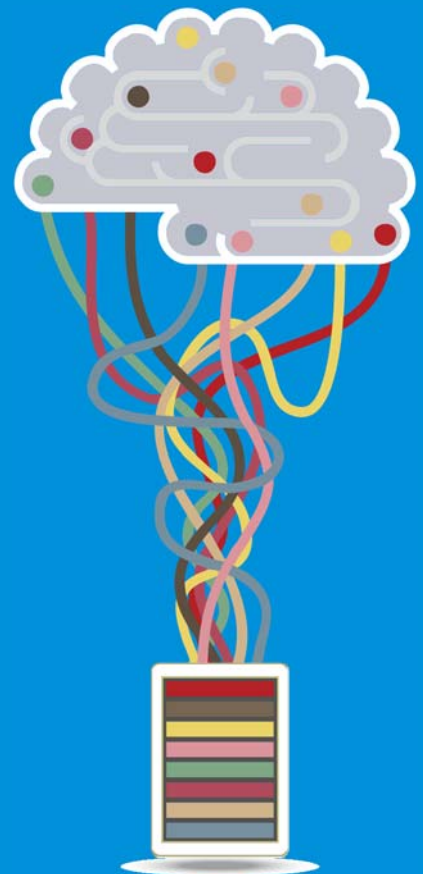


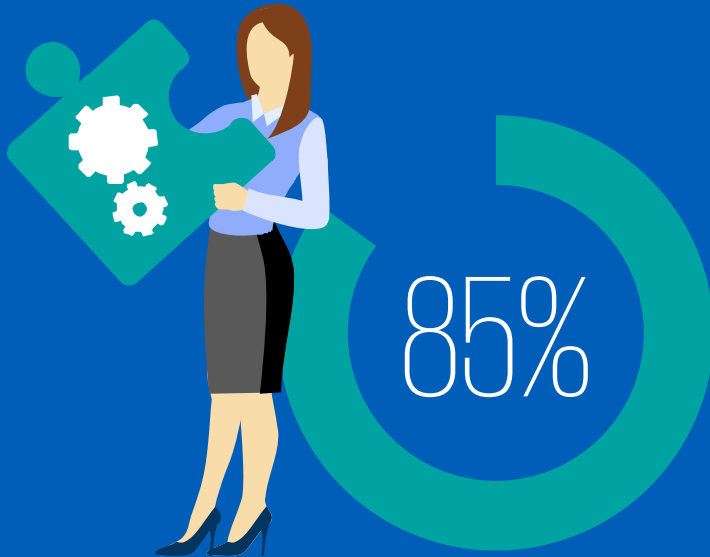


Regulatory Technology Services (RegTech)

Preparing your financial
institution for the future

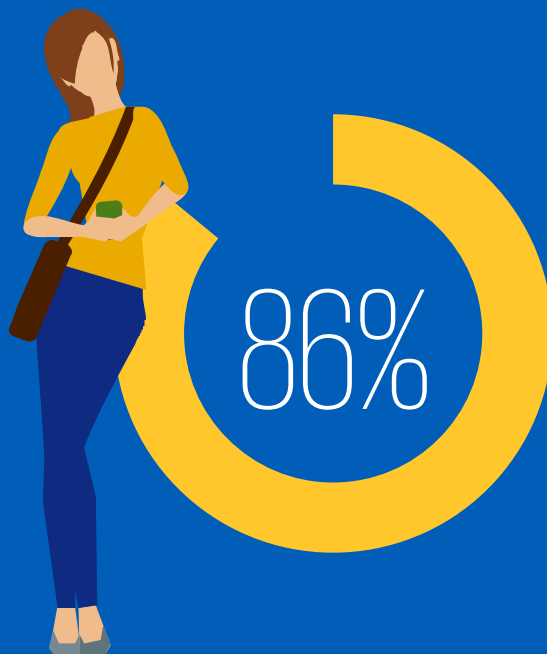


Global CEO concerns



Of CEOs are concerned about

Having to consider the integration of basic automated business processes... with artificial intelligence and cognitive processes



Of CEOs are concerned about

How the millennials and their differing needs will change their business

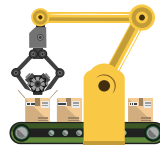
The financial services industry is facing rapidly evolving customer preferences, competition from new business models, complex regulations and macroeconomic uncertainty. Risk and compliance functions, even as mid-office functions, are directly impacted by these external forces. They are expected to be more real-time and agile while being cost-efficient at the same time. Proliferation of new technologies, FINTECHs and REGTECHs, may well be the silver bullet that risk and compliance functions of the future need

Trends shaping the future risk and compliance functions

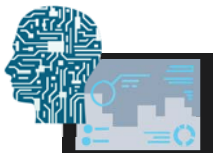
- The rise of internet connectivity, mobile and social media is rapidly changing customer preferences. This will force financial institutions to be faster than ever with decisions on issues like credit and client onboarding.
- Complex and continuously evolving regulations increase overheads and simultaneously increase the pressure to be “lean”.
- Erosion of trust in financial institutions.
- Increased emphasis on fostering the right conduct and culture, along with consumer protection.
- Slow global growth and macroeconomic uncertainty.
- Explosion of data and proliferation of new technologies, like:



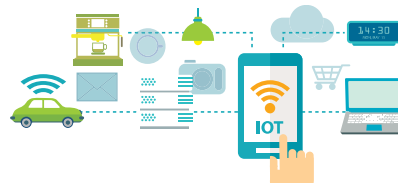
Blockchain: It is a distributed digital ledger of all transactions or information shared across a peer-to-peer network verified by all. Whether it is used for payments, over-the-counter (OTC) derivatives (smart contracts) or know-your-customer (KYC) and anti-money laundering (AML) checks, it has the potential to reduce settlement risk, counterparty risk, financial crime risk and more.



Digital Labour: It is robotic process automation (RPA) systems and natural language processing systems which enable the automation of activities like risk monitoring, reporting, data reconciliation or processing unstructured information.



Cognitive Machine / Artificial Intelligence (AI): It is deep learning algorithms that automate the process of extracting insights from structured and unstructured data. It can reduce the burden of building and maintaining models, and hence be more cost effective.



Big Data: Social media and Internet of Things (IoT) have led to an explosion of data which are highly relevant for risk and compliance functions. Establishing a framework of data sources, distributed computing and Big Data Analytics tools will help in harnessing power of Big Data.



Cloud Based Service: With regulators warming up to cloud computing, it enables banks to set up utilities that will deliver complex risk and compliance activities on a managed service model. E.g. stress testing, reporting.



Real-Time Compliance (RTC): It utilises systems to effectively alert a company to non-compliance ‘triggers’. It can enable corrective action before events build to a significant impact in scale.

The future of risk and compliance in banks

The risk and compliance functions of the future will be powered by near real time information and smart machines to make sense of complex patterns in data and hence better able to foresee risks and compliance failures. They will be able to act and respond faster by adopting disruptive technologies such as blockchain and cloud-based computing. They will be operationally 'leaner' with automated business as usual activities. In summary, they will be more adept at being an effective business partner and navigator while simultaneously playing the role of an internal regulator.



Current State



- Manual document processing
- Limited data sources to assess credit worthiness
- Static credit scoring models that do not keep pace with evolving economic cycle and consumer behavior
- Human bias

- Manual document processing
- Huge operational overheads and inefficiencies

- Very high proportion of false positives
- Poor quality of voice data
- Manual sampling and surveillance of data
- Huge operational overhead and inefficiencies

- Manual processes & procedures
- Data quality challenges
- Siloed / disintegrated systems
- Time consuming

- Models that are unable to detect complex patterns in large volumes of data
- Models that do not keep pace with ever changing economic cycle, consumer behaviour and market behavior

Underwriting

Document processing Credit scoring

Powered by Cognitive Machines, Natural Language processing, Robotic Process Automation (RPA), Big Data

Client Onboarding

KYC

Powered by Natural Language Processing, Big Data and Blockchain

Monitoring/ Surveillance

Transaction monitoring Trade surveillance

Powered by Cognitive Machines, Real Time Compliance

Risk Operations

Regulatory Reporting Management Reporting

Powered by Natural Language Processing, Robotic Process Automation (RPA) and Cloud

Risk Analytics

Portfolio Analytics Stress Testing

Powered by Cognitive Machines, Big Data and Cloud Based Services



Future State

Credit analysis	<ul style="list-style-type: none"> • Automated document processing leading to faster credit processing. • Self-learning and continuously evolving models • More accurate assessment of credit worthiness • Lower bad rates resulting in lower provisions • Limited model maintenance and overheads
Due diligence	<ul style="list-style-type: none"> • Common identity for individuals and organisations on Blockchain • Digital KYC and due diligence • Automated document processing
Trader surveillance	<ul style="list-style-type: none"> • Reduced false positives • Integrated voice and data monitoring • Operational efficiency • Proactive surveillance
Risk Monitoring Change Management	<ul style="list-style-type: none"> • End to End automation of reporting and reconciliation. • Improved data quality control • Integrated data and systems architecture • Faster reporting
Based Services	
Balance sheet analytics Fraud Analytics	<ul style="list-style-type: none"> • More accurate risk forecasting • Pro-active fraud detection • Self-learning and continuously evolving models • Limited model maintenance and overhead

KPMG's RegTech services

KPMG has developed a host of RegTech solutions, both in-house and in collaboration with select technology partners. Our deep risk, regulatory and process expertise within our Advisory practice and the specialised technology capabilities within KPMG's Digital + Innovation team enable us to provide full lifecycle support through your RegTech transformation journey:



Functions

Offerings

Enabling Technologies

Risk Management



- Application score cards
- Credit risk models
- Collections analytics
- Fraud analytics



- Cognitive machine

Compliance



- Client onboarding
- Transaction monitoring
- Trade surveillance



- Robotics processing

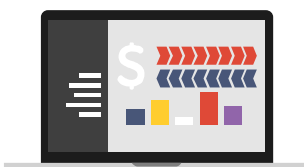


- Cognitive machine



- Automated voice monitoring and analysis

Regulatory Reporting



- IFRS 9
- Stress testing
- FATCA
- Common reporting standard (CRS)



- Hosted solutions

Case studies of KPMG's RegTech Solutions



Credit Scoring

Client

ASEAN's premier consumer banking group

- Over 1,000 branches in Malaysia and across ASEAN
- Over 13 million customers across various customer segments

Challenge

Develop an application scorecard for their credit card portfolio (using a sample of 31,680 credit card applications from Jan 2013 to Jun 2015) and benchmark the estimated default rate with observed default rate

KPMG, working with ADATOS, used cognitive machine to perform:

- Rapid data assessment
- Build Training Data
- Built application scorecard using deep learning neural network

Results

Significant reduction on bad loan rate from 1.29% to 0.93%

Translates to US\$3.5 million savings on provision per year



Voice Monitoring

Client

A bank requested a diagnosis to evaluate and report on the quality of a limited set of call recordings on a sub-set of its Sydney-based traders.

Challenge

Bank provided a USB device containing meta-data and speaker and handset recordings for five traders captured over a three-month period (Feb to Apr 2016)

Only a narrow view of the call recording landscape was available prior to the processing.

Results

From the analyses of the meta-data and audio recording files, a number of general and specific observations regarding the quality of the data have been provided, to assist in the development of the surveillance and monitoring programme.

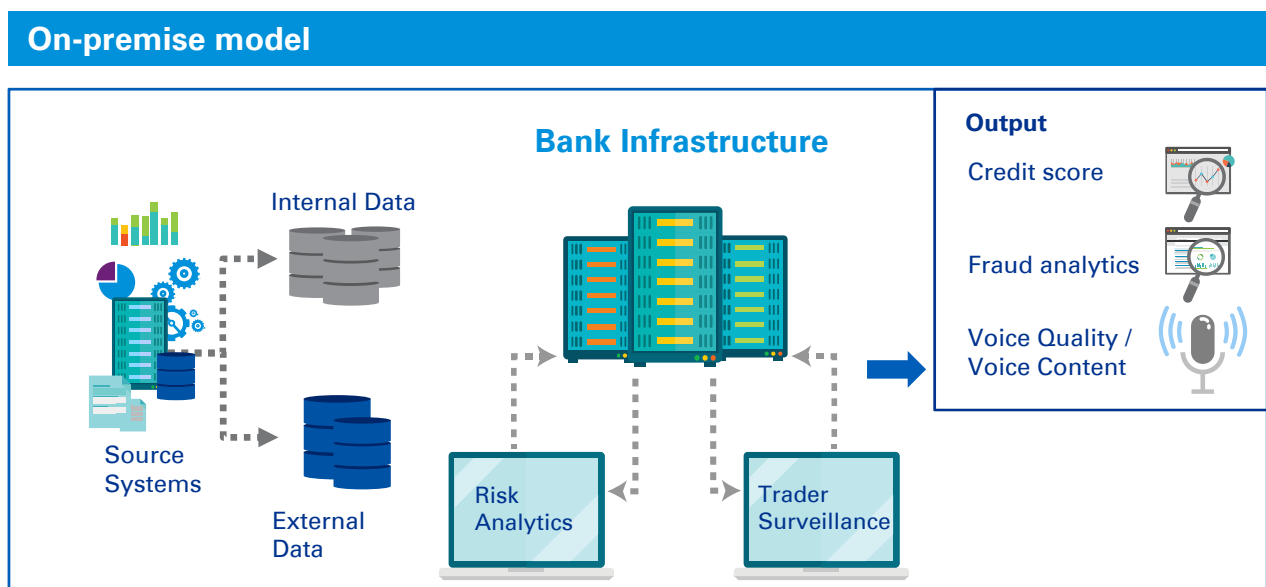
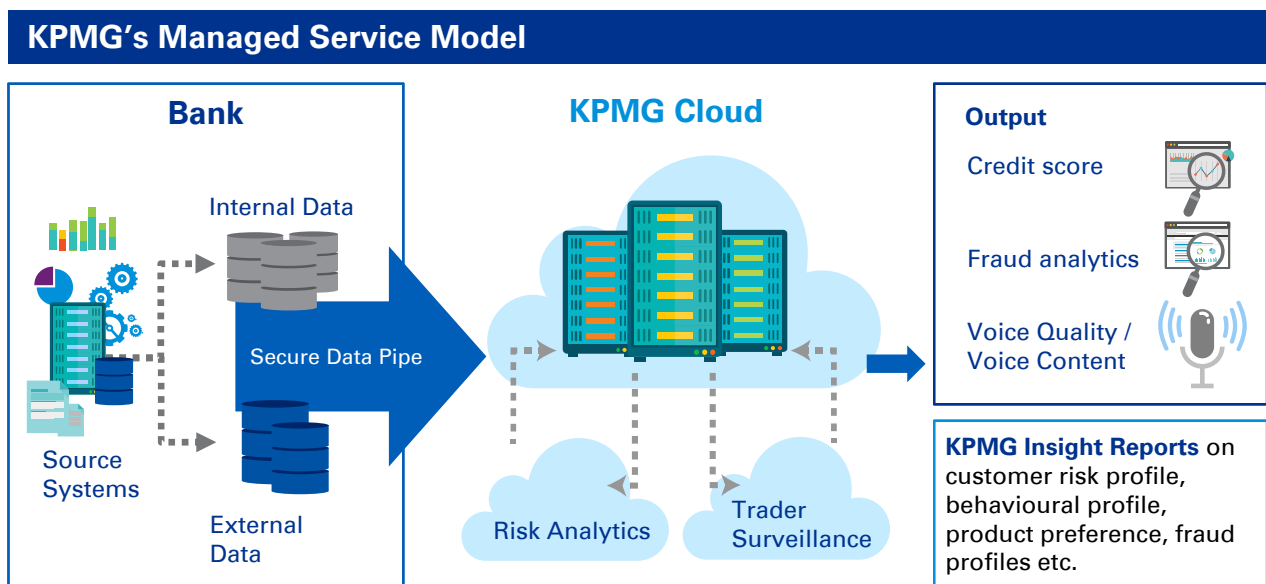
A total of 5,769 hours of recordings were provided. 47 hours contained usable content. Only 0.8% of recordings were useful.

What is our deployment model?

KPMG offers a range of deployment models to suit your business requirements.

The key models are outlined below:

1. KPMG's Managed Service Model – this Cloud based service will deliver KPMG's customised insights and best practice methodologies coupled with our RegTech approach. This allows us to deliver more value at a lower cost.
2. On-premise model - which enables the business to have direct control over the solution



Technology was the biggest factor contributing to company growth, after global economic factors





CEOs identified new technology as a key enabler to accelerate their transformative strategies

Contact Us



Chia Tek Yew
Head, Financial Services Advisory
T: +65 6213 3726
E: tekyewchia@kpmg.com.sg



Gary Chia
Head, Financial Services Regulatory Compliance
T: +65 6411 8288
E: garydanielchia@kpmg.com.sg



Craig Davis
Asia Pacific Head, Financial Risk Management
T: +65 6411 8533
E: craigdavis1@kpmg.com.sg



Nanda Thiruvengadam
Associate Director, Financial Risk Management
T: +65 6411 8212
E: nandathiruvengadam@kpmg.com.sg

kpmg.com.sg/socialmedia



The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2016 KPMG Services Pte. Ltd. (Registration No: 200003956G), a Singapore incorporated company and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Singapore.

The KPMG name and logo are registered trademarks or trademarks of KPMG International.