

Payment Systems Evolution: Where to From Here?

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Outline

- Why the RBA is interested
- General observations from international comparisons
- Some concrete examples:
 - ‘online debit’
 - B2B payment
 - Canadian bilateral system

Some Background

Wallis: Recommendation 63

..... The PSB should also ensure that new technologies are implemented to advance the efficiency and soundness of the financial system. The PSB should have the necessary resources, focus and powers to influence, or if necessary mandate, standards.

RBA's Approach

- Raise issues for discussion
- No hidden regulatory agenda
- Would like to see industry-led discussion

RBA's Approach

- Study international developments
 - products
 - architecture
- Understand incentives to innovate
- Understand importance of competition and co-operation

Some Questions

- Product versus network innovation?
- Competition versus co-operation?
- How is co-operation achieved?
- Access arrangements for bilateral systems?
- Arrangements for promoting and developing bilateral systems?

Products

- Australia has a generally good record
 - EFTPOS, bill payments, universal ATM, reliable and stable
- but recent developments overseas
 - B2B
 - ‘online debit’
 - CHIP/PIN/contactless

B2B

- Extended message formats
- Attaching electronic files
 - standardisation is helpful?

'Online Debit'

- Both merchants and cardholders seeking an alternative to credit cards online
- Systems typically connect to internet banking
- Available in an increasing range of countries

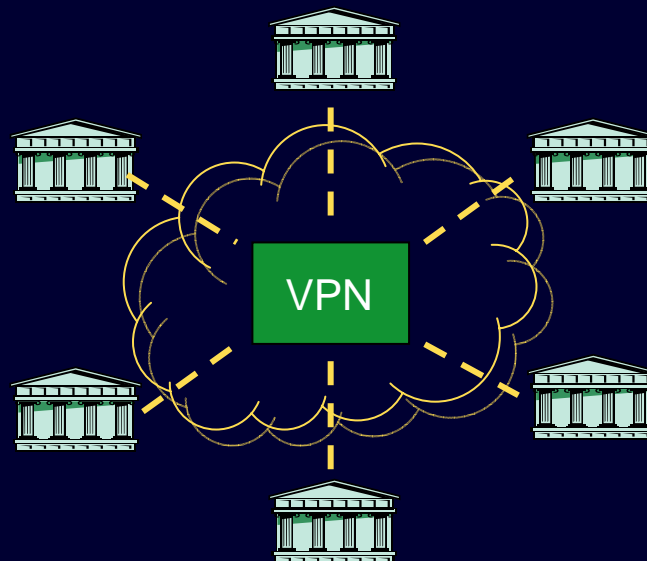
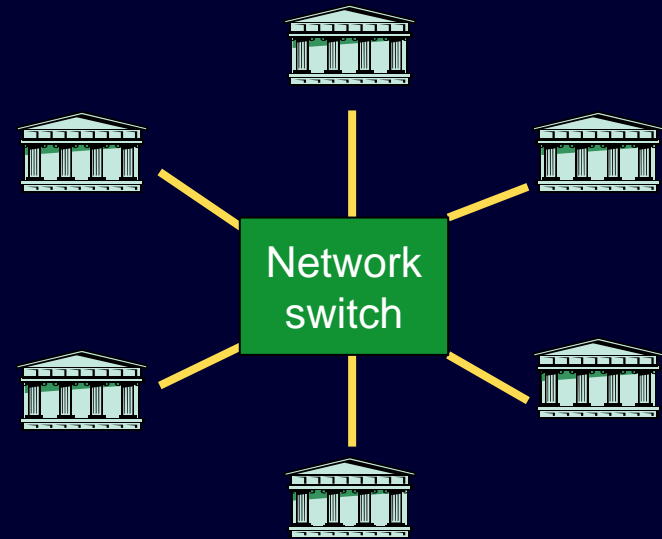
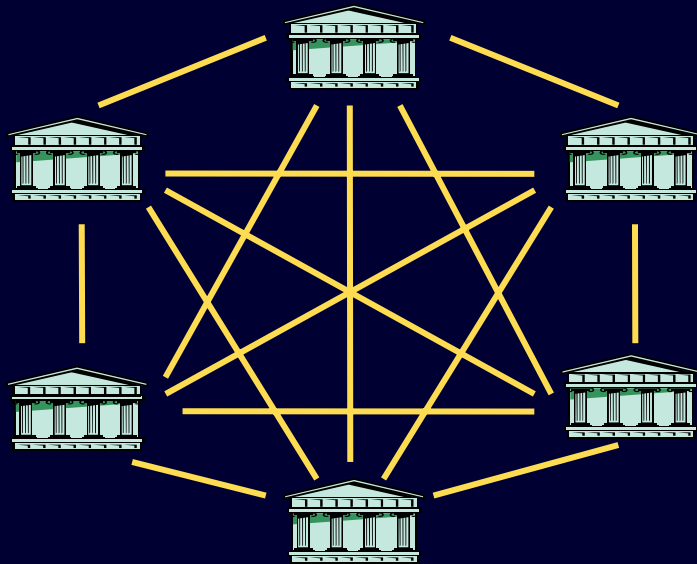
CHIP/PIN/Contactless

- Low levels of fraud in Australia
- Faster adoption in a number of countries
- Slower take-up of 'mobile payments'

Architecture

- Centralised
- Bilateral
- Hybrid

Network Structures



Bilateral Systems

- ✓ Useful in developing the system
- ✓ No single point of failure
- ✗ Access can be difficult
- ✗ Renovation can be difficult

Bilateral Systems

- Messages sent bilaterally (no central switch)
- Can also include:
 - bilateral interchange fees
 - bilateral negotiations over type of connection
 - bilateral negotiations over cost of connecting
 - bilateral business contracts

Access

- More difficult if:
 - large number of participants
 - no agreement on technical specifications
 - no agreement on interchange fees
 - no obligation to connect

Renovation

- Co-ordination problem
- No entity with incentive to promote the system
- Similar issues can arise in a centralised system

Product and System Developments

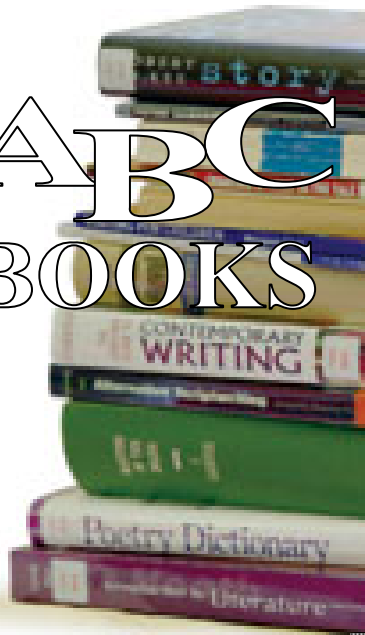
Product Developments

- Online debit
 - InteracOnline
- Business-to-business payments
 - Electronic Payments Network
- Straight through processing
 - Finvoice

Online Debit

InteracOnline, Canada

ABC
BOOKS



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BEST SELLERS
WHAT'S NEW
UPCOMING
RECOMMENDED
BROWSE

CART ACCOUNT SHIPPING HELP

CART

Step 1: Cart Summary >> Step 2: Billing & Shipping >> Step 3: Summary & Payment Options

Order Summary

Quantity	Description	Amount
1	Shakespeare-o-pedia	\$49.95
		Items Subtotal: \$49.95
		GST: \$3.50
		One-Day Shipping: \$12.00
		Taxes & Shipping Subtotal: \$15.50
		TOTAL: \$65.45

Payment Options

Pay From Your Bank Account:



INTERAC Online is a new payment service that allows you to pay for goods and services on the Internet directly from your bank account

Pay using your credit card



Cards

Card Number:

Expiry Date:

Cancel

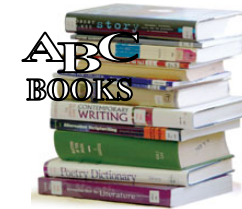
Continue

**Interac
Online**

PAYMENT DETAILS

[HELP](#)

PAY TO	ABC Books
INVOICE NO	12345
AMOUNT	\$65.45 CAD



Click to choose your Financial Institution:

123 BANK

FIRST XYZ BANK

To cancel and return to ABC Books:

CANCEL

PRIVACY

Interac is a trademark of Interac Inc, used under license.


Secure Login

Bank Card Number (or User ID)

Web password

[Forgot your User ID?](#)
[Forgot your Password?](#)

INTERAC Online Payment

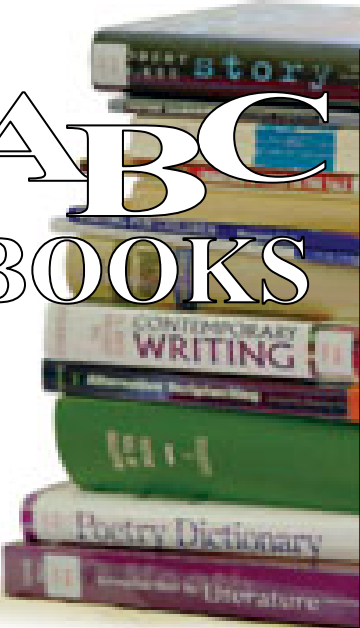
Confirm Details	
Send to:	ABC Books
Invoice:	12345
Amount:	\$65.45 CAD
From Account:	Cheque 

Confirm Details

Details	
Send to:	ABC Books
Send on:	27 September 2006
Invoice:	12345
Amount:	\$65.45 CAD
From Account:	Cheque <input type="button" value="▼"/>

Clicking on "Next >" will log you out of online banking and take you back to ABC Books in order to complete the transaction.

[< Back](#)[Next >](#)



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CART – ORDER COMPLETE

[Step 1: Cart Summary](#) >> [Step 2: Billing & Shipping](#) >> [Step 3: Summary & Payment Options](#) >> **Step 4: Confirmation**

Invoice: 12345

Placed on: September 27, 2006

Quantity	Description	Amount
1	Shakespeare-o-pedia	\$49.95
		Items Subtotal: \$49.95
		GST: \$3.50
		One-Day Shipping: \$12.00
		Taxes & Shipping Subtotal: \$19.50
		TOTAL: \$69.45

Payment method: INTERAC Online

Shipping Address

From: 123 Bank
Confirmation No: W3Q5

Joe Customer
350 George St
TORONTO CANADA M4B 1V6

Shipping method: TNT Courier
Estimated delivery: One business-day

Thank you for shopping at ABC Books

Business-to-Business Messaging

Electronic Payments Network,
United States

Electronic Payment Network

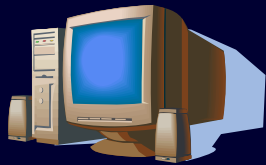
- Private automated clearing house
- Processes over 40% of ACH transactions
- B2B Initiatives:
 - EPN STP 820
 - UPIC numbers

EPN STP 820

Payables

Receivables

Accounting Software



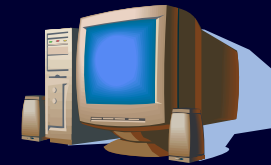
Customer Account Number
Customer Name
Invoice Gross Amount
Amount Paid
Invoice Number
Invoice Date
Discount
Purchase Order Number
Adjustment Code
Adjustment Amount
Description For Adjustment



EPN
network



Accounting Software



Message Format

Australian Direct Entry

Bank details
Bank account number
Bank account title
Transaction code
Amount
Reference (18 characters)

EPN STP 820

Bank details
Bank account number
Bank account title
Customer account number
Customer name
Invoice gross amount
Amount paid
Invoice number
Invoice date
Discount
Purchase order number
Adjustment code
Adjustment amount
Description for adjustment

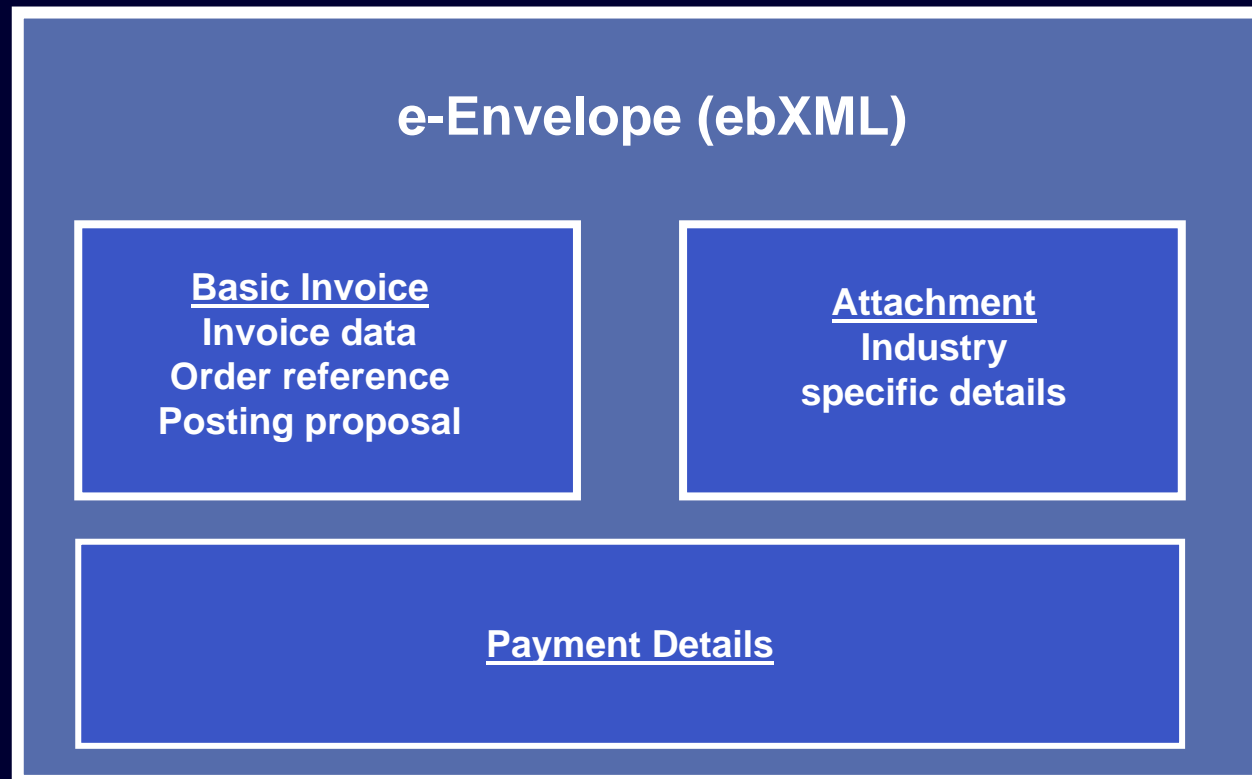
Straight Through Processing

Finvoice, Finland

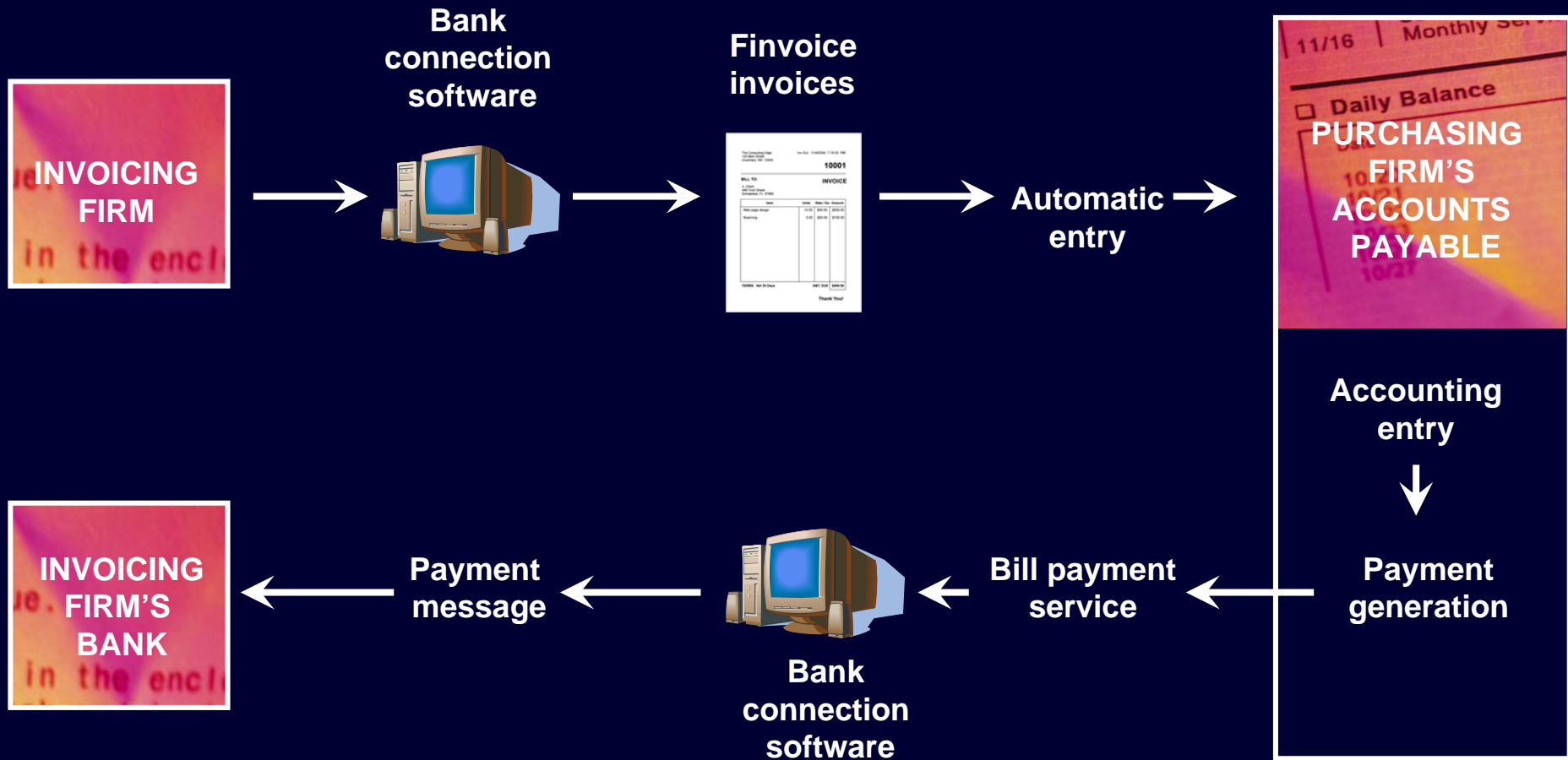
Finvoice

- Common format for electronic invoices designed by Finnish banks
- Invoices are forwarded through banks using existing connections
- Uses electronic business XML standard
- Widely adopted through Scandinavia

Finvoice Message Structure



Finvoice Processing in Accounts Payable



System Developments

Interac Association, Canada

Competition Policy

- 1996 Consent Order required Interac to:
 - remove membership restrictions
 - allow indirect access
 - modify the Board structure
 - change pricing practices
 - make the network available for new services that require on-line access to demand accounts

Ownership and Processing

Three separate entities created:

- *Interac Association*
 - member services and scheme rules
- *Interac Inc*
 - not for profit; maintains network software for members
- *ACXSYS*
 - for profit; licenses the network software, InteracOnline and Certapay

Developments

- Network Upgrade
 - moved from X-25 frame relay network to IP-based system
- InteracOnline
 - online debit solution, supported by 3 Interac members
- Certapay
 - e-mail money transfer system, supported by 5 Interac members
- Cross Border Debit
 - bridge to US ATM network, NYCE, supported by 5 Interac members