

Thought leadership series

The International RegTech Association

RegTech in the USA: the state we are in

The United States of America (U.S.) represents the largest financial markets in the world. At the end of 2015, the size of the Banking sector alone in the U.S. was 15.9 trillion dollars generating a net income of 161.6 billion dollars (analysed by the SelectUSA).

The financial sector in addition, employs more than 6 million people in the U.S. with several more millions employed in the ancillary industries e.g. education and research, technology, regulation and security, transportation and logistics, tourism. It is therefore of paramount importance that the future of Financial Sector in the U.S. is ensured and protected.

The truth of the matter is that after the downturn in 2008, the financial sector in the U.S. have been increasingly difficult if not impossible to manoeuvre. For instance, there have only been a handful of new federal banking licenses issued by the Office of the Comptroller of the Currency (OCC) in the U.S. (across all States) between 2008 and 2017. That figure in the United Kingdom will be 14 and an unbelievable 21 and 38 in India and China respectively. Message is simple, the Financial Sector in the U.S. which has been the backbone of its economic and political leadership in the modern world, have been somehow stagnant since 2008. The new banking, the digital banking era is surprisingly still embryonic in the U.S. whereas countries like, China, the UK, India, Singapore are setting the stone with Australia, Canada and Germany fast developing a mature digital banking state.



Why is this the case - is there an apathy towards innovation in the U.S.?

The answer is an emphatic 'no'. Because during the same timeframe of 2008 to 2017, the market capitalisation of the Innovative Technology and Wearables sector in the U.S. have grown from US\$ 470 billion to US\$ 2.9 trillion with Apple for instance, valued at US\$800 billion in April 2017. The technology sector now employs more people than the financial sector in the U.S. This has never happened before.

We therefore need to review why such innovation trends have not been present in the U.S. financial sector? The answer is quite clear, it is because of the 'increasing operational complexity' and 'abundance of new regulatory rules', which as we know have also been a trend in other developed nations. Because of these principal issues, it is now more difficult to make 'good, clean money' in the financial sector.

These two issues, however, is fuelled by one crucial factor, 'absence of trust', which has become an impediment to promote new ideas and innovation in the U.S. financial sector. The emerging world, on the other hand although affected by the 2008 downturn, have been able to engage with the new ideas and possibilities which are already showing tremendous financial growth and future potential. From that angle, and perhaps in very few instances of the modern history, innovation in the U.S. is lagging behind.

We in the U.S. needs to get our acts together - and it's not too late. Yet!

The sheer fact that 'trust is an issue' ideally should lead to more innovation, openness and so forth. Actually, it has led us to quite the opposite. The rules-driven regulations are becoming even larger and complex, with often conflicting principles. Unfortunately, there is no way out until we the people decide, together, that we need to change. It seems that the time is now, because of the obvious cost pressure on the banks, also the pressure of expectation on the U.S. regulators to deploy advanced technology for better analytics, smart contracts, real-time regulations among the others.

I joined, along with a number of other esteemed PhDs and scholars, regulators, banking CEOs, lobbyists and technology innovators last week at the Harvard University's Kennedy School of Business and Government (<https://www.hks.harvard.edu/>) to discuss the future of Regulation Technology (RegTech) and the opportunities it is creating particularly from the U.S. standpoint. It was fascinating to see the depth of expertise and knowledge available both across the regulatory and the technology camps, the keen interests of the banks but also the absence of the much-needed, open, collaborative eco-system for promoting sustainable RegTech innovation. I recorded a few comments during the sessions which are below, these simple messages are enough to describe the situation.

- "Regulatory compliance is a sole crushing job....."
- ".....zero confidence that we as Regulators can influence the U.S. banks"
- "Only 2 of the 33 U.S. based RegTech companies has ever met an U.S. financial regulator.....!"
- "...we will innovate, come what may. There's market outside the U.S.!"



From these messages, it is obvious that there is a deadlock, deadlock to come forward and trust the others, deadlock to get together and build an open, opt-in, trusted work environment where innovation can kick-in and spawn, in a sustainable way.

“We need to protect and re-modernise the U.S. financial sector including bringing in innovation across it. The future financial services will be much different than it is today.”

We need to protect and re-modernise the U.S. financial sector including bringing in innovation across it. The future financial services will be much different than it is today. By 2030 and beyond, we can expect a subscription-based, demand-led financial economy where consumers will be looking for the cheapest, fastest and most secure transaction medium using online web. The traditional concept of having a Bank Account through which one will pass through all of her/his transactions will give its way to online and mostly cloud based, real-time platforms that are also able to perform financial transactions and provide services, relentlessly. It is almost frightening to consider the prospect of some of the banking service providers of today, if they are unable to change themselves, in time. Indeed, in some parts of the world including China, India and parts of the Europe including the UK, some of these transactions are possible today and happening too. The state of maturity of the cyber security, data privacy and the related, nonetheless to say, will need to evolve too to make space for this open banking culture.



A big thank you to [Jo Ann Barefoot](#), CEO at the Barefoot Innovation Group and a Senior Fellow at the Harvard university, and to [Brigitte Madrian](#), Aetna Professor of Public Policy and Corporate Management at the Harvard Kennedy School for making the event a reality! This was a start of our journey to establish the future of the RegTech profession in the USA and we will continue from here!

RegTech is the Innovation-in Trust

Given the size and proximity of the issues, the definition of RegTech have been evolving, and it will continue to do so. In simple terms, RegTech signifies de-complexing and de-risking our current risk and regulatory environment, to bring in or adapt to a new, alternative and more open ways of demonstrating residual regulatory compliance, moreso by risk themes than by regulations, thereby helping to reducing cost and complexities, improving effectiveness of the Financial Services, and most crucially, achieving trust of its' consumers.

“RegTech signifies de-complexing and de-risking our current risk and regulatory environment, to bring in or adapt to a new, alternative and more open ways of demonstrating residual regulatory compliance, moreso by risk themes than by regulations, thereby helping to reducing cost and complexities, improving effectiveness of the Financial Services, and most crucially, achieving trust of its' consumers.”

Future evolution of RegTech therefore, should focus on 'trust' and prioritise innovation areas to maximise trust and consumer benefits. This is as true from a global standpoint as to the U.S. financial sector. Such benefits could be obtained by a more secure, real-time and faster services or responses, quicker outcomes and decisions, improved quality of advice, e.g. improved quality of sales and suitability, transparent single view accessible by the customer, easier checks e.g. use of a combination of bio-metrics, digital identity and other techniques to speed up the onboarding and further transactions processing.

Bring together innovative solutions, use technology as the enabler

When our forefathers created the banking systems, they didn't have any technology but it worked, part of the reason it still exists today. So are the innovative ideas and the RegTech solutions that matter more than the underlying technologies. Innovation in RegTech needs to focus on the issues faced by the financial sector, alongside bring in new technologies that can either help to resolve it or change the fundamental processes or ways of working. Using advanced analytical and identification technologies to speed up the Know Your Customer (KYC) processes and set up utilities will be an example of the former, whilst using a combination of Artificial Intelligence (AI) and blockchain (and, Distributed Ledger) techniques to revamp the regulatory compliance monitoring and reporting



processes either used by the regulators or by a consortium of banks or by the legal entities of a single bank globally will be the example of the latter.

Collaborative eco-system and skills that we need for RegTech to shine in the U.S.

We will need collaborative ways of working for RegTech to expand in the U.S. and to provide the desired benefits to the financial sector, initially. Collaboration refers to open ways of working, most often industry-led working groups where users and experts from various fields come together to create something new or change something already being used. RegTech collaboration, at the minimum will require the banks and the financial institutions, the regulators, the RegTech technologists and the professional experts including the researchers and academics to get together.

Increasingly there are examples where this has already been successful, for instance, in the United Kingdom the financial regulator (the Financial Conduct Authority) had led the charge and has helped to bring together these parties. They have produced working papers, conducted open consultations (similar to the APA - the Administrative Procedure Act in the U.S. but simpler and quicker) including three TechSprints and four industry roundtables on RegTechs asking the banks, technologists and the general public as to what needs to be done. Initial results have been ground-breaking, with multiple live projects for instance, to roll-out RegTech standards and to automate regulations into machine-readable codes for inbuilt compliance. These projects will need to go through their life-cycles to produce the desired benefits but it does prove the point that RegTech can be a win-win for both the Regulators and the Regulated, if worked in a collaborative environment. We call this, “the RegTech eco-system”. It is a fascinating time to join the RegTech eco-system and contribute to shaping the future of our financial services, including how our next generations are going to use it. At the International RegTech Association, we are committed to help achieving these objectives and also proud of it.

“.....RegTech can be a win-win for the Regulators and the Regulated if worked in a collaborative environment. We call this the **RegTech eco-system.....**at the International RegTech Association, we are committed to help achieving these objectives and also proud of it.”



What areas shall we be focussing on and how are we going to do this?

There are many places that we can start with, however, it is key that advancement of RegTech in the U.S. is carried out with a centralised focus including an open, innovative, collaborative eco-system which is joined with the international movement unwaveringly. The following areas need to take a precedence among the others.

Unique digital identity of the U.S. citizens and the consumers entering into transactions with a U.S. bank or financial institution. The digital identity or the digital passport works as a single medium for identifying and establishing a customer, which is integral in successfully developing a digital banking and financial services environment. Many data points could be added, aggregated and analysed based on a unique digital identifier which smart technologies can use to instantly trace a threat or an issue, then take appropriate steps to prevent it and also stop recurring it going forward. A number of European countries including the United Kingdom already working on this, a few emerging economies including India, already progressed in rolling out versions of this, although to a simpler structure than what we can achieve in the U.S. with the maturity and size of the customer data records.

Relook at the banking working practices particularly those which involve more complex systems and processes. An example could be the post-trade transactions monitoring and review. For a global investment bank, e.g. Goldman Sachs or JP Morgan & Co. this will entail curving out an extremely complex process, risk and controls register with standardised taxonomies and high to low risk thresholds which will be applied by the internal Risk and Compliance officers on a daily basis, thereby creating a mind-blowing data chart which reports the underlying risks. Individual, experience-based analyses will then be done by the senior management and the department heads across the bank, globally, to interpret such risks and recommend remediation actions, if any. In real-life, the process is actually even more complex than this, time consuming and extremely expensive to endure. Such working practices need to be changed, starting with the priority areas. RegTechs in the near future, will need to concentrate on developing easier, integrated and by-design risk and regulatory compliance solutions that helps the banks to either reduce or eliminate such complexities.

A potential way of resolving this particular example could be to develop a set of multiple risk scenarios or models with a variety of possibilities, then working on those models by using real-life but anonymised data sets in a parallel environment, to train the data sets by using '**Artificial General Intelligence and Embodied Cognition**' (that is, ability to think like a human brain, to be able to deduce a number of recurring facts at the same time, establish potential links among them and be able to understand and identify a potential issue, for instance, your work colleague can see that you are late at arriving at work and also made aware that there are train issues on the particular day, and that the colleague were already aware that you travel in train and at the same route, thereby the reason you are late might be due to the train issues. This deduction as simple as it may sound to us the humans, is extremely difficult to our existing technology set up which mostly run on digital 1-0-1 conditional environment and thereby although able to process multitude of data very fast at the same is unable to make complex connection among them. In simple terms, this is about training a robot as how to think, behave and act like a human being, real-time). This is to an extent, is a high-end of RegTech innovation and requires complex problems-solving as best possible test cases. The U.S. financial



sector, overall, provides a perfect example for developing this further. Few others also refer to this as gamification of risk management. We have recently seen a large Japanese investment bank entering into a \$400 million dollars programme with an Artificial Intelligence (AI) company based in the United Kingdom to develop similar solutions.

Address the computational integrity of the financial, non-financial and consumer protection regulations. Computational integrity refers to transforming the way we look and treat the financial regulations. For instance, two of the largest financial regulations currently, the Dodd-Frank Act for Consumers Protection and the Markets in Financial Instruments Directive (MiFID) II include several thousands of articles, provisions and rules which create an onerous task for the existing risk and compliance technology platforms to define new rules, controls and taxonomies, and then to create 'system codes' on the existing, enterprise Governance, Risk and Compliance (eGRC) type platforms. The result is counter-productive. Instead of providing improved confidence and regulatory compliance, the new rules and risks often increase complexity, creates conflict with the existing ones and lead to a difficult monitoring and reporting environment. This can be addressed well by enhancing the way we develop rules and regulations, for instance, when a new rule or regulation is created or revised, we could let the regulators and technologists work together in a collaborative eco-system, to develop the regulation as electronically programmable codes with computational capabilities, that is, once we have defined the basis of the regulations and the underlying rules, the technology itself can help create the rest of the obligatory steps. Appropriate review mechanism will need to be built across this step-by-step process, to ensure new RegTechs are able to respond to the increased needs of regulatory compliance including a by-design principle.

“Computational integrity refers to transforming the way we look and treat the financial regulations....it refers to developing a regulation as electronically programmable codes...that is...technology itself can help create...as step-by-step process....”

Open innovation standards for RegTech is key to provide consistency towards innovation. By innovation standards we mean consistent ways of defining the issues for which we are looking for a RegTech solution. An example could be the Legal Entity Identifiers (LEIs) or the Product Codes (PCs) which are used by the global banks to report and monitor transactions across a number of countries, jurisdictions. Commonality of these codes as standard will be a great help to both the Regulated (the banks) and the Regulators which can then use a combination of computational integrity and Artificial Intelligence (AI) to analyse masses of data across multiple business units and organizations in a relatively short period of time, also use Embodied Cognition to create links between various data points and produce thoughtful observations or deductions. In other areas for example, RegTech standards should also be used to define common themes across multiple regulations, across jurisdictions, for instance, there are various regulations in the U.S. and the Europe currently to address the market conduct and consumer protection issues. RegTech standards could be used to define the “common minimum thresholds” among these multiple regulations, that is, “what must be included,



why and how” which will help providing consistency to these regulations and ability to the banks to roll-out a single programme to enable compliance to a multitude of regulations based on similar themes. That will save millions of dollars in compliance cost enabling to invest further in developing new products, services etc. Involvement of the financial regulators in this process, is also important.

Compliance As A Service (CAAS) although being available currently for different purposes, actually refer to a packaged, ideally a cloud-based service for enabling and achieving sound risk management and regulatory compliance, including monitoring, reporting and remedial actions when necessary. This will be great help to the financial sector overall, including the newer Financial Technology (FinTech) and digitally processed banks and Insurance (InsureTech) organizations. A lot of advanced analytics and data computing techniques, for instance, behavioural and psychometrics pulses, patterns recognitions, data lake with powerful search engines including social media interactions, real-time smart reporting can be enabled and provided as CAAS. Pertinent to note that, in the short to medium term (next 2-5 years), we will see most of these services are provided as dedicated RegTech to the banks and financial institutions which will then have a higher probability to pick up as cloud-based service, to be able to provide a cheaper, inter-connected, real-time data intelligence platform.

RegTech-by Design (RTbD) is another area where we will see a number of innovative projects in near future. RTbD refers to embedding risk and compliance as part of the operating processes in the financial sector. Sometimes also mentioned as ‘inbuilt compliance’ (for example, by the Financial Conduct Authority, the United Kingdom regulator) it signifies the importance of bringing compliance closer to the actual timing of the events i.e. business activities. Multiple mal-practices that has led to billions of dollars in fines and penalties were conducted during the ‘timing gap’ between the actual activities and the compliance checks, for instance, the LIBOR scandal were made to become gigger and create even a larger financial impact due to the lateness in the checks and remediation actions. Such a practice is not helpful either to the financial sector or to the regulators.

There are several ways of enabling RTbD in the financial sector and it is itself a topic for further research and innovation. More work is essential to define and achieve its true benefits.



Key factors to consider

There are several factors which will be critical for the success of RegTech as a profession in the United States and also at other major financial centres in the world. Some of these will become evident as the professions becomes more matured. For now, given the state we are in the U.S. the following are the key factors.

Set up and execute the RegTech eco-system with collaborative support from the financial regulators, the financial institutions (including the banks), the RegTech providers both in and outside the U.S. and other related parties as mention earlier in this article.

Help create and maintain a RegTech voice, a community across the U.S. but starting with the major financial, public policy and innovation centres, for instance, New York city, San Francisco, Washington DC. Canada will also a prudent inclusion in this eco-system as the banking systems will benefit from the cross-border collaborations across the Americas.

The financial regulators including the CFTC (which has already set up its own RegTech innovation lab) need to clarify their intent with innovation in RegTech, including with their incumbent organisations and the banks. They will be expected to take the initial role of creating innovation zone, asking the banks and RegTech innovators to come together and work collaboratively for joint purposes including, financial inclusion, digital identity, smart reporting, automated and real-time compliance.

Public policy, several lobbies, industry bodies and the Government agencies (including both the Federal and State Governments) also need to get involved with the RegTech eco-system as it will create a long-lasting impact on the U.S. economy going forward. The regulators and academic think-tanks should take a priority role to expand the 'net of the conversations' to the right people in these agencies.

RegTech firms and technologists will need to prioritise the U.S. financial sector requirements. This includes possibilities of using computational integrity to simplify the regulations' structure in the U.S. Large technology firms should also identify and work in collaboration with their smaller counter-parts to foster innovation, new ideas to put them into actions.

Skilled resources will be required in abundance to make the eco-system thrive. This will require an ever-more integration of objectives between the regulators, the banks and the RegTech technology providers. More the reason for an independent, opt-in and open platform is available where all these related parties can join and work together for a set of defined purpose.

Use cases, examples and more research need to take place to look and re-look at how RegTech in the future can help resolve the 'trust' issue and help improve the confidence of the consumers whilst also contributing to increase competitive advantage and reducing operating costs.

About the Author



Dr. Subas Roy is the Chairman of the International RegTech Association. He has served as the global RegTech practice leader in a large professional services organization previously and has led several global digital risk and compliance transformation programmes over the last 20+ years.

He was the Chair of a number of Government led initiatives in the United Kingdom and wider Europe related to innovation in digital trust and compliance.

Innovation-In Trust and RegTech-by Design are the two practical theories developed by him and he continues to research on these further.

He is passionate about RegTech, global RegTech eco-system and helping to create a collaborative, leading-edge, innovative work environment. He is a trained computational mathematician with professional qualification on Accounting and Business Administration.

When not traveling, he is based in London. A father and a husband, he likes to spending time with his family, reading books and running for leisure!

He can be contacted at subas@regtechassociation.org.

About the International RegTech Association (IRTA)

The International RegTech Association (IRTA) is a united community of individuals and organizations, with a shared vision to innovate, advance, and influence the future of Regulatory Technology (RegTech). Through consultation and collaboration, the IRTA plays a central role in shaping the future of the Financial Services industry. A non-profit Association, the IRTA brings together the people, tools and policies that are required to thrive in today's rapidly evolving RegTech landscape.

Fostering a collaborative, innovative environment, the IRTA:

- Supports the entire RegTech eco-system
- Represents the interests of RegTech providers and consumers across the globe – including technology firms, service providers, professional advisers, and financial institutions
- Engages and liaises with the most influential financial regulators and academics
- Operates in key markets and economies, internationally
- Promotes the advancement of the RegTech profession, through RegTech research, and standards development
- Supports RegTech accelerators, and delivers essential education, and certifications

Disclaimer:

- This article, its contents and views are based on experience and thought leadership of Subas Roy and the IRTA. None of the views expressed in here are binding on the author or the organisation should any institution wishes to use them without appropriate consultation.
- For more information about the IRTA and its vision, mission and purpose, please visit <https://regtechassociation.org>
- For membership inquiries, please visit <https://regtechassociation.org/membership/>
- IRTA publication 2017. All right reserved. Reproduction and further usage is based on strict approval of the IRTA.