29th India Fellowship Seminar
1st & 2nd June, 2018

Development of new technologies and e-commerce – to what extent life insurance business is exposed to disruptions and how to get ready for that?

Guide – Madhura Maheshwari

Institute of Actuaries of India

Presenters:

Venkata Krishna Narayana
Ramnath Shenoy
Pallavi Pathak
Vinay Gupta

Agenda

Institute of Actuaries of India

- Emerging Technologies impacting Financial Sector
- Bringing it all together…
- What's happening across the globe???
- Risks and Challenges
- Getting Ready – The Way Forward

Emerging technologies impacting financial sector

Emerging technologies impacting Financial Sector

Institute of Actuaries of India

Artificial Intelligence (Robotics)

Machine Learning

Blockchain

E-commerce and Social Media

Machine Learning

Institute of Actuaries of India

- Machine learning is the science of **finding patterns in your data** in an automated manner using complex algorithms.
- Enables review and analysis of all forms of structured and unstructured data, including pictures, videos, and audio, to a much higher degree, using a larger pool of data.
- Enables organizations to quickly **explore niche opportunities** and create superior consumer value.
- 3 kinds of Machine learning algorithms:
  - ❑ **Supervised Algorithms**
  - ❑ **Semi-supervised Algorithms**
  - ❑ **Unsupervised Algorithms**

Machine Learning

Institute of Actuaries of India

Building a foundation

- Model built on a continuous loop of learning and feedback
- Adaptive information fed with huge volumes of domain- specific data containing all business transactions and interactions

Fraud Detection

- Machine Learning can help identify fraudulent claims and its self-learning abilities would make the model even more adept at fraud detection with each processed case.

Underwriting and Loss prevention

- Better understanding of the customer's risk profile.
- Prevent mis-selling.
- Loss prevention due to more precise pricing of risks.

Enhanced Efficiency in operations

- Reduced subjectivity in response from employees
- Lower manpower leads to lower overhead costs.

Customer Connect

- Connecting with customers at various touchpoints
- Providing timely and relevant reminders to complete necessary transactions

Artificial Intelligence (Robotics)

Institute of Actuaries of India

- **Automates business processes** at a fraction of the cost of traditional solutions, without the need to change current IT systems.
- Can support high volume, **24x7 operation**, with scheduling, monitoring and reporting.
- Best suited for stable, mature, optimized, rules-based, repetitive and high-volume processes.
- Value creation from AI depends heavily on the **quality of data** stored in the systems.

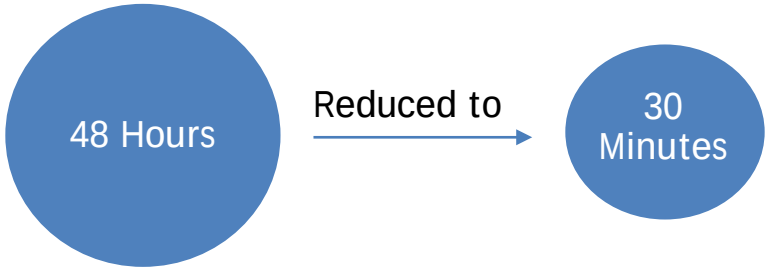
Artificial Intelligence (Robotics)

Institute of Actuaries of India

AI in Life Insurance…

- Use of virtual assistants by insurers to provide financial advice to prospective policyholders.
- Integration of data, IT, and all relevant resources to process a claim.
- Precision matching for all claims before authorization.
- Pay-back within **12-18 months**[2]

Handling 500 Premium Advices[1]



RPA Impact on Billing and Payments[3]

Process	Rule / Judgement Based	RPA Applicability
Generate premium invoice	Rule based	High
Manage and track receivables	Rule and judgement based	Medium
Calculate charges and taxes	Rule and judgement based	Medium
Link to external payment systems	Rule and judgement based	Medium
Multiple system integrations	Rule based	High

RPA Impact on Claims Management[3]

Process	Rule / Judgement Based	RPA Applicability
Notification of loss	Rule based	High
Claim entry	Rule based	High
Loss evaluation	Rule and judgement based	Medium
Claim processing	Rule and judgement based	Medium
Operations and reporting	Rule and judgement based	High

Source: 1: Digital Disruption in Insurance, March 2017; 2: PWC Strategy& Report, 2017; 3: KPMG Report,2017

Blockchain

- Blockchain is essentially the storing of static data or dynamic transaction data in distributed registers without the presence of any central authority with the method of common consensus.

- Multiple parties share and update the data which requires a significant amount of **trust** in the system.

- **Time and cost efficient**, links different processes to eliminate the duplication of information and effort.

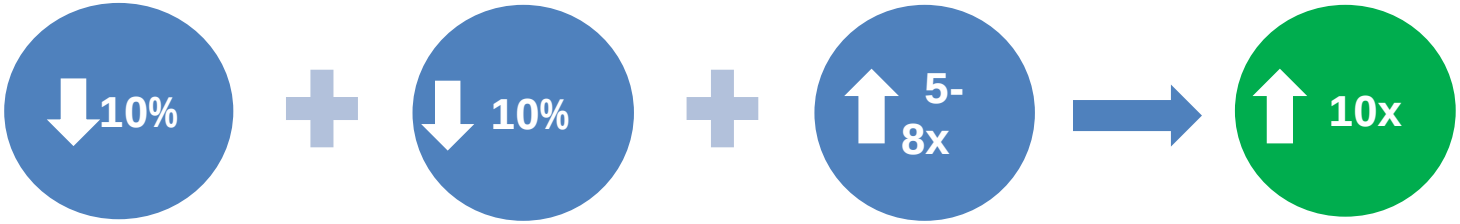
- All the transactions are real time which ensures superior consumer experience.

E-commerce and Social Media

- E-commerce is the process of buying and selling of goods and services online. India accounted for $16bn of online sales of goods and services in 2016.
- Growing government **initiatives for a cashless economy** is expected to boost the role of e-commerce in insurance industry.
- Social Media platforms like Facebook and YouTube are increasingly being used by organizations for:
  - ❑ **Target Marketing**
  - ❑ **Brand Development**
  - ❑ **Customer Education**
  - ❑ **Data Collection**

E-commerce

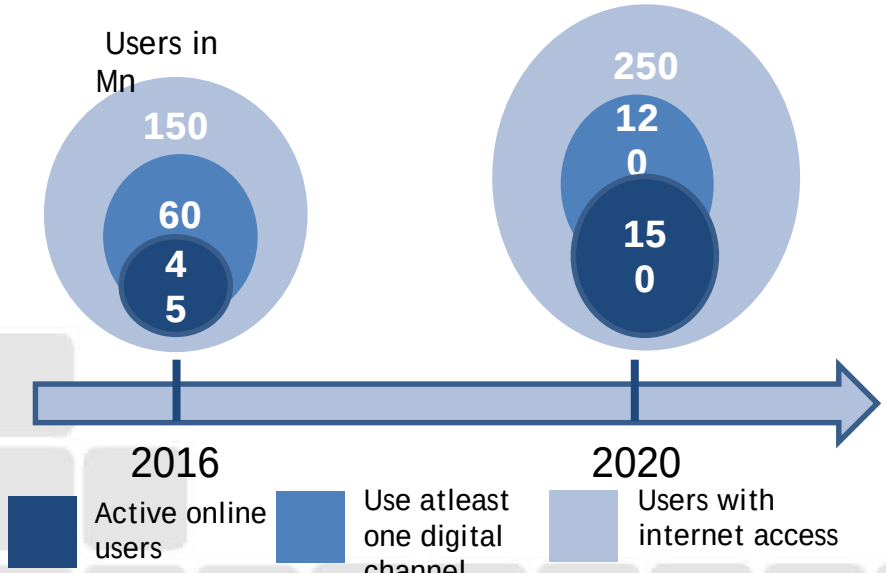
Digital Channels vs Traditional Channels



Customer Acquisition Cost	Transaction and Service Cost	**Revenue** generated by multi-channel users	**Profitability** from digital customers

- *Higher expected revenues coupled with lower expected costs indicate boost in profitability.*
- *More than 300% increase expected in active online users by 2020.* ***Huge potential for online insurance sales through target marketing.***

Digital Penetration: Urban Banking Users



Source: BCG Report,2017

Bringing it all together...

Expected Impact across the Insurance Value Chain

Institute of Actuaries of India

Product	Marketing	Pricing/ Underwriting	Distribution	Service	Claims
➢ Product becomes more personalized and usage based ➢ Greater value propositions	➢ Digital drives more effective marketing via better targeting and conversion ➢ Digital branding through social media interactions	➢ Competitive pricing through Web Aggregators like Policy Bazaar ➢ Analytics driven risk pricing ➢ Process Optimization with Straight Through Processing	➢ Customer data acquired online flows through traditional distribution channels ➢ Improved customer acquisition strategy ➢ Increased penetration	➢ Do it yourself offerings ➢ Automated processes	➢ Quick Processing ➢ Improved Claims Management ➢ Analytics based fraud detection

Higher Customer Engagement

Business Impact..

Trend	Revenue Growth	Cost Optimization	Enhancing Customer Engagement	Risk Reduction	Reducing Claim Leakage
Automation (RPA and AI for operational efficiency and enhanced customer experience	Medium	High	High	Medium	High
Blockchain based smart contracts for claim processing	Low	High	Low	Medium	High
Predictive Analysis to develop personalized offerings	High	Medium	High	High	Medium
Advanced analytics and AI fraud detection and prevention	Low	High	Low	Medium	High
InsurTech capabilities to explore new revenue streams and value added services to customers	High	High	High	Medium	Low

Source: CapGemini Financial Services Analysis 2017

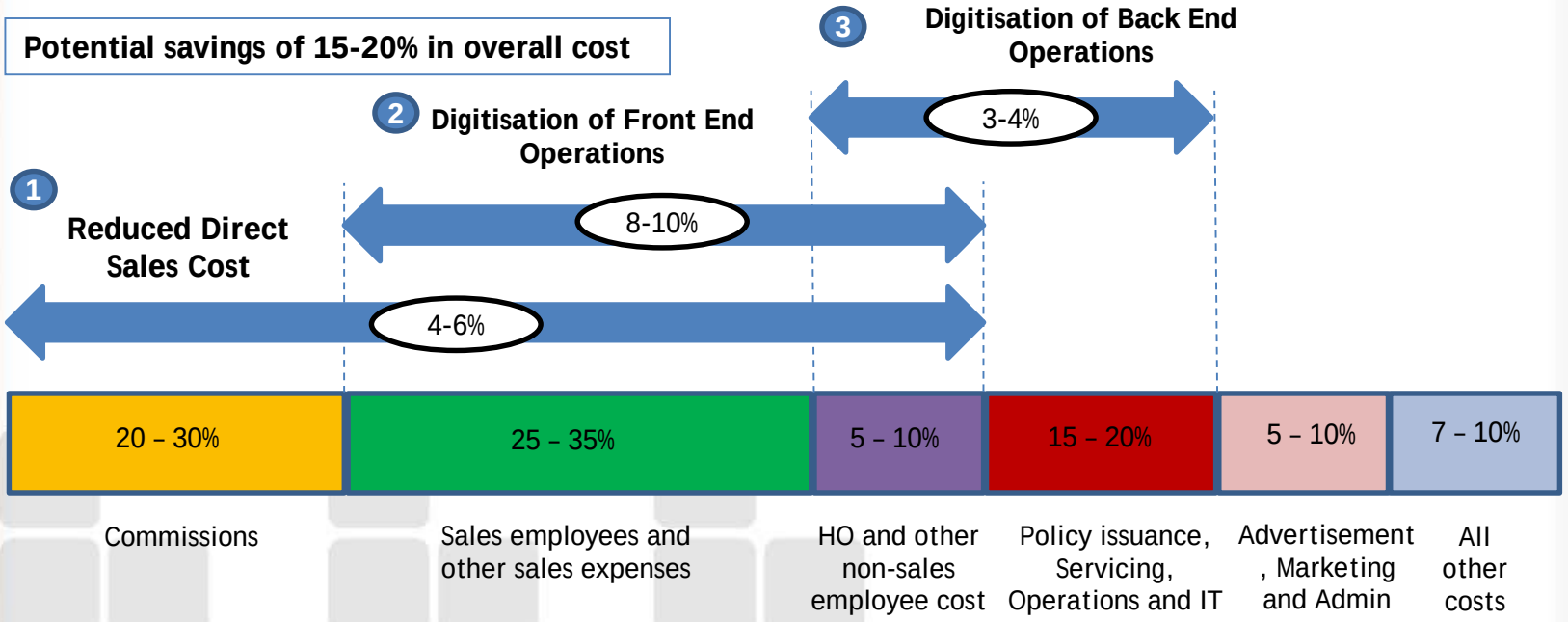
The Promise of Digitization

Institute of Actuaries of India

Pre-digitisation	Post-digitisation
• Insurance Agents • Manual Underwriting • Low Efficiency • Higher Cost	• Digital Platforms • Automated Underwriting • High Efficiency • Lower Cost

Cost Savings from Digitization[2]

Potential savings of 15-20% in overall cost



Source:1: McKinsey Panorama InsurTech database,2017; 2: BCG Report2014

What's happening across the globe???

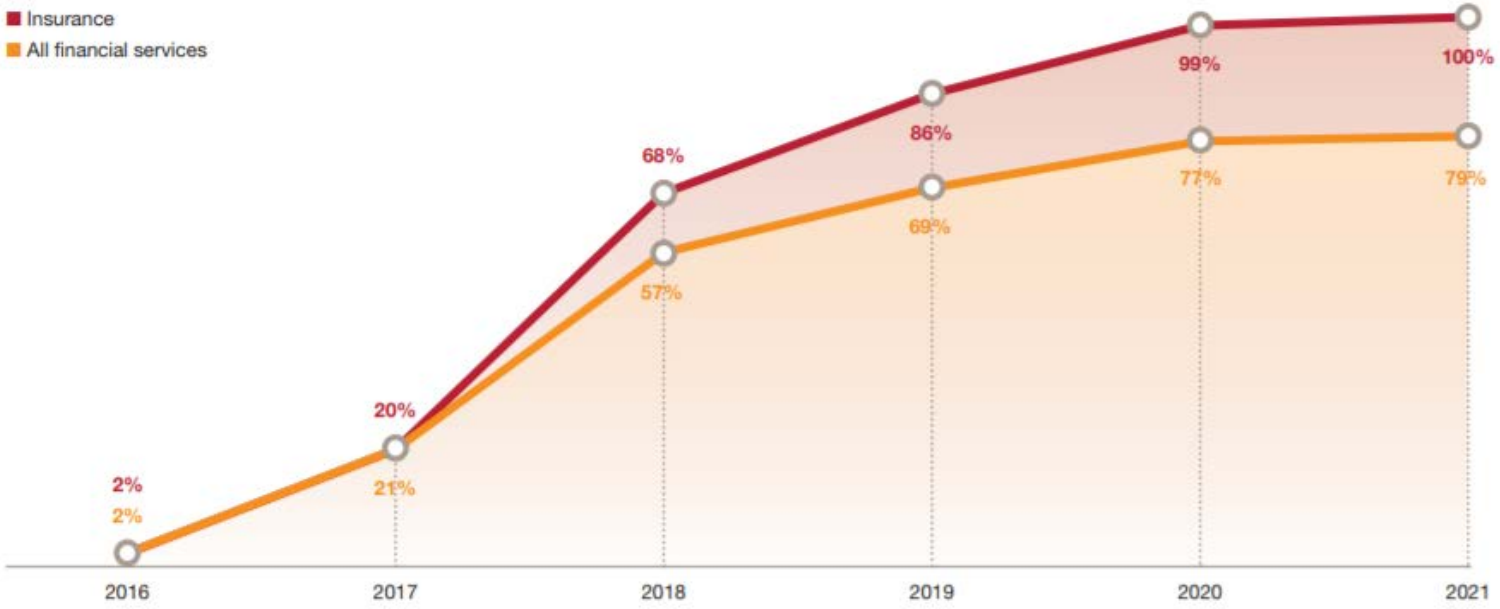
Institute of Actuaries of India

What's happening across the globe???

Institute of Actuaries of India

Figure 4: Cumulative blockchain adoption in insurance

What timeframe do you most likely expect your organisation to adopt blockchain as part of an in production system/process?



Source: PwC Global FinTech Survey 2017, Insurance Sector Participants

68% of the insurers expected to adopt blockchain as part of an in-production system or process by 2018.

What's happening across the globe???

Institute of Actuaries of India

policybazaar.com
Compare. Buy. Save.

- ***As many as 75% of insurance policies sold by 2020 will be influenced by digital channels.***
- ***Digital adoption could result in potential savings of 15-20 percent of total costs in the case of life insurance and 20-30 percent in the case of non-life insurance.***

- A report by Boston Consulting Group and Google India.

What's happening across the globe???

Institute of Actuaries of India

AI and Chatbots: Lemonade is an American insurance start-up.

Uses AI and chatbots to deliver insurance policies and handle claims over desktop and mobiles.

The claim processing time has been as low as 3 seconds in a few cases!

In house innovation factories: AXA is looking at innovation in data storage and analysis, while MetLife's LumenLab focuses on innovations for healthy living.

Strategic Partnerships: Allianz has set up a joint venture with Chinese internet giant Baidu enabling it to use data on consumers' online behavior to create customized offers.

Robotics: Some insurers in USA are adopting robotics into their claims management process to help predict the eventual outcome of the claims process and suggest the most appropriate strategy based on that prediction.

For instance, recommending an early settlement on cases where the data suggests a high potential for long-term litigation

Investing in Start-ups: Swiss Re has set up an insurtech accelerator in Bangalore, India, to help start-ups develop products and services.

InsurTechs

InsurTechs reshaping the insurance business...

Data and Analytics

- Use of Big Data to enhance pricing and underwriting via Predictive analytics

Lead Aggregators

- Potential leads aggregation by online sites

Policy & Claim Management Tools

- Digital tools enable effective policy management, claim management process - easier for customers, brokers

Online Agencies

- Online marketplace with virtual assistance

Direct online channel

- One-stop policy shopping experience

Mobile Distribution

- Direct-to-consumer mobile apps

Source: SwissRe, 2017

What Indian Insurers are doing?

Institute of Actuaries of India

HDFC Life, in association with #fame, launched India's first ever digital talent hunt for kids as a part of the marketing campaign for its product HDFC Life YoungStars.

The entire process, from entries to the grand finale, was digital

IndiaFirst Life issues OTC policies in just 30 minutes from the time it receives data on its servers

HDFC Life has launched Elle, a website Chat Bot that uses artificial intelligence and natural language processing to cater to existing policyholders

ICICI Lombard enables its agents to cross sell products with the help of intelligent apps. The company is using analytics software to develop models to help its agents in doing so

IndiaFirst Life introduced a device named Magic Board for its sales channel to source new policies. It eliminated manual scanning and documentation, allowing on-the-spot policy issuance

Max Bupa Health Insurance partnered with Vizury Engage, a leading data and marketing platform, to segment users based on data backed insights and target them with personalized engagements

ICICI Lombard enables its customers to pay renewal premium through Paytm wallet

IDBI Federal Life has implemented internal models that detect fraudulent proposals based on historical experience data. The insurer is also implementing data analytics solutions to completely automate this model

Bajaj Allianz has 350+ virtual offices operating pan India

Source: EY Insurer of the Future Report 2016

Risks and Challenges

Emerging Technologies - Challenges

Institute of Actuaries of India

Regulatory Concerns

Quick adaption to change and innovation

IT Infrastructure

Time and cost considerations

Glitch Risk

Possibility of system errors, requires close monitoring

Data Privacy

Securing data and systems

Emerging Technologies - Challenges

Institute of Actuaries of India

Impact on Resources

Tasks, jobs, management practices redesigned, building expertise

Data Quality

Usefulness of Artificial Intelligence is heavily reliant on quality of data provided.

Inherent risk in Blockchain

The absence of a central controlling authority in Blockchain increases the riskiness in system.

Availability of Expertise

Scarce availability of expertise for ongoing management of AI systems

Regulatory Landscape – IRDAI E-commerce Regulations....

Institute of Actuaries of India

Insurance Intermediaries

- Agents, brokers, insurance marketing firms and web aggregators allowed to sell insurance policies by floating an e-commerce platform
- Such platform termed Insurance Self-Network Platform (ISNP)

ISNP

- IRDAI has launched a portal for the online registration of ISNP.
- Insurance companies and intermediaries to register themselves according to ISNP guidelines to sell insurance policies on their websites.

Pricing

- Differential pricing for same product allowed
- ISNPs allowed to offer discounts to customers, but cannot offer cash-back on policies

Remunerations

- The commission or remuneration of digital intermediaries can be the same as that of traditional channels

Source: IRDAI eCommerce Regulations 2017

Regulatory Landscape – Data Protection

Guidelines on Information and Cyber Security- Highlights

- Appointment of chief information security officer
- Responsible for enforcing policies to protect information assets
- Guidelines classify critical systems, cyber resilience program, identification, detection and protection
- Organizations to define and implement procedures to ensure the Confidentiality, Integrity, Availability and Consistency of all data stored in different forms

EU General Data Protection Regulations (GDPR) - Highlights

- Enables individuals to better control their personal data
- The directive is intended to establish one single set of rules across Europe, which EU policy makers believe will make it simpler and cheaper for organizations to do business across the Union
- Data Protection Officers must be appointed for all public authorities
- Data protection safeguards must be designed into products and services from the earliest stage of development
- Allows profiling. Automated decision making will be legal where individuals have explicitly consented to it

Source: IRDAI Guidelines on Information and Cyber security for Insurers 2017, EU General Data Protection Regulation

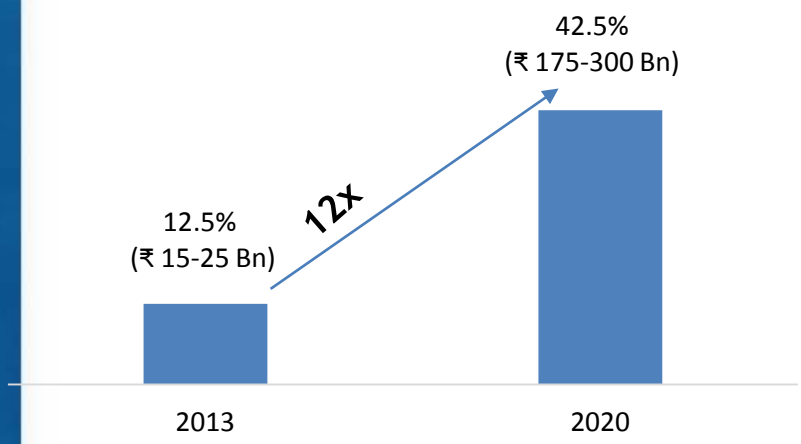
Getting Ready – Way Forward

Institute of Actuaries of India

Digital Transformation

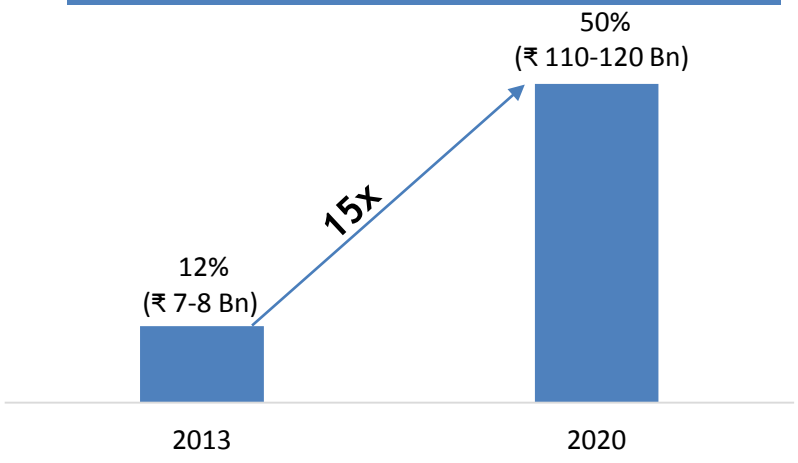
Institute of Actuaries of India

Online Life Insurance Renewals



% of overall individual renewal premiums

Digital Influence in Life Insurance Sales



% of digitally influenced life insurance sales

High growth expected in Digital penetration for life insurance.

Source: BCG Report,2014

Increased Customer Expectations – Experience from other sectors

Institute of Actuaries of India

Competitive Pricing

Create competitive price points and visibility

For example: Web aggregators compare features and prices for various insurers

Timely & Valuable Connect

Use Predictive analytics to quickly meet customer needs

For example: Suggesting a particular product or service to new customers or cross selling to existing customer, based on past interactions

Quick Processing

Capture customer information digitally and quickly

For example: Use of Tab / Mobile devices used to capture customer information

Transactional Ease

Create smooth transactions through easy payment methods

For example: Paperless e-KYC authentication process using Aadhaar through an OTP

Increased Customer Expectations – Experience from other sectors

Institute of Actuaries of India

Omni Channel Experience

Coherent client experience across all channels.

For example: the company collects missing information via dedicated links; agents have the same tool and view as customers

Create Customer Touch Points

Timely interactions to facilitate a smooth and successful journey.

For example: the company offers video chats and connections to third-party providers

Comprehensive Redefinition

End-to-end redefinition of the customer journey

For example: all policies reflect a change in the customer‘s marital status, or the company quickly settles all issues related to a claim. Linking real time database to update customer information

Insurers Will Need to be…..

Institute of Actuaries of India

Data Savvy and Automated

- Data engine and analytics
- Automation using digital technologies

Why?

- Increased adoption of telematics
- Expanding influence of social media and mobile
- Growing pressure on traditional paper-based processes

Flexible and Cost Efficient

- Flexible, cost-effective infrastructure for finance, HR and operations management
- Services-oriented architecture business model

Why?

- Drive for efficiency due to cost and margin pressures
- Growing pressure on duplicative infrastructure across channels

Strategic and Execute Quickly

- Define strategy, identify risks
- Gain perspective of people working in the areas impacted by automation

Why?

- Adopt to the fast changing architecture
- Counterbalance the effect of loss of jobs

Source: EY Insurer of the Future Report 2016

Changing Role of Actuaries

Institute of Actuaries of India

- **Assessing Digital Risks**

  Appropriate allowance in the Economic Capital calculations of the risks of adopting these digital advancements.

- **Assisting the Regulator**

  In formulation of a robust regulatory framework which is quick to adapt to this dynamic business environment.

- **Skill Upgrade**

  Ensure adequate skills and competencies are developed to remain relevant in the digital age.

Institute of Actuaries of India

Questions?

Thank You!