

OCIO Engagement Session

Cloud Strategy

July 2016



OCIO
Office of the Chief Information Officer

Agenda

Topic	Time
Engagement approach	15 minutes
Cloud strategies, priority & roadmap	15 minutes
Types of Cloud Services	45 minutes
Privacy, security & policy	25 minutes
Networking / coffee break	20 minutes
Financial considerations	15 minutes
Cloud procurement	15 minutes
Sector priorities	20 minutes
Your IT services in the Cloud	15 minutes
Cloud survey walk-through	10 minutes
Wrap-up & feedback	10 minutes

Engagement approach

(Placeholder only – Specific slide info expected from business area/speaker)



Core Government Cloud Strategy

people

Enabling our employees and citizens to access and adapt to new and evolving IT sector roles.

efficiency

Ability for the public sector to utilize a modern platform of business and technology services.

innovation

Connecting our B.C. technology sector with the public service to create and deploy new, agile solutions.

ENABLERS



ENABLERS

Security and privacy as the building blocks

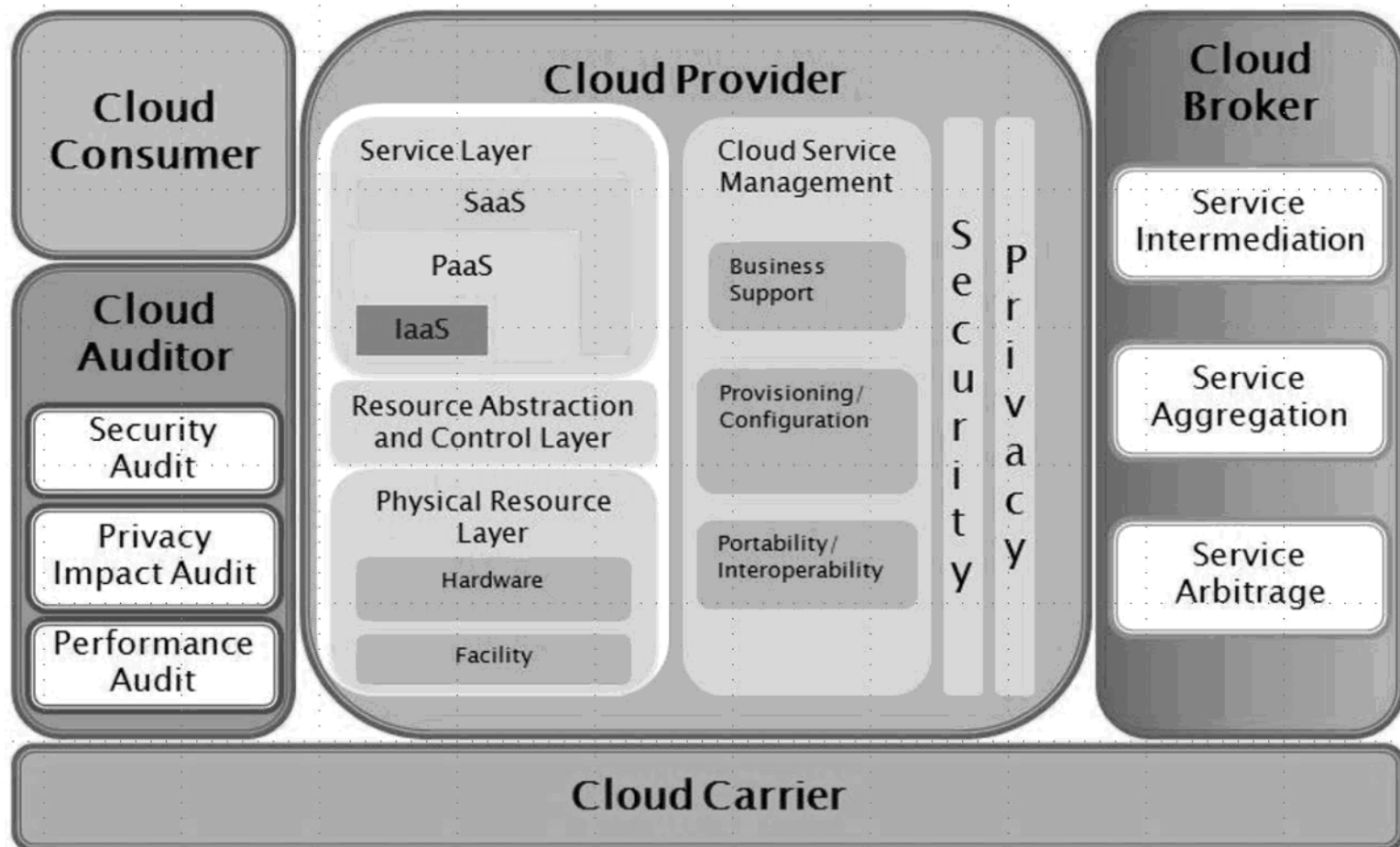


A coordinated program to lead government to the cloud



The Cloud Reference Architecture – Gold Standard

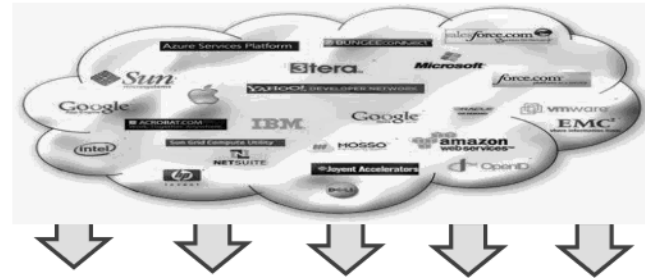
NIST* -- Cloud Reference Architecture



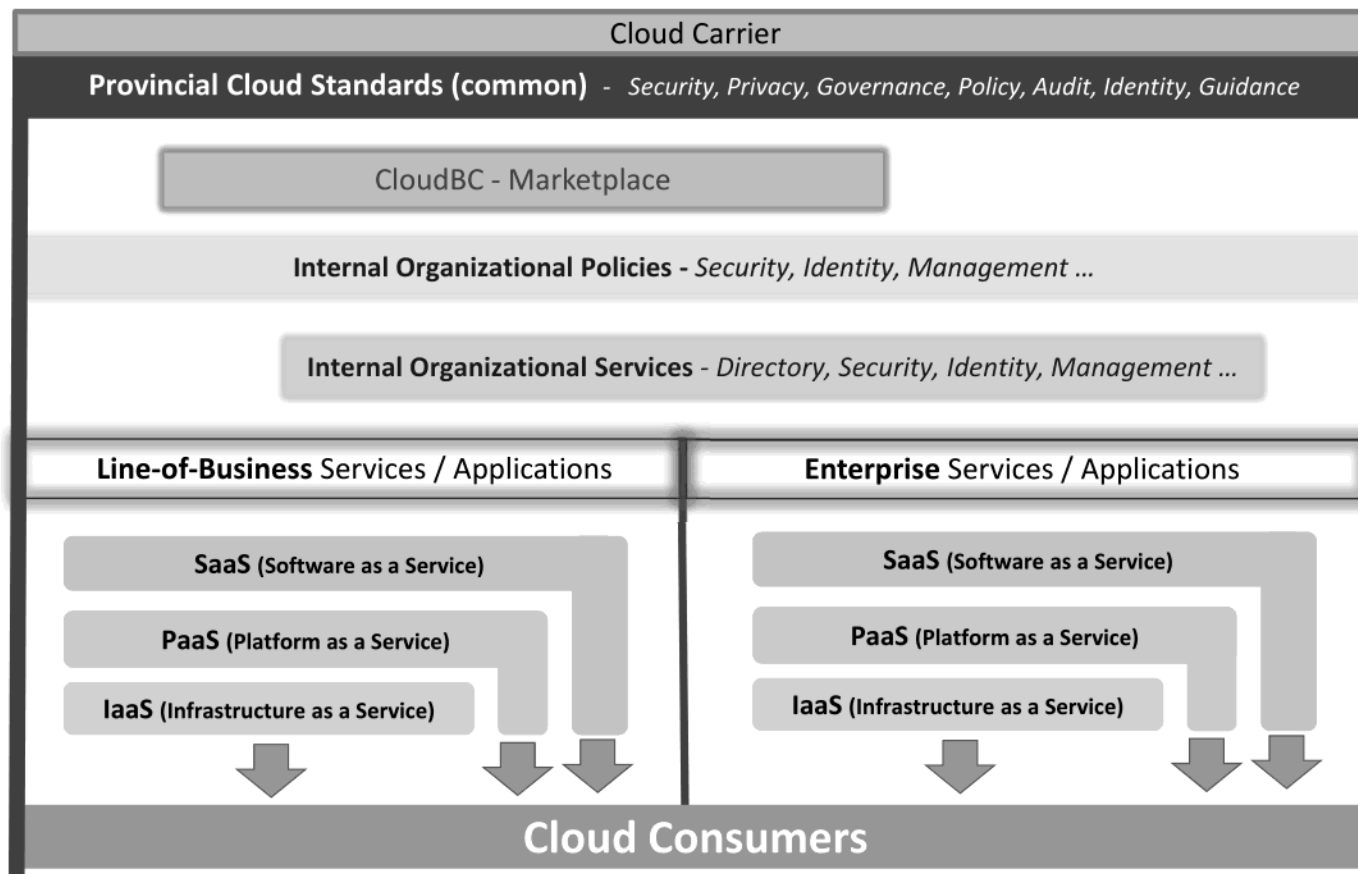
* NIST – National Institute of Standards and Technology, US Dept. Comm.

Provincial Cloud Consumer Reference Architecture

V1.5



Cloud Vendors



What is DevOps?

- Agile Methodology
- DevOps
- Test driven development
- Continuous integration
- Containers at runtime
- Immutable servers

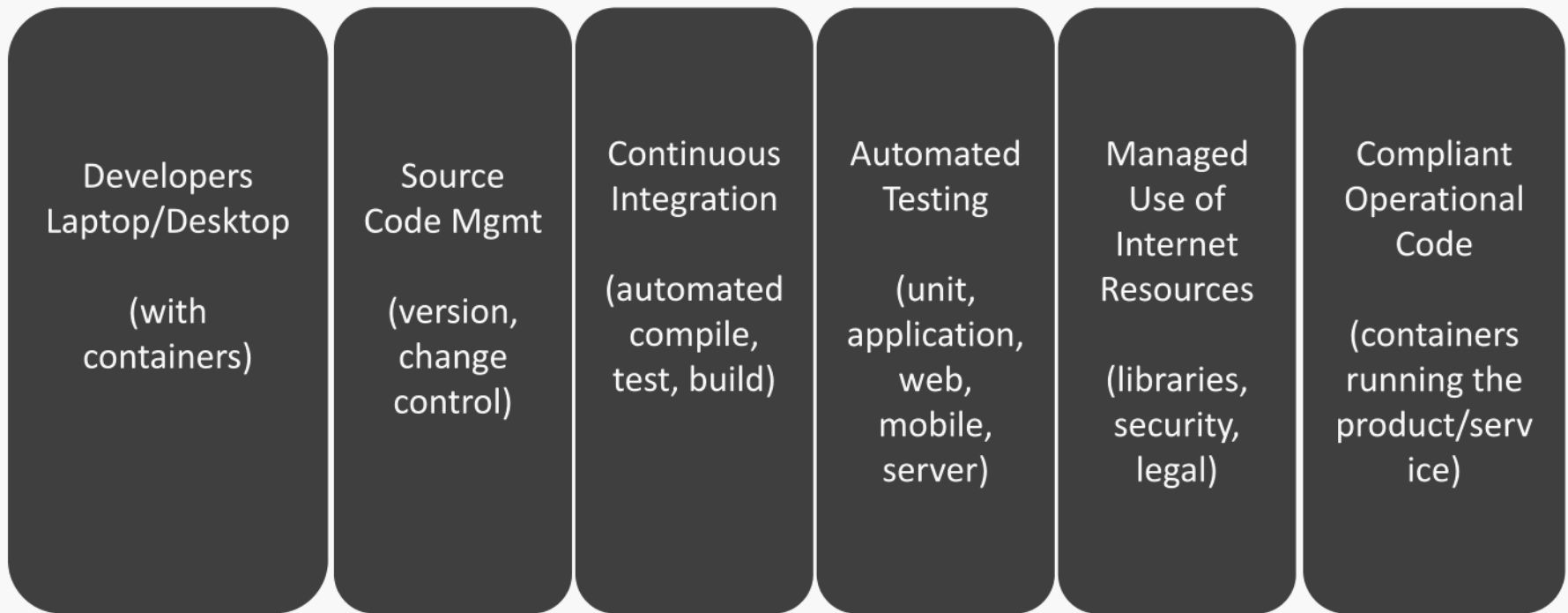
Continuous Improvement

Ability to deploy new features as small fully developed and tested increments of functionality to users every day, week, month

What is DevOps?

Automation

Use machines to make the machines: Tool chain



devOps Engineers



What is DevOps?

The screenshot shows the OpenShift Web Console interface. The browser address bar displays the URL: `https://console.pathfinder.gov.bc.ca:8443/console/project/pw/create`. The page title is "OPENSIFT ENTERPRISE". The user is logged in as "Peter Watkins Dev Work" and is in the "Add to Project" section.

Select Image or Template

Choose from web frameworks, databases, and other components to add content to your project.

Filter by keyword Browse

Instant Apps [See all](#)

- cakephp-example** (PHP icon) INSTANT-APP PHP CAKEPHP ⚡
- cakephp-mysql-example** (PHP icon) INSTANT-APP PHP CAKEPHP MYSQL ⚡
- dancer-example** (Camel icon) INSTANT-APP PERL DANCER ⚡
- dancer-mysql-example** (Camel icon) INSTANT-APP PERL DANCER MYSQL ⚡

PHP

- php:5.5** (PHP icon) BUILDER PHP ⚡
- php:5.6** (PHP icon) BUILDER PHP ⚡

xPaaS [See all](#)

- fis-java-openshift:1.0** (JBoss icon) BUILDER JBOSS-FUSE JAVA XPAAS ⚡
- fis-karaf-openshift:1.0** (JBoss icon) BUILDER JBOSS-FUSE JAVA KARAF XPAAS ⚡
- jboss-decisionserver62-openshift:1.2** (JBoss icon) BUILDER DECISIONSERVER JAVA XPAAS ⚡
- jboss-eap64-openshift:1.1** (JBoss icon) BUILDER EAP JAVAEE JAVA JBOSS XPAAS ⚡
- amq62-basic** (JBoss icon) Version: 1.2.0 MESSAGING AMQ JBOSS XPAAS ⚡
- amq62-persistent** (JBoss icon) Version: 1.2.0 MESSAGING AMQ JBOSS XPAAS ⚡

<https://console.pathfinder.gov.bc.ca:8443/console/project/pw/create>

What is DevOps?

Rancher

https://rancher.v2.firstvoices.com/env/1a5/infra/hosts/add?driver=custom

APPLICATIONS CATALOG **INFRASTRUCTURE** ADMIN API HELP

HOSTS CONTAINERS STORAGE POOLS CERTIFICATES REGISTRIES

Default Environment

Hosts: Add Host

Custom Amazon EC2 Azure DigitalOcean exoscale packet rackspace UBUIQUITY HOSTING vSphere Other

- 1 Start up a Linux machine somewhere and install the latest version of Docker on it.
- 2 Make sure any security groups or firewalls allow traffic:
 - From and To all other hosts on UDP ports 500 and 4500 (for IPsec networking)
- 3 Optional: Add labels to be applied to the host.
+ Add Label
- 4 Optional: Specify the public IP that should be used for this host. This is required if you're trying to add the host the rancher/server container is on.
e.g. 127.0.0.1

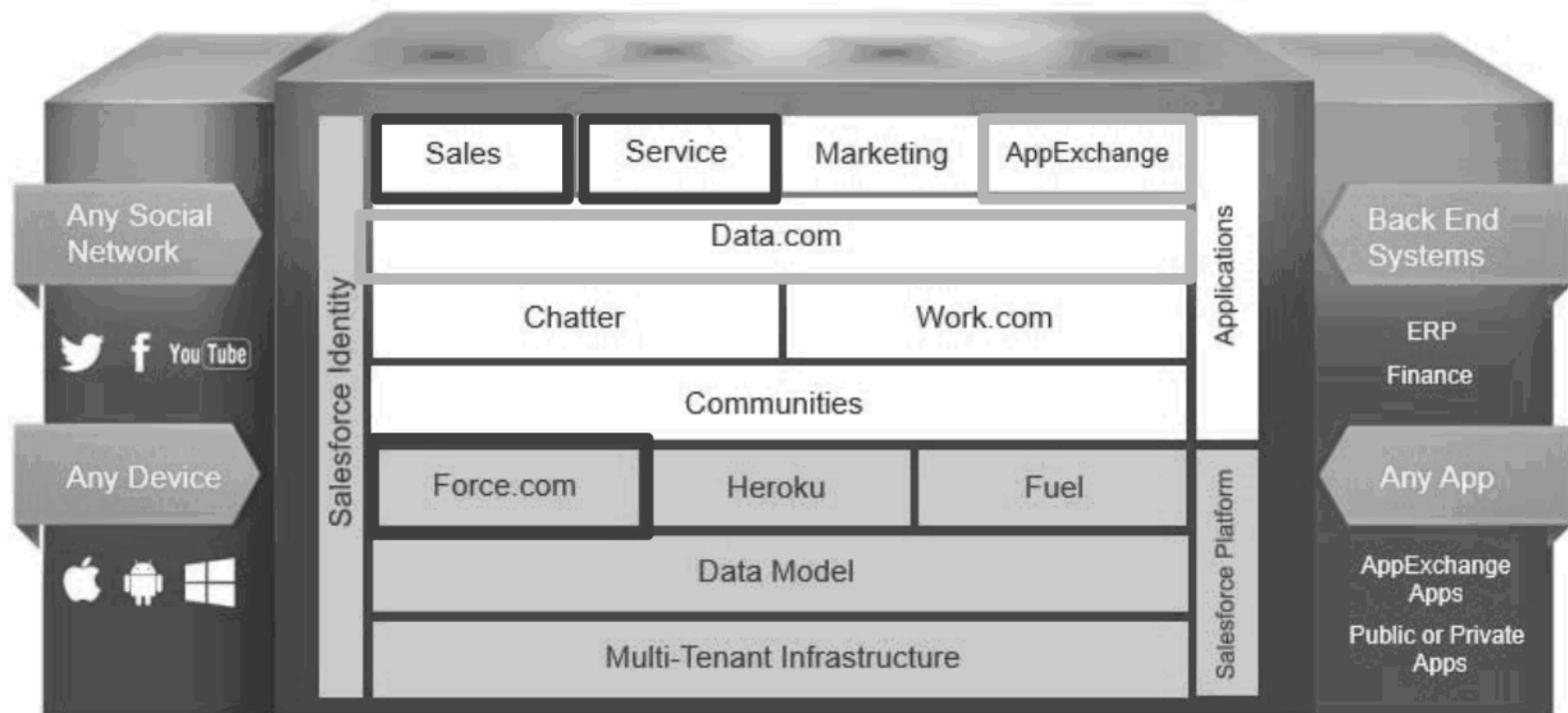
Bottom line

- Position to use it all!
- Apply it to maximize business value and service improvement
- Puts a premium on increasing skilled personnel
- We need a strong developer community to master the churn of tech stacks, services, cloud providers

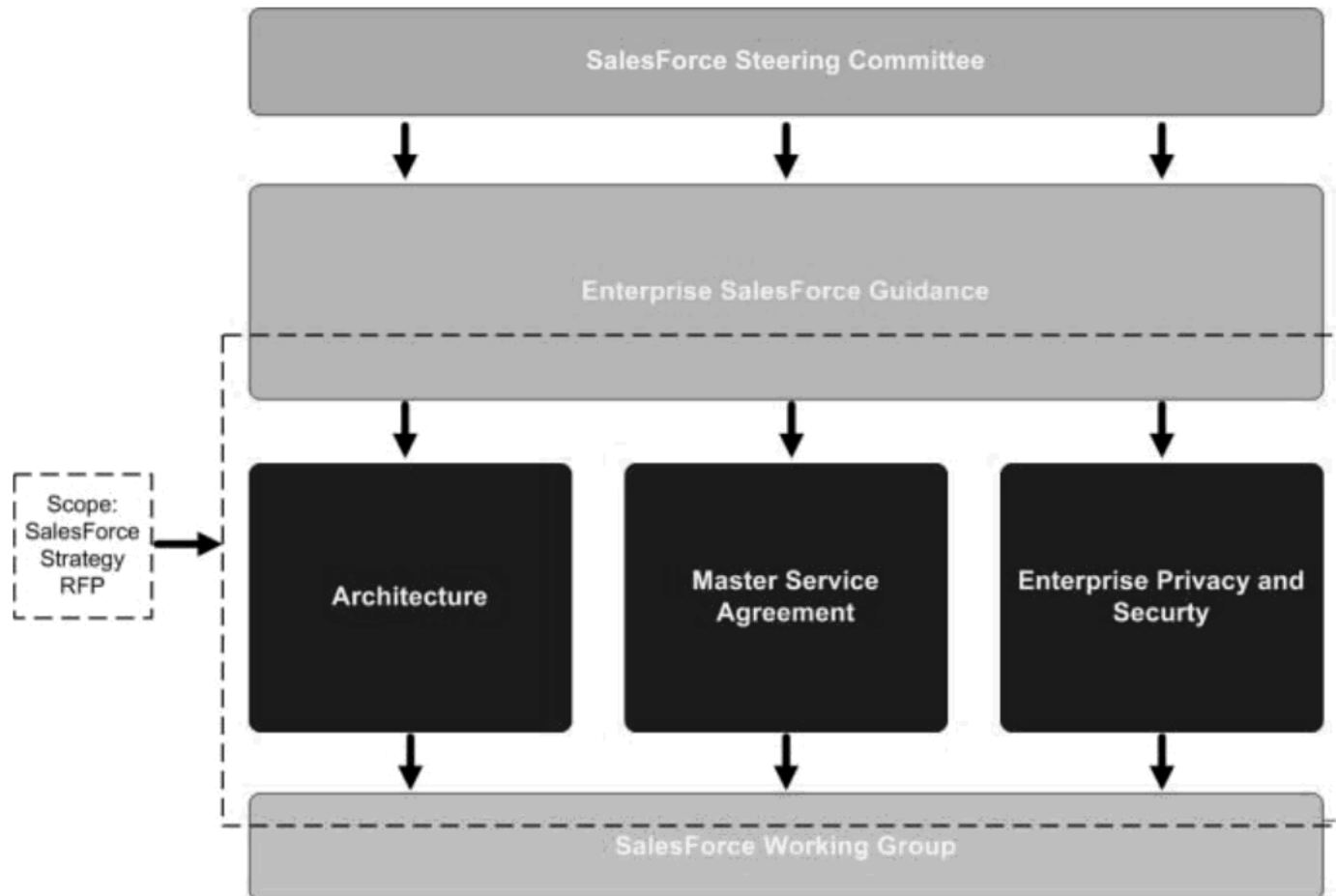
Why an Enterprise Salesforce Strategy?

- Key part of Government's overall Cloud Strategy
- Position ourselves to take advantage of Salesforce as a solution option
- Provide guidance to business owners considering investment in Salesforce
- Bring clarity and certainty to the procurement process
- Measure Data Centre against our privacy and security requirements

Pillar 2: MSA 2016 Negotiations



SalesForce Strategy Framework



Service Anywhere

– Software as a Service



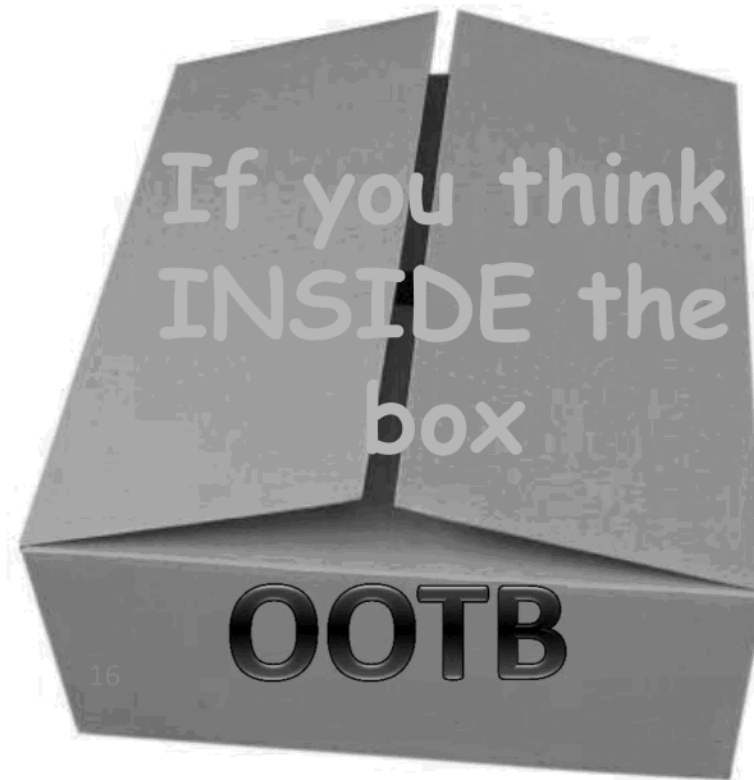
SaaS

– is it faster, easier, cheaper... better?

SaaS

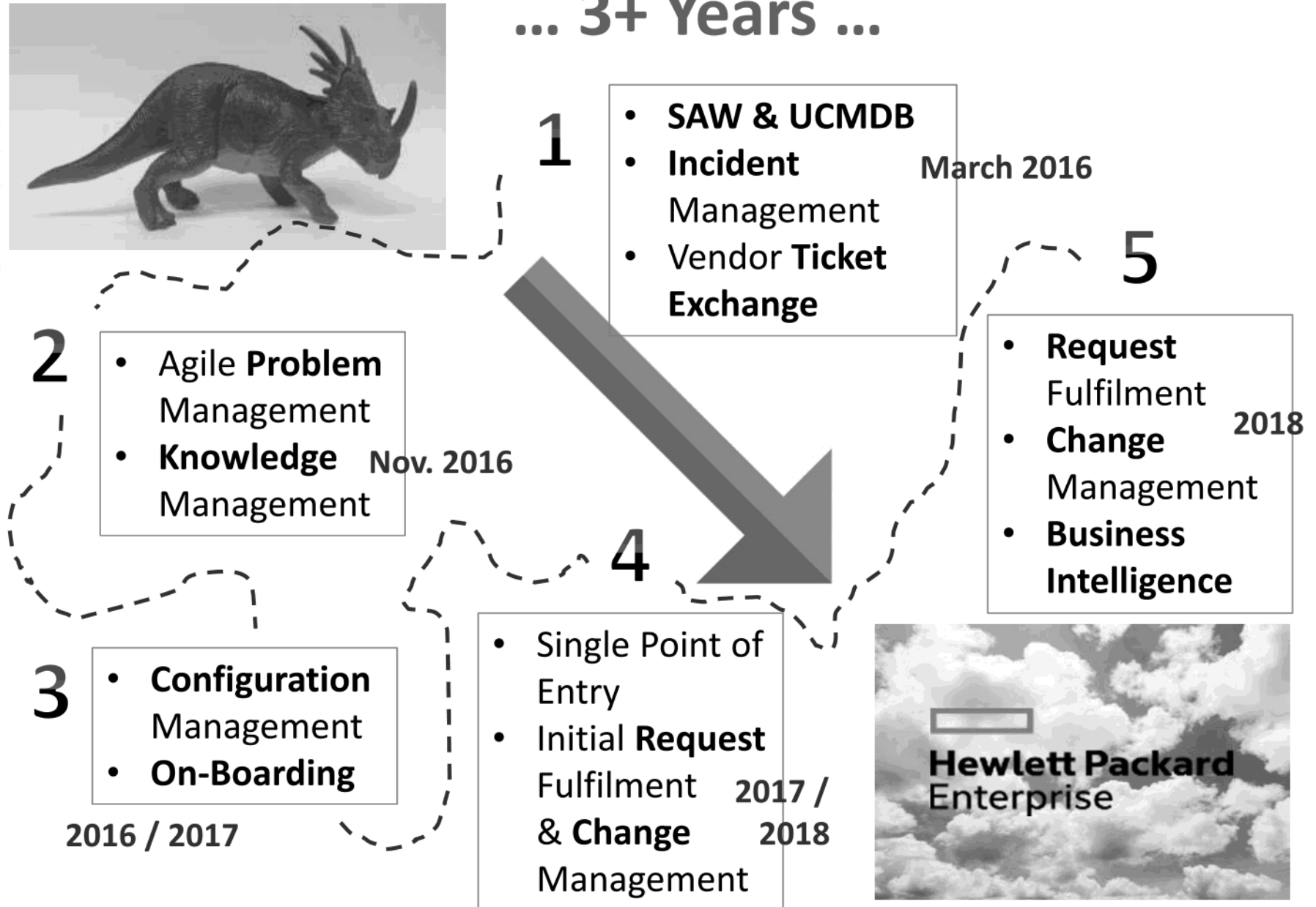
– is it faster, easier, cheaper... better?

Maybe...



Service Management Tools & Processes

... 3+ Years ...



Challenges



Opportunities

Shifting to the cloud

- Canadian data sovereignty
- Loss of control over upgrade cycle
- Loss of direct data access
 - Reporting challenges



- ✓ Canadian Data Centre
- ✓ Forces product currency
- ✓ Reduces inappropriate data access & duplication
 - looking at BI

Lessons from the Trenches

- **Change Management**
 - go at a pace that works for you
- Ensure you appreciate:
 - **OOTB vs Business process** re-engineering objectives
 - **System integrations**
 - **Data** conversion, cleanup, cleanup (& more cleanup)

Lessons from the Trenches

- **SAW is evolving**
 - Release cadence is faster than “government speed”
 - Features are regularly added or improving
 - Testing & training are ongoing
 - support challenge

Privacy, security & policy

Cloud Privacy Requirements:

1. All customer data containing personal information resides in Canada* (i.e. Canadian datacentres)
2. Service Provider access to customer data is controlled by Province (e.g. through technical and/or procedural measures)
3. Contractual provisions support FOIPPA compliance (e.g. jurisdiction, corporate governance, etc.)
4. Appropriate security provisions are in place

*unless an exception applies

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Privacy, security & policy

Cloud Privacy Protection Use Cases:

1. Remote-access technical maintenance
2. Foreign demand for information
3. Notification procedure in the event of a breach

Privacy, security & policy

Cloud Security Requirements:

1. provider is compliant with an established cloud security standard that is acceptable to government
2. provider can demonstrate annual compliance with cloud security framework via third party attestation *and government maintains right to audit components*
3. provider assists with security investigations and legal discovery

Privacy, security & policy

Cloud Security Standards:

- NIST 800-53 (FedRAMP is based on)
- ISO 27017 (November, 2015)
- Cloud Security Alliance (CSA) Cloud Controls Matrix (CCM)

Azure Compliance – August 2015

☀ New ☀ Updated

9 Azure-only

Industry



ISO 27001



SOC 1
Type 2



SOC 2
Type 2



PCI DSS
Level 1



STAR Level 1



ISO 27018



Content Delivery and
Security Association

United States



FedRAMP
JAB P-ATO



HIPAA /
HITECH



FIPS 140-2



21 CFR
Part 11



FERPA



DISA Level 2



CJIS



IRS 1075



ITAR-ready



Section
508 VPAT

Regional



European
Union
Model Clauses



EU Safe
Harbor



United
Kingdom
G-Cloud



China Multi Layer
Protection
Scheme



China
GB
18030



China
CCCPF



Singapore
MTCS Level 3



Australian
Signals
Directorate



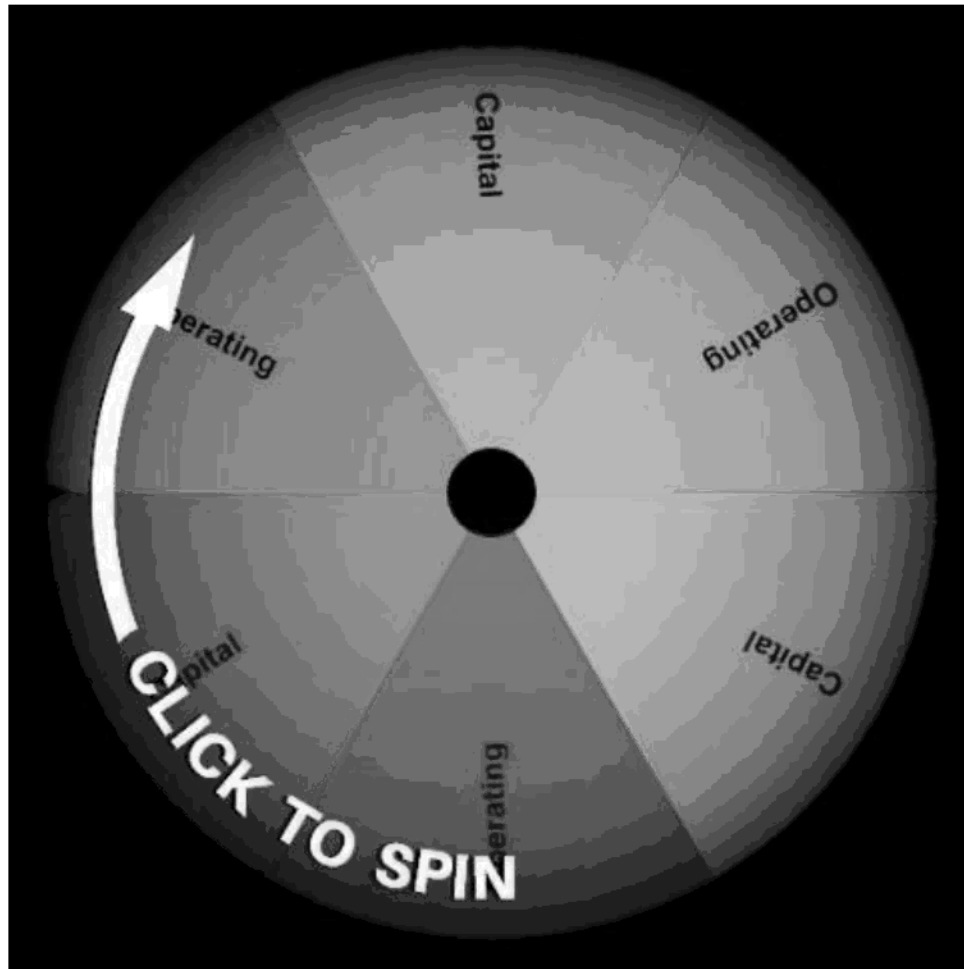
New Zealand
GCIO



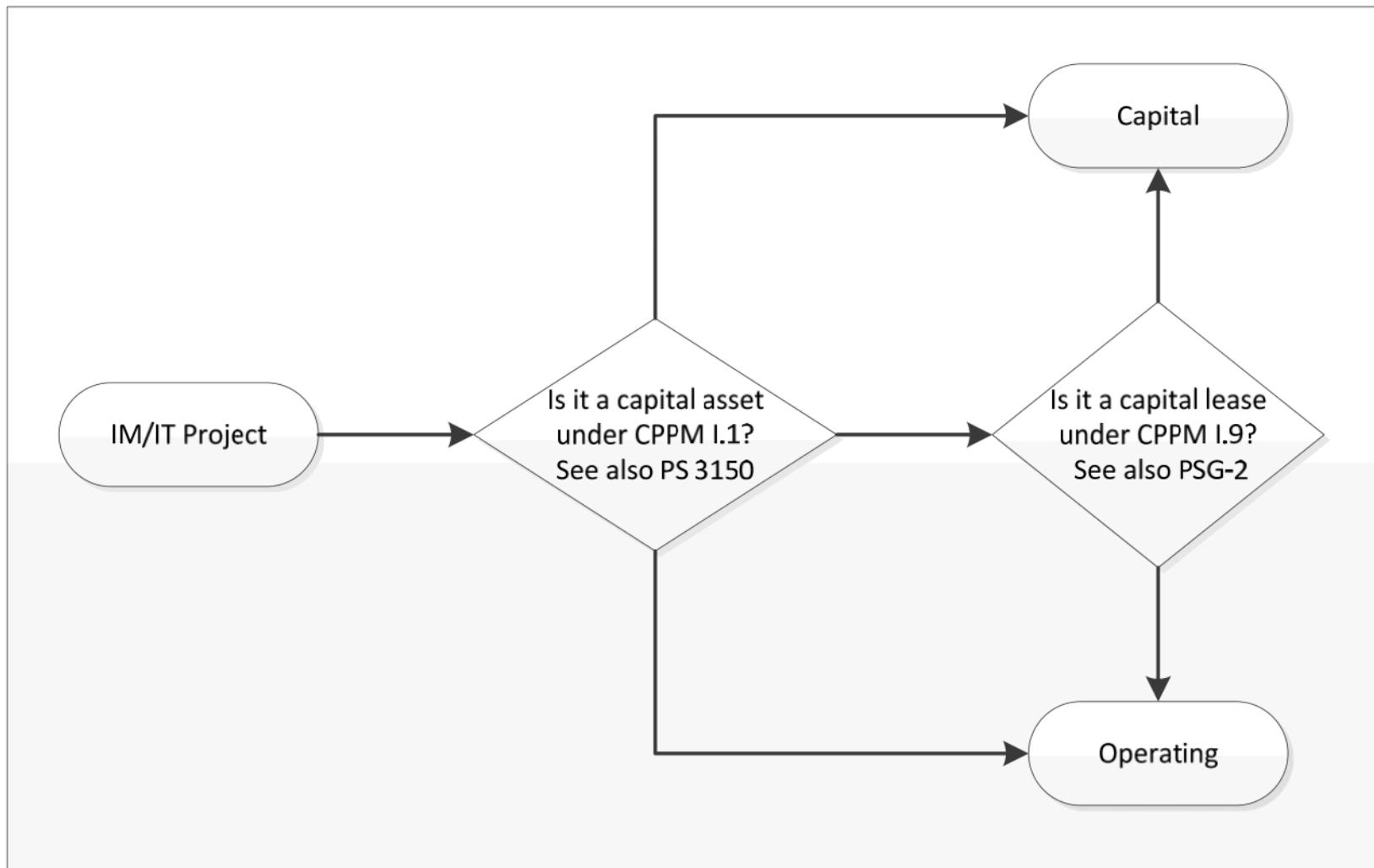
Japan Financial
Services



Financial considerations



Financial considerations



Financial considerations

Key considerations:

- Do not assume operating because it is “Cloud”
- Work with ministry CFOs to determine the financial nature of the project
- Consider the terms of the contract
- Remember, it is easier to pull a project from the capital intake process than trying to add one in late in the cycle

Cloud procurement

(Placeholder only – Specific slide info expected from business area/speaker)

Sector priorities

- Service plan
- Mandate letter
- Business priorities
- Business information
 - Capital IM/IT investments
 - Critical systems
 - Application health check
 - Consumption of IT services

Common themes

- Modernize
- Reduce red-tape
 - Simplify processes
 - Increase convenience
 - Improve accessibility
- Open & transparent information
- Cross-government partnerships
- Talent & skills development

Common challenges

- Privacy
- Security
- Flexibility
- Change management – culture, processes, etc.
- Constrained resources

Your IT services in the Cloud context

(Placeholder only – Specific slide info expected from business area/speaker)

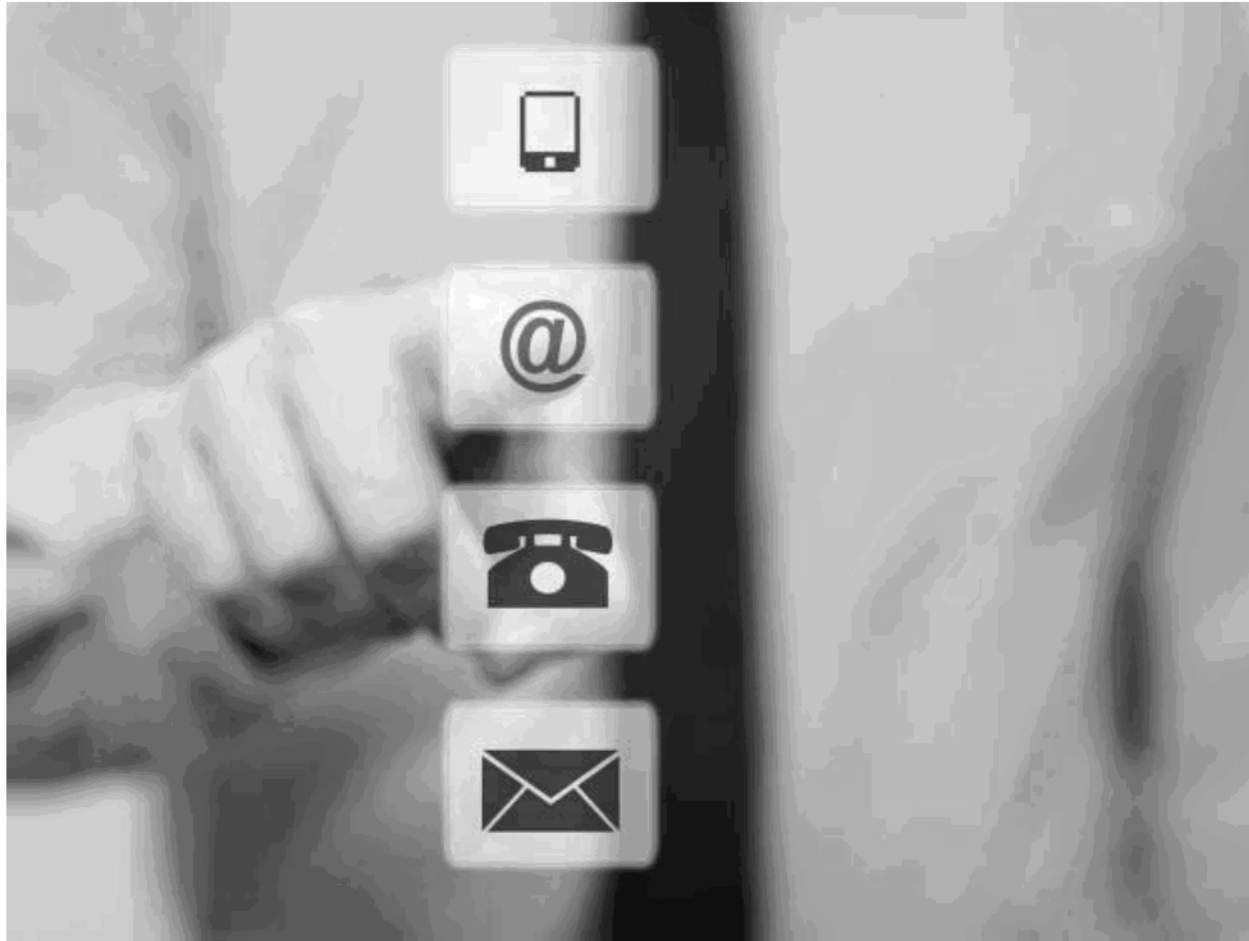
Cloud survey walk-through

(Placeholder only – Specific slide info expected from business area/speaker)

Your feedback

- Does this type of engagement work?
- What worked well?
 - length of session
 - mix of attendees
 - location
 - other...
- Considerations for next engagement session?

Contact us



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