

# VISIO BLOC

CHAINING INNOVATIVE IDEAS

A student-run bi-monthly newsletter that aims to share and promote the development of regulatory technology

#001 / MARCH 2019

# THE REGTECH ISSUE

- ▶ How RegTech Can Transform Malaysia's GRC Regime
- ▶ Security vs Privacy in RegTech
- ▶ RegTech and Blockchain: How Do Both Technologies Coincide?

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## MESSAGE FROM THE VISIO CREW

### Welcome to the first issue of VisioBloc!

VisioBloc is a bi-monthly newsletter under the UM RegTech project – a joint venture research project between the University of Malaya (UM), Quanta RegTech Capital (QRC) and Infinity Blockchain Holdings (IBH).

This newsletter is managed by a group of students from four participating faculties of UM - the Faculty of Law, the Faculty of Economics and Administration, the Faculty of Business and Accountancy and the Faculty of Computer Science and Information Technology.

In this issue of VisioBloc, we explore the emerging field of RegTech, which seeks to offer solutions to compliance and regulatory issues through the use of technology. Our articles examine both the prospects of RegTech as well as arising legal concerns regarding its application.

We hope that you will find the articles in this issue insightful, and do write to us to share your feedback on this new initiative.

Best wishes,  
The Visio Crew

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### REGTECH CUBE

The RegTech Cube is a Centre of Excellence for Regulatory Technology (RegTech) situated at the Faculty of Law of the University of Malaya. The Centre of Excellence serves as a platform for students to conduct research, education and outreach programs related to RegTech, particularly on blockchain technologies. The RegTech Cube also aims to be leading global RegTech research hub.

### OBJECTIVES

UM RegTech Project aims to:

- Set up a centre specifically for RegTech research and create a community of students and academicians in UM focused on RegTech-related initiatives;
- Bring together academics, technologists, policymakers and members of the private sector for programs that explore blockchain's impact on law, government and society; and
- Collaborate with government, private entities, NGOs and educational institutions on the use and adoption of blockchain technology.

### THE VISIO CREW

The Visio Crew is a student management committee board consisting of UM students selected by the Advisory Board to implement activities under the UM RegTech Project.



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Partners of the UM RegTech Project act as the main technical consultants for the project.



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## FACULTY OF LAW, UNIVERSITY OF MALAYA

Dato' Associate Prof. Dr. Johan Shamsuddin Bin Hj Sabaruddin, Dean

We are currently witnessing the growth of blockchain technology, a phenomenon that transforms lives. Day by day, blockchain is slowly being integrated into our daily lives, and a prime example would be the rise of FinTech. Soon, we will experience the use of blockchain in many fields that are unimaginable, including the legal field. Hence, launching the UM RegTech Project will be greatly beneficial to students. Not only will they gain exposure to a technology that is currently alien to many of them, they will be one step ahead in their future careers compared to peers who may not have a similar opportunity. This is in line with our mission to nurture the best of the best, and clearly, the RegTech Cube is what we need.

## UM REGTECH PROJECT, UNIVERSITY OF MALAYA

### Advisory Board

Following the success of Blockchain 1.0 in 2018, the University of Malaya has continued to collaborate with QRC PLC and Infinity Blockchain Holdings to launch Blockchain 2.0. One of the main highlights of this project is the establishment of the UM RegTech Project, a RegTech research center run by a multidisciplinary team of students and academicians from four faculties, namely the Faculty of Law, the Faculty of Computer Science and Information Technology, the Faculty of Economics and Administration, and the Faculty of Business and Accountancy. Through this initiative, we hope to educate our students on the multidisciplinary aspects of blockchain technology, encourage them to explore the innovation of blockchain with the assistance of professionals from both public and private sectors, and nurture inquisitive minds. In return, they shall conduct outreach programmes and organize educational activities to promote public awareness about blockchain technology. Indeed, the RegTech Cube marks the growth of a strong blockchain community in Malaysia.





## QUANTA REGTECH CAPITAL GROUP (QRC)

Adam Vaziri, Chairman and Co-founder

### MAXIMIZING REGTECH'S IMPACT: WELCOME TO THE UM REGTECH PROJECT

In a rapidly changing and increasingly blockchain driven global economy, it has become all the more important for business leaders to take a pragmatic, technological-minded approach to compliance. We at QRC are experts in regulatory technology – RegTech – and offer a host of solutions that enable these business leaders and their companies to stay compliant in an efficient and expeditious manner.

In particular, QRC specializes in RegTech for the blockchain industry. We have developed some of the most in-demand regulatory technologies for this sector and are recognized as an authority in the field. We are also known for our scientific contributions, having already formed lasting research partnerships with the National Taiwan University of Science and Technology (Taiwan Tech) and with TUL Corp, one of the world's leading GPU manufacturers. In 2018, we were honored — together with our corporate partners, Infinity Blockchain Labs — to enter into a collaboration with the University of Malaya (UM) in order to found the UM RegTech Project, a Center of Excellence for Regulatory Technology.

Situated at the UM Faculty of Law, the UM RegTech Project serves as a platform for students and faculty to conduct research and outreach regarding RegTech and blockchain technologies. In July, the REGTECH CUBE released its first major research report, the Malaysian Blockchain Regulatory Report, which provides an introduction to the technical and regulatory implications of blockchain and addresses the prospects and challenges for the technology in Malaysia.

One of the founding goals of the UM RegTech Project is to expand its pursuit of knowledge to other major universities throughout Asia. To this end, we have brought another of our partner companies, the Asia Blockchain Review — a highly skilled, Southeast Asia-focused publicity firm and media platform — into the collaboration. They are hard at work spreading the REGTECH CUBE's message throughout the continent.

In our view, the UM RegTech Project is well on its way to becoming one of the world's leading RegTech research hubs and to achieving its overarching mission: to help realize blockchain's enormous potential to benefit humanity, through compliance. We believe that once you have read this newsletter, you will agree.



**QRC  
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## INFINITY BLOCKCHAIN HOLDINGS (IBH)

Hiroyuki Enomoto, Co-Founder of IBG

### IBG WORKS TOWARD GOAL OF MOST INFLUENTIAL BLOCKCHAIN ENABLER IN ASIA

The fast-paced adoption of blockchain technology and cryptocurrencies in countries around the world is proof that many industries are ready to embrace the technology that is set to change the face of businesses everywhere. For **Infinity Blockchain Group (IBG)**, 2019 is an exciting year full of potential and opportunities.

With the organization's ambitious vision of becoming the most influential blockchain enabler in Asia, IBG has been working to empower game-changing blockchain startups to bring about the highest impacts to the economy and society, regardless of where they may be based. IBG comprises over 300 blockchain experts, with multiple offices around Southeast Asia and East Asia, from Vietnam, Malaysia, Singapore, and Thailand to Japan, Hong Kong, and Taiwan, to provide dynamic consultation and development. Its ultimate goal is to offer practical blockchain solutions to our forward-thinking customers.

In 2018, IBG brought about the success of multiple blockchain-enabled solutions. The firm's most prominent product is the **Infinito Wallet**, the first-ever universal wallet for all leading digital assets, which supports more than 1,000 coins, tokens, and smart contracts. Meanwhile, **Blockpass** has blazed a trail in shaping the blockchain-powered identity system, supporting KYC, KYO, and KYD, in order to build a trustworthy digital ecosystem for all users.

IBG has also succeeded in blending blockchain with existing industries.

**Fruitchain** is a product traceability solution launched in Vietnam, which can store supply chain information and display real-time product data. Moreover, IBG provided RNG (Random Number Generator) technology based on blockchain to **Quanta**, the first licensed blockchain lottery ecosystem, creating a fair lottery system powered by blockchain.

This year, IBG is embarking on a new initiative, the **UM RegTech Project**, which aims to research and develop innovations that will contribute to further adoption of blockchain technology and cryptocurrencies. While a team of researchers works towards an end product with a security token issuance, another team will see researchers from different fields collaborate to seek an end product that addresses regulatory compliance challenges in each area.

This project will span a timeframe of 24 months, and research findings are expected to enable IBG and its partners to further develop innovation that will take blockchain technology adoption and application to new heights in the foreseeable future.

With the **UM RegTech Project** and its findings, IBG has high hopes that it will be able to advance multiple industries using next-generation blockchain solutions developed through extensive research by experts in various fields.



The Insights section provides an overview of the theme in each issue. In this issue, we briefly explain RegTech from four different areas - computer science, law, economics and business.

# COMPUTER SCIENCE: KEY TECHNOLOGIES IN REGTECH

Said to be the “new Fintech”, RegTech, or Regulatory Technology, is the utilisation of innovative technology in addressing regulatory compliance issues within the financial services industry. Here, we identify four common key technologies in RegTech:



## ARTIFICIAL INTELLIGENCE

Artificial Intelligence commonly known as AI, is the science of developing intelligent machines that think like humans and perform tasks such as problem solving, speech recognition, learning and decision making. This technology is commonly applied in RegTech to manage regulatory risks by identifying regulations and keeping track of any amendments from time to time, monitoring transactions to ensure that they are compliant with regulatory requirements, and alerting users to detected fraud or suspicious activities that may amount to an infringement of regulatory rules.



## BLOCKCHAIN

As a type of distributed ledger DLT stands for distributed ledger technology (DLT), blockchain's immutability makes it an ideal solution for monitoring financial transactions in compliance with regulatory requirements. It allows for permanent log of transactions to be recorded and shared among financial institutions and regulators. With efficient and secure record-keeping, data inconsistencies will be minimized. Hence, regulators are able to supervise transaction activities more quickly and effectively.



## BIG DATA ANALYTICS

Big Data refers to large volumes of data that could not be stored or processed using traditional computing systems. For example, a 100 MB attachment that cannot be sent via e-mail could be referred to as Big Data. Another real-world example is social media platforms, which receive Big Data that contain valuable information of their users' daily activities. Big Data analytics are often employed to utilize such data for marketing purposes and overcome challenges posed by Big Data. Focused on identifying patterns and trends in the data, this technology is especially useful for addressing regulatory requirements as it processes data in time to recognise risks (e.g. suspicious transactions) and eliminate them.



## CLOUD COMPUTING

Cloud computing is used to store, manage and process data via shared servers hosted on the “cloud”, which metaphorically refers to the Internet. Eliminating the need for personal hard drives with high storage capacity, cloud-based software is managed by third parties and made accessible to institutions. This has significantly increased the capacity of organisations to manage data with lower costs and higher flexibility, as they are not required to spend on developing their own individual systems. In the RegTech space, cloud computing allows for the establishment of standardized shared utilities that are particularly useful for responding to changes in regulatory requirements and performing various risk and compliance processes.



## ECONOMICS: REGTECH FOR FINANCIAL INCLUSION

Digital Financial Services (DFS) is a platform that allows most financial institutions (FI) to provide service for as many customers as possible through lowered costs and bypassing logistical concerns. The progress of DFS can be attributed to RegTech and how it paves the way for financial inclusion. Financial inclusion is where in the absence of strong foundations to build physical infrastructures, as in rural areas, digitization of fundamental processes can still provide access and convenience to customers at a significantly lowered cost.

The two aspects of financial inclusion are the process of getting there and mitigating of risks along the way. The process looks like a case study that's being done in Nepal, whereby the central bank, Nepal Rastra Bank (NRB), tracks the access of users to determine the inclusiveness of financial services. The NRB created the Financial Inclusion Portal which provides real-time information to map out access and identify gaps in either infrastructure or convenience. The data collection is also reinforced thanks to a smartphone app where FI's upload and interact with the data of users to make analysis better. The results are then used by the NRB to identify where inclusion is needed the most and prioritize moving agents to those areas. This is a case of maximizing capital and achieving the quickest results.

Alongside access, convenience is also important for inclusion. The problem of repeated "Customer Identification and Verification" (CIV) processes makes it costlier and increases the time to complete and record transactions. This means, FI's are usually short staffed and are unable to deal with the demands of a growing customer base and thus locks out a large part of communities that prioritizes convenience.

RegTech has made it possible to record all transactions on a single sheet or ledger that effectively cuts the need for repeated verification and long transaction processes. This looks like the MyInfo program in Singapore, which is a personal data platform that allows FI's to access the data of users for a wide array of processes that can range from assessing and providing a credit rating to simple transfers of capital. This is also being done in India through the Aadhaar program, in which the Unique Identification Authority of India provides an identity number to residents under a single verification policy. The number is then linked to geographical and transaction information that is stored in a centralized system that can be accessed by other institutions, reducing bureaucracy along the way. This has created a more inclusive platform since it has become more convenient for communities.

The DFS is not perfect however; along with its massive benefits, the risks are huge as well. For example, because of the large customer base that this platform attracts, money laundering and false transactions could also be maximized. That is why RegTech has a safety mechanism to mitigate the risks. For instance, limit checks allow firms to limit the number of transactions a user can compute over a certain period of time to reduce the risk of false transactions, while velocity checks monitor the velocity of transactions to remove the possibility of small transactions that form huge money laundering schemes.

The future of inclusion is strong but financial Institutions need to navigate the development of digitizing processes while accommodating the risks that it can form.





## LAW: REGULATION AS A PLATFORM

Regulation as a Platform is an approach for both industry players and the regulators (or the government) to collaborate, through the use of information technology, to make the regulatory and compliance process simpler, easier and more accessible for both parties.

Two organisations – Data61 and Accenture Labs – are currently working on Regulation as a Platform proof-of-concept projects that leverage advanced capabilities of machine learning and analytics to incorporate machine-readable legislation as a new data feed into existing data analytics infrastructure. Data61 is a digital legislation initiative in Australia that aims to make rules and regulations easier to navigate. They have developed a logic reasoner called spindle which is able to convert regulatory text into a digital format and process it to extract the suggested logic behind the original regulatory text. The researchers behind Data61 are working together with regulators to ensure the accuracy of the interpretation and development of the digital logic. After the regulators' quality check, these digital logics or rules will be endorsed and made publicly available so that anyone can use them to build applications or solutions to regulatory and compliance problems.

At the moment, Data61 is developing applications for a number of Australian government agencies. One of the applications developed is a business concierge tool called 'PermitMe' which allows business entrepreneurs to apply for required permits and licenses online.

As another example, Accenture Labs is developing a Smart Advisor application that uses tools such as conversational agents, predictive monitoring, sentiment analysis and social risk analysis to assist officials in a regulatory agency or a business organization to make better decisions. The Smart Advisor is able to process and analyse data from the market, regulators and their client to generate risk scores and alerts which will then enable the decision-maker to intervene proactively based on the insights provided by the Smart Advisor and the decision-maker's own human judgment.

The two case studies above show that Regulation as a Platform is perhaps the most conclusive approach in leveraging RegTech to enhance the regulatory and compliance process.

## BUSINESS: FORECAST ON INVESTMENT IN REGTECH

As financial institutions face a continuing increase of regulatory expenditure, the emergence of RegTech is seen as the most viable option to reduce costs and maximize value. KPMG market research shows that financial institutions spend up to \$270 billion per annum on compliance and even then, fail to fully comply with regulations. Since 2008, banks have paid in excess of \$300 billion in fines alone. That is why financial institutions are looking to Regtech, a technology focused on helping institutions meet regulations effectively. Firms have doubled the \$1.37 billion spending on RegTech from 2017 in the past year. This means more investment is being sought to solve the crisis of increased spending on compliance.

The advent of technological progress has allowed RegTech to move past analysis of risks in the early 2010's to personalized interactions with customers to understand data better. This looks like the 'know your customer' (KYC) initiative that improves consumer protection by creating trends on behavior based on collected data. The future entails even more detailed collection by analyzing specific strands of data and views risks and regulation as absolutes rather than predictions.

RegTech is primarily focused on improving compliance for financial institutions, but different institutions approach the technology for different solutions. The first is a defensive approach where the tech is exclusively utilized to meet regulatory requirements. The metric of successful investment is measured by how much is saved from compliance through updated regulations, fewer conduct investigations and optimization of capital. It is mainly associated with compliance. The second is the progressive approach, whereby firms use RegTech to automate processes like risk assessment and product maturity to remove extra cost. The final step is reinvention where firms become a mass pot of industries and intellectual property to improve innovation and a culture of providing niche solutions.

RegTech is still in its infancy but given enough investment and innovation, it will be at the forefront of the future of financial institutions and hopefully the growing customer base that subscribes to them.

# HOW REGTECH CAN TRANSFORM MALAYSIA'S GOVERNANCE-RISK MANAGEMENT-COMPLIANCE REGIME

by Nur Husna Zakaria\*\*

RegTech, short for Regulatory Technology, is the application of technology for the delivery of regulatory requirements.<sup>1</sup> Emerging key technologies such as blockchain, artificial intelligence, big data analytics and cloud computing can be uniquely blended to offer promising technological solutions for an effective and affordable GRC discipline. GRC is short for corporate governance,<sup>2</sup> risk management<sup>3</sup> and compliance.<sup>4</sup> These are the three areas in which regulators regulate corporation nowadays.

In this piece, I will demonstrate how RegTech can transform Malaysia's GRC regime in a more effective and efficient fashion. To do this, I will first describe the application of blockchain technology to address issues within the GRC framework. Having gone through the potentials, I will then address the barriers in applying RegTech within GRC and how these may be overcome.

Though GRC often relate to many types of activities within a corporation, in this piece the focus will be on the audit, reporting and licensing requirements within the GRC landscape. Properly practised, GRC can help corporations stay more stable and ensure regulators meeting their regulatory objectives. Unfortunately, GRC has grown to become rather complex, which has led it to become quite a burden not only to corporations but also to the regulators.

The main issue in the GRC regime is the high costs attached to it. For corporations, failure to comply will result in a wide range of penalties. To avoid these penalties, a large amount of compliance cost is required. Directly, a corporation faces monetary expenditure to put in place internal management frameworks. Its employees would also have to invest time in observing and keeping up with the constant changes to regulatory requirements. For regulators, a stricter GRC regime means more workload in monitoring and enforcement.

To illustrate, undertaking customer due diligence exercises and risk assessment tasks to comply with regulatory recordkeeping reporting under the Anti-Money Laundering and Counter-Terrorism Financing or Know Your Customer regulations (AMLA-CTF or KYC) is very costly. A study conducted across six Asian economies, namely China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand, estimated that the total financial costs incurred by banks operating in these



countries for the purpose of complying with AMLA-CTF law amount to a staggering 1.5 billion USD per annum.<sup>5</sup>

Furthermore, in a survey conducted by Bursa Malaysia on 450 listed companies, it was found that a worrying 40% of such companies failed to properly comply with corporate governance standards. In relation to costs incurred by multinational companies which are publicly listed in Malaysia, a study found that such companies incurred an average of RM1,394,463 per annum in order to comply with corporate governance regulations whereas publicly listed Malaysian companies incurred an average of RM454,752 for such purposes.<sup>6</sup>

These high costs can be cut with RegTech. Identification of clients and legal persons, as required by AMLA-CTF regulations, could become more efficient through the use of automated identification solutions such as blockchain identity. Digital identity on the blockchain could enable timely, cost-efficient and reliable KYC checks or verifications that individuals or organizations have the appropriate regulatory approvals and licenses.

## WHAT EXPERTS SAY

The second issue is limitation on resources and expertise. Corporations today of any type, size or location are faced with ever-increasing sets of GRC. In Malaysia, the issue of limited resources and expertise is not only prevalent in the financial sector, but also in the non-financial sector, particularly in audit and reporting requirements. As an example, due to a lack of resources, Small and Medium-sized Enterprises depend on external professional services to comply with tax filing obligations, which is unsurprising given the complexity of taxation laws.

Automation could enhance the currently labour-intensive and complex conventional audit and reporting exercises. Smart contracts, which are enabled by blockchain technology, are well suited to this audit and reporting requirement because they can be used as a database. This is because blockchain allows any type of verified information to be permanently digitized, codified and placed onto the blockchain.

Another issue is the difficulty faced by corporations in keeping track of their regulatory obligations. This is due to the complexity of the GRC regime. For example, KYC regulations demand transactions to be tracked and flagged to regulators, sometimes in near real-time, and records are required to be kept.<sup>8</sup>

Blockchain is a possible solution as its transparency by design give regulators direct, instant and full information.<sup>9</sup> Since all transactions are documented on the distributed ledger, a comprehensive, secure, irreversible, and permanent audit trail exists. Reporting could be replaced by regulators participating in an appropriately permissioned transaction-related blockchain platform. This near real-time view of all transactions would enable regulators to better analyze the transaction.

However, the ever-changing regulatory requirements in the GRC landscape can be a barrier. Regulatory requirements tend to be over-prescriptive which is problematic in itself. But it becomes additionally problematic when these rigid requirements are ever-changing. My view is that this barrier must be addressed through clear regulatory objectives.

Instead of setting out detailed requirements, regulators should set general outcomes and guidance as to what they want corporations to meet. The flexibility promotes research and development in the RegTech market as developers can find ideal solutions and businesses can still comply while satisfying their own business needs. The legal system must also be conducive enough for RegTech to foster. Sandboxes as virtual safe environments used to test and examine the impacts of innovative new technologies in isolation from the regulatory limitations should be promoted.

Allowing considerable time for the RegTech market to grow is also vital. Reform of any existing GRC requirements would need to be supported by evidence based on data from reliable use cases to identify and evaluate issues. To generate momentum and further support for reform, win-win solutions (rather than strictly mandatory requirements) such as self-declarations and self-certifications must be adopted.

The other barrier is that RegTech is still in its infancy. As such, any strict rules and policies imposed on the application of RegTech could act as barriers to the development and implementation of RegTech. Effective and efficient adoption of RegTech in the GRC regime must protect the interests of all stakeholders in the ecosystem while not creating unnecessary regulatory burdens.



To do that, I believe openness and inclusivity is necessary. Openness means providing all relevant stakeholders with information and making the compliance process with RegTech accessible, comprehensible and responsive. Inclusion means allowing a wide variety of stakeholders' participation in the RegTech market as well as providing space for their voices in the GRC reform process.

Both of these are important. Expertise in the emerging RegTech solutions which have yet to be commonly used would need to be gathered from the industry RegTech actors such as startups, developers and professionals. These experts can provide valuable inputs, innovative ideas and case studies about the problems as well as the solutions that RegTech offers to the existing and future GRC framework. Furthermore, given that RegTech may pose a threat to traditional services that support GRC such as the legal profession as well as the middle and back offices, the concerns of the sectors that stand to lose from structural change must be considered and addressed by providing well-designed safety nets.

Take the dispute between the Malaysian Bar Council and Dragon Law, the Hong Kong legal tech startup that started in June 2016. Dragon Law wanted to launch its legal document customisation services in Malaysia<sup>10</sup>. Because this is customarily carried out by advocates and solicitors, the Bar Council claimed they were providing legal services in breach of Section 37 (2) of the Legal Profession Act<sup>11</sup>.

To conclude, though it is clear that RegTech can lead to great efficiency gains and more effective GRC, transformation can happen not only when we embrace and leverage the potentials of RegTech but also when we acknowledge and address the barriers that exist to the transformation of the GRC landscape.

I end this piece with hope that this short write-up, the VisioBloc newsletters and all other initiatives under the RegTech Project at the University of Malaya can be a step further to making RegTech a key parcel to GRC in Malaysia. The benefits of RegTech in the GRC regime are of leaps and bounds. So why not we go forward and reform? Let's build up this space together.



\* Some contents of this paper have been presented by the author at Asian RegTech Series E1, in Ho Chi Minh City on 23 November 2017.

\*\* Nur Husna Zakaria is a lecturer at the Faculty of Law, University of Malaya. She is currently heading the RegTech Project (International Grant No. IF057-2018) at the University of Malaya.

1. The Institute of International Finance (IIF) defines RegTech as "the use of technologies to solve regulatory and compliance requirements more effectively and efficiently". IIF (2016).

2. Corporate governance is the set of mechanisms that covers activities relating to the internal processes of a corporation such as its decision-making, transparency and disclosure requirements. Anthony Tarantino, *Governance, Risk, and Compliance Handbook: Technology, Finance, Environmental, and International Guidance and Best Practices*, John Wiley & Sons, February 2008, at pp 2-10.

3. Risk management is where a corporation attempts to identify, assess and measure risks in relation to itself to develop measures to mitigate losses that may arise from the risks. Anthony Tarantino, *supra* at pp 15-18.

4. Compliance means acting in accordance with established laws, regulations, guidelines, standards and policies. Anthony Tarantino, *supra* at pp 21-22.

5. LexisNexis Risk Solutions, *Uncover the True Cost of Anti-Money Laundering & KYC Compliance*, 2016 at pp 6.

6. Mustapha, Mazlina, *Monitoring Costs of Multinational Companies: An Agency Theory Perspective*, *Asian Journal of Business and Accounting* 7 (2014), at pp 23-43.

7. Rosiati Ramli, Mohd Rizal Palil, Norul Syuhada Abu Hassan, Ahmad Fariq Mustapha, *Compliance Costs of Goods and Services Tax (GST) Among Small and Medium Enterprises*, *Jurnal Pengurusan* 45 (2015).

8. See for example the record-keeping and suspicious transaction reporting requirements under Sections 6 and 8 respectively of the Standard Guidelines on Anti-Money Laundering and Counter Financing of Terrorism issued by Bank Negara Malaysia.

9. International Center for Monetary and Banking Studies (ICMB), *Geneva Reports on the World Economy 21: The Impact of Blockchain Technology on Finance: A Catalyst for Change* (2018) at pp 13.

10. The Malaysian Bar, *Legal Start-Up's Services Scrutinised by Malaysian Bar* (12 June 2016).

11. Bar Council Malaysia, *Annual Report 2017/18, 2018* at pp 234.

# THE RECONCILIATION OF SECURITY AND PRIVACY IN REGTECH

by Jean Lee

With RegTech, financial institutions and corporations are able to keep up and comply with the latest regulatory changes introduced by the government, which may significantly alter the framework of an industry or change the cost-structure of a business. In light of the increasing number of money-laundering issues and financial crimes, blockchain technologies are applied to boost the existing regulatory framework, especially in KYC (Know-Your-Customer) and AML (Anti-Money Laundering) processes. Whilst the need for RegTech is essential to automate compliance tasks and combat financial wrongdoings, the collection of personally identifiable information (PII) to aid the monitoring task of RegTech has raised concerns about data privacy.

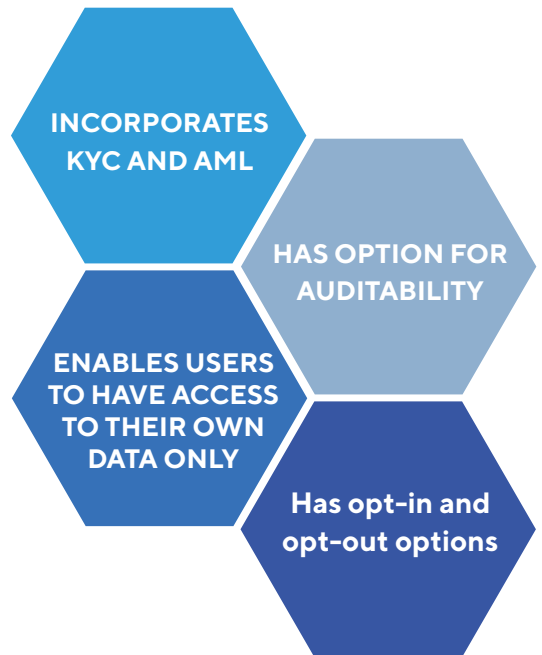
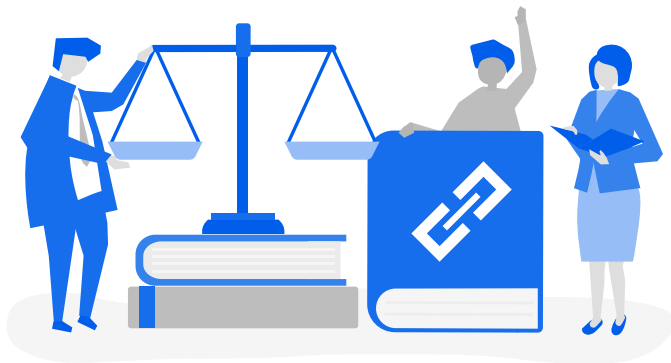
Can security and privacy be reconciled in RegTech?  
**Aaron Ting**, Vice-President of Malaysian Investors' Association and Secretary of ACCESS Blockchain Association (Malaysia), shares his views with us.

## DATA PRIVACY

The existence of data privacy issues in blockchain is dependent on the nature of the blockchain. Such issues are more apparent in public blockchains that operate on full transparency, e.g. Bitcoin. To tackle them, public blockchains utilize technologies like zero-knowledge proofs, the MimbleWimble protocol, and mixing solutions. Unlike public blockchains, private blockchains rarely have privacy issues as they can be customised to only allow certain participants in certain transactions.

Nevertheless, it is a myth to think that private blockchains guarantee privacy, especially when regulatory compliance comes into play. For example, in a private blockchain deployed by regulators, users or organizations have control over their data by exercising the option to share data (opt-in) or remove data (opt-out). In spite of the privileges that can be enjoyed by private blockchain users, regulators still have the power and discretion to access the data, subject to proper procedure.

## FEATURES OF GOVERNMENT-DEPLOYED PRIVATE BLOCKCHAINS:



### STRIKING THE BALANCE BETWEEN REGULATORY COMPLIANCE AND DATA PRIVACY

So far, there is no regulatory framework that sufficiently satisfies both regulation and protection of data. By default, regulatory processes through AML and KYC require data to be collected. Without data, the operations of RegTech would be redundant. However, with the enforcement of the EU General Data Protection Regulation (GDPR) in May 2018, the role of RegTech is now extended to compliance with data protection rules. Upon a breach of data privacy, companies are liable for a fine up to 4% of their global turnover. Even so, the GDPR has loopholes that are yet to be addressed. An example would be the provision for users to opt to view and delete their data, which, if interpreted literally, may not include situations where users hide their data on the blockchain. There needs to be a clear rule on the right of users to conceal their data as it is wholly distinguishable from the right to erase data.

Amidst the limitations, it is however premature to discount the possibility that there will be solutions to simultaneously address security and data privacy issues in the long run.



*Aaron is the current Secretary of ACCESS Malaysia, a blockchain association looking to empower the nation through the use of blockchain technology.*

### THE PROSPECTS OF REGTECH IN DATA PRIVACY AND SECURITY IN THE FUTURE

In the future, RegTech will be central to data privacy and security. From the security aspect, the days of anonymous public blockchains used in darknet markets are numbered. These particular blockchains are declared illegal and more RegTech initiatives have been taken to eliminate them. From the privacy aspect, the use of RegTech does not completely encroach on the right to data privacy. Instead, there are attempts to maintain a balance between security and privacy. For example, some public privacy coins such as Zcoins provide financial privacy enabled by the Zerocoin protocol. Under this protocol, users are able to protect their privacy by using the opt-in and opt-out feature.

When it comes to private blockchains used by governments or enterprises, RegTech can be implemented to ensure compliance with the requirement to report transactions of money or value that reach a certain threshold. In Malaysia, the threshold is established at RM25,000, and any transaction of that amount or more must be reported to the regulators. Soon, a similar requirement will be imposed on crypto transfers as it is foreseeable that regulators may go to extremes of monitoring every single transaction with the help of RegTech.



# REGTECH AND BLOCKCHAIN: HOW DO BOTH TECHNOLOGIES COINCIDE?

by Chaintope Malaysia

What if one day, you wake up to self-driving cars, machine-led banks, robot-operated restaurants, and drone-delivered online shopping? Welcome to the Fourth Industrial Revolution! Automation and artificial intelligence are agents of change in the Fourth Industrial Revolution, an evolution that will inevitably lead to redundant jobs. These jobs will be performed by machines more cheaply and consistently. Some positions expected to become obsolete include bookkeeping clerks, team assemblers, and customer service representatives.

As we approach our days ahead in automation and robotics, we have to face the fact that sooner or later, technology will outgrow human skill and talent, which will lead to the deterioration of human interaction in jobs.

Blockchain is known as a disruptive technology. Why? This is mainly because blockchain serves to reduce workflow redundancies while increasing efficiency and bringing down costs. The technology is set to make tidal waves across industries. Blockchain is a distributed system of recordkeeping makes the data tamper-resistant. While many users may access, inspect, or add to the data, they cannot delete it. The original information stays put, leaving a permanent and public information trail. Given that the technology is known for its transparency, immutability, and incorruptibility, it's no wonder that industries such as healthcare, supply chain, insurance, energy and many others are jumping on the bandwagon to adopt blockchain.

On this note, Regulatory Technology (RegTech) may seem like a complicated buzzword, but in essence, it is a standard developed by FinTech companies, particularly financial institutions, to streamline the process of doing business. RegTech redefines the issue of compliance with the many regulations governing financial institutions (Basel III, Dodd-Frank Act, AML, KYC laws, etc). According to Deloitte, "RegTech seeks to provide nimble, configurable, reliable, secure, cost-effective and enhanced opportunities for revenue growth."

RegTech provides support throughout the **Onboarding, Monitoring, Detection, and Reporting stages**, a process that resembles blockchain systems used in supply chain management. Under RegTech, the Onboarding process relates to signing up new customers, while Monitoring looks at records, thresholds, regulations, market trends, etc. De-

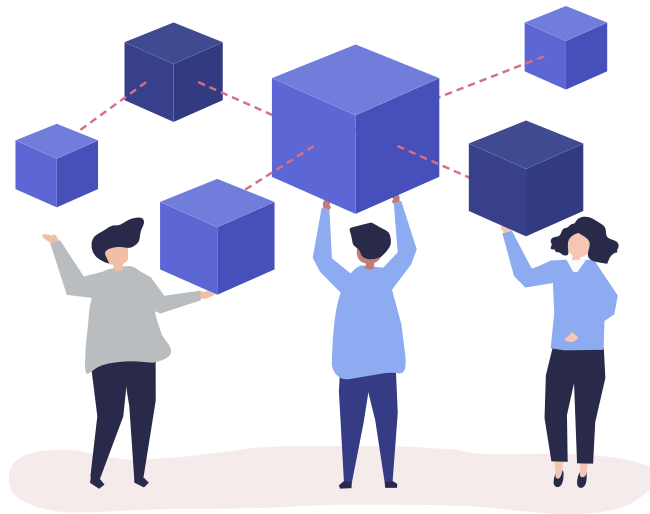
tection covers tools to ensure fraud is not committed and funds received are not laundered money, while Reporting suggests compliance requirements, regulatory information, and various other reporting activities.

A supply chain that utilizes blockchain throughout the process involves Recording, Tracking, Assigning, Linking and Sharing. Document Recording and Tracking mirror the RegTech process of Monitoring. Every product that moves in the supply chain through different intermediaries is recorded on the blockchain ledger. On the other hand, Assigning and Linking relate to the RegTech process of Detection. It involves verifying certifications of certain products to differentiate between its various properties, such as fair trade and organic. Products are traced using serial numbers, bar codes, and digital tags, which are then stored on the cloud or blockchain ledger. This ensures the documents are secured at the same time, avoiding issues such as "inside jobs" or fraud.

The Sharing process in the supply chain relates to the RegTech process of Reporting. All information that is transferred from one party to another through the supply chain is stored on the blockchain. This allows users or departments involved to cross-check information or data that is stored. This process mirrors Reporting standards in RegTech, where every process is tracked and reported in accordance with compliance guidelines, regulatory information, and so on. The Sharing process in the supply chain and Reporting process in RegTech help curb corruption while ensuring trust and mutual benefits are gained among all parties involved.

As we approach an era with constant developments in technology, we at Chaintope strongly believe that blockchain is a technology that will enhance processes, reduce costs, and limit bureaucracy, especially in government departments and regulatory processes. Although the technology is still in its infancy and regulators have been tight lipped on blockchain until a framework can be established, we foresee exponential growth and strongly believe many will begin adoption sooner or later due to its robustness, traceability, and immutability. We are happy to be creating a social structure that will transform lives and businesses while bringing a better future to the world.





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## ABOUT CHAINTOPE MALAYSIA

Chaintope Malaysia is a Japan capital MSC Status Company specializing in blockchain technology. We focus on development of blockchain-based systems for both FinTech and nonFinTech sectors. We are committed to the research and development of the public blockchain, the technology at the heart of Bitcoin. We aim to provide products and services that will benefit society and make blockchain a more trustworthy and user-friendly place. We hope that our efforts will lead to a future where both individuals and companies can interact directly utilizing more direct trust relationships, and we believe that this will help lead to the construction of more completely optimized social infrastructure. Vision: Improve Lifestyle of ASEAN Communities by Our Blockchain Technology with New Trusted Model. Mission: Develops and Provides Reliable Services with Reasonable Cost for Regional Economic Growth.

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# 5 Steps of the RegTech Journey

RegTech eases the burden of compliance, improves insight and enables new revenue opportunities.



Analysis of continual, ongoing activities to ensure activities remain compliant

- Thresholds
- Suspicious activities
- Change of status
- Employee surveillance
- New regulations
- Records
- Watchlists
- Market trends



Warehouse, organize and send data to regulators at scheduled intervals

There are many processes that must be tracked and reported on - compliance requirements, regulatory information, data privacy requirements and various other market and transaction reporting activities.

## ONBOARDING



### NEW CUSTOMERS



### Signing up new customers

Steps like contract signing, setting up accounts and training are general onboarding processes.

## MONITORING



### NEW CUSTOMERS



### Flagging potential adverse events such as risk or fraud

Financial Institutions must use detection tools to ensure fraud is not committed, and that laundered money and funds used for terrorist financing do not enter their system.

## DETECTION



### HACKER DETECTED



## REPORTING



### Support consistency across each process

Ensure that the process flows effectively — from onboarding, to monitoring, detection, and reporting.

Help meet compliance requirements and mitigate potential risks with systematic oversight across all processes.


## PROCESS TOOLS AND CONTROLS



RegTech streamlines compliance workflows across all stages

# UM REGTECH TALK SERIES

## #1 AN INTRODUCTION TO THE REGTECH ECOSYSTEM


 **Date**  
15th March 2019 (Friday)

 **Venue**  
Lecture Hall 1, Faculty of Law, University of Malaya

\*Entrance is free. For more information, please refer to [UM RegTech Facebook page](#).


TIME	ITINERARY
10:00am	Breakfast & Registration
10:30am	Welcoming note
10:35am	Introduction to the RegTech Project
10:40am	<b>Leading Technologies in the RegTech Universe</b> by Dr. Muhammad Reza bin Z'Abu <i>Faculty of Computer Science and Information Technology, University of Malaya</i>
11:00am	<b>Can RegTech Reduce Regulatory Compliance Cost?</b> By Dr. Noor Sharoja Binti Sapiei <i>Department of Accountancy, Faculty of Business and Accountancy, University of Malaya</i>
11:20am	<b>Financial Sustainability of Regtech Startups</b> By Associate Prof. Dr. Lau Wee Yeap <i>Department of Applied Statistics, Faculty of Economics and Administration, University of Malaya</i>
11:40am	<b>Can Regtech Improve Ethics and Compliance in a Corporation?</b> By Nur Husna Zakaria & Dr. Mohammad Firdaus Bin Abdul Aziz <i>Faculty of Law, University of Malaya</i>
12:00pm	<b>Recent Global Trends in Blockchain Industry</b> By Shogo Ishida <i>CEO of QRC Hong Kong</i>

### AN ACADEMIC VISIT TO TECHNOLOGICAL INSTITUTIONS

 **Date**  
29th March 2019

 **Venue**  
Putrajaya

### TECH OUTREACH PROGRAM TO EDUCATIONAL INSTITUTIONS

 **Date**  
April 2019

*For further details on our events, stay tuned to updates on our [Facebook page](#)!*

Do reach out to us at

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if you would like to partner or collaborate with us for the Academic Visit and Outreach Program!