CYBERBANKING: THE EMERGING TECHNOLOGY AND LEGAL ISSUES

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INTRODUCTION

The purpose of this presentation is to provide a synopsis of the of Advance Bank's Internet Banking initiative, its background, success to date and prospects. The regulatory issue which have been encountered will be canvassed and responses to these specific to Internet Banking and ecash™ (DigiCash's electronic cash system) will be addressed.

BACKGROUND TO INTERNET BANKING

The fact that Advance was the first Australian to "discover" the value of the Internet was due to the coincidence of a number of factors – the Managing-Director's insight; a willing technology partner (Techway Ltd); together with relevant technical competencies and infrastructure already existing within Advance.

One reason influencing Advance's continued emphasis on the development of Internet Banking was the changing consumer preferences prioritising the cost of services and the convenience of access to them. Internet based services standout on both counts as being both cost-effective as well as available for use in the home or office in real-time, 24 hours a day.

A second consideration was the progressive change in transactional demands upon the banking industry. Using Advance as an example, branch transaction volumes increased only 2% of the period 1994 to 1996 while total transactions grew by almost 17%. EFTPOS transactions grew by 73% over this timescale. The cost relativities between "over-the-counter" and on-line and card-based transactions will promote the continuation of such trends. The growth in automated telephone banking – over 300,000 registered users of Advance QuickPhone who currently complete more than half a million activities each month – illustrate the drive towards convenient, cost-effective financial services.

Competition for loans and deposits combined with customer resistance to fees is driving cost reduction strategies through migration to electronic alternatives at a time when a growing segment of the market feels empowered by new channels of access

Another significant factor has been the rapid uptake of Internet use amongst Australians. Roy Morgan Research's polling up to December 1996 suggests that the proportion of the "adult" population (over 14 years of age) to have "ever accessed the Internet" has ballooned from 12.2% to 16.3%. When combined with the penetration of PCs with modems approaching 10%, consumer demand for Internet banking is likely to develop accordingly.

However, Internet banking can be characterised as a "supply-led market". Whilst speculation is possible, like any exploration exercise there are no guaranteed outcomes.

THE LAUNCH AND EVOLUTION OF INTERNET BANKING IN AUSTRALIA

In introducing Internet banking into this market, Advance avoided a "big bang" approach and adopted a pattern of progressive releases of new functionality. As confidence grew over time and with experience, Advance also launched an banking service for Australia's second Internet-enabled bank – BankSA Ltd (October 1996)

Version 6.0 of Internet banking is currently being tested and will include further security enhancements and the introduction of electronic cash (ecash™) capabilities.

Any customer of the Bank who is registered for the QuickPhone service who has Internet access can download the Internet Banking software from the Bank's website and can log in using their Advance card number and QuickPhone password (aka QuickPhone PIN).

Since the launch of the service in December, 1995 over 13,000 customers have used the system with over 30% using it regularly. Uptake of new users continues to rise consistently and particularly as functionality/new versions of Internet banking software are released. Supporting over 50,000 activities per month Internet banking usage is now comparable to that of four ATMs. The loan and deposit business associated with Internet users is comparable to that serviced by two branches.

Internet banking is the underlying influence behind the high usage of the Bank's Internet site. When compared to a bank of similar size and demographics, which does not offer Internet banking on its site, Advance receives over ten times the traffic as measured by hits. This traffic is driven by surf-through bankers with behavioral shifts such as those affecting retailing (eg after hours and intra-week banking) becoming evident.

INFRASTRUCTURE

A big part of why Advance was able to move very quickly and why the Bank looks forward to future delivery media is the flexibility of its systems architecture. New channels can be added and rapidly re-use functionality that exists in the gateway software.

The single most serious issue for the Bank to satisfy itself on was and remains system security. This has been achieved through a rigorous process of internal and review. By virtue of a conscious containment of risk (nature of activities supported) and taking appropriate security measures relative to the identified transactional risk Advance has enjoyed 18 months of public use and scrutiny of its Internet banking solution.

FUTURE DIRECTIONS

Whilst traditional marketing principles remain, the significance of price competition and electronic delivery to the home or office is likely to alter competitive dynamics across many industries such as publishing, banking, telecommunications. In this context, smaller organisations banks can more effectively compete in technology areas.

Using Advance Bank as an example again, Advance was for some time listed as one of the top 10 Internet banks in the world for most of almost all of 1996 by The Money Page (www.money.com) against some of the biggest banks in world of which it was the only non-American entry. On the same listing 5 Cents Bank and a credit union also featured one month.

The focus of the Bank's Internet development has been to expand the breadth of some the services it has made available to customers such as account opening for a wider range of account types; account maintenance; and to enable secure applications for credit facilities.

An increasing emphasis is also being placed on developing the infrastructure for electronic commerce including an electronic cash payment mechanism; credit card systems for use on the Internet and shopping services (ie a virtual mall) to cater for the needs of merchants as well as consumers. Some of these initiatives in particular, emphasise the benefit of certification authorities and smart cards as authentication tokens.

In pursuing these commercial goals, the task is made more challenging in view of a variety of requirements on financial institutions operating within Australia such as the requirements of physical identifications, physical delivery of certain notices and risk obligations within the domestic payment system.

These markets are developing now and there are issues which have to be dealt with or Australian financial institutions could lose out in two directions – to foreign banks as Australians go direct on-line and also an "export" opportunity is missed in Asia. It is time for policy-makers and business people alike to be conscious about Australia's positioning in the global value chain or to run the very real risk of ending up at the base of the food chain for the foreseeable future. As the Internet and Internet-like technologies have the potential to render the world "potentially" borderless we cannot adopt regional thinking in this area.

REGULATORY ISSUE AND RESPONSES

Australian laws and regulations do not, on the whole, conceive and in some cases cater for the types of activities undertaken in the on-line environment. To achieve the potential benefits of customer empowerment and reducing the costs of service as well as facilitating the commercial interests of business in this country. Some prescriptions have been included in the associated presentation such as considering wider FTRA exemptions to promote on-line services; permitting electronic delivery of most regulated notices and documents; and accelerating the development of a legal framework for the recognition of digital signatures.

The presentation canvasses Advance Bank's response to the current regulatory environment when developing terms and conditions associated with the Internet Banking services and most recently with the ecash™ system. It is hoped that the discussion of these areas indicates the involved nature of the regulatory oversight of such nascent activities and the distortionary and at times unintended impact that these may have.

CONCLUSION

Regulatory complexity is perhaps the second most major hurdle to the delivery of financial services through the Internet after overcoming security issues.

What is important to achieve from legal and regulatory perspectives are the legitimate commercial intentions in delivering services via the Internet and the breadth of the opportunity that is available if a positive framework can be developed to promote these ventures.

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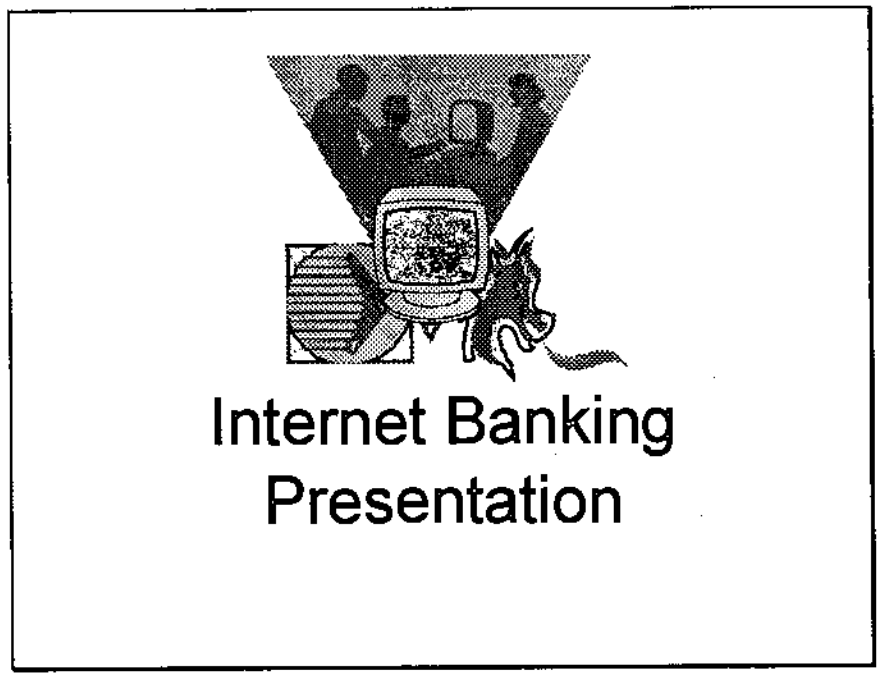

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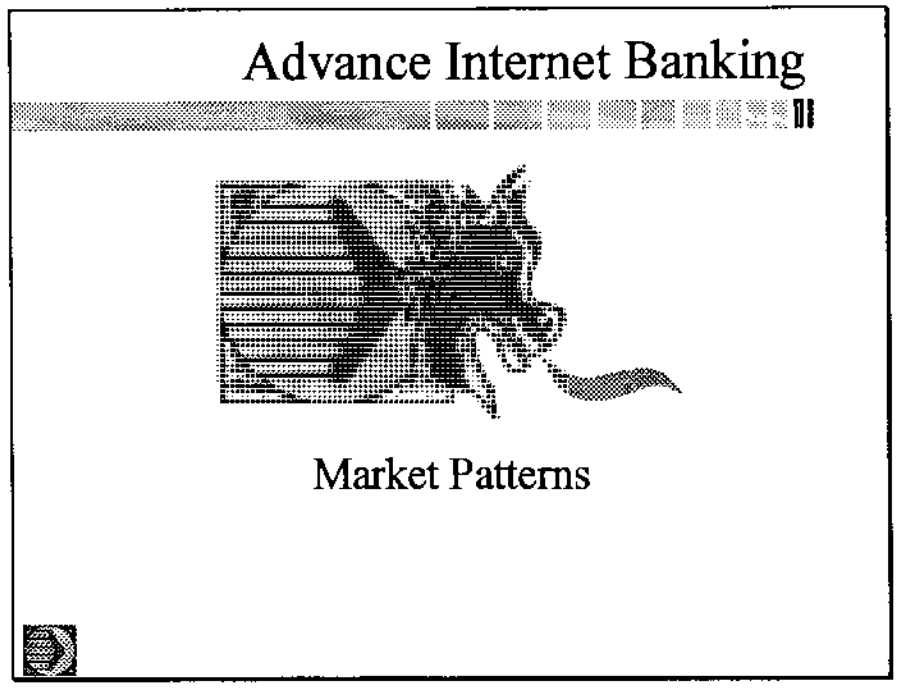

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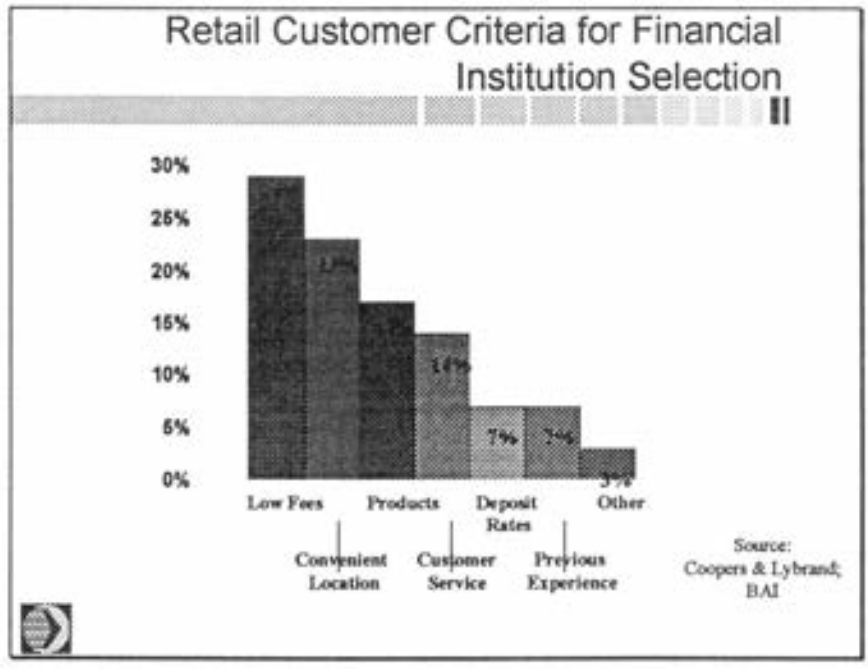

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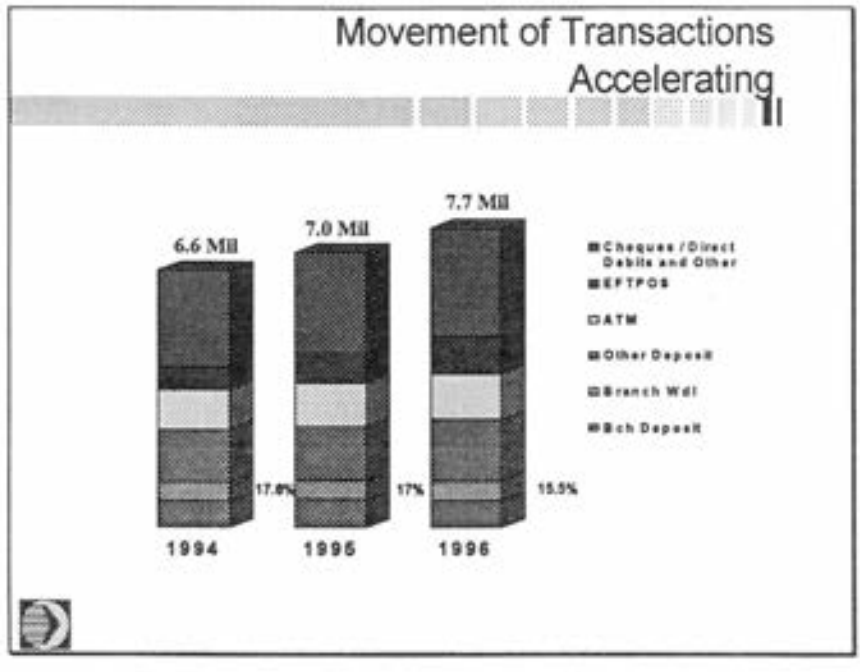

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Costs Driving Electronic Banking

Relative Transaction Costs By Channel

	Personal Service		Self Service				
Transaction	OTC	Telephone	ATM	QPhone	EFTPOS	Internet	System
Cash Withdrawal	2.06		0.47#		0.54		
Transfer	0.53	0.60	0.22	0.24		0.18	
Cash Deposit	1.65		1.88				
Cheque Deposit	2.35		2.58				
Balance	1.25	0.51	0.24	0.16		0.13	0.04

Foreign ATM cash withdrawal $.90c

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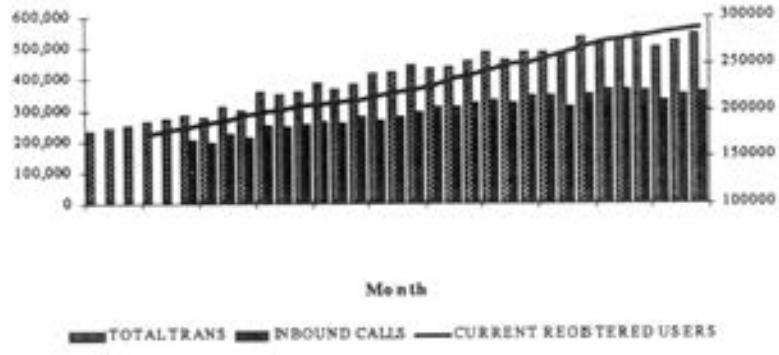
Telephone Banking Use



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Australian Internet Use

Relevant Population (14+)	**14.5M**	**100.0 %**
Own a PC	**5.9M**	**40.6 %**
Own a PC & Modum	**1.2M**	**8.1 %**
Ever accessed the Internet*	**1.8M**	**12.2 %**
Used Internet at least once a week	**0.8M**	**5.8 %**

*27.3% (Unknown)
Source: Roy Morgan Research - Oct 1995 - Sept 1996

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Internet - Here & Now

"The Internet should be good enough for most applications by the end of 1998. Performance will likely be as good as anything else a user has access to, and its utility and capabilities will likely be better than most. Reliability and security will be adequate, comparable to such successes as cable TV, PCs and mail order."

Gartner Group
July 96

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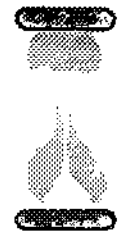
A Need for Urgency

"The consequences of inaction are severe ... banks cannot afford to delay taking action or count on the change happening slowly"



Boston Consulting Group/Bank Administration Institute
February '96

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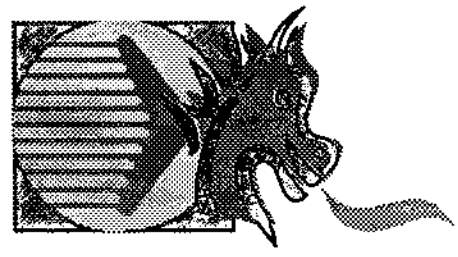
Internet Banking



User Profile

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Back to the Future
(22 December, 1995 & beyond)

- **Initial service offering - Release I**
  - Non-value, VRU style facilities
  - Proof of Concept phase for chosen infrastructure
- **Release II (February '96)**
  - Extended transaction details
  - Printing
- **Release III (April '96)**
  - Real-time internet initiated transfers
  - Security enhancements
- **Release IV (October '96)**
  - Bill payments
  - 3rd Party (other FI) account transfers
- **Release V (December '96)**
  - Term Deposit opening
  - Stop cheque instructions
  - Export transaction details to PFM software

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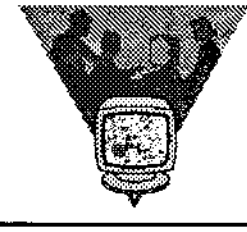
Internet Banking Customers

- Over 13,000 Internet Banking customers since service was established in December 1995
- Over 300,000 (QuickPhone) customers "pre-registered" for Internet Banking



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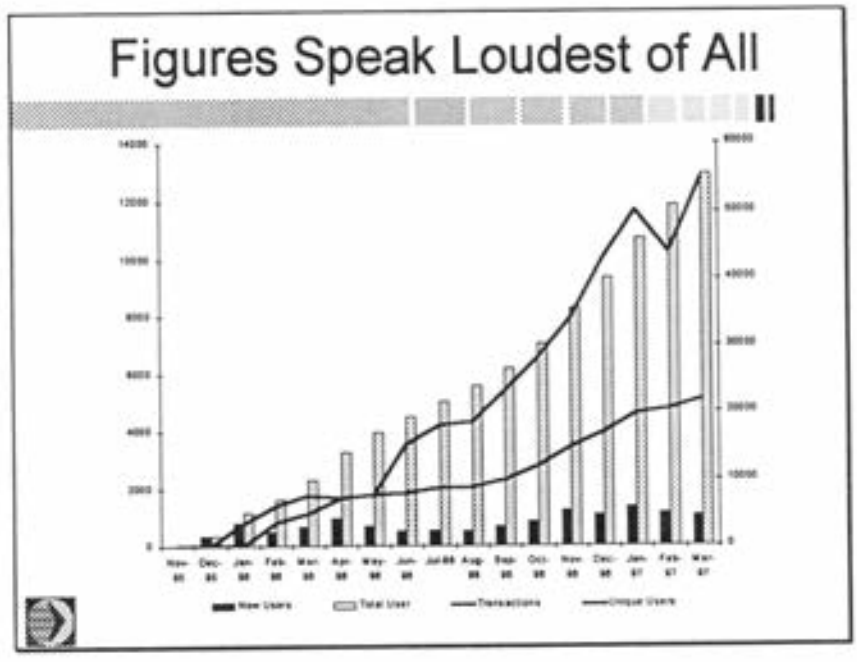

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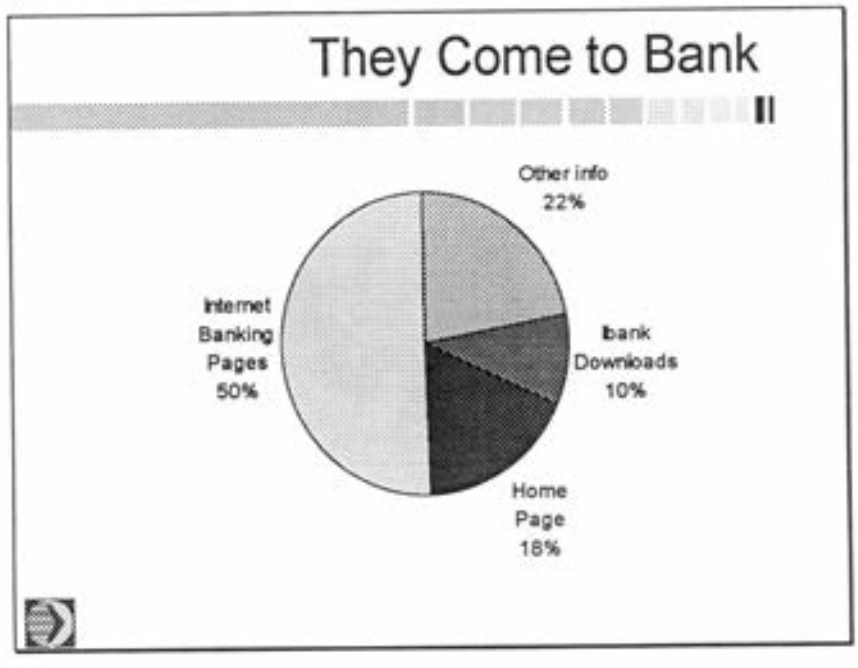

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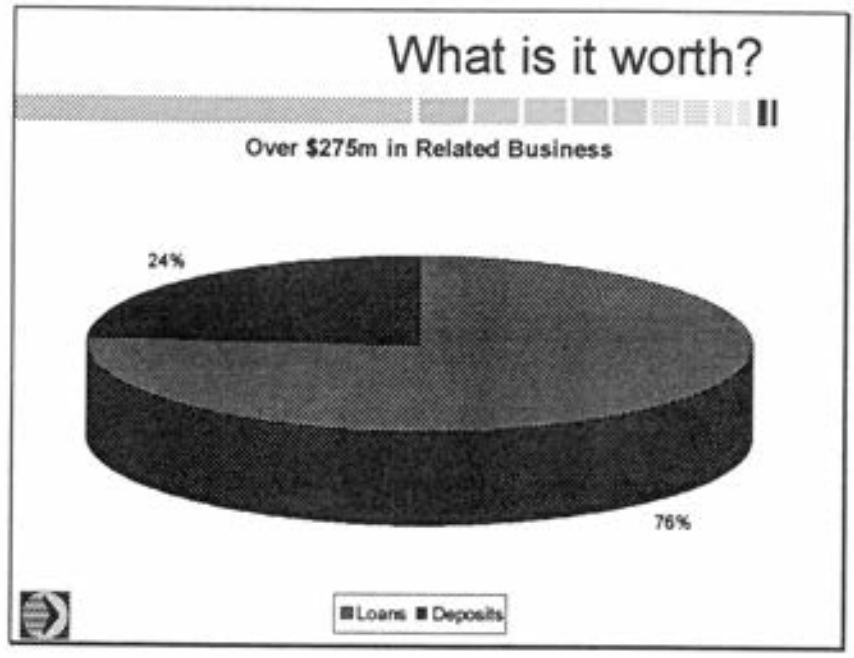

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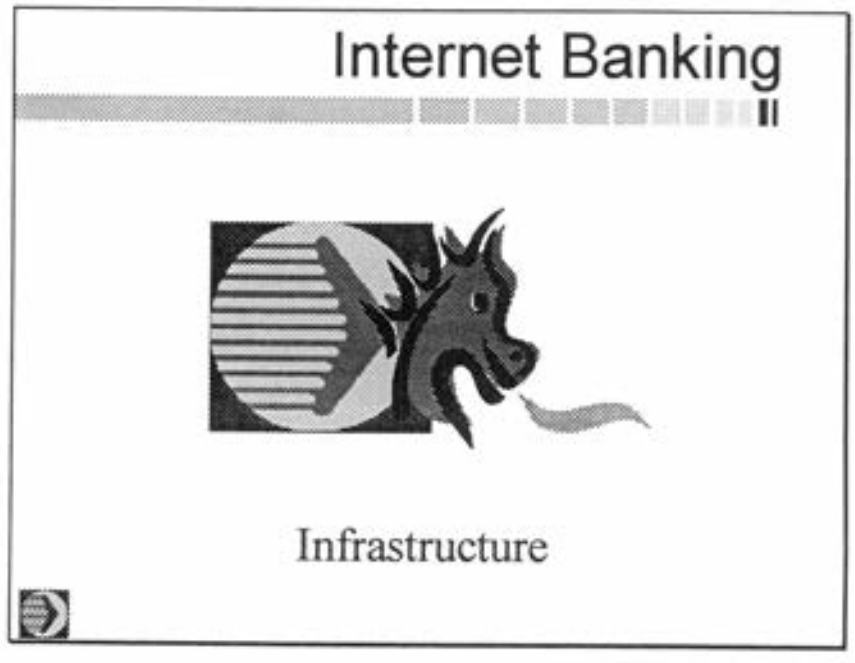

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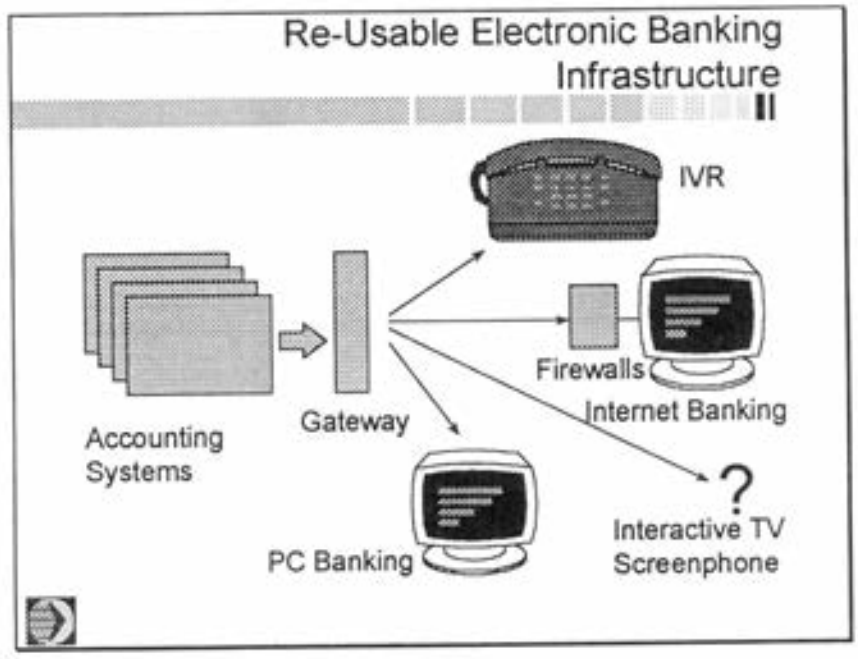

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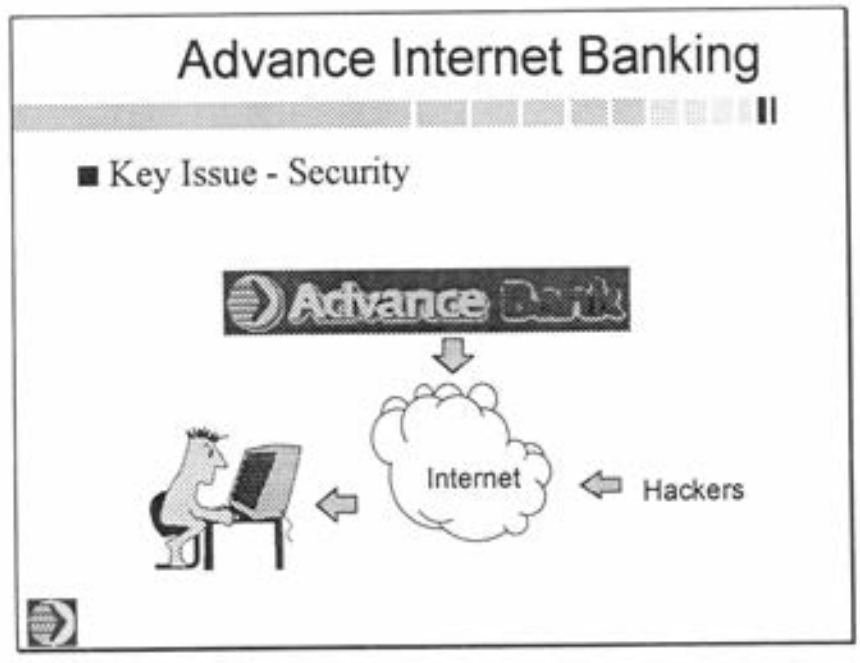

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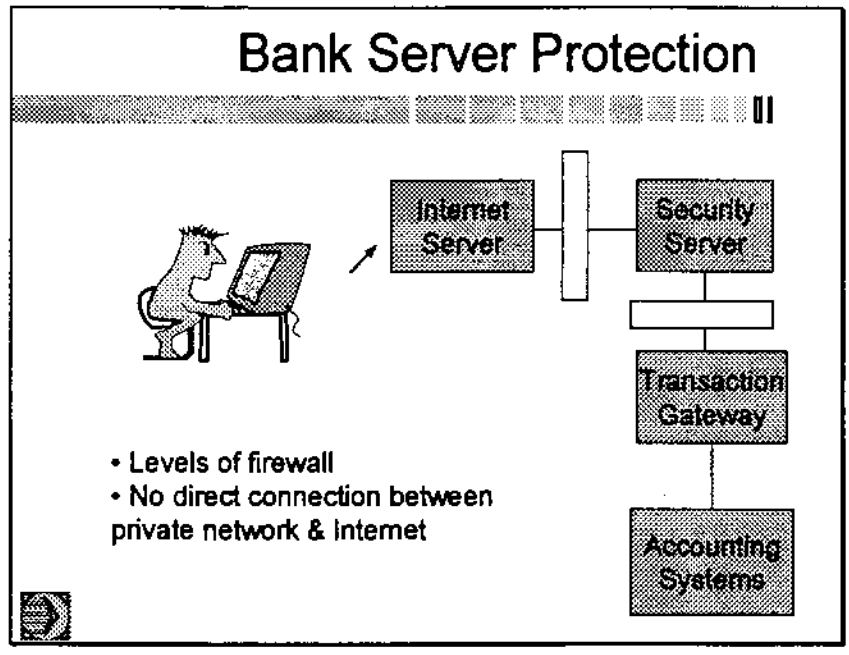

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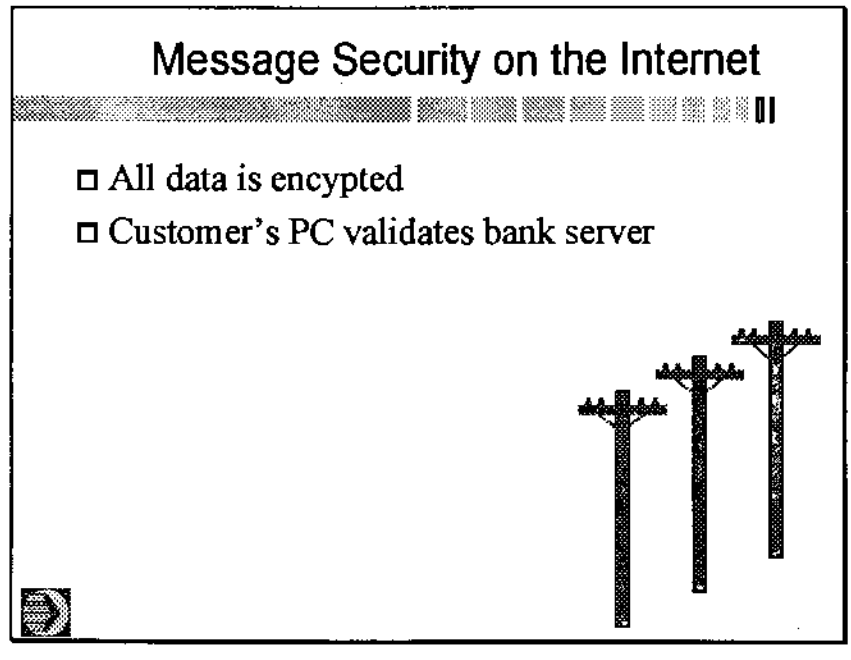

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Encryption for Privacy

- US export controls on bulk encryption
  - Maximum 40 bits key length
  - Has been compromised (with a lot of resources)
- Advance Bank uses RSA 1024 bit 'public-key/ private-key' encryption for authentication and initial session set-up
- Advance Bank uses 'strong' bulk encryption
  - 128 bit key length, not currently feasible to break
  - A new key is created for each session

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Encryption for Privacy

1. 

Customer's Internet Banking software connects to Bank

2. 

Bank uses 'private key' to communicate a random encryption key valid for a single session

3. 

IBank Internet software decrypts session key using Bank 'public key'

4. 

Remainder of session encrypted using session key (eg. customer identification & account details)

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Customer Security

- Use of access code
- Off-internet validation of downloaded software
- Tampering detection
- Protection from key-press recording

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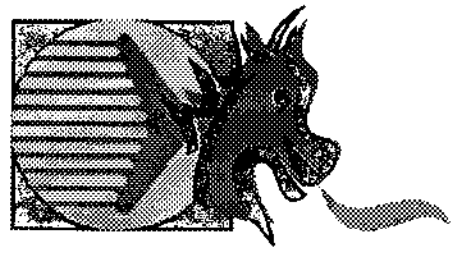
Advance Internet Banking



Demonstration

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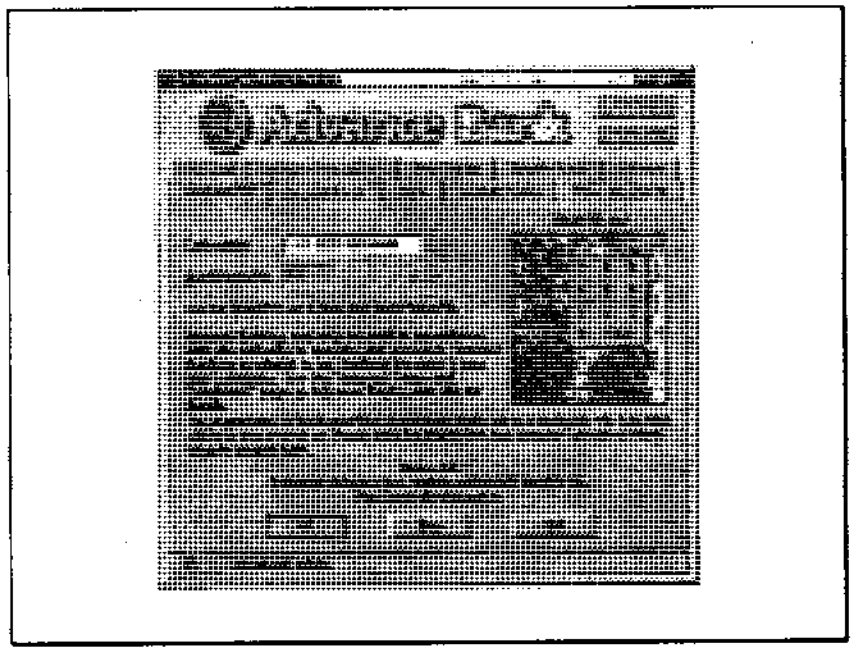

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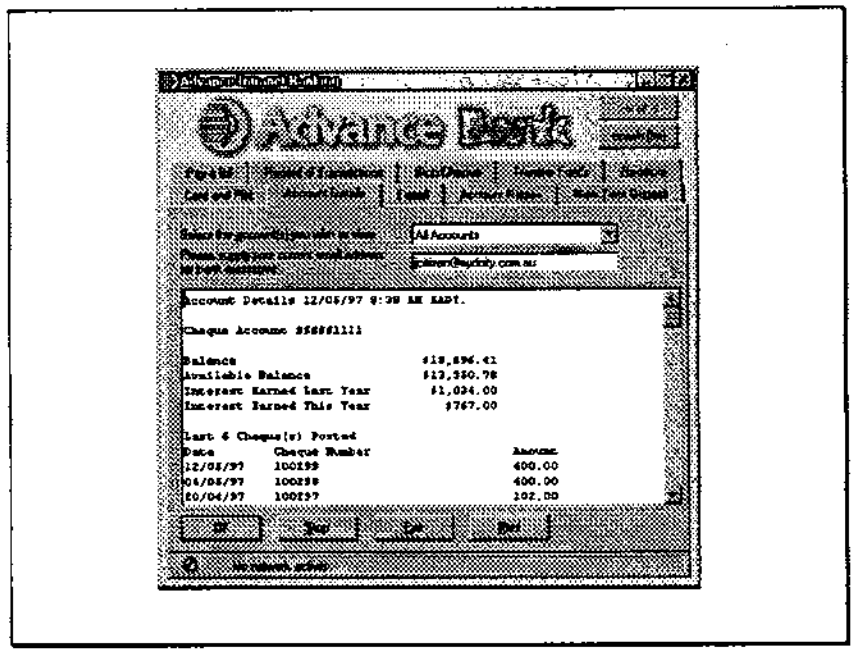

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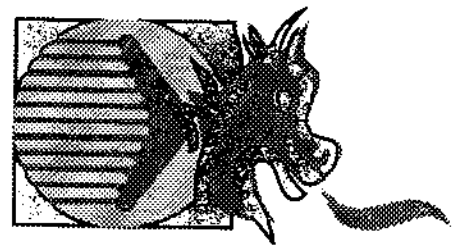
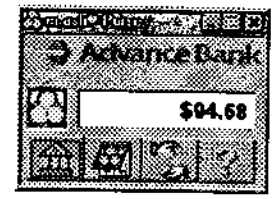
Advance Internet Banking



Future Directions

Further Planned Internet Services

- Account Opening for existing customers
- Loan/ Credit Card applications/scoring
- Account Maintenance
- Electronic commerce infrastructure
- Shopping Services
- Site Interactivity



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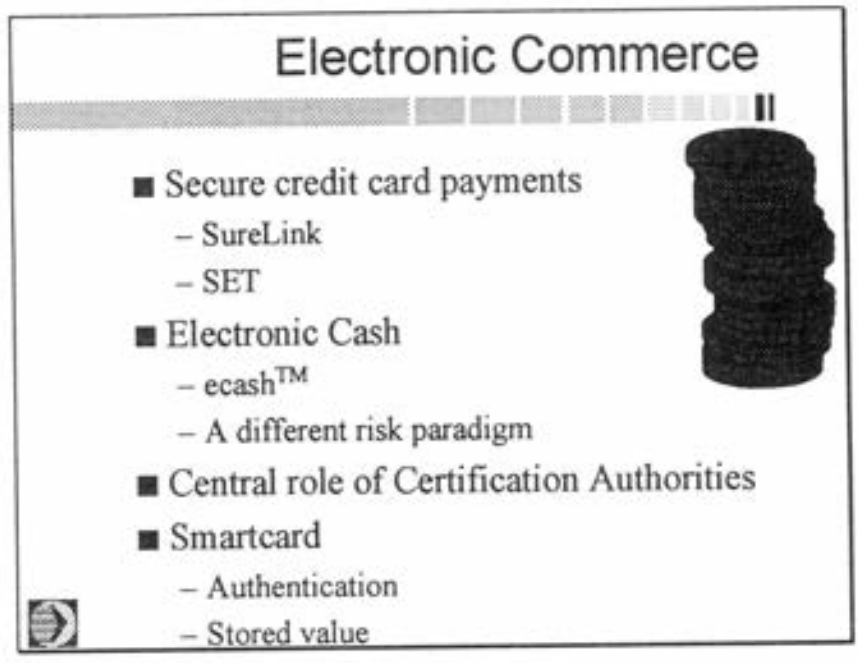

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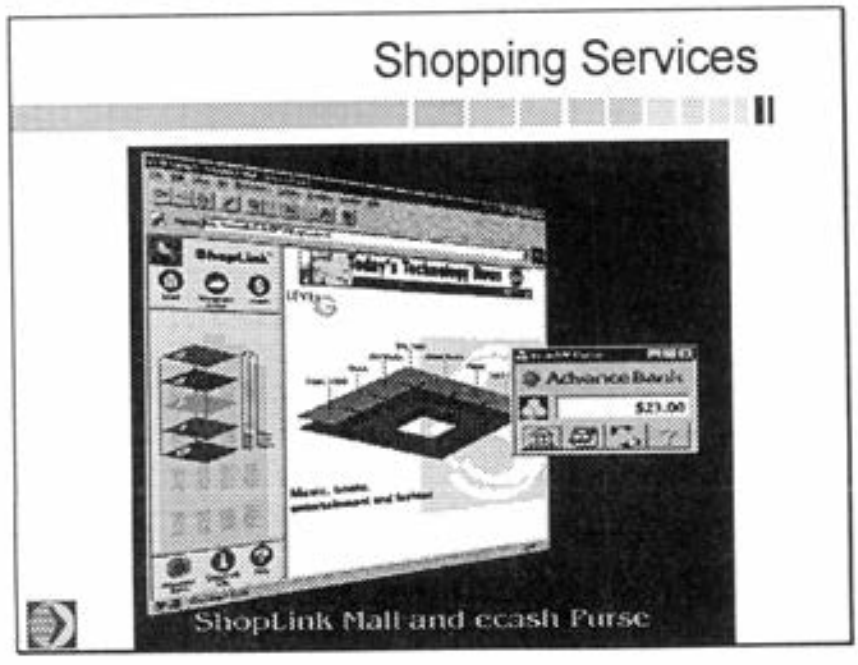

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Why not more now?

- Present requirements for customers to physically sign documents and/or visit bank premises to identify themselves and open accounts.
- Present requirements to deliver notices, account statements and other documents in writing and specified formats
- Present obligations on card issuing institutions to take responsibility for compliance by all parties to the EFT system

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Enablers for On-line Business Success

- Identify which parts of the value chain we want to service and create the awareness and conditions to encourage development
- Legally recognised absolute identification of customers via a tamper-proof, mobile token, with a digital 'signature'
- Amendment/adaptation of relevant laws & codes
- Taxation relief that supports on-line infastructure development (eg: venture capital programs, capital gains tax)
- Reduce transaction taxes that limit international competitiveness

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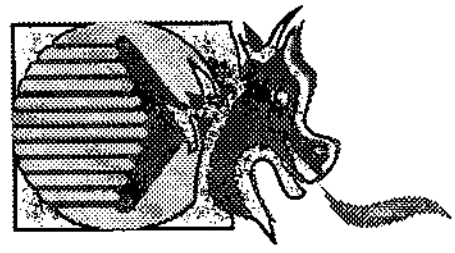
Advance Internet Banking



Regulatory Framework

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Regulation in an Electronic Age

- Many Australian laws and codes pre-date and did not conceive of the on-line environment
- Internet/On-line Banking has potential to increase competition, empower customers and lower costs

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Regulation in an Electronic Age

- Internet/On-line Banking is potentially borderless
- Inconsistency with major economy regulation will preclude Australia's competing internationally while inviting foreign competition in Australia

Examples:

- consistency with BIS prudential standards required
- Major inconsistency (disadvantage) is transaction taxes FID/BAD

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Regulation in an Electronic Age

- Achieving full potential domestically requires:
  - reverting from FTRA customer identification requirements to the "know your customer rule" and/or
  - accelerated legislative enablement of digital/electronic signatures to overcome the present need for customers to physically sign documents and/or present themselves and documents
  - permitting the electronic "delivery" of notices, account statements and other documents, by agreement with the customer
  - uniform acceptance of electronic delivery for evidentiary purposes.

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Internet Banking - Regulatory Responses

Internet Banking	**1. No Applicable Code of Conduct**	Terms & Conditions framed with a view to EFT Code of Conduct (However, see point 4 below). Conformance to Code of Banking practice
	2. Account Identification	Account opening limited to existing customers
	3. FTRA	Value limits established. Normal reporting of electronic transactions
	4. Internet Banking Terms & Conditions	Acceptance indicated by on-line confirmation. Download copy of Terms & Conditions with Internet Banking client software. Risk relationship per telephone banking.
	5. Internet Banking Fees & Charges	Displayed on the web site, indicated where applicable on the Internet Banking screens, and contained in generic fees schedule (available in all branches).
	6. AAM Prospectus	Prospectus displayed with ASC approval in tamper proof format. However, original of application form needs to be obtained in order to apply.
	7. Application of government taxes & charges	Applied as usual according to underlying accounts.

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Ecash - Discussion of regulatory issues

Jurisdiction

- ecash provided for the use of Australian resident users only

Code of Banking Practice (CBP)

- ecash represents an 'ongoing Banking service'

  Impact: ecash and Banking Services Terms & Conditions and fees and charges must be disclosed 'in writing' before customers use the system.

  Response: Adopted position that electronic delivery is equivalent to providing documents 'in writing'.

  1. Can't download Purse software without viewing Terms & Conditions pages
  2. Also provide soft copy of T & C's with downloaded ecash software as 'readme file'
  3. Other related publications (eg. fee schedule) are published on web site and in branches
- Obligation to provide periodic statements inapplicable as ecash is not a 'deposit account'
- Dispute resolution procedures per other Banking Services

EFT Code of Conduct

- Does not apply as requirements of an electronic terminal, EFT plastic card and personal identification number (PIN) are not met
  - ⇨ Future extension of this code may represent a risk

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Ecash - discussion of regulatory issuescont..

ecash Safes: Financial Transaction Reports Act 1988 (Cth)

Reportable Transactions

Impact: As a 'cash dealer' under the FTRA, Advance must report a transaction involving the physical transfer of $10,000 or more or other suspect transactions to AUSTRAC

Regulation of 'Account'

Where a person opens an account with a 'cash dealer' the cash dealer is usually required to obtain information relating to that account eg. '100 point check'

We maintain that ecash is not to be considered an 'account' as defined by FTRA as ecash is:

a. not 'currency' ie. Australian legal tender

b. not a cheque or payment order as defined by the Cheques and Payment Order Act 1986 (Cth)

c. not a safe deposit arrangement (explicit in ecash Terms & Conditions)

ecash coins as currency: Reserve Bank Act 1959 (Cth) & Currency Act 1965 (Cth)

Given the definition of currency under these Acts ecash could not construed to be of the nature of currency.

ecash coins as 'Unclaimed Monies' - S.69 Banking Act 1959 (Cth)

Legislation does not apply as definition of unclaimed money under the Act is not sufficiently broad to encompass 'electronic cash'.

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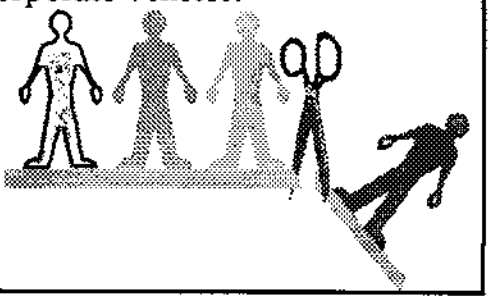
Conclusion

- Regulatory complexity is probably the second greatest major hurdles to innovation by banks after security.
- Individual initiatives warrant consideration of the most appropriate corporate vehicle.



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