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Adapting Risk Management to Evolving Technologies

May 9, 2017

Ray Cheung

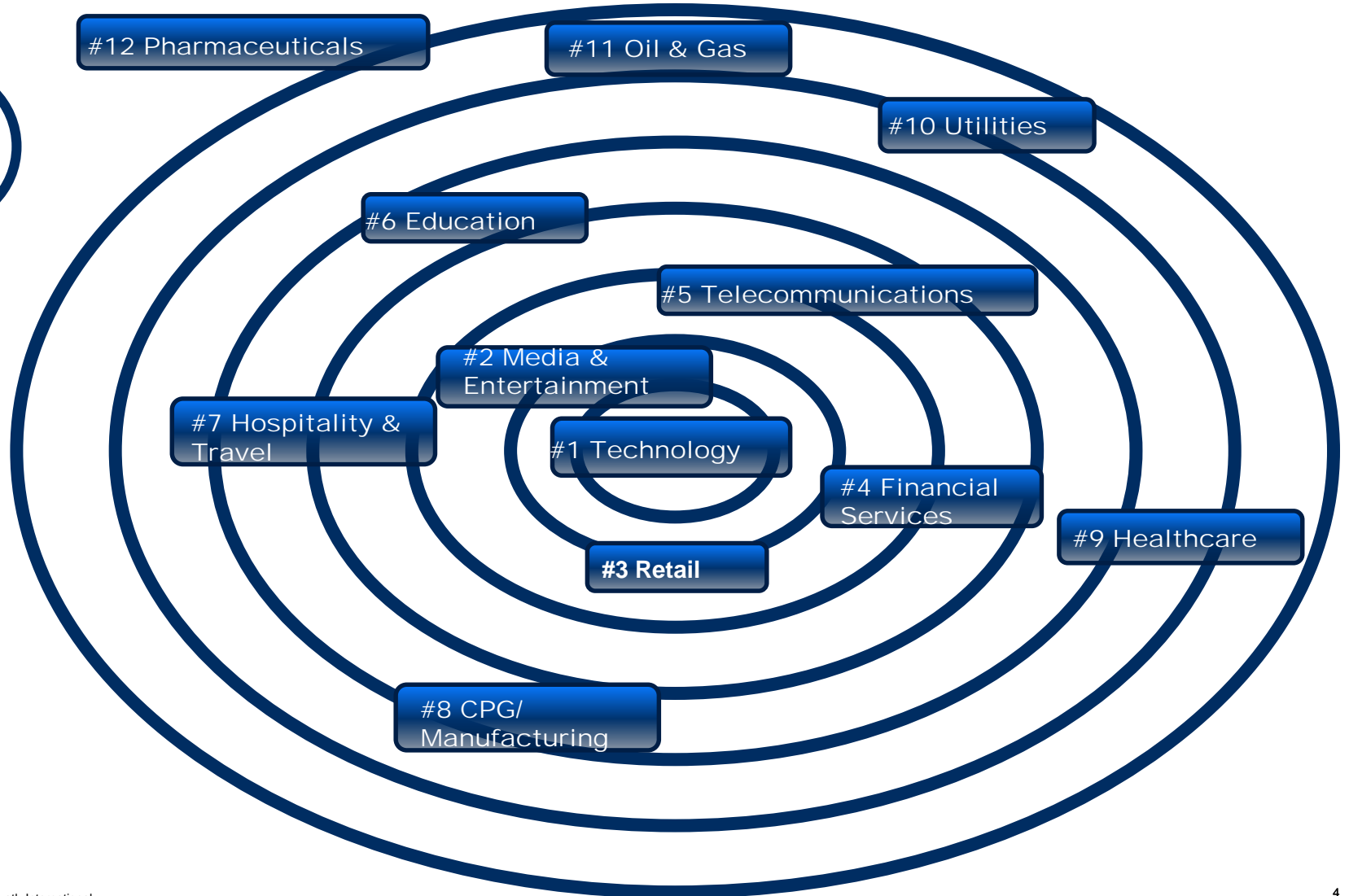
Agenda

- Digital Disruption and Shifting IT Spend
- High Tech Risk Environment
- IT's New Look within Technology Companies
- The Driving Force & Risks for Advancing IT Departments
- Adapting the 2 Speed Risk Approach

Digital Disruption

- The largest taxi company in the world owns no taxis (**Uber**)
- Largest accommodation provider owns no real estate (**Airbnb**)
- Largest phone company owns no telecom infrastructure (**Skype**)
- Most popular media owner creates no content (**Facebook**)
- Worlds largest movie house owns no cinemas (**Netflix**)
- Largest music providers own no music (**Spotify**)
- 60% of mobile devices use processors from company that doesn't manufacture computer chips (**ARM**)

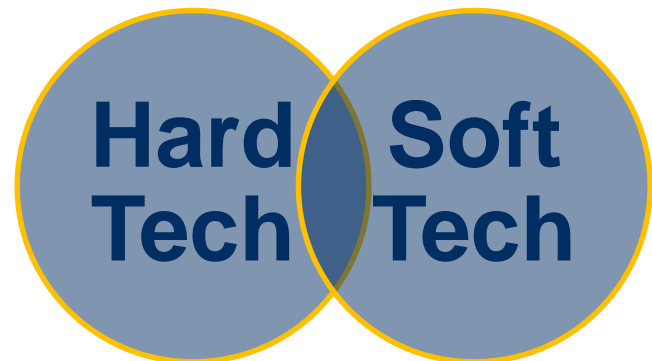
Digital Disruption by Industry



How Disruption is Impacting High Tech



1. Accelerating Value Creation/Destruction
2. Encroaching on HardTech/SoftTech Space
3. Shifting a Paradigm from Selling Technology Stack to Selling Total Solution
4. Disruptions are always Risks



Discussion

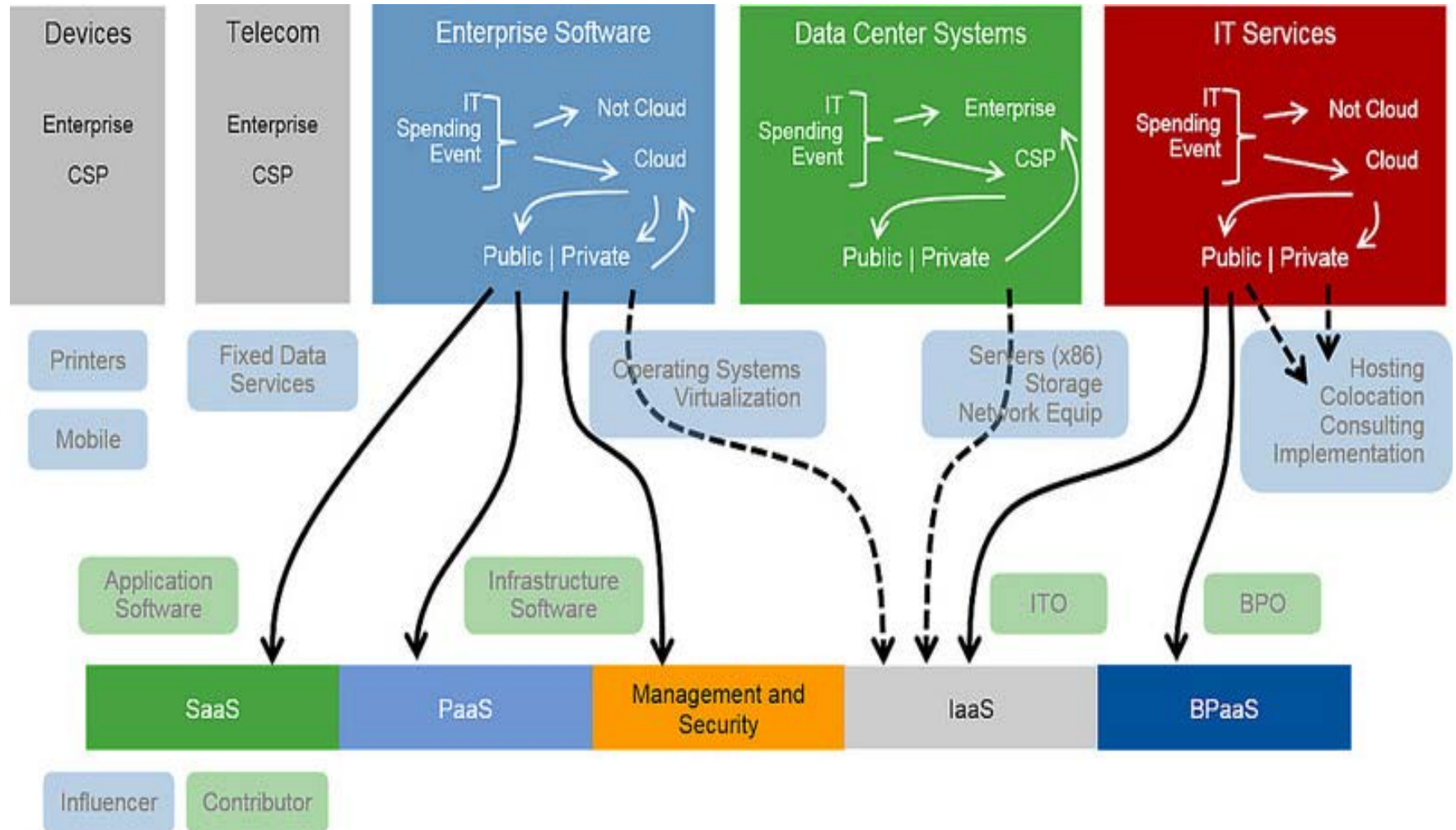
- Does the technology companies operate in a unique risk environment?
- What are the most prevalent risks for the technology companies?



High-Tech Risk Environment

- Appetite for risk
- High-velocity workflows
- Commitment to research
- Demand for talent
- Creative destruction
- Cybersecurity is a question of when, not if
- Digital disruption

Shift From Traditional IT Spending to Cloud



Source: Gartner (July 2016)

IT's New Look within Technology Companies

At today's technology companies in Silicon Valley, IT departments has had to make significant changes to stay current with emerging technologies and remain ahead of their competitors:

Faster and more rapid development
Increased deployment speeds
Heavier reliance on third party vendors

More advanced IT departments help improve business efficiency, allow products to be improved and pushed out faster, and help companies support more users.

The Driving Force for Advancing IT Departments

Time to market and availability matters

E-Commerce continues to arrive

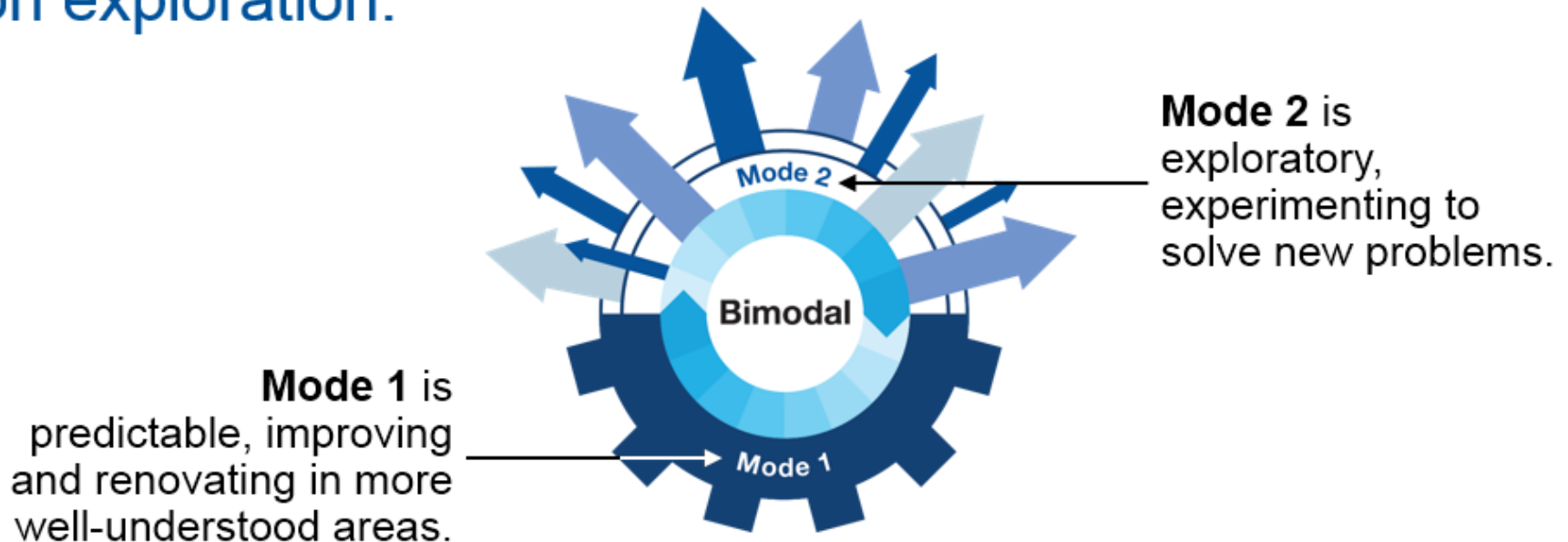
Advanced analytics give the upper hand

The New IT - Old vs New

	Traditional IT	Current IT
Technology	<ul style="list-style-type: none"> Stable universe of IT platforms and tools 	<ul style="list-style-type: none"> Continuous new solutions and tools
People	<ul style="list-style-type: none"> Heavy reliance on internal IT teams Mostly IT-driven changes Separate development and operations teams 	<ul style="list-style-type: none"> More reliance on third party IT professionals Stakeholder-driven changes Collaboration among teams
Process	<ul style="list-style-type: none"> Step-by-step systems and development life cycle process with easily auditable artifacts and checkpoints 	<ul style="list-style-type: none"> Agile development life cycle with less structure and fewer documentation requirements
Perspective	<ul style="list-style-type: none"> Deemed as a cost center as it only focuses on procuring, operating and depreciating Assets 	<ul style="list-style-type: none"> Seemed as a profit center as it focuses on providing services that are most impactful to the goals of the business

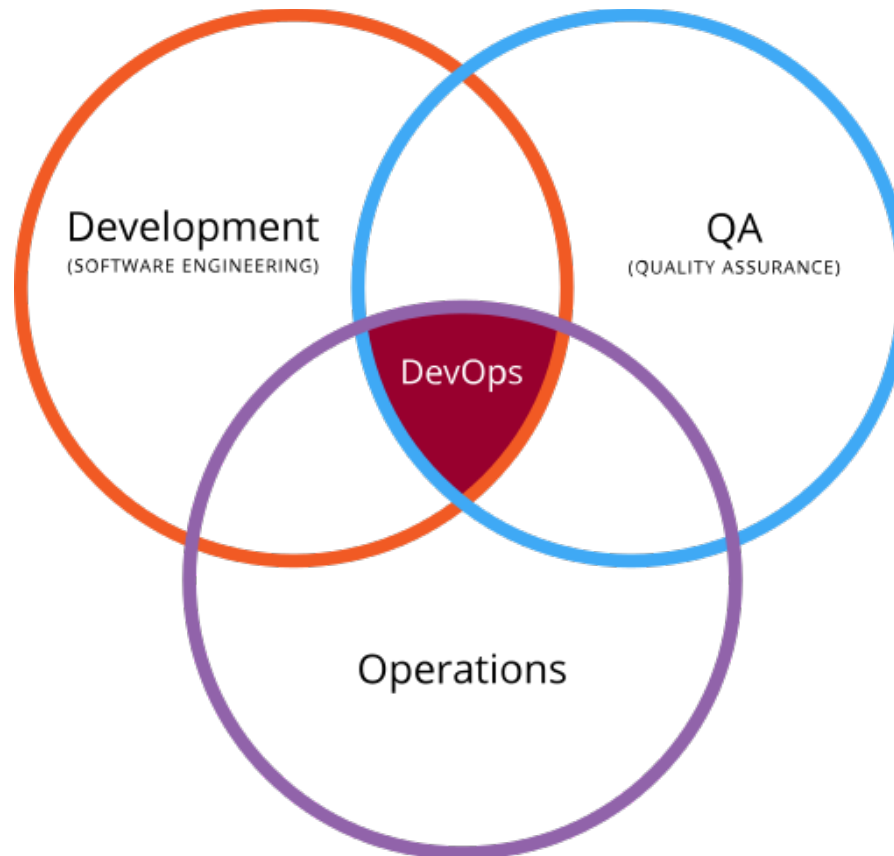
The New IT – 2 Speed

Bimodal is the practice of managing two separate but coherent styles of work — one focused on predictability and the other on exploration.



The New IT – DevOps Approach

To support the new model of IT, more and more businesses are shifting from traditional means of organization to more fluid DevOps models



The New IT – The New Speed

Because of these changes, IT is getting undeniably faster

200x

200x more frequent
deployments

24x

24x faster recovery
from failures

3x

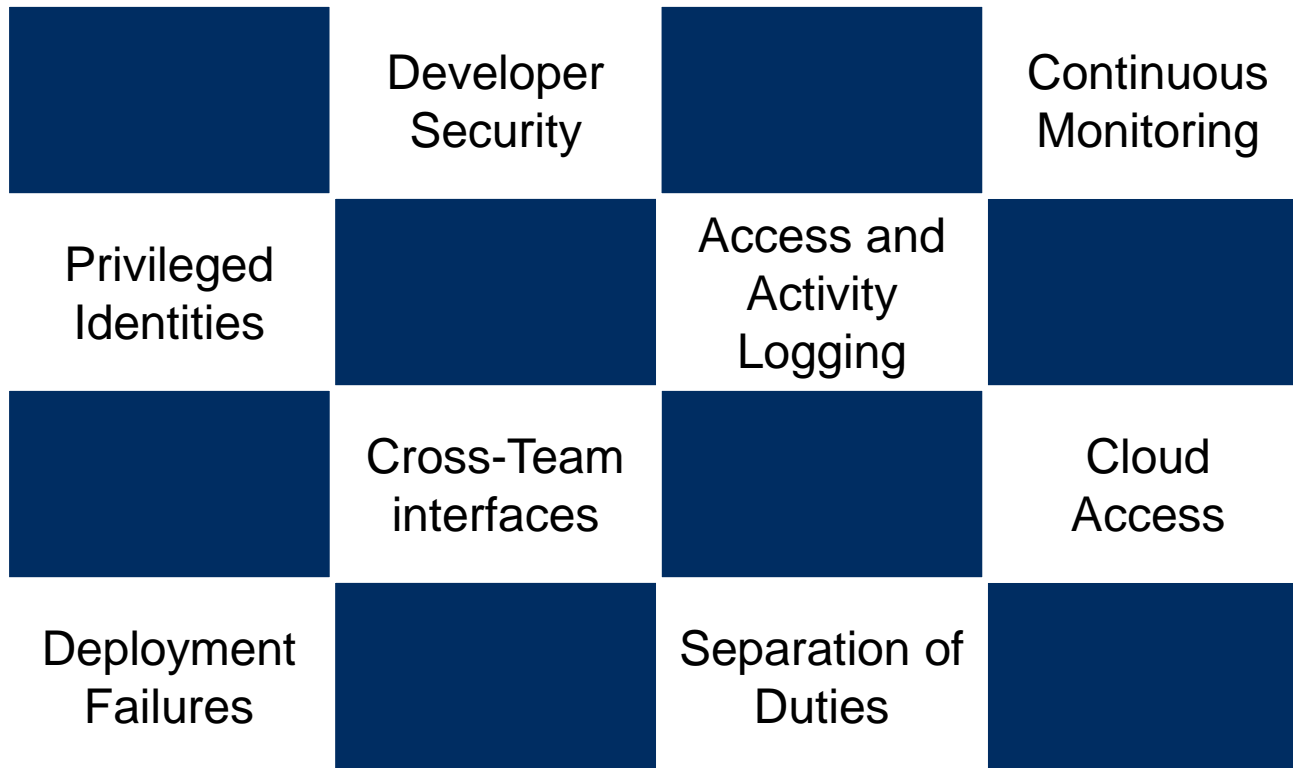
3x lower change
failure rate

2,555x

2,555x shorter lead
times

The New IT – The New Risks

Having an IT team that is cross-functional introduces new risks to the business.



Changing the Risk Approach

For increasingly complex IT environments that have adopted DevOps models and other technologies, it is important to focus on these 10 control categories

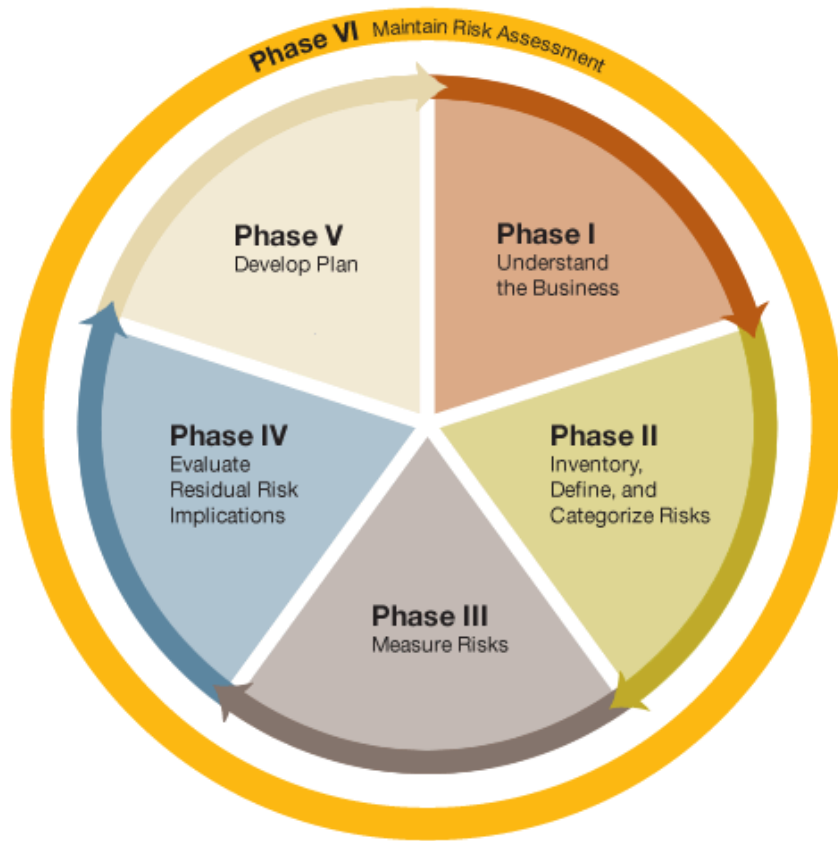
1. Automated Software Scanning
2. Automated Vulnerability Scanning
3. Web Application Firewall
4. Developer Application Security Training
5. Software Dependency Management
6. Access and Activity Logging
7. Documented Policies and Procedures
8. Application Performance Management
9. Asset Management
10. Continuous Auditing and Monitoring

Changing the Risk Approach

To address the new risks associated with evolving technologies, a change in mindset is in order

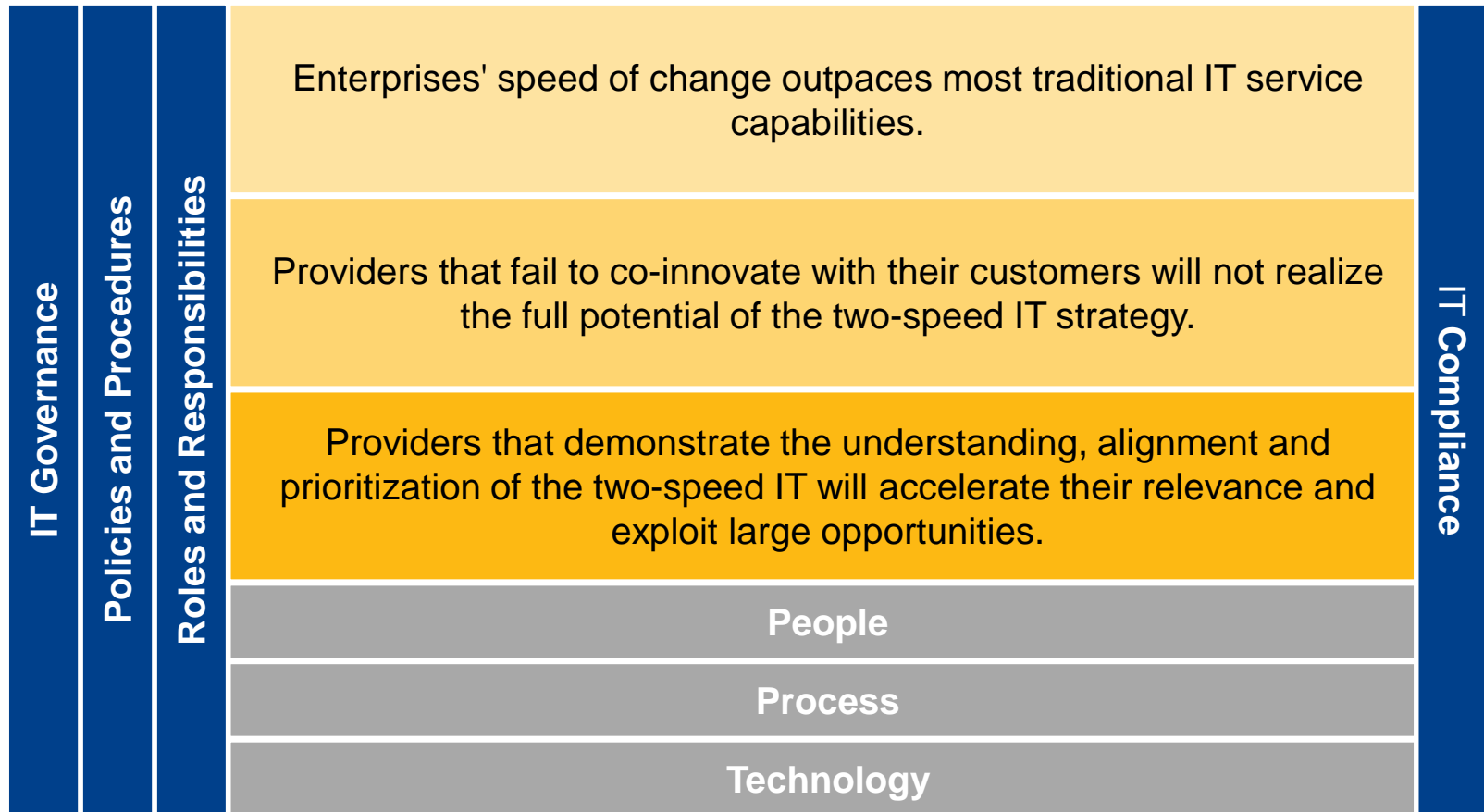
Traditional IT Risk Management		
Solutions	ITGC	SOC
Purpose	<ul style="list-style-type: none"> Assesses internal controls for IT systems used for financial reporting as support for an integrated audit support 	<ul style="list-style-type: none"> Reports on controls for financial statement audits or controls related to compliance or operations
Limitations	<ul style="list-style-type: none"> Focused on financial reporting systems only Manual Intensive Sample Basis (not full assurance) 	<ul style="list-style-type: none"> Focused on limited set of systems (financial reporting or other) Manual intensive Sample Basis (not full assurance)

Changing the Risk Approach – Risk Assessment Methodology



Innovate	Differentiate	Run
Stakeholders: R&D, Chief Digital Officer, Chief Marketing Officer and CEO	Stakeholders: Business Units, Supply Chain and Process Owners	Stakeholders: CIO or Shared Service COO

Changing the Risk Approach – Integrated IT Risk Management Sample Framework



Key Takeaways:

- IT is now expected to understand business needs and help the company achieve its goals – attract new customers, creating new markets, and outperforming competitors.
- IT departments are starting to recognize the need to adopt advanced technologies and are placing greater reliance on third-party vendors to manage their IT environment.
- Managing the risks that are relevant to today's complex environment requires a change in mindset.
- Companies need to strike a balance between protecting the organization and running the business by building sustainable solutions that transform the risk management structure and stay ahead of potential threats.

Thank you

Ray Cheung

Phone 415 230 4971

Ray.Cheung@crowehorwath.com