

RISK IMPLICATIONS IN THE AGE OF TECHNOLOGICAL DEVELOPMENTS

27 FEBRUARY, 2018



CONFIDENTIALITY

Our clients' industries are extremely competitive, and the maintenance of confidentiality with respect to our clients' plans and data is critical. Oliver Wyman rigorously applies internal confidentiality practices to protect the confidentiality of all client information.

Similarly, our industry is very competitive. We view our approaches and insights as proprietary and therefore look to our clients to protect our interests in our proposals, presentations, methodologies and analytical techniques. Under no circumstances should this material be shared with any third party without the prior written consent of Oliver Wyman.

Oliver Wyman Group is a part of Marsh & McLennan Companies



- Revenue 2016: US\$ 13.2BN
- Staff: 60.000
- Clients in more than 130 countries
- Listed on the New York Stock Exchange

Marsh

Insurance broker and risk advisor

- Risk management, consulting and transfer
- Financial solutions and insurance program management services

Revenue 2016 US\$5.98 BN

- Staff: 30,000+
- · Clients in over 130 countries

Guy Carpenter

Risk and reinsurance specialist

- Reinsurance and risk management
- claims handling and fiduciary accounting

· Contract management,

- Revenue 2016 US\$1.14 BN
- Staff: 2,300+
- · Offices in over 50 countries

Mercer

Human resource consulting

- Personnel strategy
- HR systems
- Compensation
- Incentive systems
- Communication
- Revenue 2016
- US\$4.32 BN
- Staff: 21,000+
- Offices and operations in more than 40 countries

Oliver Wyman Group

Management and economic consulting

- Strategy
- Organization
- Operations
- Risk management
- Transformation management
- Revenue 2016 **US\$1.79 BN**
- Staff: 4,500+
- 50+ Offices in ~ 30 countries

Presenters



Yen Chu Cheng, Partner

Finance and Risk, Head of Oliver Wyman Labs, SEA

Singapore



Shikha Johri, Principal Finance and Risk

3

Singapore

Financial services industry has experienced rapid changes and new trends with the onset of digital technology era



Advanced analytical tools (e.g. AI, machine learning, cognitive computing) integrated into client engagement and product development



Data

New online digital data sources (e.g. social media, mobile usage) for more insight into customer behavior/preferences

Existing internal data leveraged more



Infrastructure

Automation of manual processes (e.g. RPA)

Decentralization of legacy IT infrastructure

Platforms and open APIs integrated with IT system



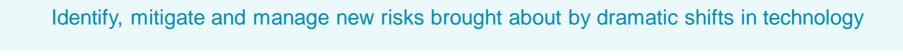
Regulations

Increased prudential regulation (e.g. new and refined capital requirements)

New accounting standards (e.g. mandate to upgrade systems, data, reporting)

Data regulations with increased scrutiny

In face of business model disruption, there are 5 critical areas of focus for Risk leadership



Make disruptive technology part of the solution

Define digital ambition for risk and vision for future of risk management

Upgrade capabilities of risk function & leadership to drive technology innovation and be strategic advisor in the face of disruptive trends

Develop a clear roadmap to being future proof risk function

Dramatic shifts in technology have resulted in emerging risks, increasing pressures on risk functions

	Type of risk	Description
1	Technological risks	Operational tech risks (e.g. 3 rd party risks), IT risks (e.g. cybersecurity threats)
	Strategic risks	Threats of disintermediation with FinTechs disrupting traditional financial services value chains
	Systemic risks	Large volume of data entails unprecedented scale in case of failure (e.g. takedown of single cloud provider = \$50-120BN in economic loss)
	Talent risks	Increase in talent/workforce requirements beyond traditional risk activities, while competing for talent with FinTechs
6	Socio-political/ privacy risks	Growing use of unstructured data sources (e.g. social media, mobile usage) results in risks of social exclusions and privacy issues
1	Regulatory risks	Evolving regulatory requirements imposed on traditional banks for transparency, auditability, and completeness

Process digitization poses new risks/challenges that need to be managed Example: Frontline process digitization

Applications moving to digital channels

- · Challenges in new types of fraud
- Difficulties in compliance with KYC
- Lack of personal review and dependence on analytics

Client servicing

- Ensuring that clients understand products
- Meeting regulatory requirements without undue red tape

New products with unknown characteristics

- Deposit "stickiness" of online products
- Much faster payments leading to potential counterparty risks

Storage of data now electronic

- Material cyber risk of data breaches
- Dependence on systems leading to operational risk exposure

Agile development of new products

- Need to be very quick risk management a dynamic partner
- Transitioning risk to more "test-and-learn" environments

While tech development poses challenges, risk managers can gain large dividends by leveraging innovative technology to be part of the solution

Opportunities for tech application across three major levers

Examples of application Levers Analysis of credit assessment AML/KYC DATA Collections Warning system for deterioration in credit quality Credit risk modelling Fraud detection **ANALYTICS** Conduct monitoring forensics Optimization of debt collection rates Decrease in SME lending decision timeframe **PROCESSES** Market risk control automation Compliance & reporting



Potential benefits for risk functions

- Rise in productivity
- Greater insights from new technology
- Potential for competitive advantage

Source: MMC analysis

Case study Digitise loan applications process via advanced credit underwriting procedure

Automation to enhance credit underwriting process:



SMALL BUSINESS NEEDS

Customer needSimple credit process



Product need
Unsecured products



Channel need Online access



INTEGRATED PRODUCT TEAM FOR DESIGN



Utilizing dynamic customer cash flow data



Automated assessment



ENHANCED UNDERWRITING PROCESS

Radically simple

- · Convenient channel for easy access
 - Simplified 3-step process



Hassle-free customer experience

Pre-population of customer data using internal & external sources



Rapid decision making

- Shortened approval time
- Enhanced predictive power



END PRODUCT



60 seconds credit, 3 business days to disburse funds



Instant online decision



Direct disbursement to account

As technology disrupts the industry, risk managers need to define their digital ambition and concrete measures to become a robust "risk function of the future"

Digital capabilities

Peer comparison to understand current positioning and strategic investment accordingly Prioritization of high-impact and quick-win areas

Risk organization/ governance

Adoption of a more strategic role; increased competencies of Risk leadership

Front-to-back process redesign

Active integration of digitization across customer journey

Cooperation model across functions

Strong communication & motivation to drive certain culture/behaviour/conduct

Digital Risk transformation

Regulatory/ supervisory journey

Continued monitoring of global & local reg. changes on emerging tech

10

New HR/ talent proposition Concrete recruitment strategy for top Risk talent, key differentiator in leaner risk teams



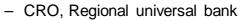
Upgrade core banking systems/interfaces

The transformation journey

Clear definition and alignment of digital ambition across key stakeholders

A fundamental shift is required in capabilities of risk function & leadership to drive innovation and be strategic advisor

"We need to move from people-based decision-making to machine-based decision-making. Only the right use of machines and digitization will help us to succeed."





"Steering the Risk function through digitization has become an existential question which will completely change who we are and how we work. Today, we are not even close to capturing what that means."

- CRO, Global universal bank

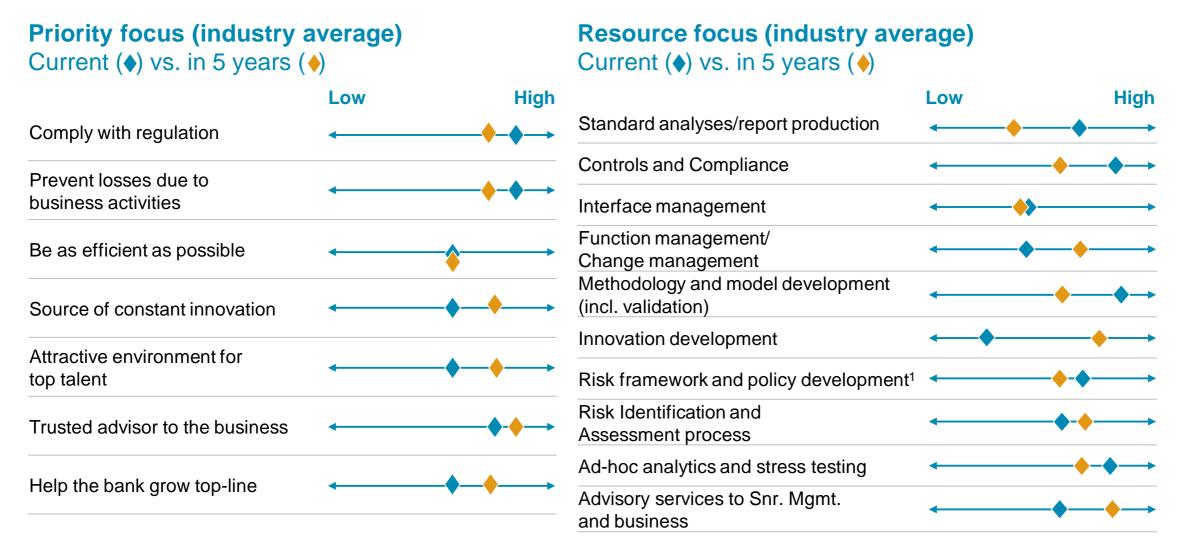
"Talent management has historically been underemphasized – particularly in Risk. If we do not invest today and up our game, we will have structural problems in the near future. In particular, we find ourselves competing with a set of new market participants, which historically weren't relevant for us, amongst them FinTechs and technology companies such as the Googles and Apples of this world. The skills are essentially the same."

CRO, Regional retail bank

"Efficiency is key. And efficiency can only be achieved through new technology – no doubt about that. In order to cope with that, we need to disrupt our talent, our talent management, and our recruiting. If we do not hire the right people today, we will have lost in five years' time."

- CRO, European universal bank

We see a shift in the priorities and resource allocation towards methodological innovation, ad-hoc analytics and front line advisory activities



• Risk leaderships needs a fitting competency profile that would allow them to lead the Risk function of the future

Basic risk skills

Have a detailed understanding of day-to-day risk tasks (e.g. risk measurement & monitoring) even if they don't perform them

Communicator and motivator

Be effective communicators and exercise a motivational management style that encourages collaboration – crucial for shaping the risk culture of the bank



Big picture

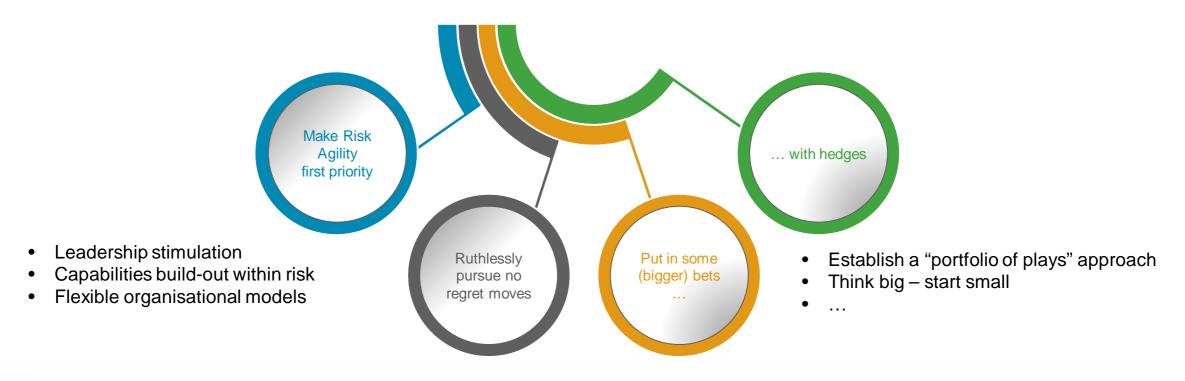
Understand risks incurred in the banks' various lines of business and their interactions (e.g. key economic drivers of P&L in major BUs) to advise CEO and business heads on risk-return optimization and strategy

Technology savvy

13

Take a keen interest in tech developments, looking for opportunities to improve risk assessment and process efficiency

Any roadmap to being future proof risk function should include four elements



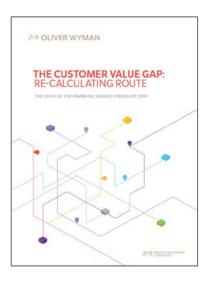
- Pull all traditional Risk efficiency levers
- Establish a scenario-mindset
- Build Risk Incubator/Labs type setups
- Upgrade Risk talent proposition
- Enforce Risk culture enhancements

- Experiment with technology, big data and analytics in key tech areas ...
- ... and beyond the obvious!
- Try to leapfrog traditional optimisation with technology in at least one area
- Launch utility experiment minimum one key area

Any questions?



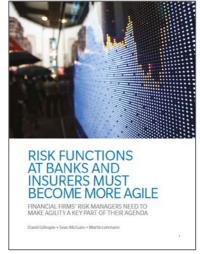
Oliver Wyman Reports















Contact Us

For further information, follow us on Asia Pacific Risk Center (APRC) and BRINK Asia

ASIA PACIFIC RISK CENTER

www.mmc.com/asia-pacific-risk-center.html

For information about banking news, reports, conferences, Policy positions, training, meeting opportunities, and membership, visit:



www.aba.org.tw





Economy • Environment • Geopolitics • Society • Technology

Brink Asia is a digital news platform that provides regional perspectives from leading experts on issues related to emerging risks, growth and innovation.

www.brinknews.com/asia

@BRINKAsia

contact@brinkasia.com

in Follow 'BRINK Asia'

This is made possible by Marsh & McLennan Companies and managed by Atlantic Media Strategies

QUALIFICATIONS, ASSUMPTIONS AND LIMITING CONDITIONS

This report is for the exclusive use of the Oliver Wyman client named herein. This report is not intended for general circulation or publication, nor is it to be reproduced, quoted or distributed for any purpose without the prior written permission of Oliver Wyman. There are no third party beneficiaries with respect to this report, and Oliver Wyman does not accept any liability to any third party.

Information furnished by others, upon which all or portions of this report are based, is believed to be reliable but has not been independently verified, unless otherwise expressly indicated. Public information and industry and statistical data are from sources we deem to be reliable; however, we make no representation as to the accuracy or completeness of such information. The findings contained in this report may contain predictions based on current data and historical trends. Any such predictions are subject to inherent risks and uncertainties. Oliver Wyman accepts no responsibility for actual results or future events.

The opinions expressed in this report are valid only for the purpose stated herein and as of the date of this report. No obligation is assumed to revise this report to reflect changes, events or conditions, which occur subsequent to the date hereof.

All decisions in connection with the implementation or use of advice or recommendations contained in this report are the sole responsibility of the client. This report does not represent investment advice nor does it provide an opinion regarding the fairness of any transaction to any and all parties.