SupTech and RegTech :
The Case of Korea

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Contents

1. Fintech Landscape in Korea - ICT Infrastructure

Korea has a great potential to develop the Fintech industry;
Equipped with outstanding ICT infrastructure; Main channel for
financial services rapidly shifting to mobile

Korea's ICT Infrastructure Development

ICT Development Index 2017   **#2**
(ITU, 2017.11)

2018 Automation Intelligence Unit   **#1**
(EIU, 2018.4)

2018 Bloomberg Innovation Index   **#1**
(Bloomberg, 2018.1)

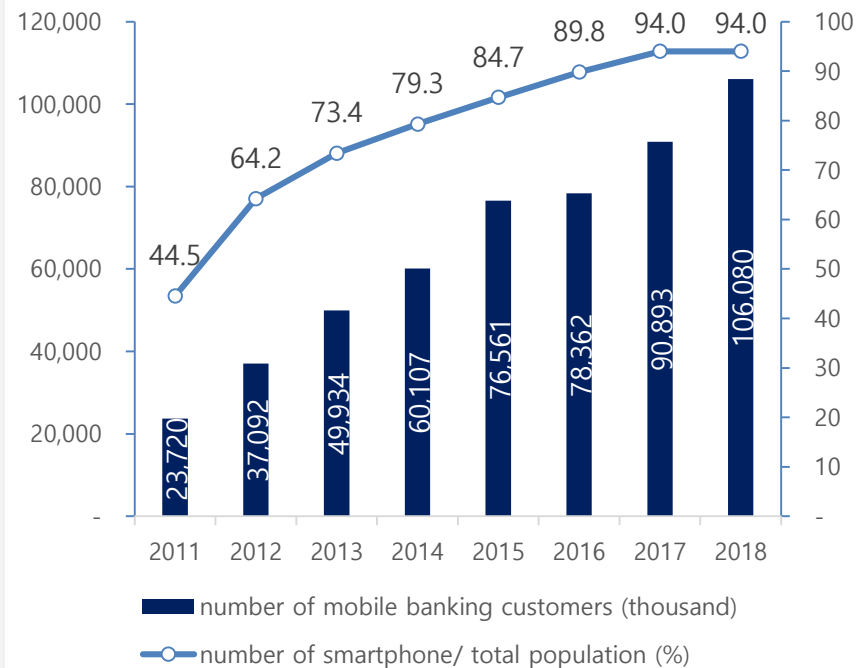**2017 Government AI Readiness Index** **#4**
(Oxford Insights, 2017.12)

2017 Digital Evolution Index   **#7**
(Tuffs University, 2017.7)

Source: Samjung KPMG Analysis

Smartphone and Mobile Banking Growth

Year	number of mobile banking customers (thousand)	number of smartphone/ total population (%)
2011	23,720	44.5
2012	37,092	64.2
2013	49,934	73.4
2014	60,107	79.3
2015	76,561	84.7
2016	78,362	89.8
2017	90,893	94.0
2018	106,080	94.0

■ number of mobile banking customers (thousand)
─○─ number of smartphone/ total population (%)

Source: Samjung KPMG Analysis , BOK
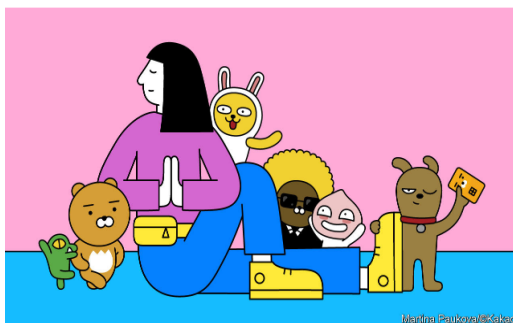
1. Fintech Landscape in Korea <Reference>

South Korea is trying to make banking fun(The Economist, May.2019.)

SPECIAL REPORT: BANKING

How to make banking fun

South Korea is trying to make banking fun

New ways to tame a chaotic banking system

Martina Paukova©Kakao

Print edition | Special report
May 2nd 2019

- In Korea, major selection criteria for financial services have been personal network; and consumer experience have not been satisfactory.
- The Financial Services Commission implements Fintech promotion policy to strengthen financial competitiveness and improve the quality of services

VIVA REPUBLICA "In the long run, Toss holds the customer contact point and the bank acts as a supplier." **rainist kakao**

- Fintech is changing the financial life by providing fun, affordable, and convenient financial services, and because the customer interest and expectations are rising.

✓ Possibility of falling into 'dumb pipe' as the existing financial sector is becoming more 'overbanked'

✓ Financial companies need to think from consumers' perspective whether financial products are the best option for their future.

✓ In addition to cooperation with Fintech, innovation attempts through internal competition

FSS working to evolve in step with changing digital finance landscapes

Regtech

Financial firms

Suptech
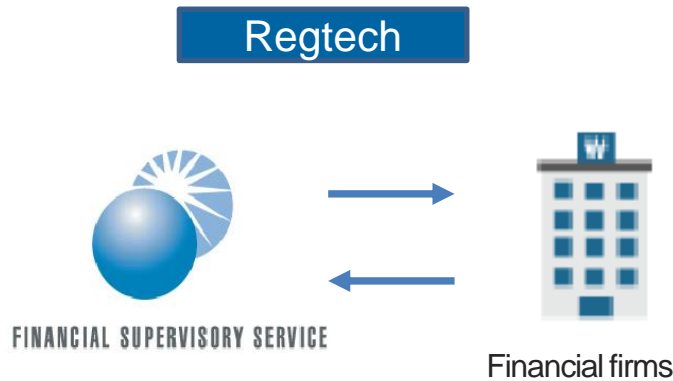
Creating an environment favorable to the growth of Regtech companies that provide regulation-related services to small financial firms and fintech companies

- Conducting a pilot financial security RegTech program that automatically checks the security level of financial companies
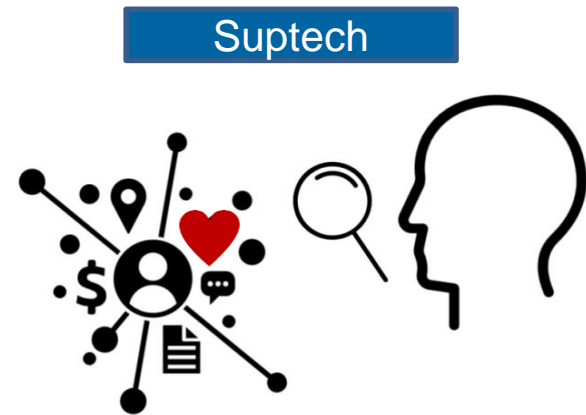
Long-term plan on IT strategy to effectively utilize Suptech

- Establish big data-based integrated supervisory system

- Promote further development of financial information exchange systems

- Enable comprehensive search of consumer complaints and integrate reporting channels

2. Supporting RegTech development - Regtech cases 1&2

FSS supports financial companies that actively utilize Regtech
to carry out regulatory compliance

[CASE 1] Prevention System to prohibit violations of FX transaction laws	▪ Consumers are provided with a detailed guideline on the items to report from banks when making Fx transactions ▪ Decreased cases of violation will lead to more effective supervision of the FSS
[CASE 2] RegTech Financial Security System	▪ Automatically examines the security level of financial company to counteract cyber threats and shares threat intelligence in real-time ▪ Automatically produces periodic report ▪ Also conducts security assessment and provides consultation

2. Supporting RegTech development - Regtech case 3

[CASE 3] MRR Test Project

Step1 : Identifying areas to which MRR is applicable

Step2 : Establishing a special version of law

Step3 : Converting the special version of law into machine readable code

Step4 : Mapping the data to the systems of financial services firms

Step5 : Aligning with the systems of financial services firms

Step6 : Real time implementation and verification

Article 33 (Business Report and Public Disclosure) (1) A financial investment business entity shall prepare business reports for three, six, nine, and twelve months respectively from the commencement date of each business year, and shall submit them to the Financial Services Commission within the period of time prescribed by Presidential Decree, not exceeding 45 days after the lapse of each relevant term as specified above.

O ∀r : A financial investment business entity *S : business report W: 45days*

```
<!DOCTYPE html>
<html xmlns="http://www.fss.or.kr/1999/xhtml">
<head>
          <meta content="IE=edge" http-equiv="X-UA-Compatible">
          <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
```

Open API

2. Supporting Regtech development
- Challenges in Regtech Adoption for Financial Services Firms

Prerequisites

Perceive Regtech as an investment, not as a cost

As Is		To Be
Reliance on IT department for data analytics	→	Ensure the compliance department is IT-independent
Regtech is not in the scope of next generation	→	Ensure the compliance department is IT-independent
Lack of IT staff in charge of IT compliance	→	Secure IT staff responsibility for IT compliance
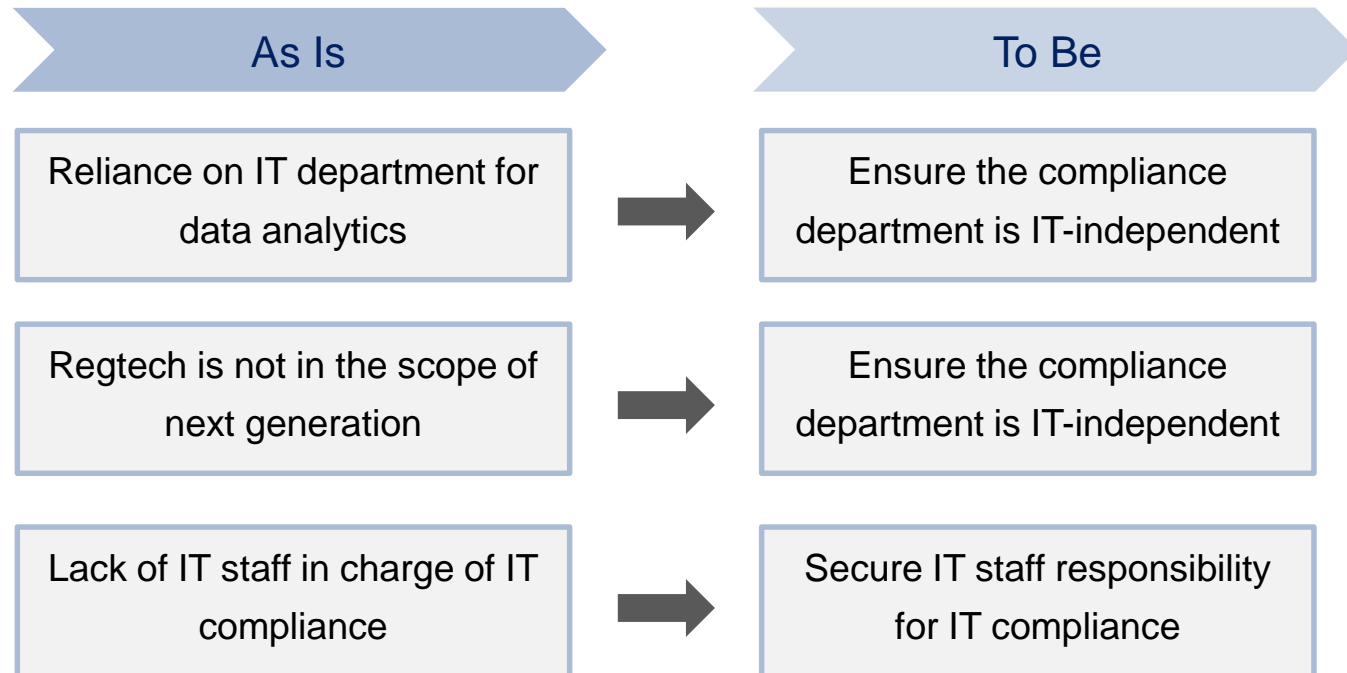
2. Supporting Regtech Development <Reference>

Regtech and Suptech Showcase (May 23, 2019)

UNITAS CRI(Country Risk Index) Service

NIC Digital Compliance Platform

Automated Solution for Checking Error Payment of Insurance Account

AML/RBA Solution SaaS Service

Financial Investment Monitoring System KI-Guard

Financial Security Regtech System

3. Supporting SupTech Development - Suptech cases 1&2

The FSS makes use of technology to enhance efficiency of supervision and improve consumer protection

[CASE 1]
Anti-Voice phishing APP

① Activates AI app when a call comes from an unknown number
↓
② Converts the call into text and analyzes it by block units
↓
③ Gives alert when the possibility of voice phishing is detected
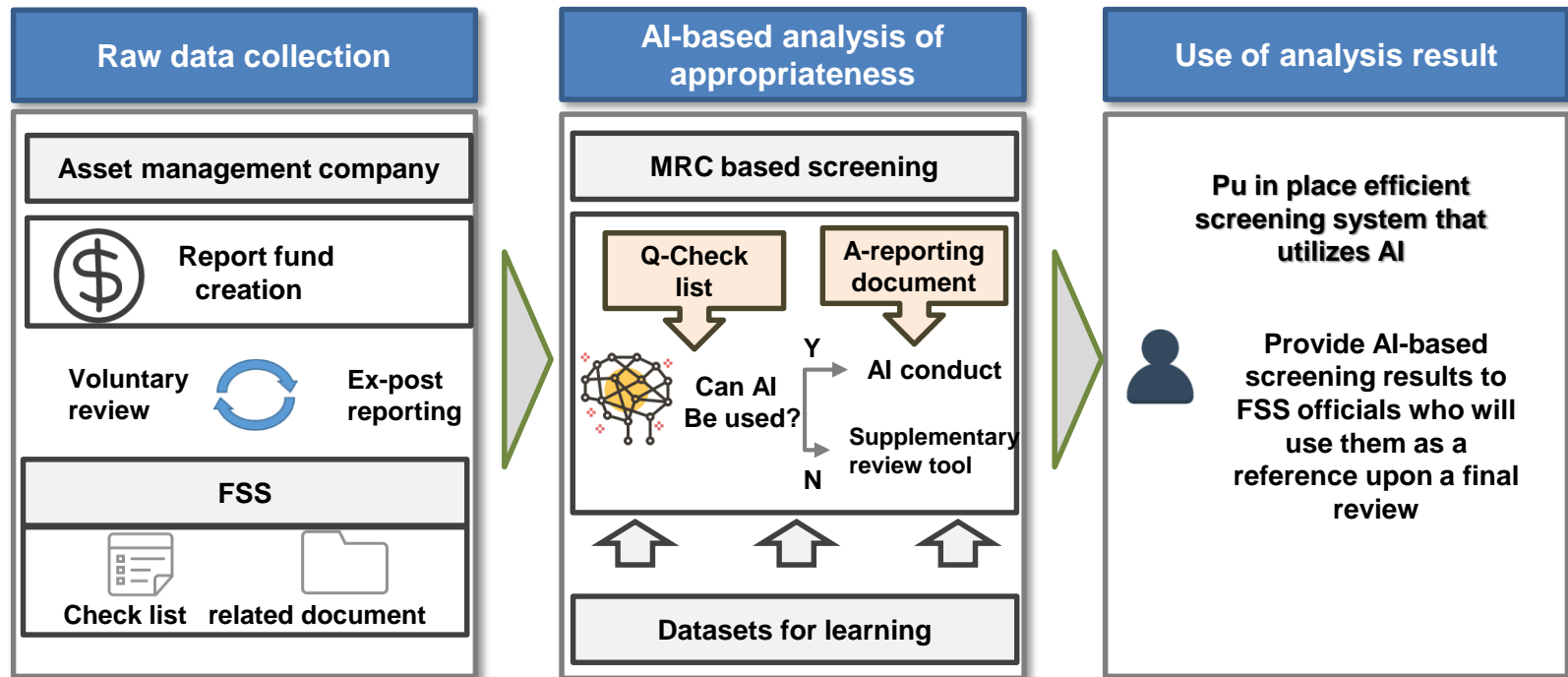
[CASE 2]
Anti-smishing AI algorithm

① Collects and analyzes various fraudulent text messages
↓
② Builds on analysis model
↓
③ Operates the AI algorithm upon receipt of suspicious messages

3. Supporting SupTech Development - Suptech case 3

[CASE 3]
An AI-based pilot system to review the terms and conditions of financial instruments

(As Is) Officials at the FSS manually sift through files to screen diverse and complex terms and conditions of financial products, which requires excessive time and human input.

Raw data collection	AI-based analysis of appropriateness	Use of analysis result
Asset management company	**MRC based screening**	**Pu in place efficient screening system that utilizes AI**
Report fund creation	**Q-Check list** / **A-reporting document**	
Voluntary review / **Ex-post reporting**	**Can AI Be used?** Y → AI conduct / N → Supplementary review tool	**Provide AI-based screening results to FSS officials who will use them as a reference upon a final review**
FSS		
Check list **related document**	**Datasets for learning**	

3. Supporting Suptech Development
- Challenges in Suptech Adoption for Supervisory Authorities

Approach of FSS

1 Build a Roundtable(platform) for Collaboration

↓

2 Make an operable potential solution

↓

3 Suptech Report

4. Conclusion – Challenges to Fintech Supervision

Challenges to Fintech Supervision

1   Weak legal grounds for Fintech supervision

2   Difficult to determine who is responsible for what mix between finance, communication and commerce

3   Protection of those marginalized from digitization

4   Micro and macro-financial risks
   - Micro : Third-party reliance, Cyber risk
   - Macro: Contagion risk, Big-tech risk

5   Demands exceed supply in Fintech supervision

Fintech - Regtech - Suptech Ecosystem

Fintech

▪ Financial Technology

Regtech

Suptech

▪ Regulation Technology

▪ Supervisory Technology
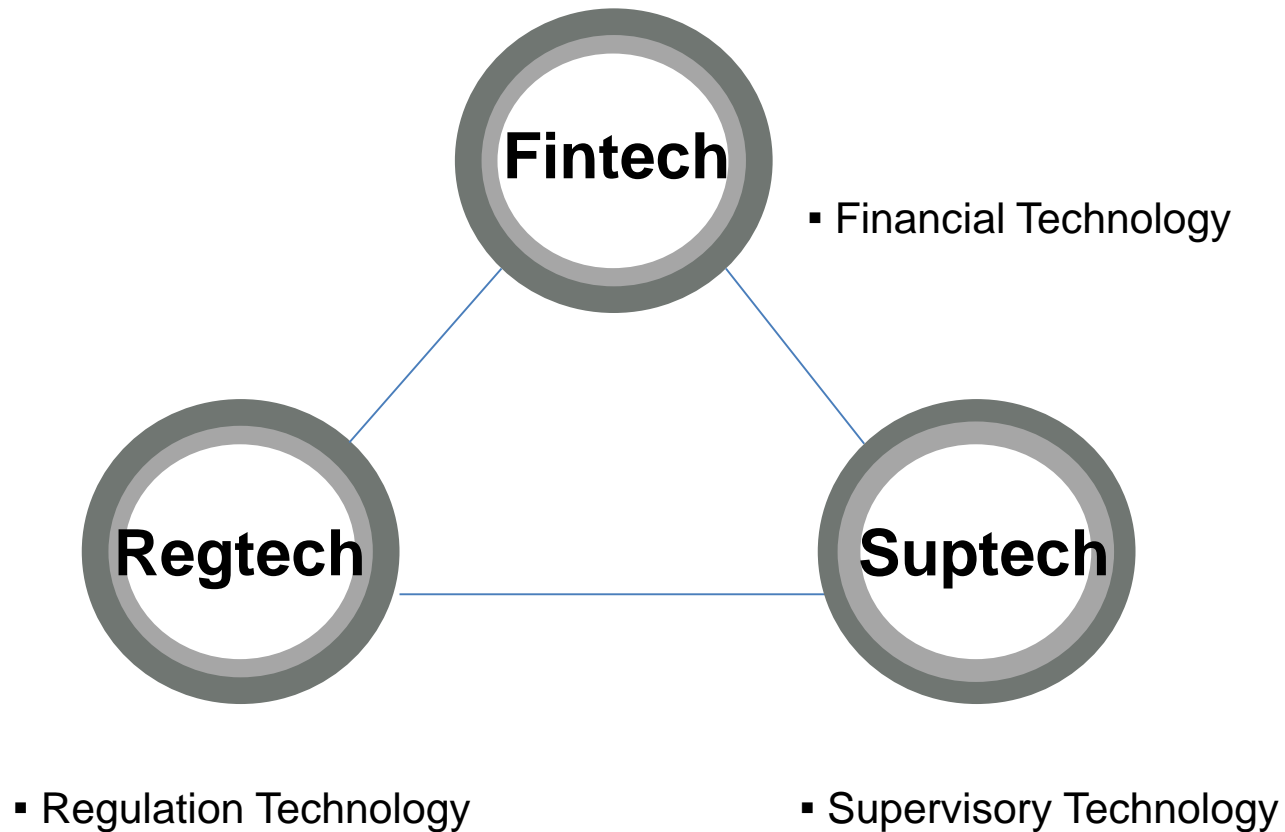
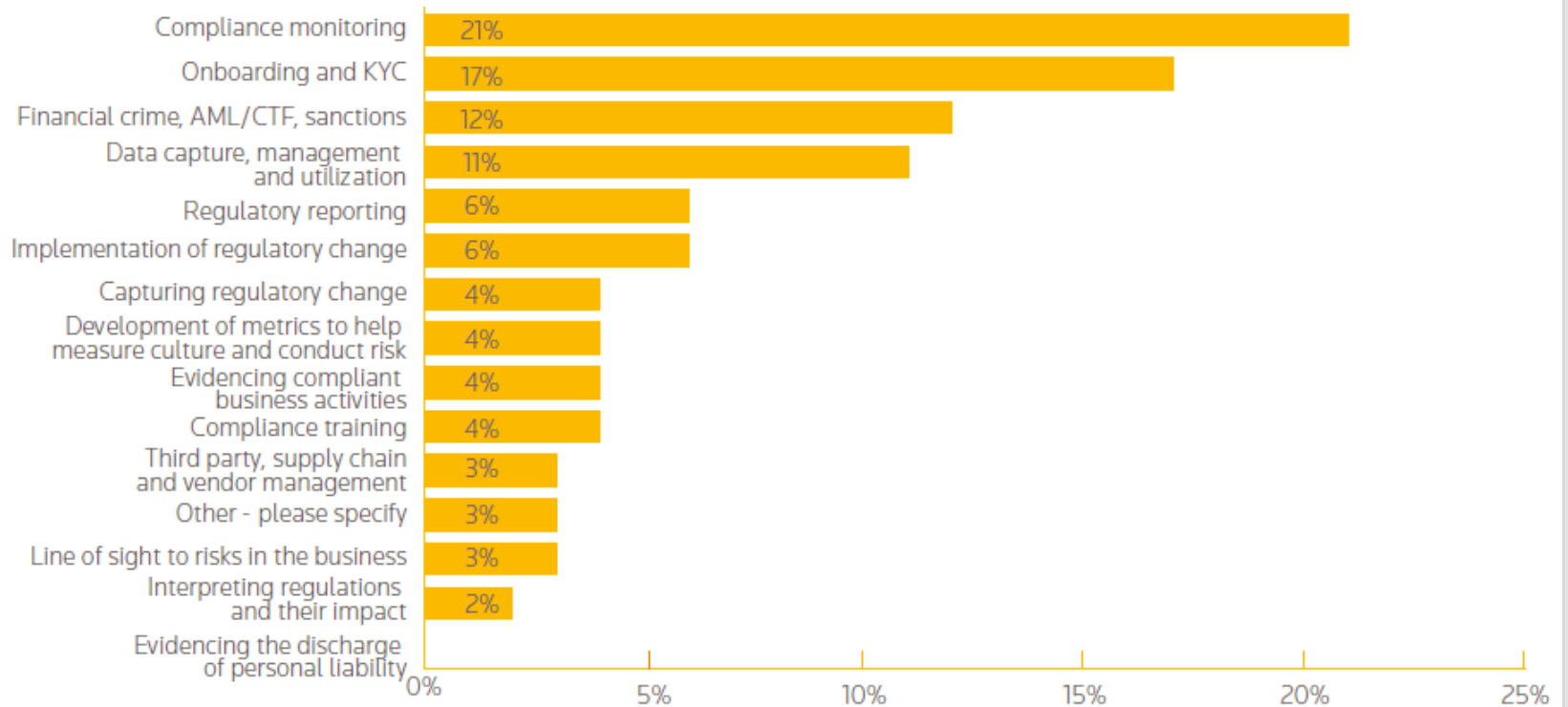# Thank You

Email : kyt951@fss.or.kr

Attachment 1

RegTech in Compliance, Regulation, Risk management

Which part of compliance and regulatory risk management is most likely to be impacted by regtech at your firm?

Category	Value
Compliance monitoring	21%
Onboarding and KYC	17%
Financial crime, AML/CTF, sanctions	12%
Data capture, management and utilization	11%
Regulatory reporting	6%
Implementation of regulatory change	6%
Capturing regulatory change	4%
Development of metrics to help measure culture and conduct risk	4%
Evidencing compliant business activities	4%
Compliance training	4%
Third party, supply chain and vendor management	3%
Other - please specify	3%
Line of sight to risks in the business	3%
Interpreting regulations and their impact	2%
Evidencing the discharge of personal liability	

Source: Thomson Reuters Regulatory Intelligence – Fintech, Regtech and the Role of Compliance in 2019, by Stacey English and Susannah Hammond

Attachment 2

Early adopters and their innovative suptech technologies

Technology	Supervisory agency								
Data collection									
API	ASIC			BSP					
Data input approach	ASIC							OeNB	SEC
Data pull approach	ASIC		BNR	BSP			FCA		
Machine-readable regulation							FCA	MAS	
Cloud computing	ASIC				CNBV	DNB	FCA		SEC
Chatbots				BSP			FCA		
Data analytics									
Big data	ASIC	BoI			CNBV	DNB	FCA	MAS	SEC
Artificial intelligence					CNBV	DNB	FCA	MAS	SEC
NLP	ASIC	BoI			CNBV		FCA	MAS	SEC
Machine learning	ASIC	BoI			CNBV	DNB	FCA	MAS	OeNB	SEC
Supervised learning	ASIC	BoI				DNB	FCA		SEC
Unsupervised learning	ASIC					DNB	FCA	OeNB	SEC
Topic modelling							FCA		SEC
Random forest	ASIC	BoI					FCA		SEC
Image recognition							FCA		
Neural networks						DNB		OeNB	SEC

Note: based on interviews and public sources. Definitions of each technology can be found in the Annex.

* source : July, 2018 BIS Innovative Technology in Financial Supervision – the experience of early user

How far advanced are supervisory agencies with suptech applications

Supervisory area	Supervisory agency								
	ASIC	BoI	BNR	BSP	CNBV	DNB	MAS	OeNB	SEC
Automated reporting			Operational	In development		In development		Operational	
Real-time monitoring	Operational	Experimental				Experimental			
Validation		Experimental		In development	In development		Operational	Experimental	Operational
Consolidation	Operational						Operational		Operational
Visualisation	Operational				In development	In development	Operational	Operational	Operational
Virtual assistance		Experimental		In development			In development		
Machine-readable regulations									
Manipulation	Operational				In development		In development		Operational
Insider trading	Operational						In development		Operational
AML/CFT		Operational	Experimental		In development		In development		
Fraud	In development						In development		In development
Mis-selling									Experimental
Credit risk evaluation		Experimental							
Liquidity risk evaluation						Operational			
Macro-financial risks	In development	Experimental				In development			In development
Emerging risks signalling						In development			
Policy evaluation			Experimental		Experimental	Experimental			
Financial stability		In development				Experimental			

Note: ▢ Experimental stage ▢ In development ▢ Operational

* source : July, 2018 BIS Innovative Technology in Financial Supervision – the experience of early user