

# InsurTech & RegTech: Game-changer for Insurance Industry?



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# Agenda

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- FinTech Overview
- Insurance 101
- What is InsurTech?
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  - Top 10 InsurTech Trends
- Data Analytics
- InsurTech Challenges
- RegTech
  - Regulatory Challenges
  - What is RegTech
  - Where does RegTech work best?
- What's next?
- Q & A



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**Being the Head of Information Technology at Hong Kong Housing Society (HKHS), the mandate of Mr. Sun is to provide vision and leadership for developing and implementing information technology initiatives for HKHS. He is accountable to direct the planning and implementation of enterprise IT systems in support of business operations in order to improve cost effectiveness, service quality and business development of HKHS.**

**Previously, he was the Assistant Vice President of Manulife Hong Kong Information Technology. He was accountable for the delivery of all Hong Kong Employee Benefits (including both Pension and Group Life & Health) system solutions, and was responsible for all IT Compliance and operation risk management of IT.**

**He was the Head of IS audit at Manulife Asia Division and was accountable for the delivery of professional, value-added and risk-based audit services across 11 Asia countries.**

**Darron graduated from Deakin University with a major in Computer Science and obtained the Master of Science in Information Systems and Master of Business Administration from The Hong Kong Polytechnic University. Darron is a Certified Management Accountant (CMA), Member of Institute of Public Accountants (MIPA), Associate of CPA Australia (ASA), Certified Information Systems Auditor (CISA), Certified in Risk and Information Systems Control (CRISC), Certified Information Systems Security Professional (CISSP) and Certified in Risk Management Assurance.**

**He is Vice Chairman of CMA (Australia) Strategic Development Committee, Secretary & Director of Hong Kong IFC Lions Club, and subject matter expert reviewer of ISACA CRISC Review Manual.**

**He was a committee member of ISACA Headquarter both Student & Academic Subcommittee (SAS) and Communities Committee.**

# FinTech Overview

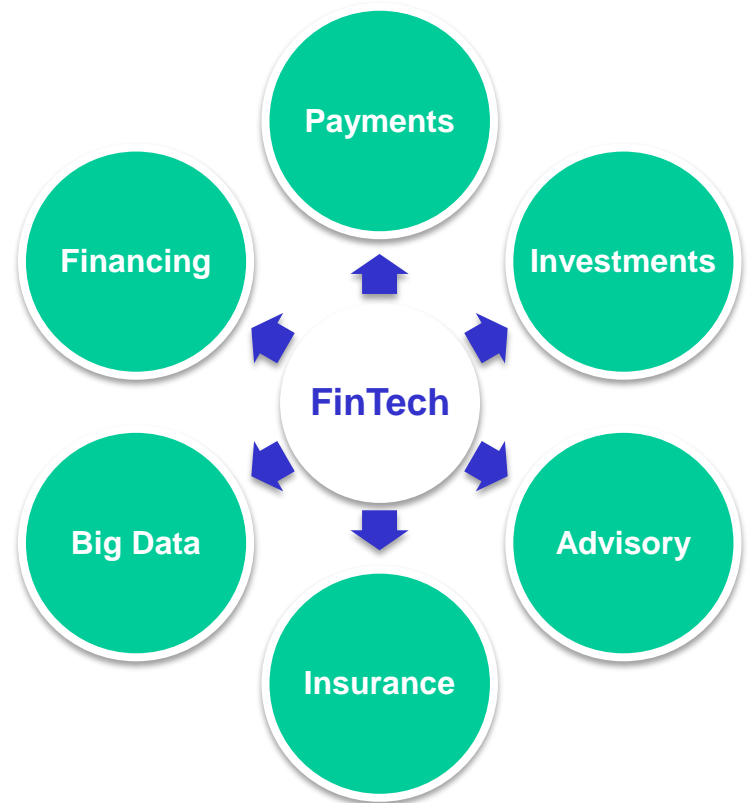
# FinTech Overview

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[5 things you need to know about FinTech](#)

# What is FinTech?

- FinTech – a contraction of “Finance” and “Technology” is the use of technology in the financial services industry resulting in the introduction of new and innovative products and services, primarily through software.
- Describes the intersection between software and technology to deliver financial services.
- May refer to technical innovation applied in a traditional financial services context or to innovative financial services offerings that disrupt the existing financial services market.



# Growth of FinTech?

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- Statistics:
  - Forecasted that over \$4.7 trillion of revenue at traditional financial services companies is at risk of disruption by FinTech companies
  - FinTech firms attracted \$19 billion in investment in 2015
- FinTech has emerged due to:
  - technology (social networks, big data)
  - favorable regulatory environment
  - demographics (rise of the millennials)
  - mobile financial services provide cheap banking solutions to the unbanked

# Where FinTech are?

According to EY study:

Place	Market Size	Investment	Fintech staff	Characteristics
NYC	7.5bn	1.9bn	57,000	<ul style="list-style-type: none"><li>• close to markets</li><li>• 1st generation</li><li>• incubators &amp; accelerators</li></ul>
California	6.3bn	4.8bn	74,000	<ul style="list-style-type: none"><li>• mature FinTech community</li><li>• established connections</li><li>• large VC funds</li></ul>
UK	8.9bn	707m	61,000	<ul style="list-style-type: none"><li>• global financial hub</li><li>• progressive government &amp; reg.</li><li>• effective network of hubs</li></ul>
Germany	2.4bn	524m	13,000	<ul style="list-style-type: none"><li>• mostly credit &amp; lending</li><li>• increasing focus on b2b</li><li>• complex startup environment</li></ul>
Hong Kong	0.9bn	62m	8,000	<ul style="list-style-type: none"><li>• relatively nascent market</li><li>• community focused on capital markets</li></ul>
Singapore	0.9bn	50m	7,000	<ul style="list-style-type: none"><li>• gateway to Asia</li><li>• easy to do business, English</li><li>• dedicated team at regulator</li></ul>
Australia	0.8bn	267m	10,000	<ul style="list-style-type: none"><li>• emerging Fintech ecosystem</li><li>• 0.9bn commitment to innovation</li></ul>



# THE FINTECH ECOSYSTEM

## Payments & Transfers



## Lending & Financing



## Retail Banking



## Financial Management



## Insurance



## Markets & Exchanges



# FinTech Evolution

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- **BankTech**
- **InvestTech**
- **InsurTech**
- **RegTech**

# Insurance 101

# What is Insurance?

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**Insurance** is a mechanism individuals use to limit their exposure to risk. A risk refers to the potential for a loss – meaning it is unclear as to if and how an individual will be affected by an event. Individuals band together to form groups that pay for losses. By forming groups, the risk is spread and no individual is fully exposed.

**Exposure** – Someone or something that can experience damage, destruction, disappearance, death, disability or illness because of the action of another person or accidental happening.

**Loss** – The unintentional or unexpected reduction in value of an object or potential stream of income due to the action of another or accidental happening.

**Claim** – A demand for another party to recover the value lost from a suffered loss.

# Major categories of Insurance?

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**Life** - Life insurance protects against the financial risks associated with dying, disablement, illness, and retirement.

**Health** – Health insurance coverage for health expenses incurred in the event of illness or injury.

**Property & Casualty** – Property insurance covers damages to physical objects that are lost or damaged, while casualty insurance covers liabilities that result from negligent acts.

# **Traditional insurance distribution channels**

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**Insurance Agent** - Represents the insurance company and collects data used in the underwriting process.

**Insurance Broker** – Represents the client seeking insurance. Brokers generally do not work for an insurance company, but instead sell policies from multiple carriers.

**Bancassurance** – partnership between insurance company and bank

# Top challenges in the global insurance industry

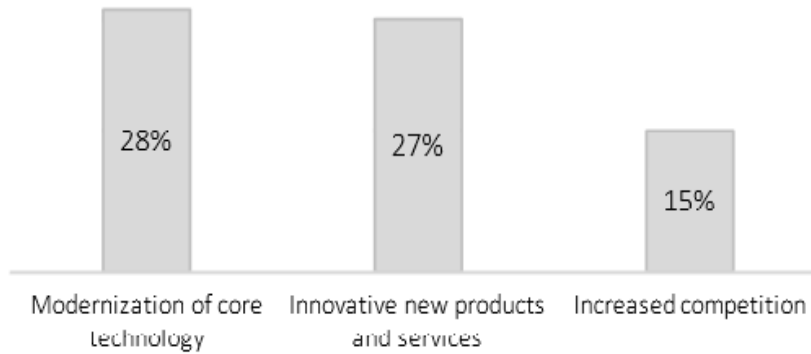
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1. **Technology and big data** - Turning the promise of new technology and big data into commercial successes. This includes capitalizing on the opportunities in mobile and web-based services, using big data and predictive analytics effectively, and overcoming the problems associated with legacy technologies.
2. **Growth** - Low growth in mature economies with the potential for high growth in emerging economies.
3. **Customer focus** - The need to create better, more comprehensive customer relationships and make it easier for customers to do business with insurance companies.
4. **Regulation** - Operating under multiple regulatory jurisdictions and complying with changing rules with regard to such things as capital requirements, transparency and reporting, and customer interaction.
5. **Alternative investments** - Managing more complex portfolios with nontraditional assets in a low interest rate, low economic growth environment.
6. **Leadership** - Discomfort regarding the adequacy of talent pipelines for effective leadership in the future.

# Major Trends – Increased Technology Spend

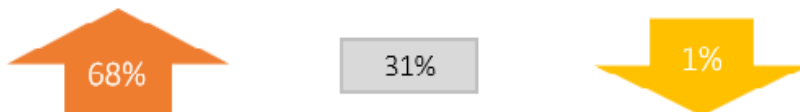
Modernizing core insurance technology is a primary challenge facing insurance companies. From a resource perspective, the highest priority is hiring and retaining technology staff.

Top Challenges Identified by Insurance Executives



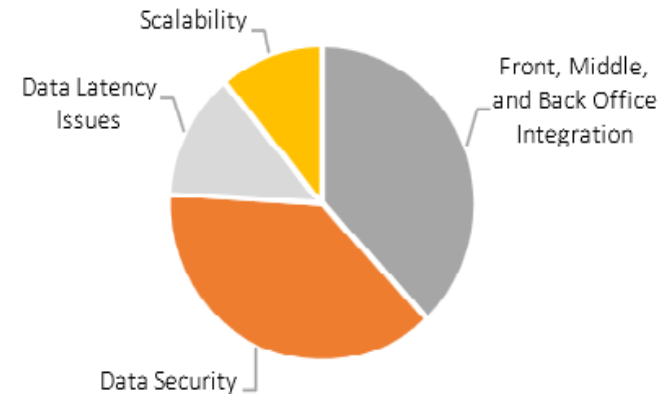
Insurance IT Budgets

68% of insurance carriers anticipate IT budgets to increase this year.



IT Resource Consumption

The majority of IT resources within the insurance sector are dedicated to system integrations and data security.



According to IDC, global insurers spent almost \$101 B on IT in 2015, a 4.4% year over year increase.



# Major Trends – International Regulation

Prior to the downturn, regulations used US-centric metrics, with international organizations such as the International Association of Insurance Supervisors (IAIS) or International Monetary Fund (IMF) having little influence.

Post the downturn, existing entities (such as the IAIS) and new ones (such as the G20) have moved to globalize and centralize insurance regulation, increasing international influence over US regulation in the process.

## Regulatory Structure Prior to the Downturn

International Association of Insurance Supervisors

International Monetary Fund

National Association of Insurance Commissioners

## Regulatory Structure Post the Downturn

International Association of Insurance Supervisors

International Monetary Fund

National Association of Insurance Commissioners

The Department of the Treasury

US Federal Reserve System

G20

InsurTech

# What is InsurTech?

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The innovations around InsurTech and how it enables insurers to deliver relevant, targeted offerings to consumers....

[InsurTech](#)

# What is InsurTech?

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- **Insurance** is an old business, one of the oldest, and it tends to favor those with deep pockets and a long experience in the market.
- Traditionally, actuarial tables are used to assign prospects to a risk category. The group is then adjusted so enough people are lumped together to ensure that the policies are profitable for the company.
- This approach does result in some people paying more than they should based on the basic level of data used to group people.
- “**InsurTech**” is the FinTech sub-segment addressing existing insurance challenges and opportunities
- Refers to the use of technology innovations designed to squeeze out savings and efficiency from the current insurance industry model.

# What is InsurTech?

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- The belief driving InsurTech companies is that the insurance industry is ripe for innovation and disruption. InsurTech is exploring avenues that large insurance firms have less incentive to exploit, such as offering ultra-customized policies, social insurance, and using new streams of data from internet-enabled devices to dynamically price premiums according to observed behavior.
- Using inputs from all manners of devices, including GPS tracking of cars to the activity trackers on our wrists, these companies are building more finely delineated groupings of risk, allowing products to be priced more competitively.

Manulife MOVE

# InsurTech Universe

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## **1. Customer Engagement**

- CRM
- Omni Channel acquisition
- Digital claims process
- Online policy purchasing

## **2. Regulation & Law**

- Digital contracts
- KYC Identity verification (AML)
- Automated compliance processes

## **3. Wealth Management**

- Algorithm asset management
- Digital saving plans
- Pension management

# InsurTech Universe

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## **4. Health**

- Wearables
- Preventive healthcare
- Genetic data

## **5. Data Analytics**

- Real time risk mitigation
- Dynamic underwriting
- Personalized premiums

## **6. Information Security**

- Claims fraud detection
- Cyber breach insurance
- Risk management

# Top 10 InsurTech Trends

## 1. Massive cost savers in claims, operations and customer acquisition

- Digitizing current processes is necessary for operational excellence and to cut costs.
- Digital transformation of insurance carriers started in 2015, really took off in 2016 and is mainstream by 2017 and beyond.
- Virtually every insurer, big or small, that takes itself seriously will continue to look for ways to operate more efficiently in every major part of the costs column: in claims expenses, costs of operations and customer acquisition costs.
- Technology purchases and investments by insurance carriers will further explode in these areas
- With OutShared's CynoClaim solution more than 60% of all claims can be managed automatically, resulting in lower costs as well as increased customer satisfaction. Results of the first implementations: as much as 50% decrease in costs, 40% increase in customer satisfaction. The solution takes six to nine months to implement, whether it is from scratch or a migration of established operations to the platform, which is quite spectacular in the insurance industry.



# Top 10 InsurTech Trends

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## 2. A new face on digital transformation: engagement innovation

- No insurer ever succeeded in turning operational excellence into a competitive advantage that is sustainable over the long term. Engagement innovation is the next level of digital transformation.
- Engagement innovation not only includes customer experience, but customer-centric products, new added value services and new business models.
- Insurers leverage on digital channels and connected devices such as smartphones, connected cars and wearables to acquire and engage new customers.
- By collecting data from smartphones and a number of different connected consumer devices to build holistic customer profiles, providing better insights into customer risk exposure and customer product needs. Following the analysis, risk prevention programs, individual pricing as well as personalized and “on the spot” insurance products can be placed on the market, increasing the customer’s loyalty and lifetime.

# Top 10 InsurTech Trends

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## 3. Next-level data analytics capabilities and AI

- Many insurers have started IoT initiatives in the last few years. In particular, in car insurance it is already becoming mainstream, with Italy leading the pack. Home insurance is lagging, and health and life insurance is even more behind.
- All pilots and experiments have taught insurers that they lack the right data management capabilities to cope with all these new data streams -- not just to deal with the volume and new data sets, but more importantly to turn this data into new insights, and to turn these insights into relevant and distinctive value propositions and customer engagement. Insurtechs that operate in the advanced analytics space, machine learning and artificial intelligence hold the keys to unlock the potential of IoT.
- 2016 DIAMond Award winner BigML has built a machine-learning platform that democratizes advanced analytics for companies of all sizes.

# Top 10 InsurTech Trends

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## 4. Addressing the privacy concerns

- To many consumers, big data equals big brother, and insurers that think of using personal data are not immediately trusted.
- Most data initiatives of insurers are about sophisticated pricing and risk reduction. Cost savers for the insurer. However, the added value of current initiatives for customers is limited. A chance on a lower premium, that's it. To really reap the benefits of connected devices and the data that comes with it, insurers need to tackle these data privacy concerns.
- On one hand, insurers need to give more than they take. Much more added value, relative to the personal data used. On the other hand, insurers need to empower customers to manage their own data. Expect fast growth of insurtechs that help insurers to cope with privacy issues.

# Top 10 InsurTech Trends

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## 5. Contextual pull platforms

- Markets have shifted from push to pull. But so far most insurers have made hardly any adjustments to their customer engagement strategies and required capabilities.
- Whereas push is about force-feeding products to the customer, pull is about understanding and solving the need behind the insurance solution and being present in that context. Insurers need to be present in the context of daily life, specific life events and decisions, and offer new services on top of the traditional products.
- Insurtechs that provide a platform or give access to these broader contexts and ecosystems help insurers to become much more a part of customers' lives, be part of the ecosystem in that context and add much more value to customers.
- VitalHealth Software has developed e-health solutions for people with chronic diseases such as diabetes and cancer. Features include all sorts of remote services for patients, insurers and care providers collaborating in health networks, access to protocol-driven disease management support. All seamlessly integrated with electronic health records.

# Top 10 InsurTech Trends

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## 6. The marketplace model will find its way to insurance

- Virtually every insurer offers a suite of its own products. Everything is developed in-house. More and more carriers realize that you cannot be the best at everything, and that resources are too scarce to keep up with every new development or cater to each specific segment.
- In the marketplace model, the insurers basically give their customers access to third parties with the best products, the most pleasant customer experience and the lowest costs. The marketplace business model cuts both ways. Customers get continuous access to the best products and services in the market. And costs can be kept at a minimum through connecting (or disconnecting) parties almost in real time to key in on new customer wishes and anticipate other market developments.

# Top 10 InsurTech Trends

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## 7. Open Architecture

- A new ecosystem emerges with parties that capture data and parties that develop new value propositions based on the data. Insurers will have to cooperate even more than they are currently doing with other companies that are part of the ecosystem.
- When an insurer wants to seize these opportunities in a structural way, it is no longer only about efficiently and effectively organizing business processes, but it is also about easy ways to facilitate interactions between possibly very different users who are dealing with each other in one way or another.
- The Backbase omnichannel platform is based on open architecture principles. It leverages existing policy administration systems capabilities and adds a modern customer experience layer on top, creating direct-to-consumer portals and giving the opportunity to integrate best-of-breed apps as well as improving agent and employee portals.

# Top 10 InsurTech Trends

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## 8. Blockchain Technology

- When Goldman Sachs, Morgan Stanley and Banco Santander decided to leave the R3 Blockchain Group, many thought this was proof that blockchain technology apparently was not as promising as initially expected. The contrary is true. It is not uncommon to join a consortium to speed up the learning curve, and then drop out and use the newly acquired knowledge to build your own plans and gain some competitive advantage, especially with a technology as powerful as blockchain.
- Everledger tackles the diamond industry's expensive fraud and theft problem. The company provides an immutable ledger for diamond ownership and related transaction history verification for insurance companies, and uses blockchain technology to continuously track objects. Everledger has partnered with all institutions across the diamond value chain, including insurers, law enforcement agencies and diamond certification houses across the world. Through Everledger's API, each of them can access and supply data around the status of a stone, including police reports and insurance claims.

# Top 10 InsurTech Trends

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## 9. Use of algorithms for front-liner empowerment

- Algorithms that are displacing human advisers generate headlines. Robo advice will for sure affect the labor market's landscape. For a costs perspective, this may seem attractive. But from a customer engagement perspective this may be different. To relate to their customers, financial institutions need to build in emotion. Humans inject emotion, empathy, passion and creativity and can deviate from procedure, if needed. Banks and insurers need to create a similar connection digitally. With so many people working at financial institutions, there is also an opportunity to create the best of both worlds.
- The first insurers that deploy robo advice to empower human front-liners. This is resulting in better conversations, higher conversion and, finally, greater solutions for customers.
- AdviceRobo provides insurers with preventive solutions combining data from structured and unstructured sources and machine learning to score and predict risk behavior of consumers -- for instance, predictions on default, bad debt, prepayments and customer churn. Predictions are actionable, because they're on an individual customer level and support front-liners while speaking to customers..



# Top 10 InsurTech Trends

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## 10. Symbiotic relationship with InsurTechs

- Relationships between insurers and InsurTechs will become much more intense.
- Insurers will also look for ways to learn much more from the insurtechs they are investing in -- whether it is about specific capabilities or concrete instruments they can use in the incumbent organization, or whether it is about the culture at InsurTechs and the way of working.
- An increasing number of insurers that are now using lean startup methodologies and that have created in-house accelerators and incubators to accelerate innovation in the mothership.
- The Aviva Digital Garages in London and Singapore are perfect examples. They are not idea labs, but the place where Aviva runs its digital businesses, varying from MyAviva to some of the startups Aviva Ventures invests in – all under one roof to build an ecosystem and create synergies on multiple levels.

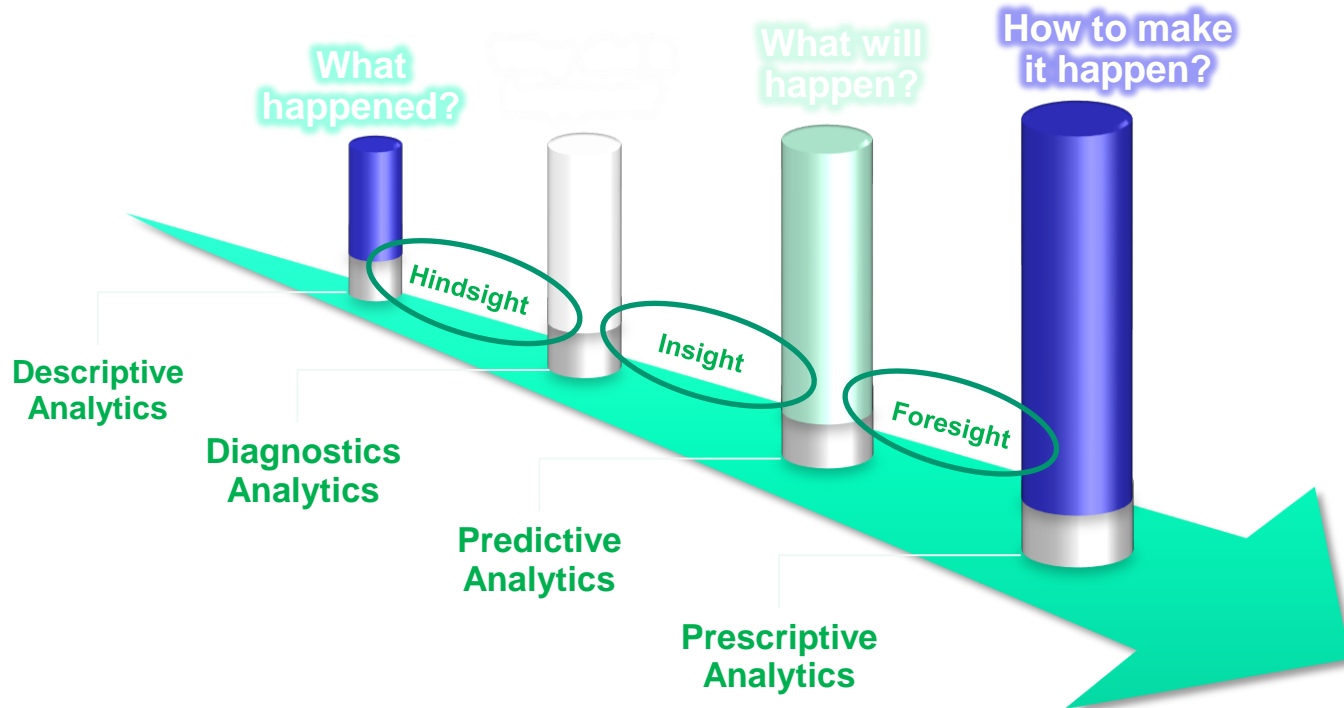
# Data Analytics

# Application of Data Analytics

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- Understand Our Customers
  - Predicting lapse likelihood
  - Customer segmentation
- Product Offering
  - Streamline process e.g. fast-track underwriting
  - “Analytics as a Service” e.g. JH Retirement Plan Services
- Fraud detection
- Market Share analysis
- Business analysis
- Audit planning and testing

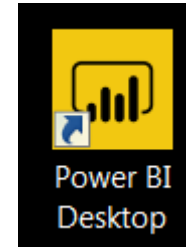
# What Is Analytics?



# Tech Stack



Azure SQL Database



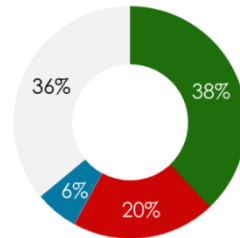
Excel



# Retirement Plan Services: member profiling



Persona Distribution For Non Contributors



- 1. Patty
  - 2. Selma
  - 3. Bart
  - 4. No Discernable Patterns
- } 64% of total non-contributors

**1. Patty**  
Cash-strapped Female  
38% of total non contributors



- Female
- Age > 23
- Average Participant Age = 40
- Average Years of Service = 5
- Investable Asset < \$100K = 99.3%
- Personal Net worth < \$50K
- At least College Education = 53.0%
- 3 or more People in Household = 53.4%

**2. Selma**  
Low Disposable Income  
20% of total non contributors



- Female
- Age > 23
- Average Participant Age = 45
- Average Years of Service = 7
- Investable Asset < \$100K
- Personal Net worth >= \$50K
- At least College Education = 57.1%
- 3 or more People in Household = 55.3 %

**3. Bart**  
Young People  
6% of total non contributors



- All Genders
- Age <= 23
- Average Participant Age = 22
- Average Years of Service = 6 Months
- Investable Asset < \$100K = 72.1%
- Personal Net worth >= \$50K = 56.0%
- At least College Education = 44.2%
- 3 or more People in Household = 62.8 %



# Market Share analysis

In term of total business, the landscape of whole life insurance company is still relatively the same.

Premium Type Breakdown

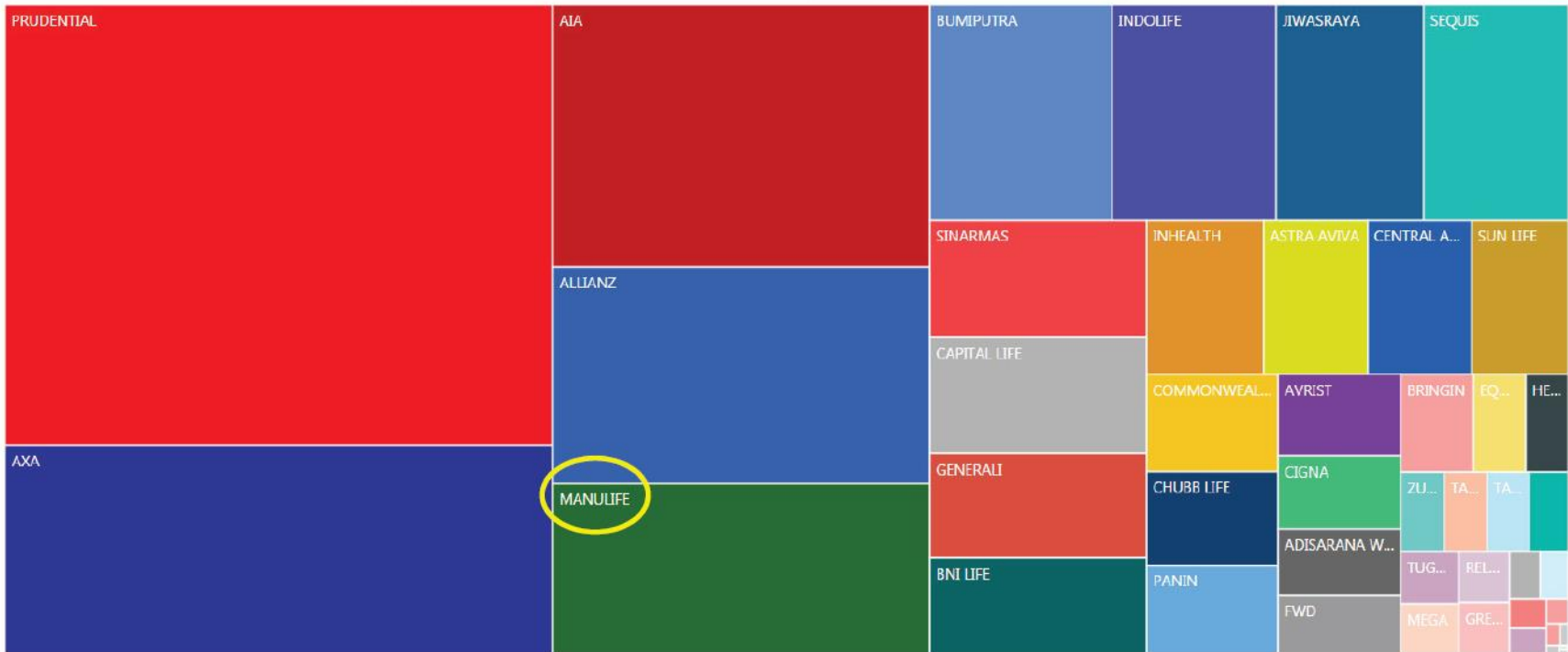
02 ALL BUSINESS

Channel Breakdown

08 ALL CHANNEL

Period Breakdown

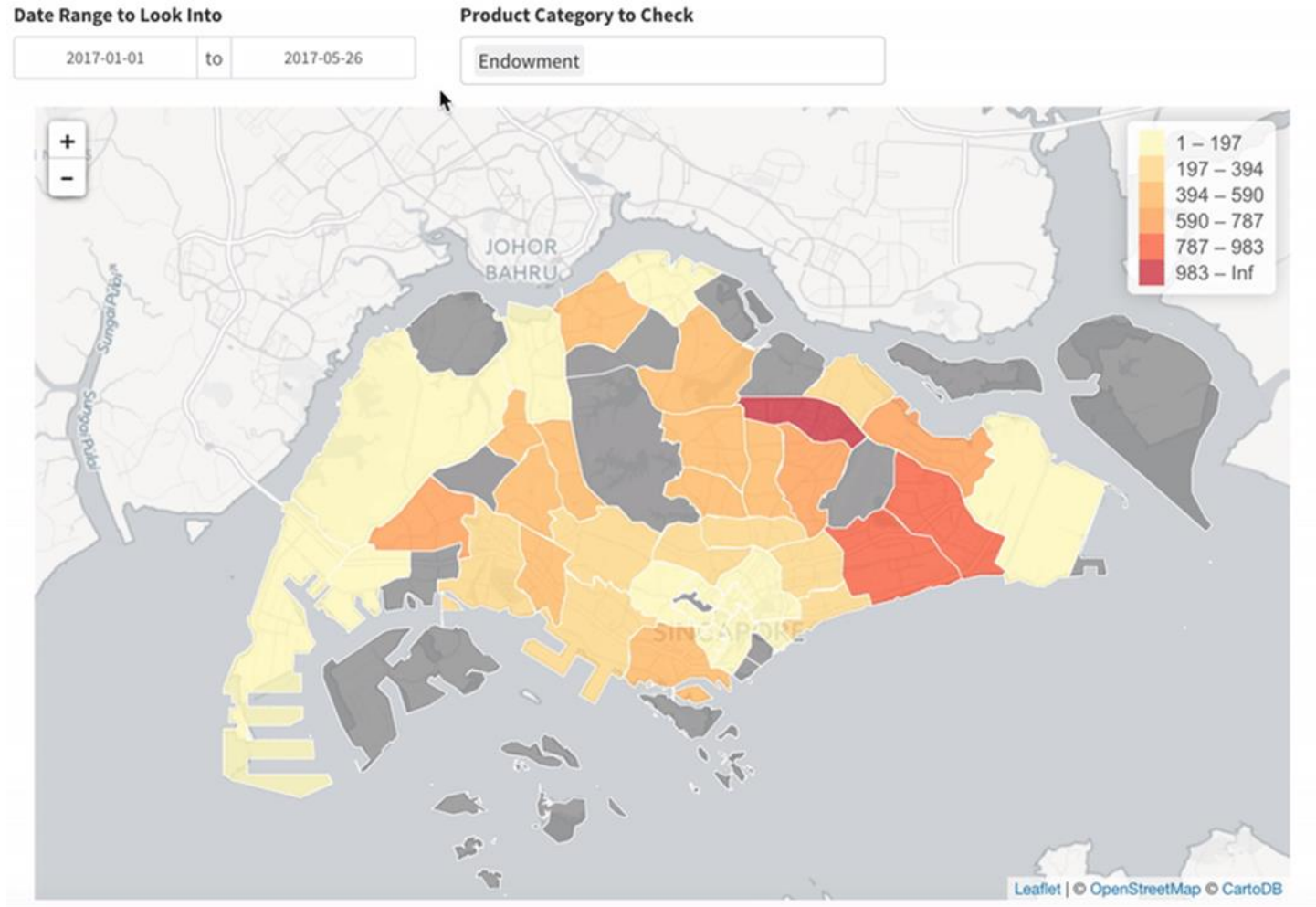
2017 Q1





# Business analysis

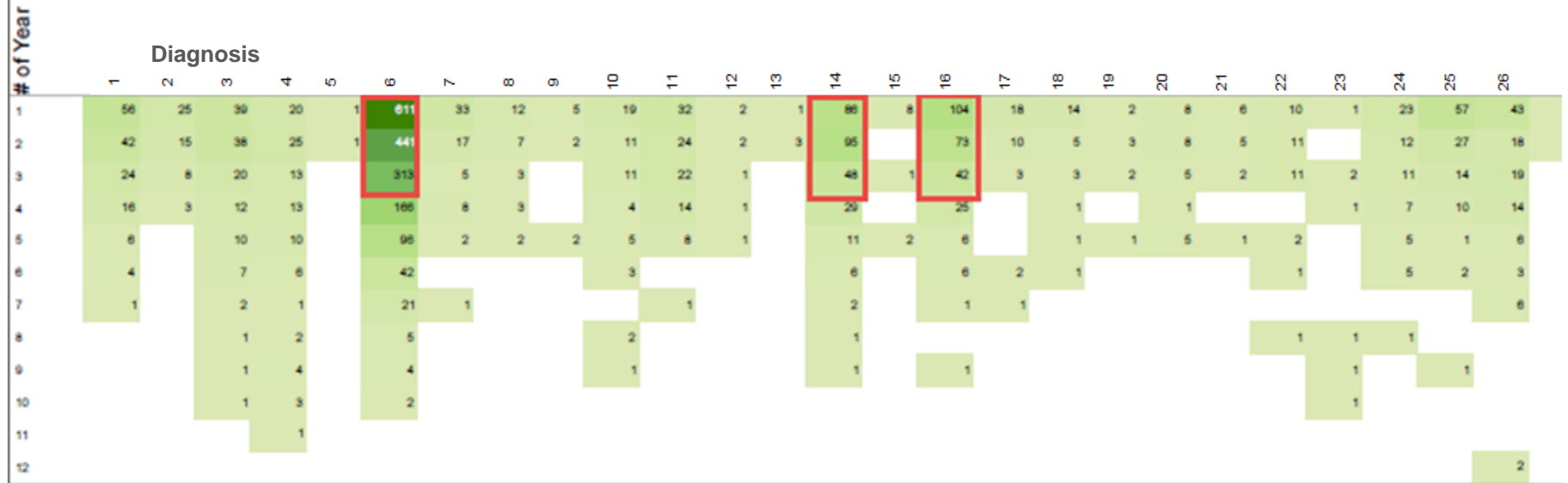
## Geographic Profiling





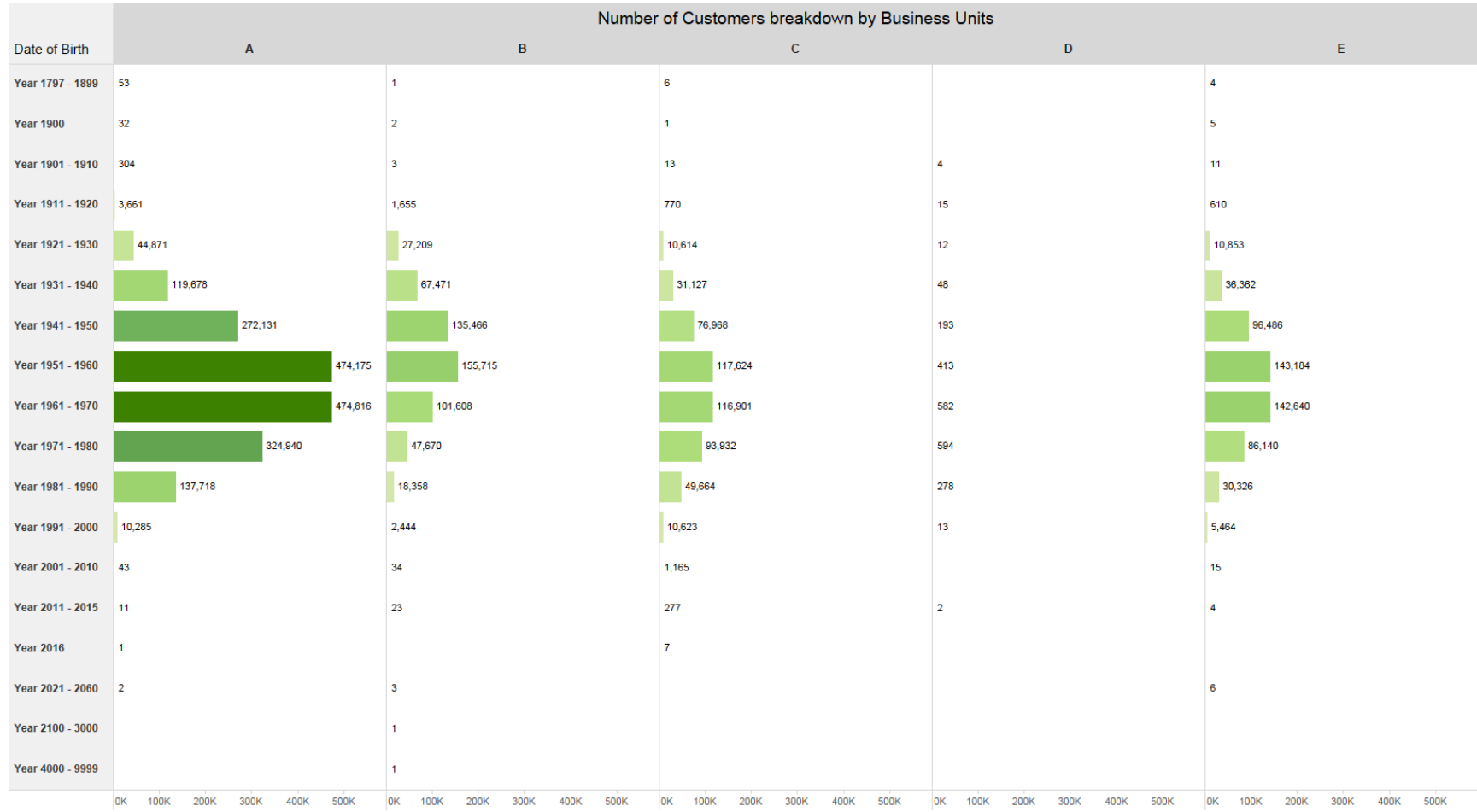
# Distribution Of Claims Payments Length Across Diagnosis

Number of Claims by Claim Length (CSPP April 29, 2015 to May 2, 2015)  
Diagnosis & Claim Length



Sum of Number of Records broken down by Diag Mid Lvl Gp vs. # of Year. Color shows sum of Number of Records. The marks are labeled by sum of Number of Records. The data is filtered on Issue Age and Current Status. The Issue Age filter excludes Null. The Current Status filter keeps

# Data Validation – Client’s Age



# InsurTech Challenges

# InsurTech Challenges

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## 1. Innovations in Distribution and Customer Engagement Will Raise Questions for Brokers and Agents

- In the hyper connected modern economy, consumers expect goods and services to be convenient and easily accessible.
- For consumers buying insurance, however, the experience is often confusing, frustrating and riddled with hard-copy forms and fax-machine-level technology. Submitting and settling claims is no better. In fact, the insurance industry has one of the lowest levels of customer satisfaction of any industry.
- Given this, many startups have focused on improving the existing distribution and claims-handling models, offering AI-enhanced policy advice, digital purchasing platforms and lightning-fast issuance of policies  
→ take everything an insurance agent currently does—from hard-copy forms to telephone calls—and put it online.
- Will changes like digitization, automation and advances in chatbots and robo-advisors constitute a threat to brokers, or simply an opportunity to better service clients?

# InsurTech Challenges

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## 2. Regulatory Hurdles Abound

- Regulatory hurdles abound at every stage of the value chain. While data and AI allow insurers to more accurately price risk, regulation may prohibit specific factors from being considered
- This problem is compounded by the fact that regulation of insurance is largely left to the states, resulting in 50 different regulatory regimes with which insurers must comply.
- For instance, while some states expressly permit genetic data to be used in the life and disability space, others expressly prohibit it.
- Another potential regulatory roadblock is “accuracy vs. determinability conundrum.” i.e. as AI becomes more sophisticated and accurate at pricing risk, humans will be less capable of explaining or understanding it.
- Distribution and claims-handling are also rife with traps for the unwary.
- For example, how many and which employees working in a brokerage startup must be licensed? When consumers purchase insurance products without interacting with a human, who is the licensed broker on the transaction? When AI is used to assess damage to a car, how will companies demonstrate that the approach is “reasonable” under fair settlement practices laws?

RegTech



# Regulatory Challenges

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- Increasing levels of regulation and a greater focus on data
- Regulators in HK: HKMA, SFC, IIA, etc
- More challenging regulatory expectations are having significant operational impacts on organizations

2016 Sep      HSBC was fined HK\$2.5M for regulatory breaches - failing to put in place adequate internal controls to monitor its positions in Hong Kong Futures Exchange's futures and options contracts to ensure compliance with the prescribed limit

2016 Aug      Morgan Stanley was fined HK\$18.5M for internal control failures related to disclosure of short-selling orders and comprehensive documentation of electronic trading services

==> In US, HSBC was fined \$1.9 billion over money laundering!!

- In respect of new legislation and regulation this can create challenges around understanding, implementing and embedding the new requirements whereas for existing legislation there can be challenges around understanding and managing the risks

# What is RegTech?

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**RegTech**, like FinTech, PayTech, is another example of an industry that is being changed rapidly by software. There has been technology used at various levels in the Regulatory space for over 20 years. However, what the new RegTech label recognises is that the gap between software and non-software enabled services has widened significantly.

Though technology has been used to address regulatory requirements for some time, below are some key characteristics of RegTech:

1. **Agility** – Whilst traditional solutions are robust and designed to deliver on your specified and “locked down” requirements, they can be inflexible and require development or configuration in a proprietary language for enhancements or changes. For RegTech solutions, cluttered and intertwined data sets can be decoupled and organised through ETL (Extract, Transfer, Load) technologies
2. **Speed** – Reports can be configured and generated quickly
3. **Integration** – short timeframes to get solution up and running
4. **Analytics** – RegTech uses analytic tools to intelligently mine existing “big data” data sets and unlock their true potential e.g. using the same data for multiple purposes.

# Where does RegTech Work best?

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- Legislation / regulation gap analysis tools
- Compliance universe tools
- Health check tools
- Management Information tools
- Transaction reporting tools
- Regulatory reporting tools
- Activity monitoring tools
- Training tools
- Risk data warehouses
- Case management tools

# Examples of RegTech

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- **FundRecs** - Reconciliation software for the Funds Industry;
- **Silverfinch** - creates connectivity between asset managers and insurers through a fund data utility in a secure and controlled environment;
- **Trustev** - online fraud prevention by scanning transactions in real time to determine whether they are real or not;
- **TradeFlow** - trade data tracking and risk alert based technology.
- **Vizor** - software provider that enables the supervision of companies by a supervisory authority, such as a central bank, financial regulator or tax authority.
- **Corlytics** - software that analyses compliance risks in banks and financial firms.
- **AQMetrics** - delivers high quality integrated regulatory risk and compliance management solutions

What's next...

# What's Next?

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- Omni channels services
- Advanced data analytics – Data Lake
- Obsolete Legacy Systems (Cloud platform?)
- Operation transformation – BPM
- Customer experience management (CEM)
- Global virtual team

# Contact

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Q&A

