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ICT in Customs Administration & Trade Facilitation

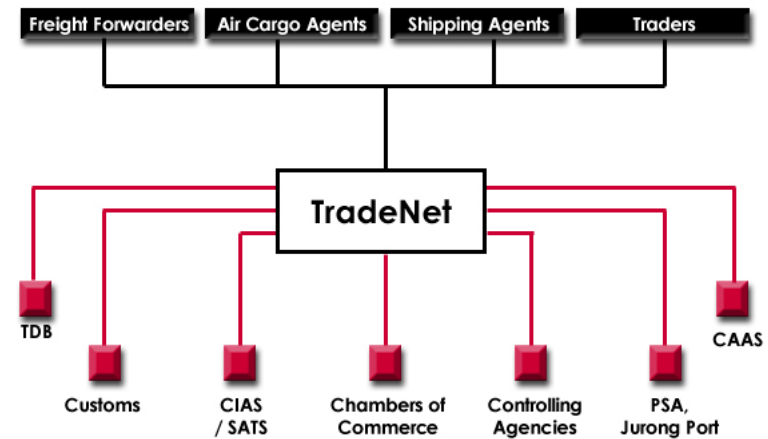
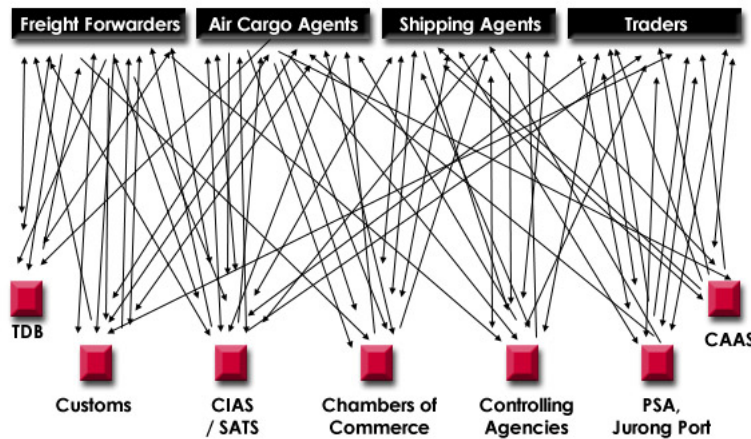
ADB ICT Workshop on Risk Management & Post-Entry Audit

Tan Sian Lip
9th June 2005

Case Study

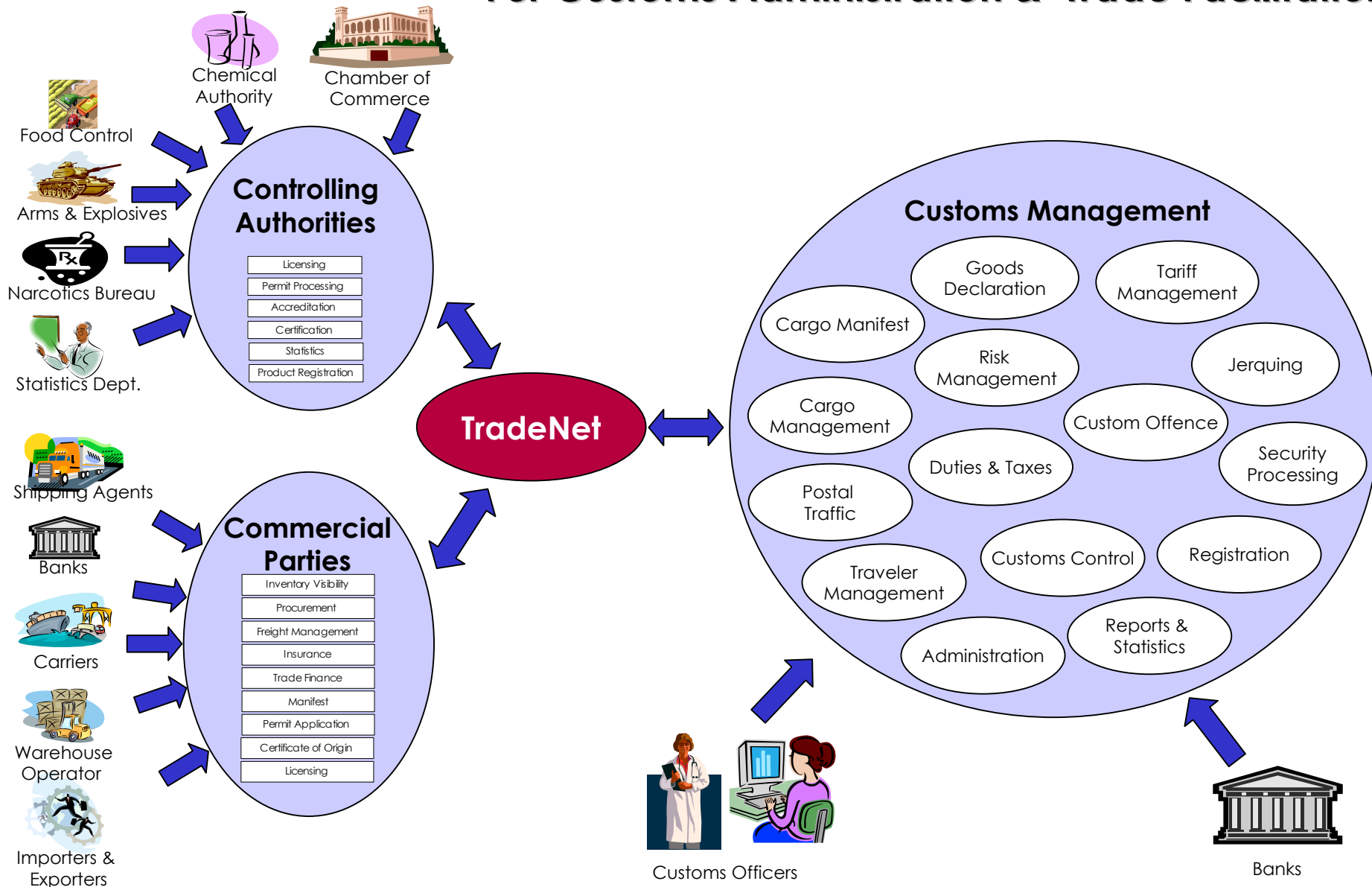
Singapore TradeNet

World's first nationwide trade clearance system Integrates 35 controlling units' requirements



	Before TradeNet	After TradeNet
Processing time/permit	2 – 7 days	10 sec or less
Fees charged	S\$10 – S\$20	S\$3.30
Number of documents	3 – 35 docs	1 eForm/eDoc

Single Window For Customs Administration & Trade Facilitation



Comments on Trade Facilitation & Control

- They are not (necessarily or completely) antithetical
- **The Single-Window approach to trade-clearance / facilitation improves Control because it lowers**
 - Direct cost of compliance – there are fewer steps in the clearance process
 - Indirect cost of compliance – application of rules is uniform and determined by the IT system
 - More reliable than depending on business users' familiarity with rules
 - Fewer instances of non-compliances resulting from ignorance of rules

Changes Over 16 Years

Changes at three levels

1. Business/Operational Rules

- periodic changes in response to changes in business, legal, and control environments

2. Organisation Roles & Structure

- Less frequent re-organisation of government has resulted in movement of governmental functions between governmental bodies

3. Technology

- Occasional replacement and upgrading of technology platforms (computers, network equipment, etc.)

Impact on Traders: (almost) none

- Except for changes in information required for clearance

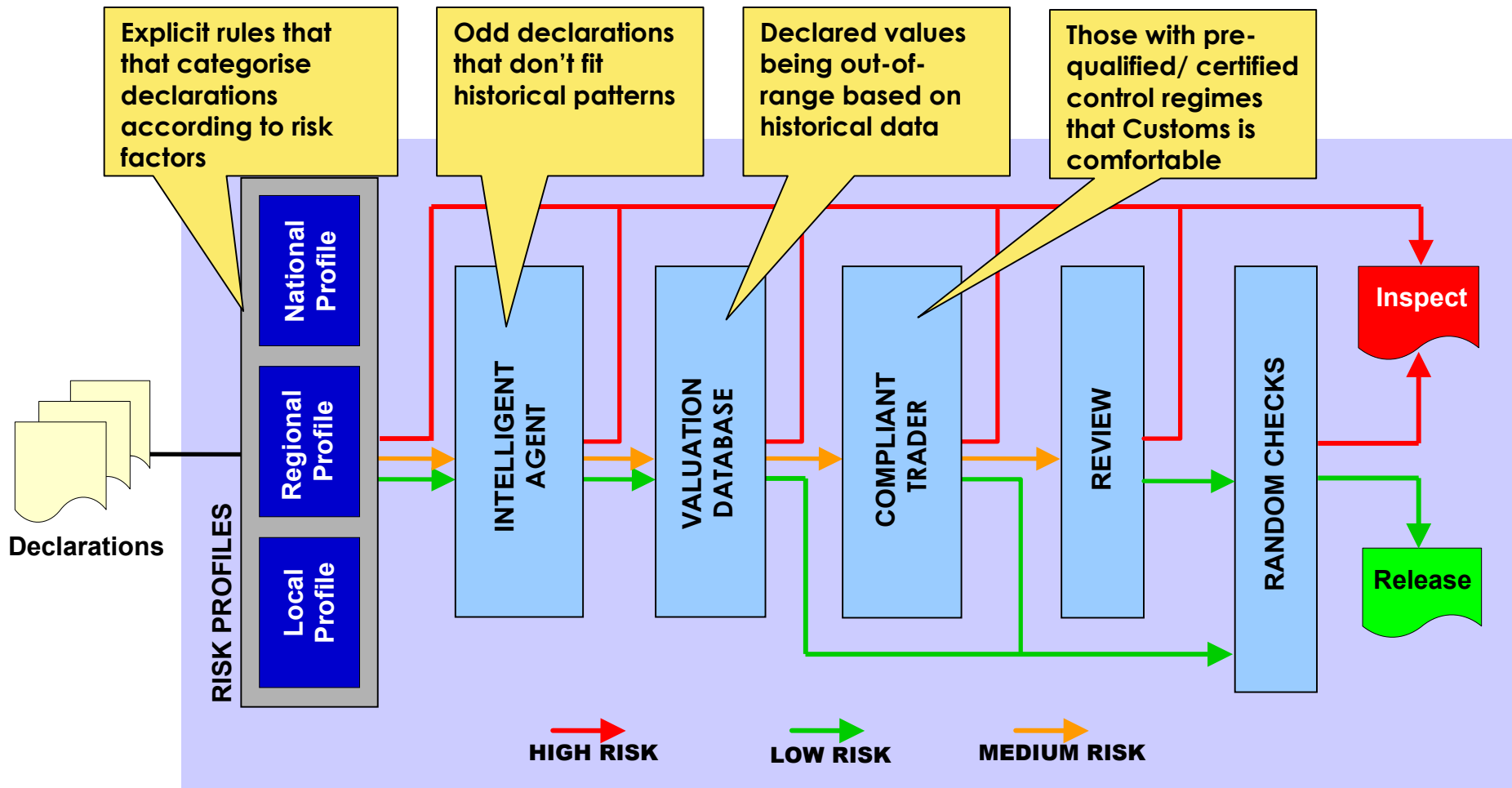
Organisation & Architectural Considerations

- **TradeNet was implemented by a separate / distinct entity under a BOO arrangement**
 - Business rules from multiple agencies are “externalised” and encoded within the systems operated by this entity
 - Technically simpler to maintain all trade-clearance rules within one IT system
 - May be difficult to require all participating agencies to externalise their rules for inclusion into a separate entity's system

Organisation and Architectural Considerations ... cont'd

- **Alternative model is to require automated and (close to) real-time online clearance from agencies that are responsible for those decisions**
 - Maintaining the “single-window” user-interface will require binding all participating agencies to the “window” provider through data-exchange technology and service-level agreements
 - Politically simpler but technologically more complex (and possibly less reliable)
- **Whatever the model – leadership and will-power is the key to success**

Risk Management – Clearance Workflow

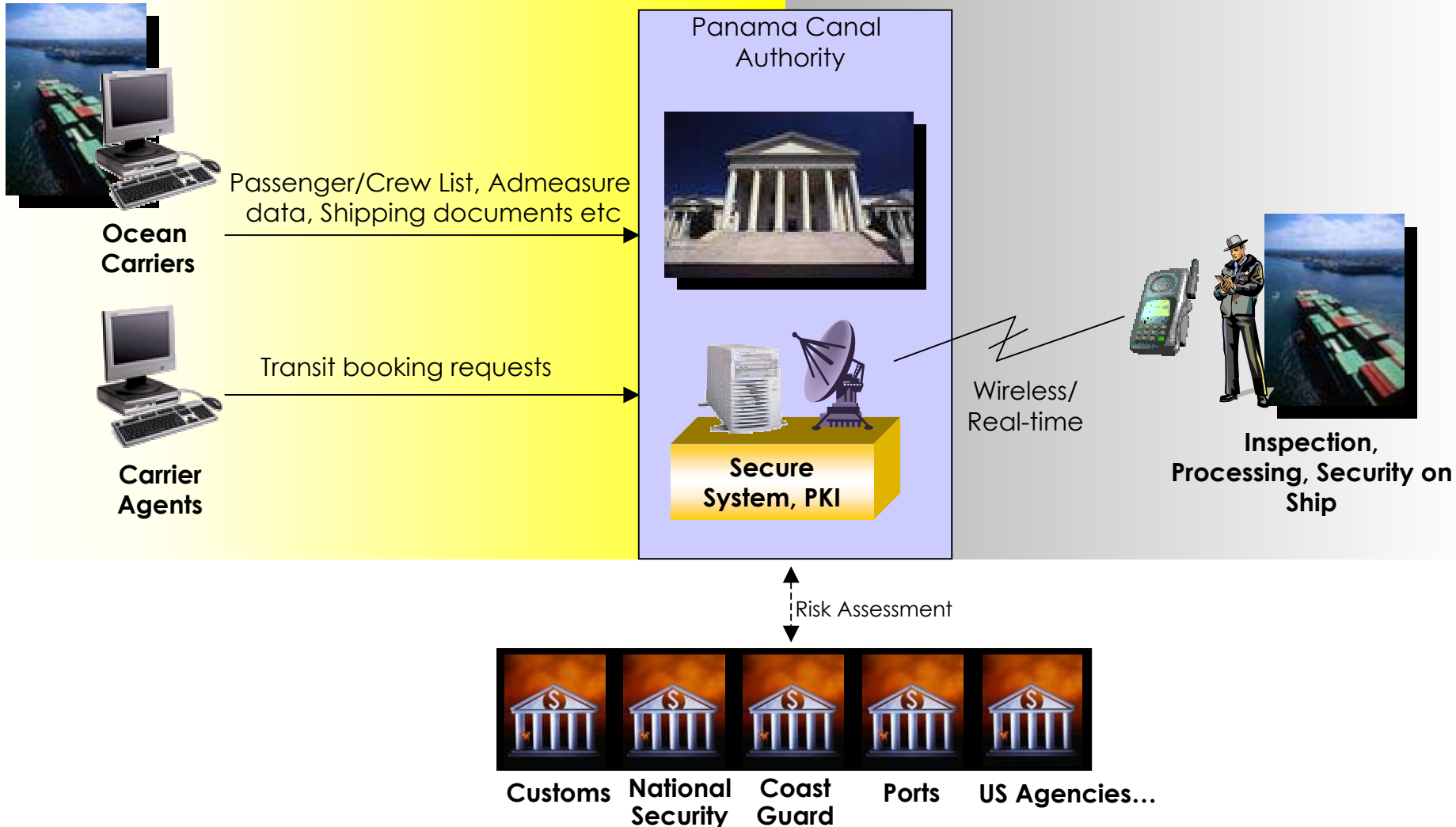


Case Study
Panama Canal Authority
Mobile Data Collection System

ACP MDCS

Electronic Data Collection System

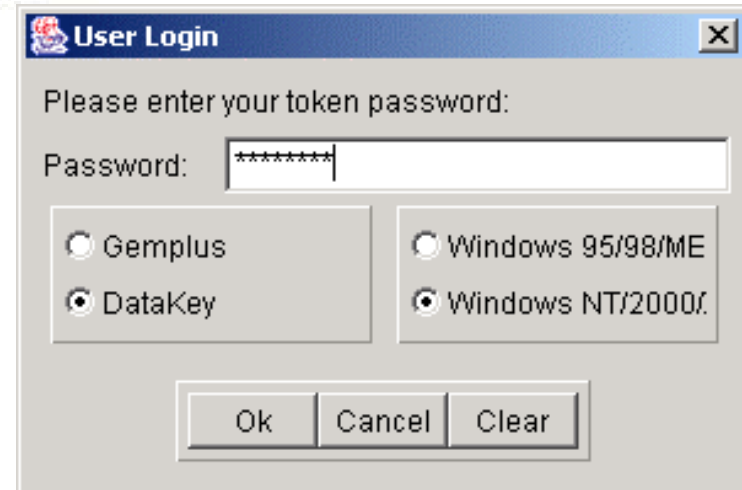
Mobile Data Collection System



MDCS Technologies



- Rugged Tablet PCs, PDTs, Wireless Mobile Printers, Wi-Fi wireless network, VPN, Bluetooth, PKI
- RadianTrust, Microsoft .NetCompact Framework, Oracle, BEA WebLogic, J2EE, Safe-Net/BeTrusted



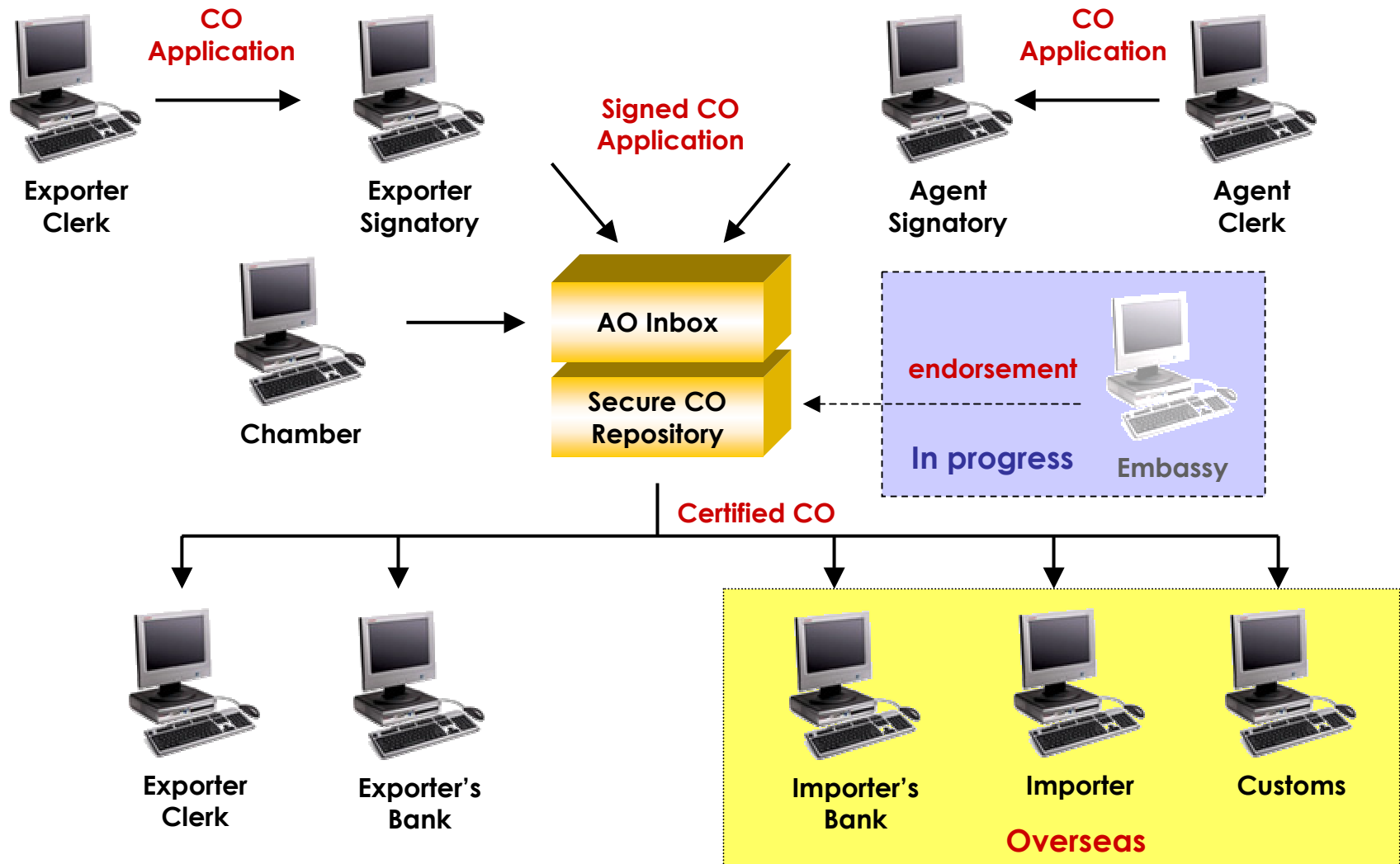
Benefits of Secured Mobile Data-Collection

- **Increased Timeliness**
 - Data-capture in real-time & on-site
 - Results of analysis can be conveyed
- **Higher Quality**
 - No errors arising from transcription of hard- to softcopy
- **Accountable**
 - all data entered can be digitally signed




Case Study

Electronic Certificate of Origin

Electronic Certificate of Origin



Optical Document Security




1 Exporter (Name & Address) FAST EXPORTER PTE LTD 31 SCIENCE PARK ROAD THE CRIMSON Singapore 117611		REPUBLIC OF SINGAPORE CERTIFICATE OF ORIGIN No. SCCCI-04-000210 NO UNAUTHORISED ADDITIONAL ALTERATION MAY BE MADE TO THIS CERTIFICATE ONCE IT IS ISSUED	
2 Consignee (Name, Full Address & Country) CimmonLogic (North America) Inc 100 York Boulevard Suite 200 Richmond Hill, Ontario Canada		8 DECLARATION BY THE EXPORTER We hereby declare that the details and statements provided in this Certificate are true and correct. FAST EXPORTER PTE LTD ECT3001 Signature: Name: Anthony Chong Designation: MANAGER Date: 10 MAY 2004 Stamp:	
3 Departure Date On or About 14 MAY 2004			
4 Vessel's Name/Flight No. Vessel-Crimson			
5 Port of Discharge HANNAH (KISHIWADA), OSAKA			
6 Country of Final Destination JAPAN			
7 Country of Origin of Goods SINGAPORE			
9 Marks & Numbers SVD-456	10 No. & Kind of Packages Description of Goods (include brand names if necessary) POLO T-SHIRT	11 Quantity & Unit 1000 PCS	
12 CERTIFICATION BY THE COMPETENT AUTHORITY We hereby certify that evidence has been produced to satisfy us that the goods specified above originate in/where processed in the country shown in box 7. This Certificate is therefore issued and certified to the best of our knowledge and belief to be correct and without any liability on our part. <div style="display: flex; justify-content: space-between; align-items: center;"> <div>  SINGAPORE CHINESE CHAMBER OF COMMERCE & INDUSTRY 47 HILL STREET S. (179345) TEL: 6336 3685 FAX: 6338 2140  SCCCI SERIAL NO. 10 MAY 2004 </div> <div style="text-align: center;">  for SECRETARY - GENERAL </div> </div>			

Invisible
watermark
"COPY" will
appear after
photocopied



Visible
watermark
deteriorates
on copying

Vital
transactional
info stored &
PKI-signed in
2D barcode

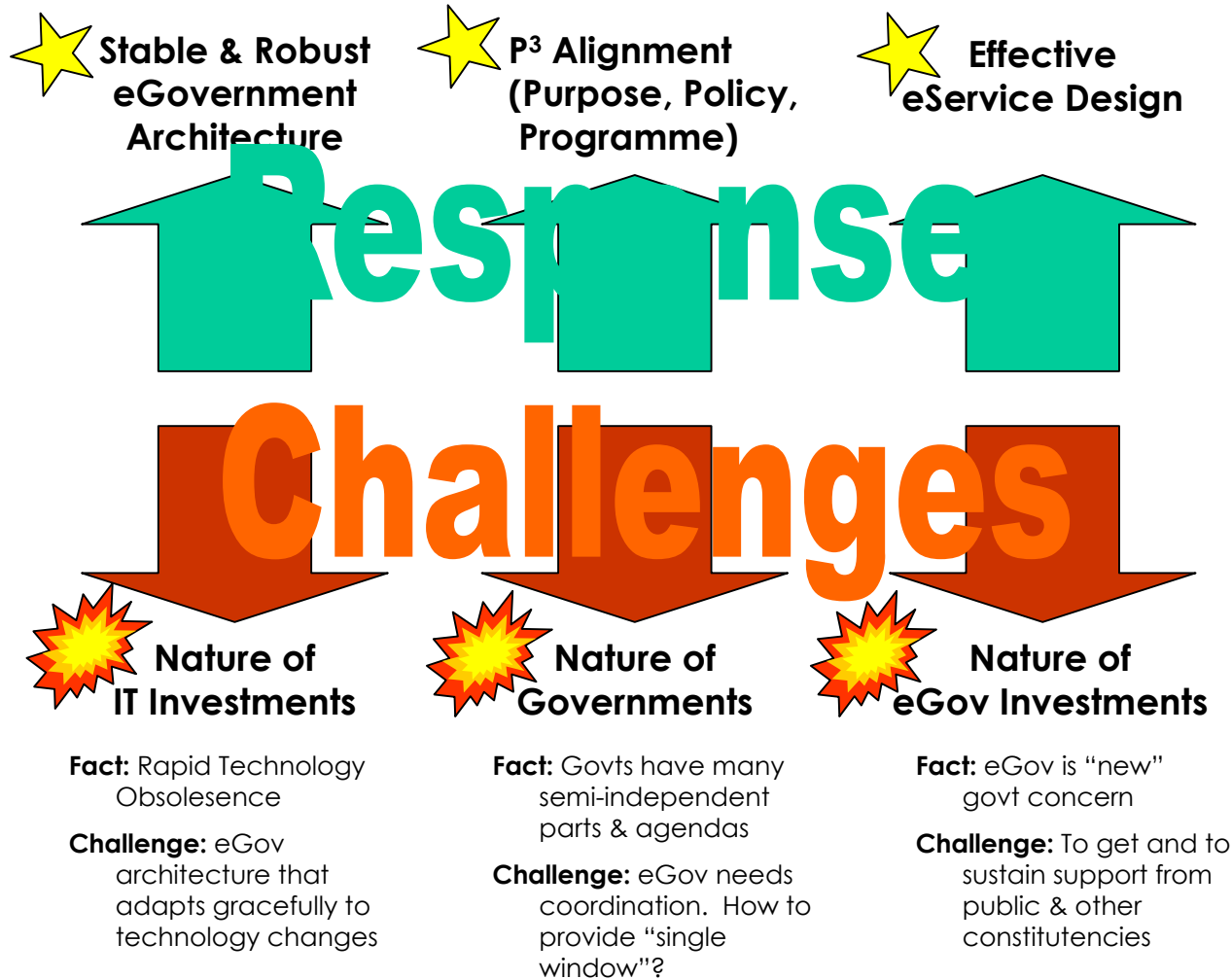
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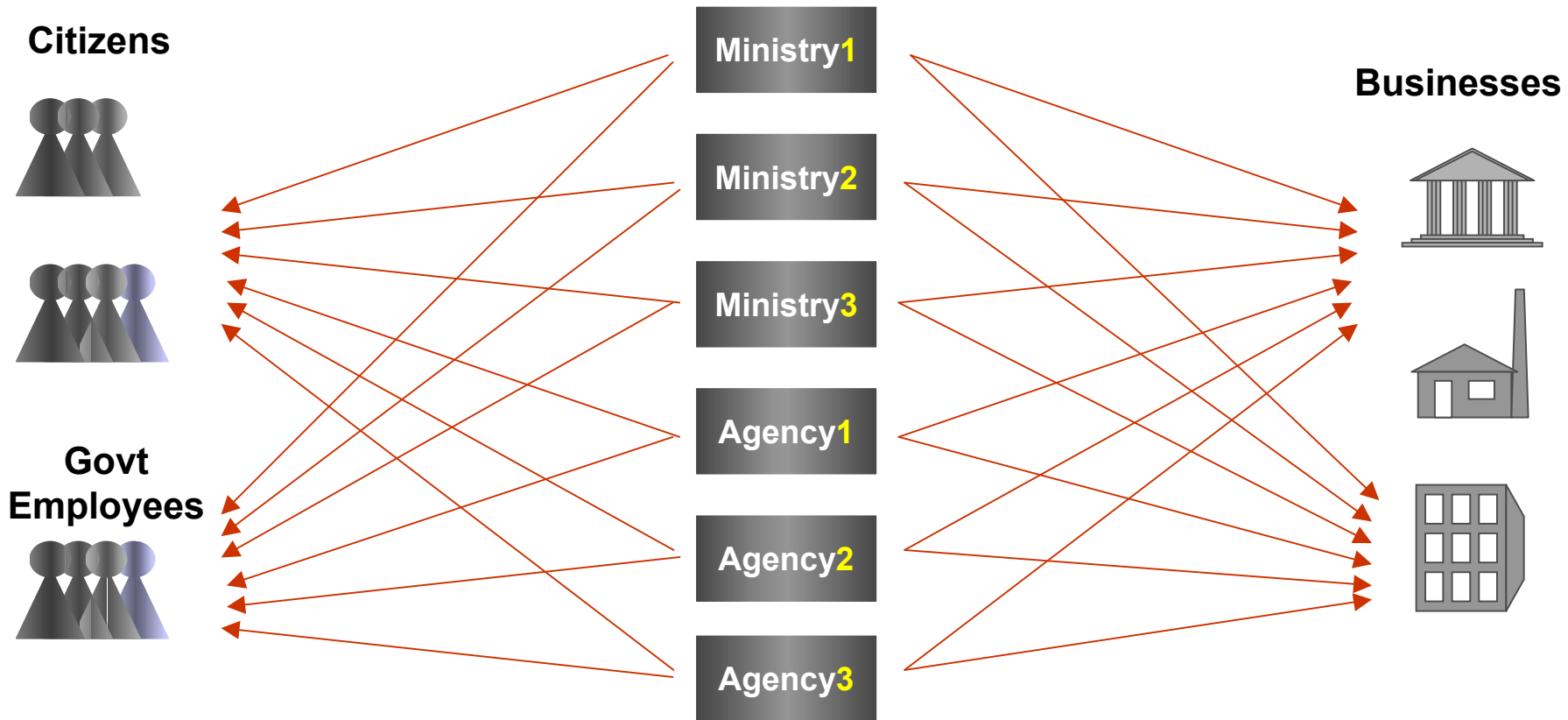
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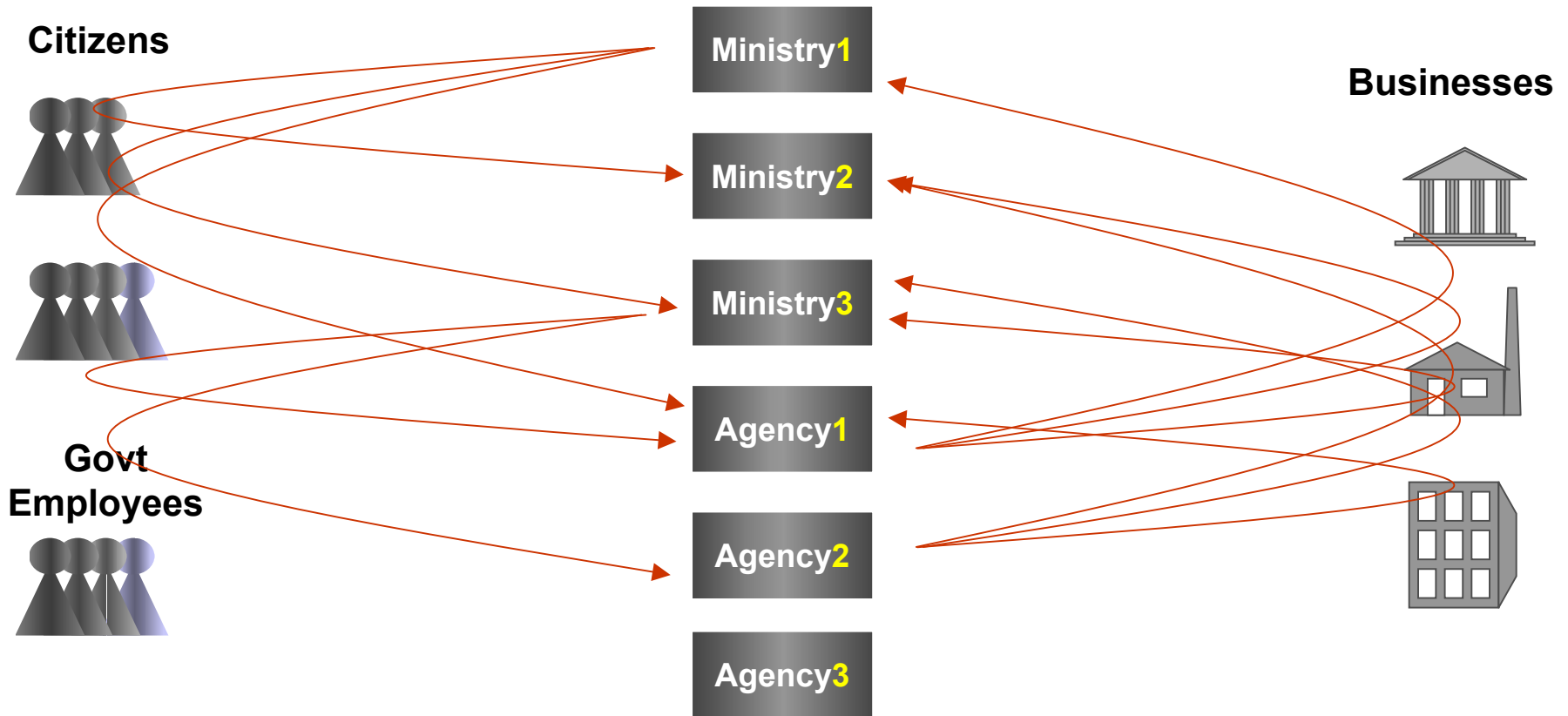
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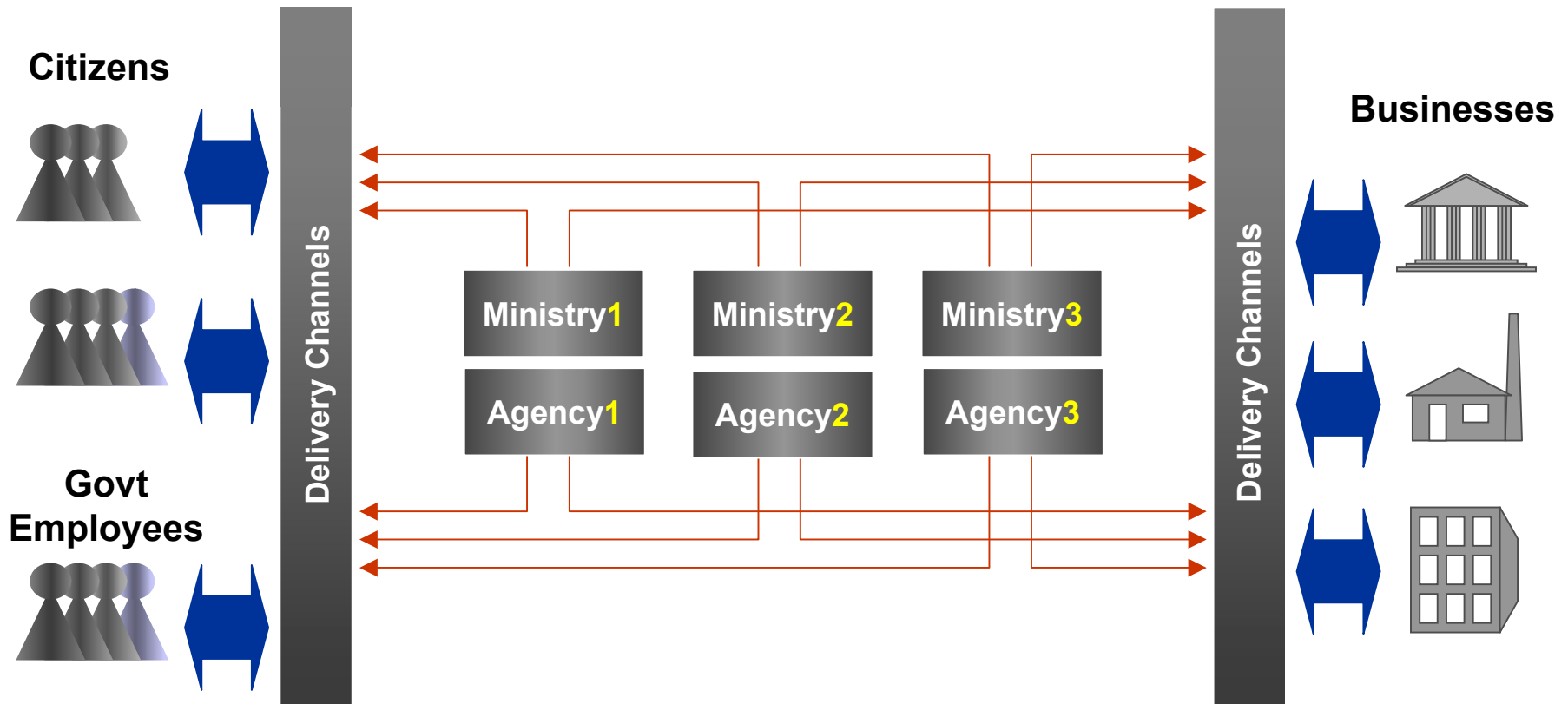
ICT Issues & Solutions

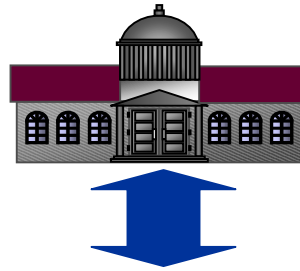
eGov Challenges & Responses





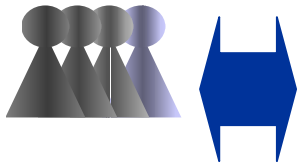




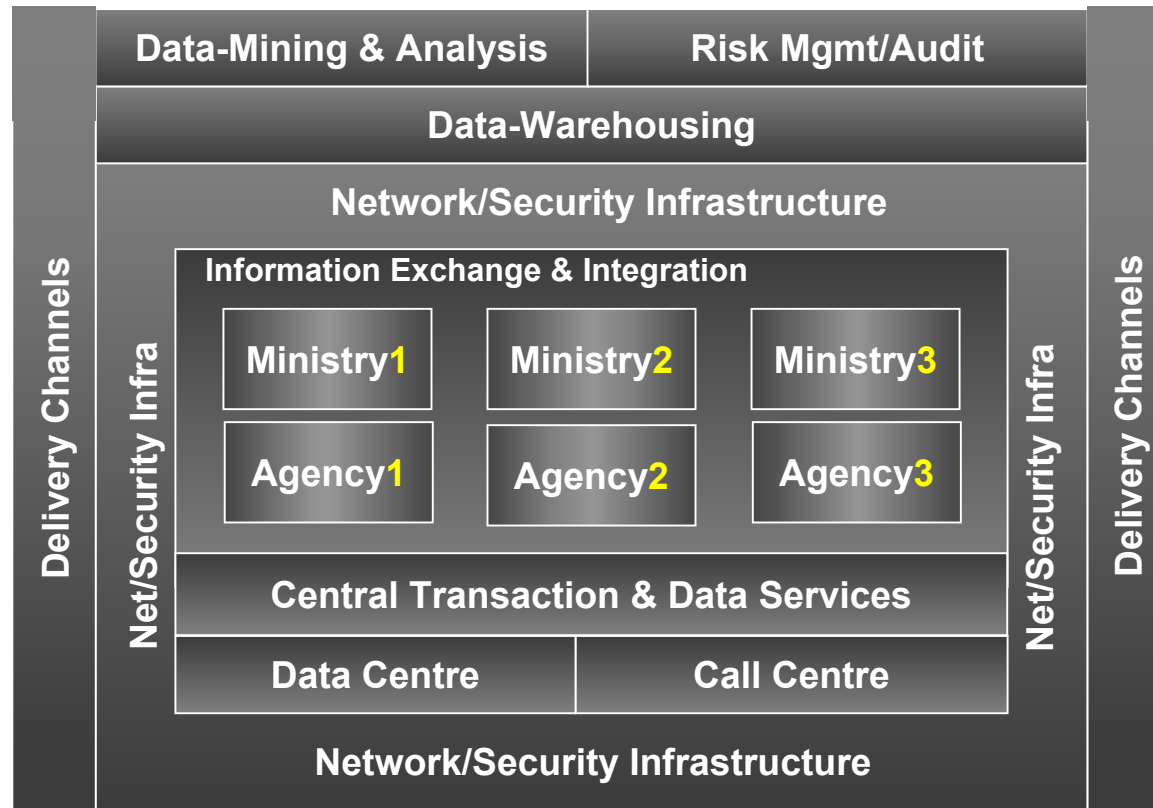
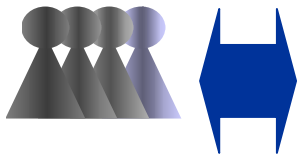


**Government
Policy-Makers**

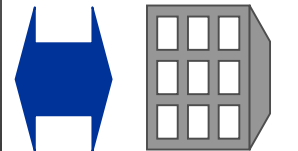
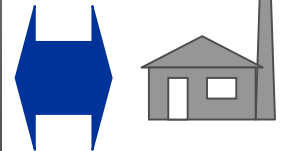
Citizens



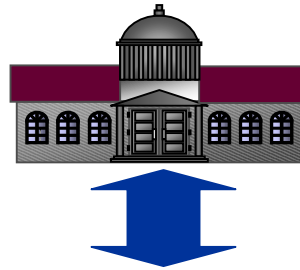
**Govt
Employees**



Businesses

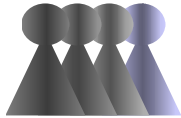
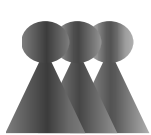


Ministry/Agency Systems
Core Government Infrastructure

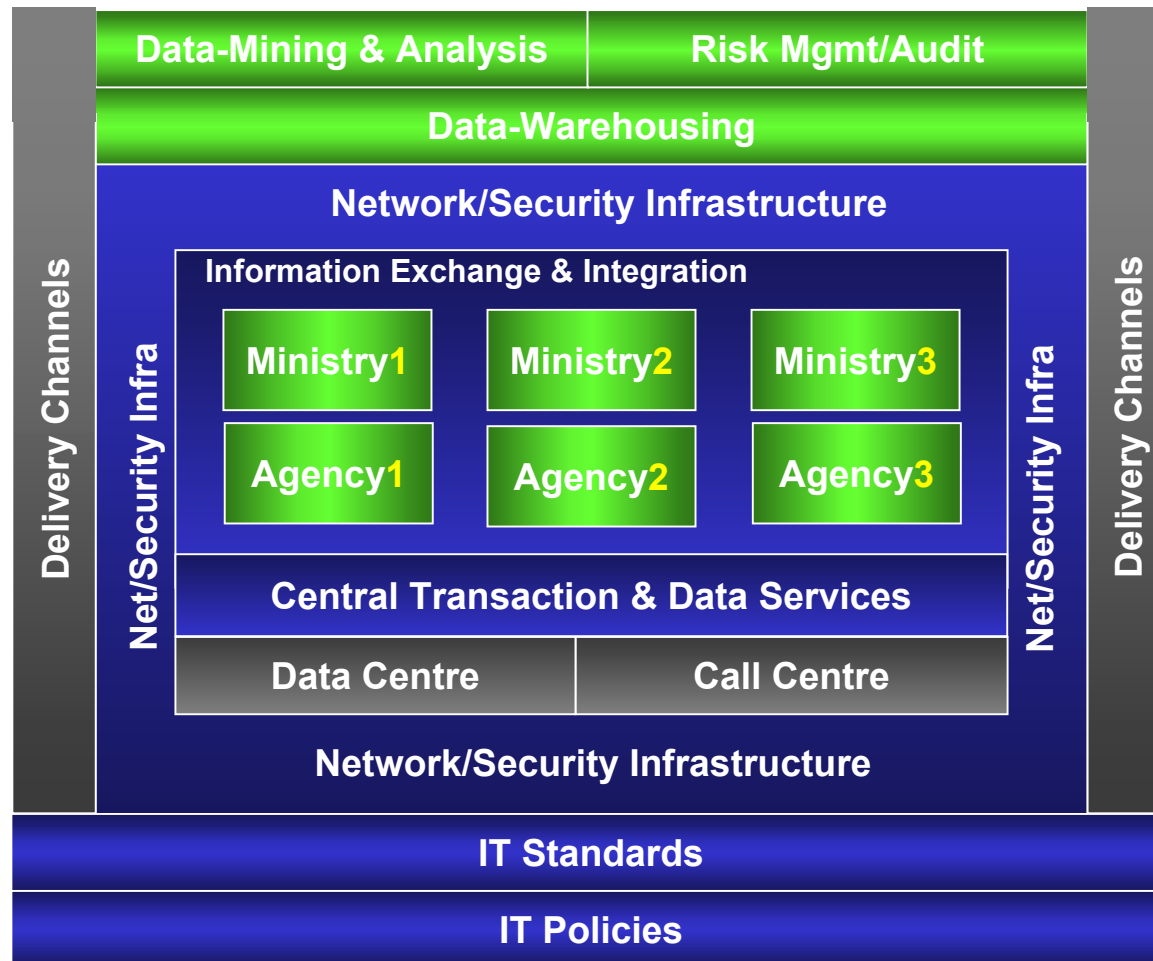
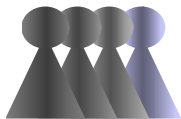


**Government
Policy-Makers**

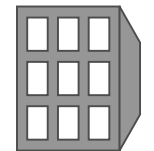
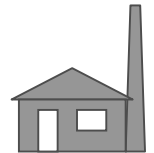
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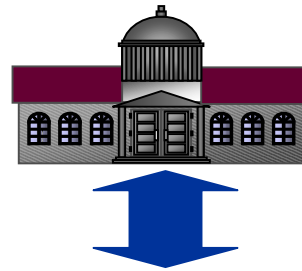


**Govt
Employees**



Businesses

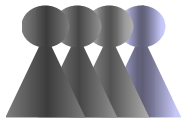
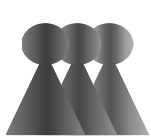




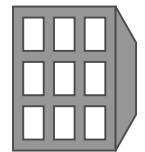
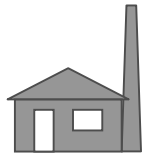
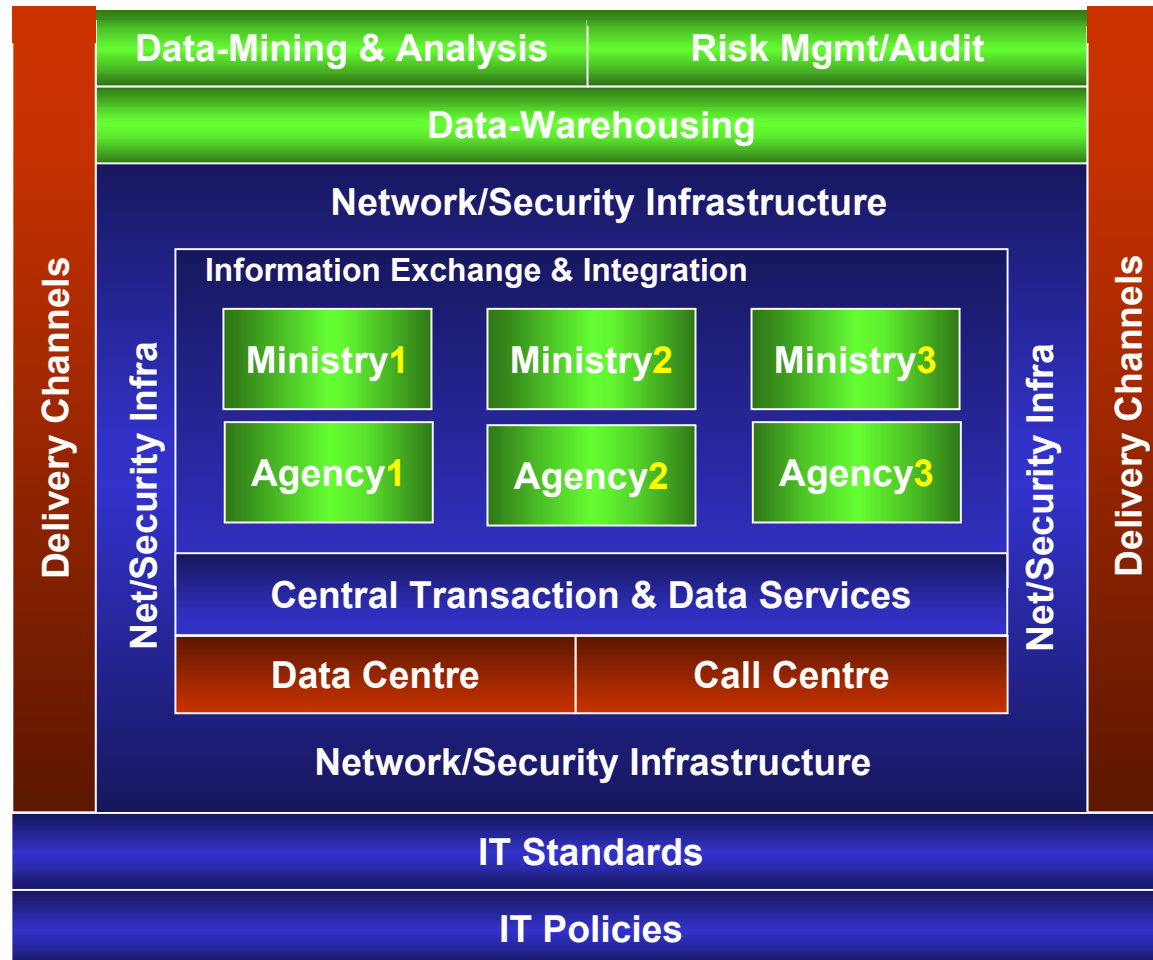
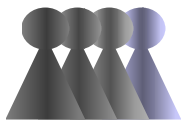
**Government
Policy-Makers**

Businesses

Citizens



**Govt
Employees**



Other Govts



Security & Legal Issues in Cross Border Information Flows

- **Legal Standing of Softcopy Information**
 - Reliance upon transmitted softcopy information as the (partial) basis for performance of customs procedures requires such information to have legal-evidential standing – for both public- and private-sectors
 - Examples: Singapore and USA's Electronic Transactions Acts (ETA), Hong Kong's Electronic Transactions Ordinance, UK's Uniform ETA

Security & Legal Issues ...

- **Public Key Infrastructure (PKI)** is an elegant way of achieving the big 4 goals of information security (CAIN)
 - Confidentiality: only intended recipient can receive and interpret the information
 - Authenticity (Authentication): the source of the information can be reliably determined
 - Integrity: the information has not been tampered with
 - ➔ – Non-Repudiation: the source of the information cannot deny (repudiate) its role in providing the information

Security & Legal Issues ...

Cross Border PKI

- **PKI ... cont'd**

- Multiple Certificate Authorities (CA) with differing certificates of practice statements (CPS), i.e. differing security practices and liability limitations
- Establishment Mutual trust between users of these CAs
- Complex ways:
 - Supranational CA to certify CAs in each participating state, e.g. SWIFT-backed Identrust
 - » sovereignty and operational-financial issues have prevented such schemes from working
 - » For example, SWIFT-backed Identrust has not found wide acceptance

Security & Legal Issues ...

Cross-Border PKI

- Establishment Mutual trust
 - Complex ways cont'd...
 - Cross-Certification amongst participating CAs
 - » Harmonisation of security practices, legal liabilities, applicable governing laws and jurisdictions for adjudicating disputes
 - » Practically speaking, it is difficult to achieve
 - especially in cross-border inter-jurisdictional situations

Security & Legal Issues ...

Cross-Border PKI

- Establishment Mutual trust
 - Simpler way:
 - Cross Recognition
 - » Between users of CAs - not the CAs
 - » Each member agrees to recognize the validity each other's public-keys & signatures
 - » Some standardisation of security practices
 - » No harmonisation of legal liability and applicable jurisdictions & laws
 - » Example: Cross-Border Trade-Declaration Exchange “Club” Approach by CrimsonLogic

Thank You