Why Cash ????
ESTA Conference

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ATMIA
ATM INDUSTRY ASSOCIATION

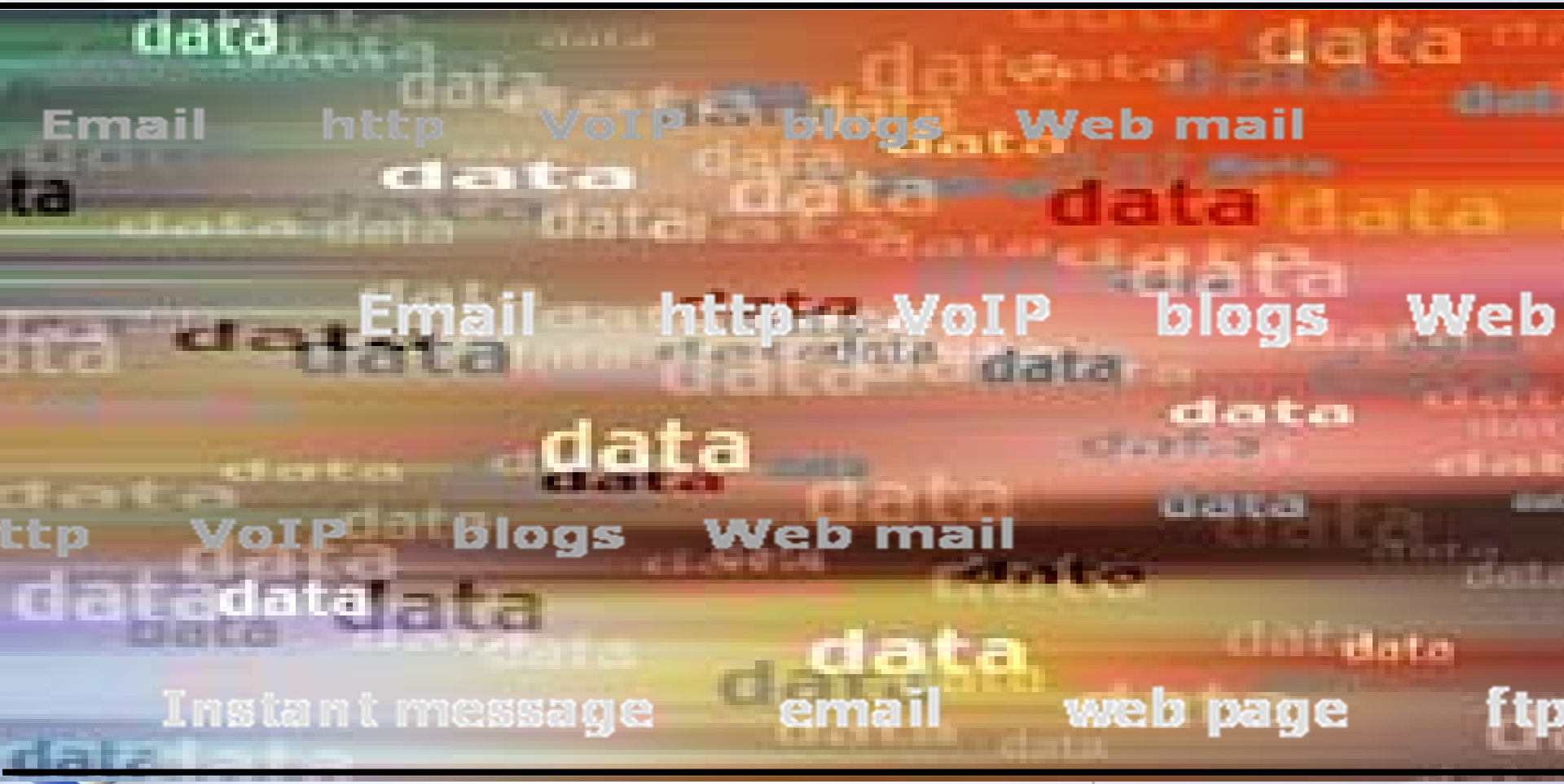
Bang your dead …..

Bang your dead ….

In the Past …..

In the Present ….

Bang your dead… in the future….



First….

- Confidence in Cards and Customer data protection
- Confidence in electronic cash and how it is supported
- What is the motive for change ?
- What is the cost of change ?
- What are the consequences of change ?

Finextra Headlines April

- AMEX to ditch contact-less key rings
- Malware used in Hannaford card data theft, 4.2million credit & debit accounts, across 300 store servers
- Compass Bank insider fraud IT employee stole 1million card details, names, account numbers and passwords to produce cards to withdraw money at ATM's
- Security experts uncover online supermarket for bulk stolen credit card data

Some external reports ……

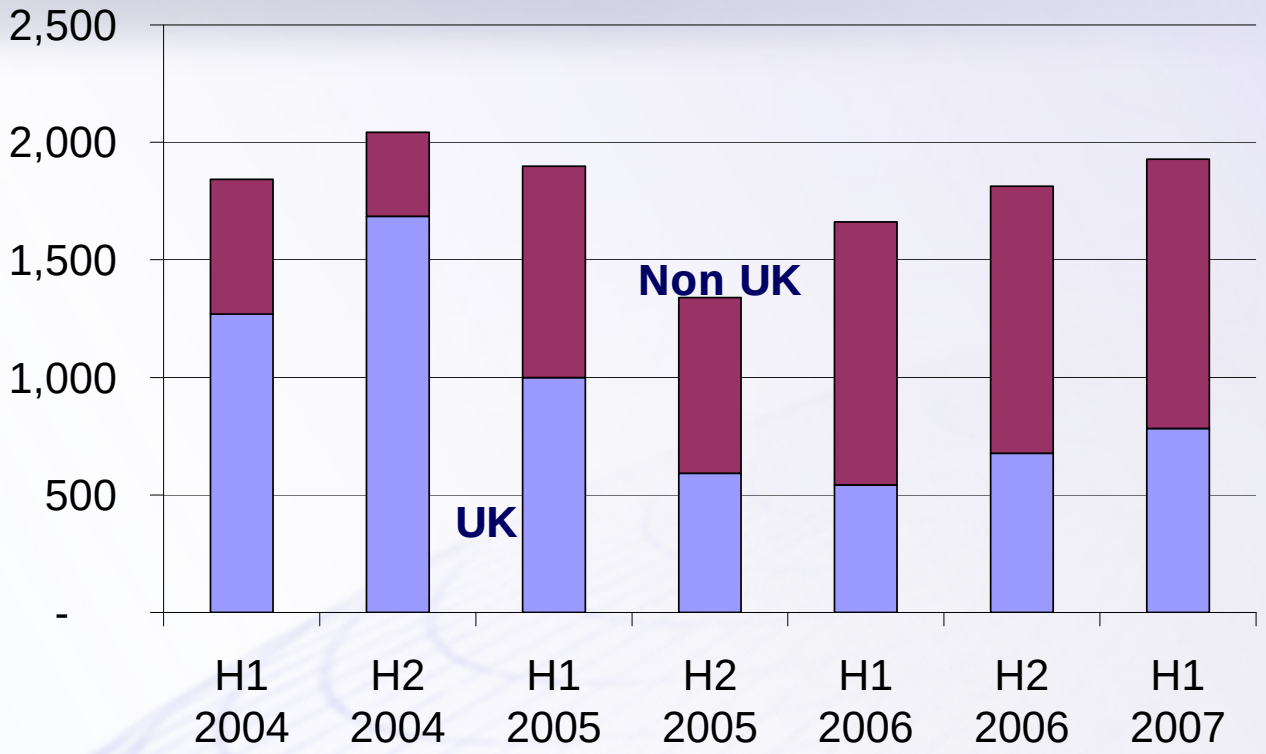
- Nilson Report estimates $30bn card fraud losses in the US and an urgent need to improve technologies and processes to avoid loss of trust
- SEPA report July 2007 reiterated the urgent need to work on security of payments for internet banking, card payments, and e-commerce.
- Reported in “Contemporary Economic Policy” E-money systems present new uncertainties to banks and payment systems through there potential for increased fraud, operational, and legal risks.

Some additional reports…

- Bank of New York's computer problem, which resulted in a $23.6 billion overdraft in 1985
- The "worm" virus that disrupted 85% of the operation of the Internet in 1987
- Significant losses occur if any interruption in the operation of the software supporting the system (due to a virus, e.g.) or of the centralized switching facility (because of creating and updating hardware/software systems

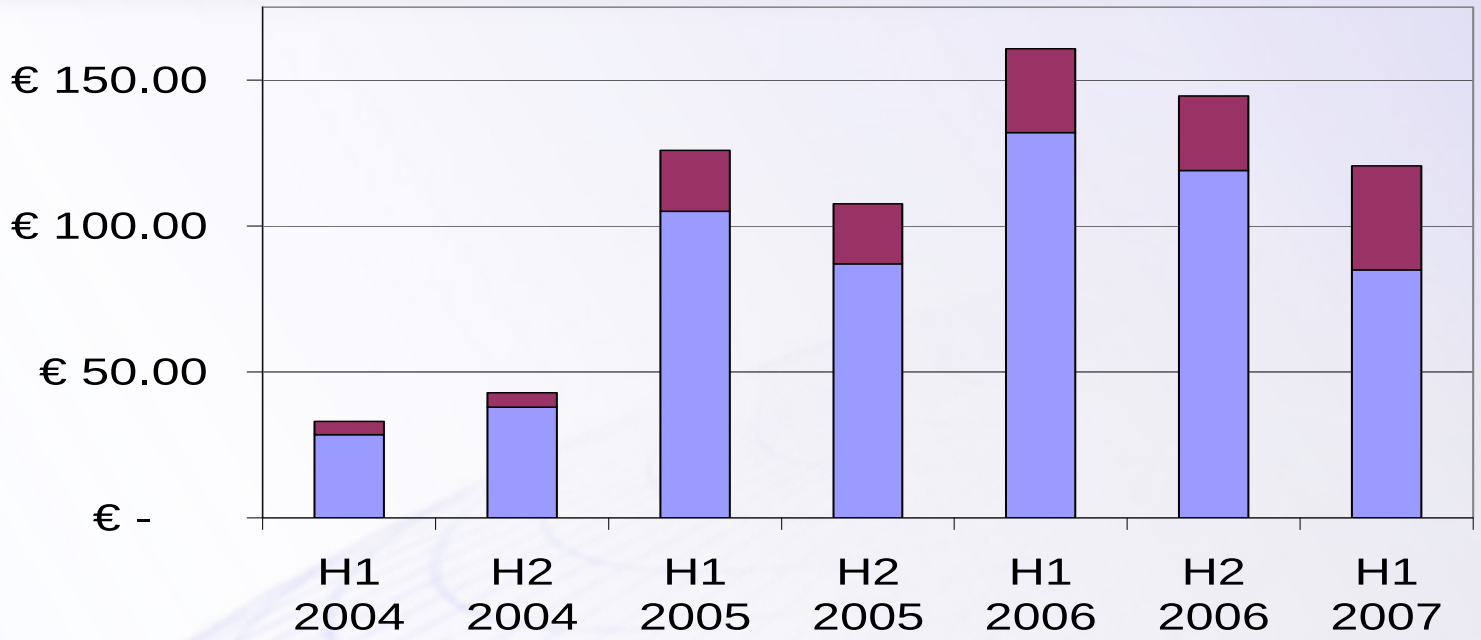
- Card Fraud UK has risen from £400m in 2005 to £550m in 2007
- Blackhat 2008 conference, Adam Laurie used his card reading script (ChAP.py) to pull name, account number, expiry details from an audience members RFID Amex card – without removing it from the victims wallet.

Skimming Attacks



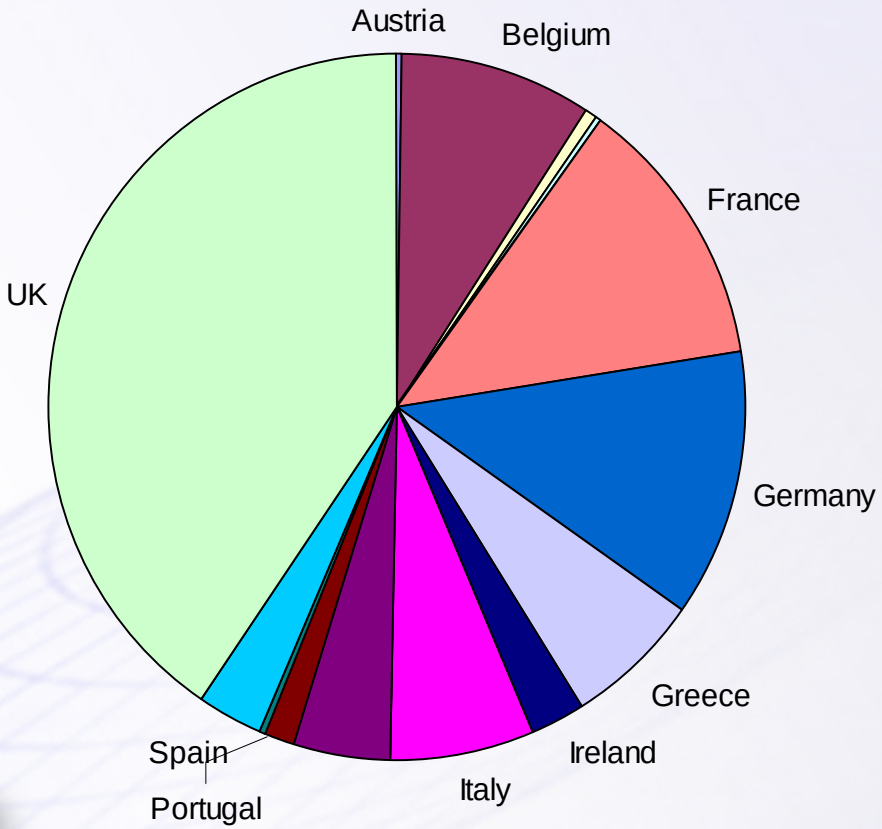
	H1 2004	H2 2004	H1 2005	H2 2005	H1 2006	H2 2006	H1 2007
Skimming Attacks UK	1,269	1,686	1,000	593	543	678	782
Skimming Attacks Europe less UK	575	357	898	746	1,118	1,136	1,147
Skimming Attacks Europe	1,844	2,043	1,898	1,339	1,661	1,814	1,929

Skimming Losses



euro Millions	H1 2004	H2 2004	H1 2005	H2 2005	H1 2006	H2 2006	H1 2007
Skimming losses UK	€ 28.50	€ 37.90	€ 105.00	€ 87.00	€ 132.00	€ 119.00	€ 85.00
Skimming losses Europe less UK	€ 4.50	€ 5.02	€ 20.90	€ 20.70	€ 28.70	€ 25.60	€ 35.60
Skimming losses Europe	€ 33.00	€ 42.92	€ 125.90	€ 107.70	€ 160.70	€ 144.60	€ 120.60

ATM skimming attack by country 2007, 19 countries reporting, 1,929 incidents



Information digest….for Q1 & Q2 2007

- **The previous statistics indicate UK to be the fraud centre in Europe, with 752 skimming attacks (not number of cards) netting €85m**
- **The rest of Europe which had 1147 skimming attacks netting €35.6m.**
- **Unfortunately information from Europe (European ATM Security Team) is highly suspect in terms of the level of information reported from each of the countries.**
- **UK information is coordinated between Banks, VocaLink, and APACS.**
- **When analysed the criminals in UK gain over €113k for each skimming attack, whereas in the rest of Europe it is one third less at around €32k!**
- **Extrapolation of UK data across Europe for both number of attacks and level of loss would indicate nearer €1billion loss rather than the €120m reported**

Is Cash Dead… case study Boots UK

Value

- 54% Cash
- 40% Card
- 6% Other

Transactions

- 79% Cash
- 18% Card
- 3% Other

- Trend 1
  - Cards are being used more approximately 2% reduction in cash payments
- Trend 2
  - Value of Cash is increasing highest level in 159 years history

The Costs

Transaction information

- Total of 485million transactions
- 13,000 Tills
- 1,500 Stores throughout UK
- Contactless payment is :-
  - 16 seconds faster than cash
  - 24 seconds faster than cards

Cost of Transaction

- Cash
  - Includes infrastructure costs,admin, cash collection, receipt, and cash losses
- Contactless
  - Estimated cost of replacing or upgrading POS terminals £3.5m
  - Communication, Charges, Training, disputes, and integration

The Costs ….

Method of Payment	No. of Transactions	Avg Cost per Transaction	Banking Cost
	000's	Per /transaction	Per/transaction
Cash	361,292	3.90	0.50
Credit Cards	41,859	3.90	2.85
Debit Cards	77,739	3.90	2.50
Amex	1,200	3.90	3.50
Contactless Debit	0	4.70	4.70
Contactless Credit	0	7.60	7.60
TOTAL	482,090		

The Complexities…..

- 3 prime areas of business
  - Advisory sales assisted 50% of tills
  - Browsing self service 40% of tills
  - Fast food – peak at lunch time only 10% of tills
- Other Factors
  - Tills are at peak less than 40% of the day, but must be manned – fixed cost
  - To save 10seconds in transaction time must convert to more sales to cover cost of technology
  - Customers need education – which payment method to use

Information provided by Boots, UK High Street Retailer 1500 Branches

COST

- Cost of Cash per transaction around 0.6%
- Cost of credit/debit card per transaction around 2%
- Cost of touch and go around 4% plus ROI assessment

SPEED

- Approximately 16 seconds no additional infrastructure
- Approximately 25 seconds, just invested in Chip & PIN
- Approximately 10 seconds plus the cost of investment

Where does it lead us …..

- Touch & Go when speed is prime factor, can reduce time at till by up to 10 seconds, but costs more
- Cash when maximum profit is required, particularly on “sales” items or special “offers”
- Card when audit trail is needed, impulse buy of high value goods

Current Forms of e-Commerce

- Credit Cards
- Debit Cards
- Stored value Cards
- Internet Banking/Commerce
- Mobile banking (RFID Chips)

Historical Summary ……..

- Gold – globally accepted, targeted by criminals while in transit on high seas, trains, and stagecoach to be replaced by..
- Paper money - globally accepted currencies (£GBP, $US, and now €EU) targeted in ATM's, cash in transit, cash centres with moves to be replaced by..
- E-cash – globally accepted credit, debit, pre paid, with magnetic stripe (**compromised technology**), electronic chip, and now RFID Chips being introduced in a range of devices..

Basic facts…

- Cash is a public asset
- Issued by Central Banks and the only payment method under the authority of the state
- Replacing cash with e-money is tantamount to privatisation of payment and monetary policy and could lead to liquidity crisis, price wars and financial instability
- Cash has two main functions
  - **As a store of monetary value**
  - **Method of payment**

How much could be controlled..

- Un – Governable Sector
- Cash only and growing in the developing economies.
- Developing economies are integral to the success of Developed economies (Manufacturing in China, India, Asia, and Service outsourcing)
- Figures from 121 countries show 29.75% of world GDP is informal (non registered economic sector)
  - Worldbank inform that 50-70% of non agricultural employment is cash paid
  - Estimated that 48million workers are illicitly working in the 21 OECD countries – cash payments
- The informal sector is growing in the first world, second world and third world economies

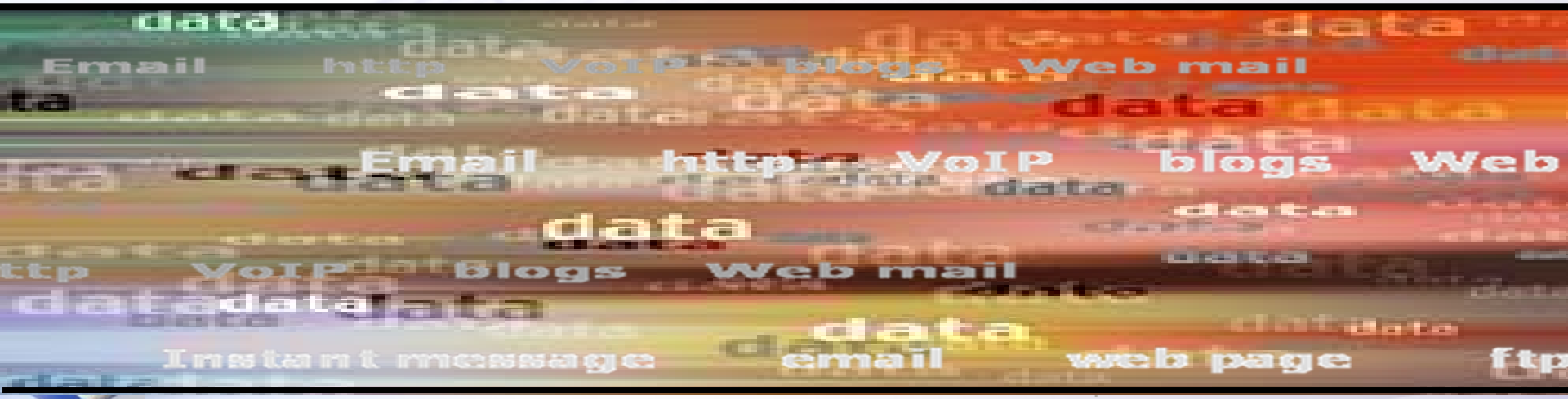
So what constitutes an e-bank ?

- Who issues e-money
- Will funds be put in place to cover the e-value
- Who would be liable for losses
- What happens if the branded network or electronic bank fail – would the electronic cash credit worthiness be affected
- Would customers be willing to accept that the issuer of electronic cash is absolved of liability in all cases?

The big issues

Digital communication and electronic data storage is a key weakness with open systems

- Internet Identity Fraud & financial data
- Comunication Highways open to penetration
- A clear Criminal target to breach and compromise
- A clear Terrorist target to destroy
- Network security and electronic data storage, is defined by the weakest point



…and in Summary

- The future technologies of the ATM
  - Cash is still king
  - Local recycling of cash at the ATM or Branch is important to the overall cost of cash
  - The method of accessing cash (card with magnetic stripe) needs to be security strengthened
  - Criminals and crime patterns migrate quickly and find the weakest links in the financial chain
  - introduction of new technologies should be tempered with a full risk assessment
  - Global crime needs to be addressed using Global coordination of deterrent and detection techniques
  - Technology needs to be introduced – but the introduction should create security improvement for customers not opportunities for criminals.

Final Thought

ATMIA can *assist* the industry *to monitor* GLOBAL cash security issues to provide input for LOCAL security issues.

Thank you for your attention!

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