

**DEPARTMENT OF BROADBAND  
COMMUNICATIONS AND  
THE DIGITAL ECONOMY**

**DIGITAL ECONOMY  
FUTURE DIRECTIONS**



**Submission by  
Communications Experts Group Pty Ltd**

**Dr Walter Green Director Tel 08 9293 4974 email:  
ceg@westnet.com.au**

## BACKGROUND

This submission has been prepared by Communications Experts Group Pty Ltd who are Telecommunications consultants and who have consulted a group of West Australian persons who have a knowledge of the Computer and Telecommunications industry in Western Australia.

The case studies cited in the submission are drawn from experiences overseas and Western Australia.

Dr Green is a Director of ATUG and has been a member of number of committees providing Telecommunications Policy advice the WA State Government.

## KEY POLICY ISSUES

The West Australian ICT Development Forum produced a report “Enabling Growth” that showed that 30% of State GDP is due to the productivity enhancing capabilities of Telecommunications and Computers. The NBN Broadband network is a key component to enabling wider range of users improve their productivity and social benefits (health, education, social inclusion, etc.). The need for Broadband is well understood, and this submission describes the research and experiences of others in identifying how the digital economy is likely to develop when the NBN is operational.

## What Does Digital Economy Success Look Like?

The report “Enabling Growth” studied the contribution of ICT (Computer and Telecom) to the WA Economy. The results of the report suggest the following criteria would provide a reasonable assessment of a successful Digital Economy.

- a) 100% of School Leavers are Computer Literate to the level of the BCS or European Computer Driver Licence.
- b) The output from Universities meets or satisfies Australia’s needs for Software Engineers, ICT staff (Computer Science plus specialists’ skills such as Graphical Information Systems).
- c) An agreed percentage (2%) of Productivity Growth is due to Computer and Telecommunications or ICT.
- d) 85% of Businesses regard Computers and Telecom as vital for business instead of 75% today.
- e) Organisations have access to Broadband Networks that satisfy their criterion levels for:-
  - i) Security.
  - ii) Services (Data Rates, Jitter, QoS levels, Packet Loss, etc).
  - iii) Reliability.

At present only large organisations can build and operate networks to meet their criteria eg Banks, Defence, some Medical networks.

All other businesses are dependent on service offerings made by the carriers and essentially only have access to two types of services.

Residential Internet Access which typically offer:-

- Non existent security,
- Poor quality of service and low data rates, and
- Moderate reliability

and Business Services which typically offer:-

- Security – almost non-existent.
- Moderate quality of service and data rates,
- Reliability – high and medium levels of reliability are available, depending on the data rate levels. eg 1 Gbit/s are generally duplicated whereas 100 Mbit/s are single points of failure.

The biggest impediment to this goal being achieved is the lack of ability to purchase point-to-point data links on equitable terms with competitors.

Refer also to the CEG submission in the Senate Interim Report on the National Broadband Network for a more detailed explanation on the need to separate the provision of wholesale data links, and retail services providers who can build, operate and manage broadband services to better serve the needs of different types of businesses.

## Open Access to Public Sector Information

### Best Practices in PSI formats

A very successful format for developing and distributing Public Sector Information is the West Australian Government Landgate SLIP System and the Western Australian Land Information System (WALIS).

Both systems have proven that agencies can co-operate in the collection, management and distribution of land and title information to the public. Both systems were selected as 2006 and 2007 Finalists in the WA IT and Telecom Awards. For more details refer [www.waitta.asn.au](http://www.waitta.asn.au) 2006 and 2007 Winners and Finalists.

The licensing and fee paying structure implemented in SLIP and WALIS is a sensible compromise to satisfy commercial requirements and individuals' needs for smaller parcels of information.

### Digital Confidence

#### 1. Background Information

A major problem in storing and using digital information is the ability to authenticate digital data, and preserve its value in legal proceedings. There have been reported incidents where defendants in Professional Indemnity and Public Liability Court cases, have been disadvantaged because they only had electronic copies of their documents. The legal argument was that paper copies must have been used, and may have provided evidence against the defendant. Destroying the paper copies was therefore deemed to be destroying evidence. Other legal arguments focused on the validity of electronic records and proof that they had not been modified in any way.

#### 2. Authentication Standards

There is a strong requirement for a legislated standard in authenticating electronic media or files that can be used when storing or transmitting information.

The "md5" and "sha1" authentication methods are readily available, easy to use and provide some level of authentication. However the use of either of these methods has not been established or recognised by the Courts or Government Agencies.

Secondary uses of the "md5" and "sha1" methods include validating a document or file sent over the internet and ensuring that no errors of transmission have occurred.

Providing acceptable procedures are used these methods can also validate documents that are resent at a later date.

While the "md5" and "sha1" methods have been discussed in this submission, it should be noted that there are other methods that can be used, and that some may be more secure than the "md5" and "sha1" methods.

## Summary

These issues need to be addressed to improve the confidence in the use of the online transactions and transmissions:-

1. The Legislation for an Authentication Process that meets or exceeds the security levels of the “md5” and “sha1” methods.
2. The development and free distribution of software for inclusion in operating systems, web browsers and email packages for authenticating files.
3. Legislation that ensures that courts accept the electronic evidence in place of paper evidence, and persons are not disadvantaged by lack of paper evidence.

## Barriers to Strong Online Retail Transactions

### 1. Lack of Authentication

The lack of authentication processes is a major impediment, especially after disputes over “which copy of an electronic file is valid”. i.e. where a sender and receiver both claim to have accurate copy of a document, yet both documents contain significant differences (There are some organisations that refuse to send quotes or tenders electronically for the above reason).

### 2. Impact of Transaction Terminals

There has been a significant focus on retail purchases over the internet. This focus on retail purchases tends to ignore fundamental buying habits of the public, where many people still need to touch, see or inspect a product or service before a purchase is made.

There are a majority of cases where some form of “personal service” is required as part of the reason to purchase the goods or services. [A large proportion of SME Businesses exist to serve this market].

The “personal service” may include, but is not limited to:-

- advice about products or services
- installation and training
- maintenance and repair
- development and construction, etc

A number of companies have recognised that these “personal services” are essential for the success of their business. In order to improve market share, improve accuracy in ordering, and deliver on-line support services, these companies have delivered programs to customers that makes it easy for them to buy goods without leaving their premises and hence do not go to stores operated by competitors.

These programs, or computer applications are sometimes referred to as “transaction terminals” because they convert a PC with a Broadband connection into a terminal that is compatible with the supplier companies’ databases and business processes.

Early successful examples of this trend are the Coventry and Capricorn businesses in Western Australia. Capricorn were WAITTA Winners in 2000 and Coventry were a WAITTA winner prior to 1998.

The increasing use of transaction terminals is high in countries with good broadband networks, but has been slow to develop in Australia because of the slow broadband speeds. A number of the transaction terminals developed locally have been very innovative in overcoming the low internet access speeds.

The use and volume of transactions performed via transaction terminals should be included in the assessment of “online” metrics. This method of online business is likely to exceed retail transactions when the National Broadband Network is built and operational.

### 3. Online EFTPOS Terminals

A special case of “Transaction Terminals” is the EFTPOS machine. It is significant that there is only one provider of EFTPOS services that uses the internet. All other EFTPOS machines rely on a Telephone Dial-up line and depend on either 1800 or 1300 numbers to conduct transactions. The supplier of the current Internet EFTPOS had to overcome significant hurdles to get their scheme implemented. Australia needs to review the processes for conducting transactions over the Internet and the legislation of an approved authentication system would help in implementing Internet EFTPOS systems.

Note The communications costs for an Internet EFTPOS transaction are 9 cents whereas Dial-up transactions cost a minimum of 25 cents.

### Development of Australia’s Knowledge and Skills Base

#### Skills Development

There is a significant gap in the training of University Graduates when they graduate. Many graduates had difficulty finding a job because they “did not have any experience”. This problem was successfully overcome in WA when the then Minister Clive Brown implemented the Open Source Centre.

purpose of:-

- Identifying software and applications for the digital economy
- Identify tools for creating digital economy products
- Creating awareness of the availability and usefulness of these tools and products
- Create training positions for graduates to get hands on experience in selecting appropriate software tools and working in business related projects (this was implemented after the Centre had been operational for 12 months).

The success of the project enabled all the graduates to find work within a few days of completing the programme, and many left early because they were being offered jobs. The centre achieved a number of other successes before being closed. Similar centres are in operation in other countries and Singapore has a very successful centre for giving graduates work experience.

### Core Set of Digital Economy Skills

The introduction of a Computer Literacy Qualification similar to the “Computer Driver’s Licence” developed by the British Computer Society with the addition of a Computer Security Component. Ideally all school leavers and tertiary students should have this type of qualification before they graduate.

### Measuring the Digital Economy

#### Additional Datasets

The impact of online transactions using “transaction terminals” or applications should be included in the parameters for measuring the Digital Economy.

The detail for this metric has been described under Barriers to Strong Online Retail Transactions Section 2.