



STORKEY & Co
MANAGEMENT CONSULTANTS

Challenges to Avoid Financial Technology Disruption

Presentation by Ian Storkey
June 2018

ADB



2018 Asian Regional
Public Debt Management Forum



Let me cover ...

Update on the Two
Debt Recording
and Management
Systems

Three New
Technology Initiatives
in Debt Management
Operations

Protecting DMO's
Critical Business
Operations and
Systems



Update on the Two Debt Recording and Management Systems

CS-DRMS

- CS-DRMS, CS-SAS & Horizon
 - Current CS-DRMS version is 2.2
 - **Question: How long will CS-DRMS be supported?**
- Meridian
 - Available to existing member states from January 2018 on a pilot basis with selected countries, released to all clients from January 2019
 - **Question: How will Commonwealth Secretariat manage roll-out to over 60 countries and over what timeline?**
- Crown Agents
 - Implementer and support for non-Commonwealth countries
 - No support provided for Myanmar since October 2017
 - **Question: When will replacement provider be announced?**

DMFAS

- **DMFAS Version 6**
 - Current version 6.1.3 (released in early 2018)
 - Version 6.2 and 6.2.1 planned for release in 2017
 - Version 7 signaled over 2 years ago with development in 2017-18
- **DMFAS Version 7**
 - Expanded coverage of debt data, broader scope of functionality, enhanced reporting, and improved support
 - Indication is 2019 but no firm timeline for rollout published as yet
 - **Question: How will UNCTAD manage roll-out to 86 institutions in 57 countries and over what timeline?**



Three New Technology Initiatives for Debt Management Operations

Hosting DMO Systems

- Some DMOs have opted to utilize service providers to host their debt recording and management systems via an internet portal rather than maintain the software in-house
- This has the benefit of transferring IT and system risk to a third-party provider and therefore reducing or even eliminating the IT systems resources that the DMO would have in-house, i.e. mitigate operational risk

Example of Hosting



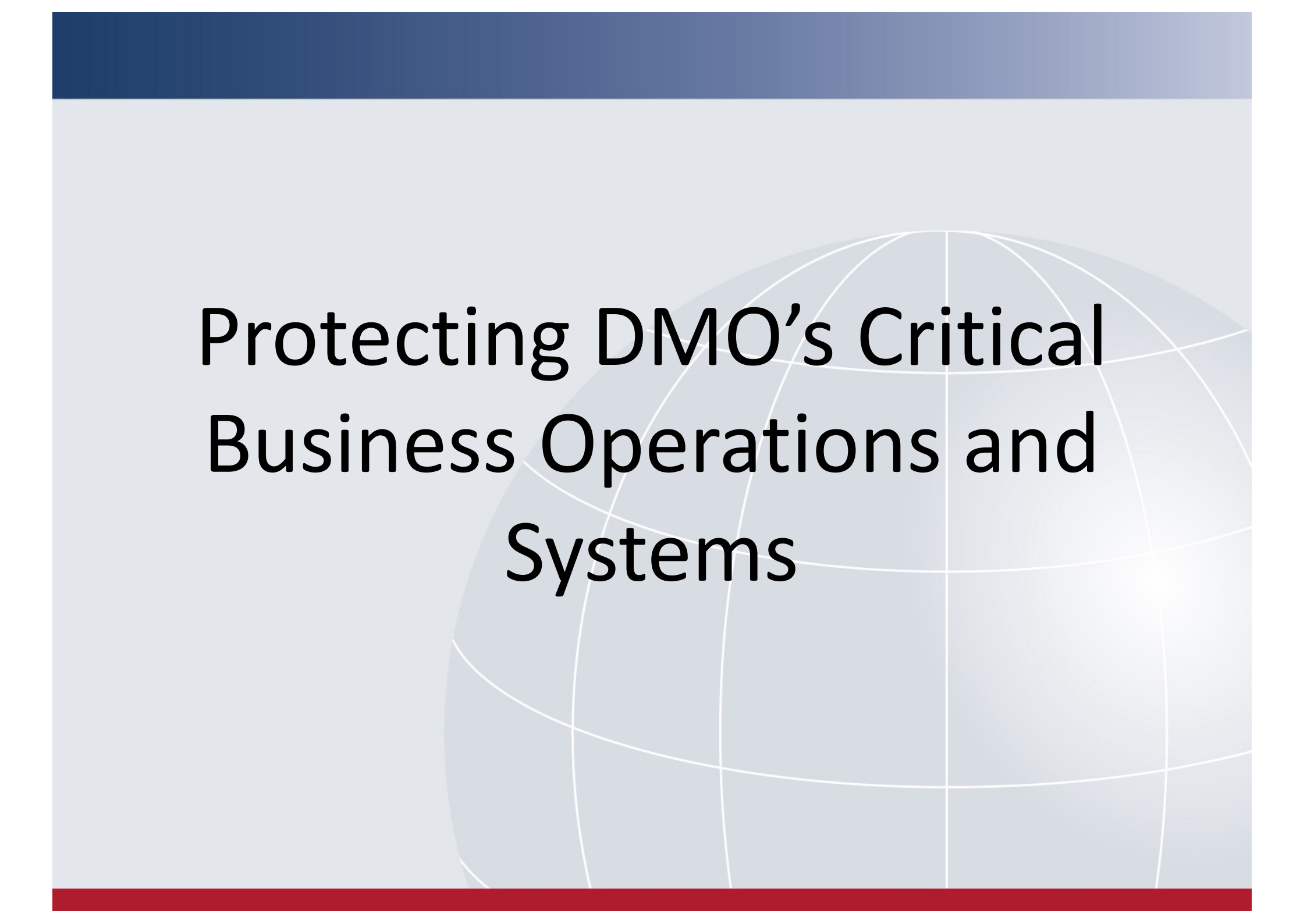
- FIS™ Treasury Management Software
 - Includes Integrity and Quantum
 - Can be deployed on premise, in a private cloud or in a secure, SaaS environment hosted at ISO-certified and SSAE 16 / ISAE4302-audited data centers
 - NZDMO, LGFA and AOFM have moved to SaaS environment using FIS' Quantum™

Kenya M-Akiba Bond

- Kenya began issuing a Government bond leveraging mobile phone technology to promote financial inclusion in March 2017
- €1.25 million (KES 150 million) M-Akiba three-year “mobile bond with 10% semi-annual coupon was initially issued during a two-week window, where retail investors were able to place orders for the bond on their mobile phone which was issued at par and allocated on a “first come first served basis”
- Aimed at retail investors and could be purchased in sizes from €25 and up to a daily maximum of €1,200 per investor (approximate equivalent values)
- M-Akiba bonds can be traded on Nairobi Securities Exchange where buy or sell orders are placed exclusively via mobile devices and are processed in real-time
- <http://www.m-akiba.go.ke/>

Issuing Bonds using Blockchain Platform

- In January 2017, Commonwealth Bank of Australia tested issuing a cryptobond with Queensland Treasury Corporation using a capital markets blockchain platform
- QTC ran a prototype bond auction on the blockchain platform but no bond was actually issued
- QTC used the blockchain to generate a bond tender, view investor bids in real time (in yieldbroker), finalize investment allocation and settle instantly with investors
- QTC acted as both the issuer and investor to test the end-to-end process for the issuance
- In October 2017, Russia's National Securities Depository issued its first-ever live bond using blockchain, a US\$10-million bond for shares in Russian telecom giant MegaFon, using smart contracts and the open-source Hyperledger Fabric blockchain



Protecting DMO's Critical Business Operations and Systems

Case of Mexico SHCP

SHCP



SECRETARÍA
DE HACIENDA Y
CRÉDITO PÚBLICO

- Command Center to constantly monitor activity including cyber-attacks
- Monitoring and control over the transmission of sensitive or confidential information
- Control in the corporate environment of the use of mobile devices for processing sensitive information



Case of Mexico SHCP (VPN Services)

SHCP



SECRETARÍA
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CRÉDITO PÚBLICO

- Encrypted channels of communication between different buildings
- New generation intrusion prevention system
- Perimeter anti-malware protection in the main buildings
- Protection Denial of Service (DoS) and Distributed Denial of Service (DDoS) attacks to avoid anonymous attacks
- Firewall protection of applications for the main WEB portals of the Ministry of Finance
- Four Internet Exit Peers (Verizon, Qwest, Level 3, PCCW)
- Monitoring and notification of suspicious activities, as well as event correlator, to interrelate different network devices and make timely arrests of attackers

Case of Mexico SHCP (Security)

SHCP



SECRETARÍA
DE HACIENDA Y
CRÉDITO PÚBLICO

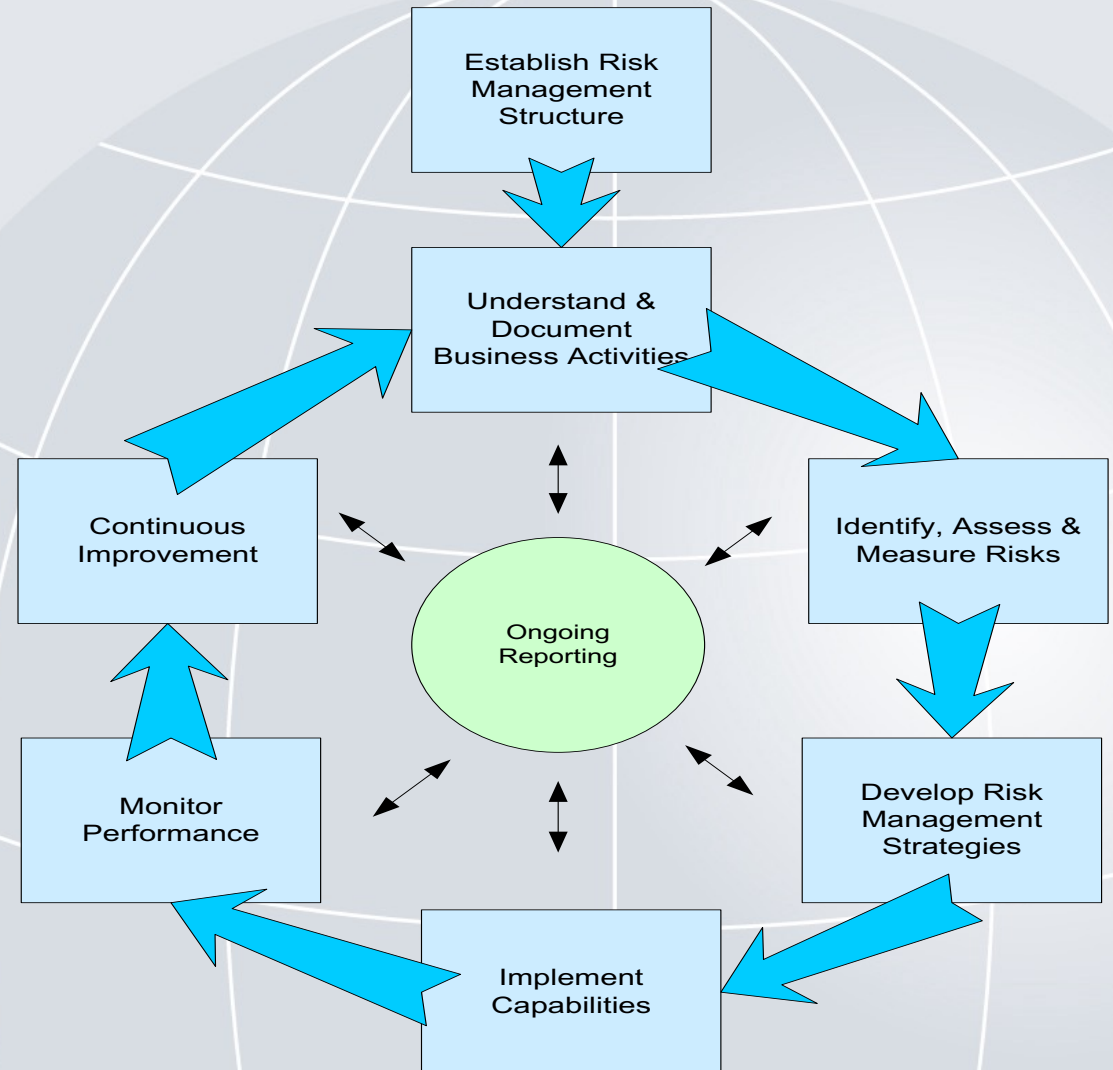
- Monthly filtering of more than 480,000 emails (spam of 60% of total mail)
- More than 3,000 detections of attempts to execute applications in March, which were blocked because they were harmful to the SHCP network
- Average monthly identification and neutralization of 100 suspicious activities
- Implementation of control of access to the network to more than 6000 mobile devices (Smartphone and laptops)

Managing Risk in the Cloud

1. What type of cloud is offered: private, public, or both?
2. How is client-based data segregated in the cloud?
3. What security certifications does the technology provider possess, and how does it stay ahead of the curve when it comes to cyber-security?
4. Where is data hosted and how secure are hosting centers?
5. If you were to decide at a later date to bring your cloud-based treasury data in-house, how would that process work?
6. How is data encrypted?

Protecting DMOs Critical Operations

1. Document business activities and critical processes and systems
2. Undertake business impact analysis to assess probability and impact
3. Develop BCP (include 3rd parties)
4. Implement or update BCP
5. Training to imbed into the culture and day-to-day operations of the DMO
6. Regular (at least annual) testing and updating





Annex: Blockchain

- Blockchain allows one participant to transfer something of value to another participant by recording the transaction in an immutable “block” on a transparent “chain”
- No central authority is involved as blocks are written to a blockchain by consensus among participants
- Eliminates settlement risk because the transfer of title is linked with the payment and the transaction is executed and settled instantaneously
- Blockchain can also manage the transfer of ownership (which is automatically updated if a bond is sold in the secondary market) and to automate coupon payments, which eliminates the need for someone in a back office to manually process payments
- Effectively, there is a huge benefit because there is no need to worry about settlement risk as it is instantaneous, and it is binary, therefore, it either happens or it doesn't