTF) figures is that the reliability of these digital technologies will far exceed their analogue and electro mechanical predecessors. Unlike electromechanical equipment which has a gradually increasing fault rate with time, computer like equipment has a high infantile mortality (which in any case is very low); then the fault rate falls away very quickly, and stays almost insignificant for decades, then rises sharply towards the end of its useful life.

Engineers pushed for digital technologies for long distance communications using optical fibres, not only because of MTTF reasons, but they knew that digital transmissions regenerate their codes. In this regeneration phase: error detection and correction is included meaning that distortion is not a major issue as it was for analogue transmission systems. In the analogue case, the signal is not encoded and re-generated but re-amplified so level variations and distortion was a major issue – and maintenance was intensive.

Further, engineers pushed for optical fibre as the distance bearer of choice, because the installation and commissioning costs were minuscule in comparison to analogue and coaxial and / or radio / satellite solutions in most cases. Satellites were and still are a very expensive technology in comparison to optic fibre, and optic fibre to the home in remote situations may again be the bearer of choice over copper, radio and satellite.

Realising that much higher traffic densities were possible with TCP/IP on ATM, it was again engineers that paved the way to introduce this technology. The reasons were simple: the optical fibre bearer was already in the ground and fully utilised and the engineers needed to come up with an ingenious method to get better utilisation out of scarce resources. So they did, and would do much more but most telcos have been stripped of their engineers and replaced by consultant accountants, lawyers and sales and marketing teams – none of who have the education, knowledge or ingenuity to strategically develop infrastructure!

Network Topologies

It has to be understood that the nature of metropolitan telecommunication networks and a rural/remote telecommunication networks have divergent topologies. These need to be very briefly outlined before the discussion gets any depth.

In the metropolitan case, the networks are usually meshes, where several centres are connected directly from several other centres. Also in this case, the distances between these centres are small, and the number of network nodes is relatively high, so setting up networks in ring/mesh structures is a sound engineering approach. It is this type of network topology that is predominated in metropolitan areas, simply because of the traffic and population densities and although very expensive to implement, it provides a very cost-effective solution.

In the country, rural and remote case, the telecommunication networks are almost always tiered star arrangements, and the switching is then usually parented off more than one major centre as a measure of network redundancy and congestion management. Distance is the major issue here and it can be very expensive to implement even a star network to few customers, and it is definitely not a commercial interest.

So business-focussed non-holistic telecommunication companies will not be establishing and installing telecommunication networks in regional and country areas. They will instead purchase the wholesale use of an existing telecommunication network and then retail that to

the customers. All this means is that there will be a second parallel set of retail staff managing a set of limited resources (the customers in a particular area). The Southern Telephone Company is a typical example of this philosophy.

In metropolitan areas it is not uncommon to have phone (multiple lines at will), fax and analog modem services capable of at least 24,000 bits/s. If the cable has not been already used for Pair Gain Systems (PGS), then also Asymmetric Digital Subscribers Line (ADSL), PABX facilities including B-ISDN and N-ISDN (OnRamp in Telstra language). To top it off, multiple mobile phone networks leased lines, Virtual Private Networks, Cable Television, and Cable Internet. And on all of these services the total congestion rate is usually low and the delay of a deferred applicant is usually less than a few days at worst. That is a pretty wide array of services and in rather good condition for most metropolitan customers.

In urban (non-major metropolitan areas) it is not uncommon to have phone (occasionally multiple lines at will), fax and analog modem services capable of at least 24,000 bits/s. If the cable has not been already used for Pair Gain Systems (PGS), then also Asymmetric Digital Subscribers Line (ADSL), PABX facilities including B-ISDN and N-ISDN (OnRamp in Telstra/Alcatel language). Also, a mobile phone network, leased lines, and Virtual Private Networks (VPNs). And on all of these services the total congestion rate is usually medium to high, with deferred applicant having to wait from days to weeks as normal I would believe. That is a fairly wide array of services and in rather good condition for most urban non-metropolitan customers.

In non-urban areas it is not common to have phone, fax and analog modem services capable of at hopefully 9,600 bits/s, and *maybe a mobile phone network*. **That's it!** And on all of these services the total congestion rate is usually high, and I would believe that the deferred applicant for better services would range from months to years. That is comparatively a fairly low array of services and in rather fair to poor condition.

Conclusion

The problem in non-urban areas is that the infrastructure is not there as it is in the metropolitan areas in CBDs, and as stated before it is not a profitable business to be in as these services (under conservative business planning guidelines) will be the first to be dropped. In this case a business model is inappropriate and a community model needs to be developed, as it is vital for all Australians, no matter where they are located in Australia, to have metropolitan like communication facilities, as this is the information age and not the industrial age.

Services that need to be readily available in the non-urban areas include ADSL, mobile networks and B-ISDN on top of the existing telephony services. If the urban services were to be introduced in those areas, then Engineers will have to innovate new techniques to extend the services common in metropolitan areas to rural and remote communities. Further, the traffic densities in the infrastructure needs to be rigorously upgraded, by including intra-regional (not flat) ring optical fibre networks in country areas, and these optic fibre rings linked at major country centres to provide wide geographic diversity and low congestion for rural growth areas. These rings would provide a high traffic density capability with wayside access at most small community centres. Only then will Australia have the infrastructure to provide adequate services to all Australians, particularly in regional and remote centres.

B: Equitable Broadband Services

Reference:

The capacity of the Australian Telecommunications network, including the public switched telephone network, to provide all Australians with reasonable, comparable and equitable access to broadband services;

Response:

The dilemma is that we are expecting to have the same or a similar set of products available in rural and remote areas, as we already have in metropolitan/CBD areas; simply because we have deemed it appropriate that all Australians should have an equal chance to do business and/or communicate, and make distances and/or population densities non-issues. This is a very tough call, but we do have technologies at our finger tips that can go a long way to make this a reality, but to do so, it requires long term planning, with a truly national (holistic) approach, and substantial and continuous funding. It is not a political item that can be fixed in one year or political term and be tampered with the next year or political term. As stated above, the policy is to provide as far as possible, a comparable (ie adequate) telecommunication network services to all Australians – including Regional and Remote areas.

In a very recent case, I was investigating the possibility of assisting seniors to learn computing in Merriwa, a smaller town in the upper reaches of the Hunter Valley in NSW. Barely what could be called Remote, more like Regional. As I understood it, they have an ISP (Internet Service Provider) there at the CTC (Community Telecommunications Centre) and it is connected to an ISDN line (128 kbits/s) from Maitland, and that is the best that can be done – and optic fibre passes through the town and there is no wayside connection to the best of my knowledge. I live in a metropolitan area and have cable Internet at home and have had so for years. If I were to live in a country area, I would expect the same services.

This to me is a disgrace as if it is correct, then it speaks volumes for the lack of infrastructure in the non-metropolitan areas of Australia. There will have to be a very concerted effort to construct a series of linked optical fibre rings throughout all of the Regional and Remote areas of Australia. Only then will the infrastructure can me of such a traffic density that it could manage ADSL and Cable TV including Internet in remote areas effectively. An alternative may be to use satellite to the most remote centres only and radiate with optical fibre from those centres, but the bandwidth of satellite is very narrow compared to optical fibre, and the running costs of satellites is immense – making very poor commercial sense.

In my mind, no ISP should be allowed to connect with a pipe thinner than a Megalink (2.048 Mb/s). Further, there needs to be rules set in place that limits the number of customers per nominal ISP – Internet pipe, so that ISP/Internet link congestion is managed and performing to an Australian performance standard. That activity would wipe out a large proportion of ISPs that are operating in conditions that I would consider to be very sub-standard. It would force the issue to place the necessary infrastructure to match the needs of Regional and Remote communities, as though they are part of the metropolitan community.

Over the last few years there have been some very interesting programmes of handouts by various Governments to ‘give’ Regional and Remote communities the services they would have already had, if these same politicians had not stripped Telstra of national planning and infrastructure development, Research and Development, and impressed a business model on where a community model was very effectively working.

One of these was the Networking the Nation (NTN) which I believe is in its fourth phase of rollout – and strangely enough receives very little publicity! In almost all cases, the

communities have to put together a business case and plead for the funds for a particular service and then if they are lucky, the funds for the service is provided, and they then have to contract out to have it put in place. Compare that farce to a Forward National Planning Branch that with R&D in hand, is constantly looking at future technologies and developments, and how they can put these into the Australian community, a Planning Branch that ensures that the infrastructure is in place to match the projected growth needs and a Network Construction Branch that installs the equipment on time under budget, and with the Quality approach to minimise rework.

The latter is very efficient, very effective and has a very small overhead. It was the introduction of competition that skewed the planning of infrastructure to be heavily biased to CBDs and metropolitan areas. The business competition model also broke up a holistic planning function – leading to duplication of unnecessary long distance services, and the omission of services in the Rural and Remote areas.

Unfortunately, the NTN initiative is also based on the business competition model, and it tries to fit into the community model, but of course it does not fit – hence the business cases, the tendering, pleading, and the apparent service provision. I am very sceptical of this whole process, and it is time to give Telstra CountryWide the charter to manage its affairs by giving NTN to them – no strings, and let them run as a community service, not a business.

Another classic is the CTC (Community Telecommunication Centres) in NSW – to be run as a high paying business in a community that is low in funds. I think it is the right intention, but the wrong model. As I understand it, Queensland has a similar model and I am surer that other states have followed track in sorts. I wish them well in their endeavours.

Conclusion:

The Australian public telephone switched network (PSTN) is, I believe well positioned to provide high quality (highly repeatable) connections to anyone else in the Australian PSTN. The PSTN has largely been replaced by the ISDN as infrastructure and in distance conditions, TCP/IP is used to advantage to provide very high traffic density on optical fibres.

I have no doubt that Regional and Remote Australians cannot be provided with comparable BroadBand service to those in CBD and metropolitan areas. This is simply because the joining infrastructure is (I believe) not there and will not be until there is a major change in Government policy, and they drop the Business model, and replace it with the Community model. When that is done, and Telstra CountryWide is given the charter to totally run NTN without Government or other business interference, then there is a good chance that it will occur, but it will not happen ‘over night’.

I believe that the main problem is that of providing adequate bandwidth infrastructure to all Regional and Remote centres. With that in place, services like effective ADSL in all towns with a population greater than (say) 120 will be a reality, as will wide coverage mobile services – beyond the highways.

Currently ADSL is pushing to get to 3.5 km from a DSLAM (Digital Services Line Access Multiplexer), and different technologies (other than copper pair) will have to be introduced to provide both long distances and wide bandwidth to customer premises – again – optical fibre could be promising here.

C: Improved Investment Patterns

Reference: Current investment patterns and future investment requirements to achieve adequacy of services in the Australian telecommunications network.

Response: As I understand it, the Australian telecommunications network is now a conglomeration of some thousands of very small businesses, several hundred small to medium size businesses, and some multinationals.

These businesses are all looking at the bottom line and through that, they are focussed on returns for their investments, and simplistically that must be seen to be very good for the business economy – but not for the masses, nor for smaller businesses nor for regional and remote Australians and their communities.

The endemic problem stems from the need to make money on every deal, and greed to make as much money on every deal as possible – and this is standard business practice. As this business model is applied over any community all but the bigger businesses pay the price. Major Governments and major Opposition parties will not see this as a problem as they are very heavily supported by major businesses, who, naturally press to have laws relaxed in their favour – after all that is business – not a community issue.

Big businesses and multinationals are able to and do change the laws on the countries that they operate in. They also have considerable ‘bully’ power and are lean on overhead management costs. Contractors and sub-contractors have very little ‘bully’ power, even the reverse, they are the ones bullied, from both sides, their clients and contractees. The net result is that contractors and sub-contractors have to drop Quality practices and work on piece-time accountancy practices. This cannot be good for the Australian community.

When Optus had its major network installed, I understand that contract, and a subsidiary (arms-length) Telstra company that won that contract did it. I heard it on very good authority that Optus were very pleased with the arrangement as it was on time, under budget (about half that of competing multinational companies), and the Quality practices exceeded any other previous contract that Optus’ parent company had struck in the globe.

Recently I was made aware of a not so small business that was drawing cables under contract for a major communications company. They had to make considerably more underhand payments and client favours (eg build fences, dams, contour banking, make roads, extra wiring) with their equipment than when these same people were working WITH the major communications company. And they had to come in with a profit margin. No doubt the contracted price was much higher than with a major telco as the backing.

It should be very obvious from these two situations, that Quality practices and critical size are the imperatives for improved telecommunications installation businesses.

Investment patterns for the Australian telecommunication network is a community issue, and in that light, business must be a major part but not the controlling part – and that is the dilemma. In the days before ‘competition’ there was one major and very highly co-ordinated body, making sure that the investment capital used for the Australian telecommunications network was very wisely spent. Duplication of services was virtually impossible and in much earlier times, (when telecommunication equipment was particularly expensive) service occupancy rates were extremely high, making virtually full utilisation of the network on a long-term basis a reality. The problems of extreme network congestion meant long delays to

get a through connection, several hours wait was not unreasonable in making a call Melbourne - Sydney – Brisbane, and connections to Perth meant sometimes days delays.

As technologies have changed, the costs of telecommunication equipment has come down significantly, and here are a few examples: The introduction of printed board assemblies (PBAs) carved the production times and costs of telecommunications equipment, as did the introduction of transistors (to reduce power consumption), ferrites (to improve filter designs), analogue integrated circuits (ICs) (to improve system stability), digital ICs (to improve network management equipment), digital switching (to drastically improve both switching capability and reduce maintenance), digital transmission (to radically reduce the investment cost and greatly improve the performance standards of long distance transmission), optical fibres (to replace very expensive coaxial cables, and radio systems) and digital computers (to totally compliment the productivity improvements all of the above).

While this telecommunications technology revolution took place over the last 40 years, most politicians had their eyes taken off the ball and were re-focussed on the business bottom line, and not the total Australian telecommunications network. The consequence of this is that the politicians were focussed to see the rising returns for telecommunications, and they were being pressed by a very big external power to introduce ‘competition’ as this political power had manufacturing businesses that were pushing to sell their wares.

As a result of this, Australia and most other countries were caught up in a frenzy of stripping government owned and managed assets from governments and handing them largely into the hands of shareholders, who are totally focussed on asset growth and return on investment. The ‘sell’ on this was to let people actually buy what they already own and had inherited, and a high proportion of Australian businesses bought it (and expected the value to continue rising, assuming that it would be managed by conservative forces who in the past had an impeccable record). Simultaneously, the regulations were pulled out and watered down so that lesser equipment standards would be allowed in. There was a problem here: Australia was firmly locked into the International Telecommunications Union (ITU), and the standards did not fall, so the ruling body was broken up to make things ‘more flexible’. QED.

Now with competition, the sell was that prices would fall, but instead of one management organisation to feed, there were two, then three, then many. Worse still, instead of working together to provide the Australian telecommunications network, these businesses worked in opposition, and duplicated many networks and services – making an overall more expensive network than before, and over capacity. In other words, the majority of Australia has been over provisioned for big business (CBD) based networks and services and severely under provisioned for non-CBD, metropolitan, country and remote services and equipment.

As if this was not bad enough, one of the Governments intervened and refused to allow cross subsidisation from a profitable area to a lesser or non-profitable area (Country), and that meant that from then on – country, rural and remote areas would have a minimum of services provided – but Telstra had to adhere with the Customer Service Obligation (CSO) in any case. It is standard practice to apply cross subsidisation in any business; especially those based on community needs. Families are classic cases of cross subsidisation where parents support their children and help them grow. Rules for some but not for others!

In about 1987, Telecom/Telstra set up a Country division, based in Brisbane as its Headquarters and it managed their customers very effectively. I believe that it was so effective that it embarrassed the Metropolitan Division and consequently it was broken up in about 1996. Why are we not surprised that a ‘new’ Country Division has recently been

created? The alarm bells should be almost deafening to all but the most inept politicians, that the investment processes particularly in Country regions are an accumulative disaster, Telstra is doing all that it can for these people and the money that has been stripped from Telstra through 'competition' is not being wisely invested.

Networking the Nation (NTN) is a classical case of open admission that the Federal Government got it totally wrong when it stripped the funds from Telstra, gave these funds and 'freedom' to competitive forces, and then opened their pockets for isolated communities to plead for services that they would have received – with solid infrastructure – to make it all work correctly.

With the Government push for full-on competition the lateral investment in advertising and marketing meant that considerable funds (resources) were deflected from core businesses - (that of providing a well engineered and overall cost effective communications network infrastructure network for all Australians), into advertising, sponsoring and the introduction of heavily duplicated products by competitive communications based companies. This cannot be a cost-effective solution to 'drive down' call costs.

A typical example of the destructive nature of governments (and oppositions) intervention through introducing full on competition is the multiplicity of mobile phone networks. In each of the main capital cities there are typically 4 GSM networks and 2 CDMA networks, each costing at least \$50 M to install and another \$50 M to connect and each of these 4 or 5 companies has management overheads, management systems and technical and engineering staff. The customer issue is that none of the networks provides total coverage and many country areas have missed out. Call costs have to reflect the equipment installation and commissioning costs, and ongoing overhead costs for the 4 or 5 companies. So thanks to governments and oppositions the "driven down mobile call costs" are heavily advertised in TV, and call costs much higher than they would have been without the advertising, multiple managements, technical staffs, thin (duplicated) geographical coverage in metropolitan areas, and lack of infrastructure and coverage in country and remote areas.

Cable Television is another debacle where I estimate that between \$2 B and \$4 B has been wasted through duplication of service access. It is obvious that content is the big issue here, and a deal needs to be struck to allow Optus to let go of this disaster, before it too, like One-Tel is shaken out of the market. Australia is too small in population and too large in area for full on competition.

Currently we apparently have more than 1,000 Internet Service Providers (ISPs) in Australia. We are also looking for self-regulation, and such a thing is very difficult in a shakeout market as every one is getting more desperate to stay in business with less revenue. The market shakeout merely provides customers with temporary deflated prices, and sagging service standards. When the surviving telco are left, they have an awful legacy of low price expectancy from the customers, poor standards of equipment being integrated into a much higher standard network (from the failed companies) and job losses that make the major telcos look mean and uncivil. In all this the surviving telcos have to hold the prices while they re-port the customers that lost their ISPs, provide a better service than what those customers had before, and make a profit – if it is business based. Another very tough call.

Non-holistic businesses focussed telecommunication companies have established and installed telecommunication networks in and between major CBDs and metropolitan areas. This is simply because the population density and the demand for services per unit area was high enough that they can undercut the established telecommunications companies (because

there was no legacy equipment and services there) and for a relatively short time – a few years – provide a superior service. If by then these parasitic companies have not already failed through poor planning and/or excessive payments to their Directors, they will attempt to offload their network to a more established telecommunications carrier, and move on. They are not community minded; they are ‘business’ minded.

Conclusion:

The alarm bells should be almost deafening the politicians, and telling them that we have another communications disaster that is waiting to happen. We have the telecommunications index on a freefall on the stock market, and several companies have drastically lost value or decided to close business, as their business plans did not show value. One wonders who signed off on these business cases and what accountabilities they had to sign off on such.

Those politicians that are not inept must by now be realising that telecommunications is not only a business issue but a community lifeblood issue also, and that the community needs to take precedence and the business will follow later. Currently we have the “Cart in front of the Horse”! This is the reason that the current investment patterns in overstocking the CBD/metropolitan networks and starving the Rural and Remote networks, is heading for a disaster.

The community issue here is that people will not live in Country / Rural / Remote regions of Australia because the communications in these areas is so poor in terms of Internet, mobiles and Cable TV. (Satellite TV is a compensating factor.)

Currently we have a very high number of business managers overseeing a plethora of telecommunications companies and contracting arrangements. The true picture of just how many people who are working in the telecommunications industry is heavily shrouded by contract arrangements making the figures look a lot ‘cleaner’ (or lower than they really are).

The Government in providing ‘handouts’ in the form of NTN grants and the like is a very piecemeal approach that is extremely ineffective and cumbersome, and this funding goes primarily into the Regional and Remote areas – administered by Telstra CountryWide – after a long paper trail is exhausted. It makes a lot of common sense to me for this whole charade to be channelled directly into Telstra CountryWide, and let them do the job without Government intervention. In that way, the infrastructure would be put in place and the services provided and the overheads would be minimised – on time and under budget.

The Government has to realise that if it sells Telstra, it will still have to provide continual support to Telstra CountryWide and it has to run in a business approach (as it already does).

In this situation Telstra CountryWide is not a sale item, but a main Government infrastructure provider. Likewise, Telstra Residential is not a sale item – as it makes no money. That leaves Telstra Business/Government – and its role is also therefore to support Telstra CountryWide with funds and expertise, such that the Government does not have to fund Telstra CountryWide!

It makes common economic sense for the Government to buy back at a reduced price the part of Telstra that was sold – and leave it an arms length Government business!

D: Telecommunications Industry Restructure**Reference:**

Regulatory or other measures which might be required to bring the Australian telecommunications network up to an adequate level to ensure that all Australians may obtain access to adequate telecommunications services;

Response:

It is very obvious to me that there is serious network duplication in several areas and in other areas the networks are all too thin. There is no national body that holds a registry of all commercial circuits/networks/links, and to me this is a tragedy as we should know that we are investing in the best network for Australians, and not just a few multi-nationals, and large companies.

As such I am proposing that a central registry of all commercial links be placed in the hands of a government body that is essentially remote from all telcos – somewhat like how AUSTEL was. This body could then advise telcos of duplication or worse, and advise telcos of where the network structure really needs building. Further it would rein in the plethora of ISPs and provide them with a charter of service standards for them to report back on and hopefully in near real time.

It would become the Australian Telecommunications Network Planning Bureau and be the central advisory body. It would encompass / take in several satellite bodies including the ACA, ACIF and other lesser groups.

Conclusion:

As per the response.

E: International and Other Ratings

Reference:

Any other matters, including international comparisons, which are deemed relevant to these issues by the Committee.

Response:

Competition, Sales and Marketing

Competition was I believe, introduced as a front to 'drive down' what was seen as 'excessive telecommunication costs'. The first approach was to publicly disgrace Telecom Australia (and all the people that worked in it) by comparing internationally the local, regional and inter-regional call costs related on to time and distance. The finger was then pointed to where the figures for Telecom Australia did not look better than 'competitive carriers'. Surprise, surprise there were no geographically similar countries, direct comparisons were made with countries having much higher population densities, and when these figures were more closely analysed, Telecom Australia came out looking quite good – but these figures were not considered. Jack Keavney's book "The Time for Truth" uncovered this farcical debacle and showed the deception for what it was.

In 1980, the first digital exchanges were installed in Australia – but these all connected to analogue equipment, and it was several years before digital transmission networks could make these digital exchanges show real value. The operating costs were coming down because of technology issues, where obsolete equipment like coax cable, valve based equipment, and step-by-step exchanges had to be replaced, not because of not competition, nor market forces. The maintenance costs were spiralling, and the service performance was falling quickly, and replacement was overdue. The godsend was optical fibre with digital transmission techniques, and the synergy of digital switching exchanges (with virtually no moving parts), with digital transmission, went well beyond what happened with analogue transmission, and analogue electromechanical exchanges.

Competition?

With the introduction of competitive communications carriers, several 'Gateway' exchanges had to now be included into the non-international inter-exchange-network – and at considerable expense. Somebody had to pay for these exchanges. As I understand it, good old Telecom/Telstra paid for these exchanges. Which means that the public had to fork out for these through call costs, service fees and line rentals, that otherwise would have been significantly lower if 'competition' had not been introduced.

Telecom/Telstra also had to put up space in their telephone exchanges to accommodate these competitive carriers – at as I understand it Telecom/Telstra's expense. This news received a very low priority – almost like it may have been suppressed. As I understood it, this exchange space access was done to give competitive carriers a springboard chance. No doubt if these are small communications businesses they could never afford it and their call costs would be immense to accommodate these setup expenses. Large communications businesses no doubt got a free ride to rip into Telstra's business and make it even less profitable for Telstra. In that process it forced down the then current Telstra 'profit margin' (read re-investment capital). This was not competition forcing down call connect prices, but a very inept then government (and opposition) move to unwittingly kill off the best run business in Australia, cripple research and development (R&D) and push Australia back to a gravel pit economy.

It must be obvious to all but the most inept business people that the business model for competitive carriers in Australia cannot work unless serious capital is invested in the short

term **and** in the medium/long term, the returns must well exceed the investment to be profitable.

This is therefore a very scary business plan, considering that the usage costs are trending down, meaning that the long term (>3 years) profit can in no way be guaranteed. This means that the short-term business plan must be positive, and that the new products brought on line must show a very positive cash flow, and that the customer solution must be selective to accurately target the highest usage and therefore paying customers. Optimistically a 1 in 10 business plan such as this actually happens – but the other 9 – are doomed to fail.

Marketing?

This brings in Marketing, and in the Telecom Australia era, marketing was a small expense issue, as most of the ‘profits’ were actually re-investment funds and these went into wages and equipment replacement. As with all established businesses, there is legacy equipment, those that are reaching the end of their use by date and new engineering solutions need to be developed (usually from engineering research). Legacy equipment, products and services usually have excessive overheads. Phasing these out requires engineering ingenuity together with marketing, and both are required to work together, and need each other for both to be successful.

The Change of Guard

Along with desperate advertising; lawyers, marketing and sales staff have been added to all telcos at the liberal expense of engineers, and technicians, and instead of re-training their existing staff in IT (and not realising that many of the staff that they “let go” were well versed in IT), new IT staff have been brought in – but their telco history is short, so mistakes that were made earlier are being perpetuated through ignorance and lack of wisdom – (read lack of experience). It is a bitter pill and in particular Telstra and the Government and the Opposition are paying the price (along with Regional and Remote Australians).

Conclusion:

International comparisons are a futile exercise, as in the case of a government monopoly, the prices would have been set to just cover the running costs of the equipment and provide for new equipment at the end of the life cycle. In the case of a free-standing business, a certain profit is taken off for advertising, directors fees, advisers, share dividends and tax – and usually in that order.

There are internationally agreed performance standards managed by the ITU-T, and these should be the target.

We have a window of opportunity to create communications infrastructures that can be exported to the rest of the world. This window can be opened by moving out of the business planning model and moving into the community planning model. Business will follow. It is up to you to make the moves to change Government thinking.