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Editor

Mr. A. P. Singh

Director, Amity School of Insurance Banking and Actuarial Science

Amity University, Uttar Pradesh

Sector – 125, Noida

Uttar Pradesh,

India.

From the Desk of Editor

It gives me an immense pleasure to release the Volume 2 Second Issue (July – December 2019) of Amity Journal of Insurance Banking and Actuarial Science. (AJIBAS). This issue of AJIBAS consists of two conference proceedings of Insurance and Banking held in October 2019 at Amity School of Insurance Banking and Actuarial Science and Four articles on the recent developments in Banking and Insurance Industry. Themes of these research papers are: To Develop a Classification Model for Health Insurance Sector, Revamping Marketing Strategies in Competitive Insurance Environment of 2020, 'Insurtech – The beginning of digital transformation and Application of Artificial Intelligence in Insurance Industry. I hope the readers will enjoy reading these articles while learning the new concepts and procedures being followed by the corporate houses in achieving customer satisfaction and Business enhancement.

We would like to express our gratitude to Honorable Founder President D. Ashok K Chauhan for his constant motivation and inspiration. We are grateful to our respectable Chancellor Dr. Atul Chauhan for his continuous guidance. Our sincere thanks to Vice Chancellor Dr. Balvinder Shukla for continuous guidance and motivating in publication of compendium of papers.

Editor

A. P. Singh

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Conference Proceedings
National Conference Growth Drivers in Economy

Prof R.C.Bhatnagar, Asst Prof B.S.Bisht, Prof (Dr.) Narinder Kumar Bhasin

[HELD ON 22 OCT 2019]

1. Theme of the Conference : Growth Drivers in Banking

Indian economy is currently facing a slowdown due to various factors. The growth rate of many industries including the eight core sectors have decreased to2.1% compared to 7.3% last year. During June this year, it grew by just 0.2%. Private investment in capital expenditure (envisaged capex plan) has not been picking up. As against a growth of 10% in envisaged capex plan of private sector in 2010-11, there is a de-growth of 10% in the envisaged capex plan in 2018-19. The capacity utilization of manufacturing companies seems to be stagnating at 75% levels for the last couple of years. Automobile manufacturing has been coming down in the recent months, a crisis worst since December 2000. Total sales in the automobile industry faced an 18% decline in July 2019 compared to the previous year. As per industry estimate, there have been job losses to the tune of 2.30 lacs in the automobile sector alone. The unemployment rate in the overall economy has also witnessed a sharp increase. As per NSSO job survey, unemployment rate is at a 45 year high at 6.1%. Given this backdrop, Asian Development Bank (ADB) has forecasted a GDP growth of 6.50 percent for FY20. Exports growth has been sluggish for the last 5 years. In the current fiscal, exports have shrunk by 1% due to global factors like the ongoing tariff war and lower global growth. MSME which is one of the crucial segments of the economy is finding it difficult to grow as enough growth capital is not available. In one of the reports by IFC-Intellecap, it is estimated that there is a credit gap of humungous Rs.16 Tn in MSME sector alone.

2. Objective(s) of the Conference (Point-wise)

- To understand the various factors responsible for current slowdown in Indian Economy.
- To Share information about recent steps taken by the Government to stabilise the growth
- To understand the nature of problems in the banking industry, review the various steps taken by the government and panelists to deliberate on the challenges in lending in various segments of banking and suggest innovative ideas to spur growth in lending which in turn will help in economic growth.
- To understand the challenges posed by the Shadow Bank / NBFC`s.
- To discuss the challenges being faced by the regulating agencies in monitoring of Shadow Banking activities
- To enhance Financial Literacy and add value to the awareness of delegates and students in terms of RBI initiatives and Campaign like “ RBI Kehta Hai “

3. Conference Proceedings

3. A. Order of actions: -

- Welcome of dignitaries and students by the anchors for the conference.
- Agenda of the conference was given and topics to be discussed were stated.
- They gave description regarding Amity university: - its history, various departments, different awards and achievements etc.
- Information given about ASIBAS department and different courses being run by it.

- Lightening of the lamp was done by the dignitaries and Director of ASIBAS, Shri A. P. Singh
- Mr A.P. Singh, Director, ASIBAS welcome all dignitaries with a sapling.

Address by: Mr. A.P. Singh - Director ASIBAS

- Lesson for youngsters to have personal quality of commitment and reconcile their personal life with corporate life
- Thrown light on slowdown in economy and decrease in GDP by RBI and IMF
- Slowdown in private consumption pulling down economic growth
- Growth in rural wages is required to spur consumption demand
- Increased liquidity is required in NBFC and MSME sector
- Merger of public sector banks – Too big to fail Banks – RBI`s close monitoring required
- RBI`s surplus capital funds will make PSB`s strong
- Risk Management in Retail Banking is required.
- Risk aversion among bankers in lending / project funding
- Discussion on Corporate Tax and GST.
- Panic situation in the financial system and how even not only PSB`s but private sector banks are facing the heat.

Address by: Dr. D.K. Bandyopadhyay, Chief Advisor Amity Group , Chairman Amity law School

- Changing contours of banking industry.
- Banking has created hilarious moments with recent Bank frauds
- Security of funds in Banks only up 1 lakh as per DICGC Claim
- Explained how the academic institutes like Amity University through Industry 4.0 will give the direction to the nation which will proud the Indian Economy
- Discussed about Implementation of Education 4.0
- Discussed about current Economic Slowdown and RBI Independency.
- Mentioned US Recession story.
- Technology based business competing with present day business.
- Quoted to bring the Industry on Academic floor and academic to industry.

Address by: Prof (Dr.) Balvinder Shukla, Vice Chancellor ,Amity University

- Overview of Changing Contours in Banking Industry
- How education institutes can train their students to manage business socially
- Mergers and Consolidation of Public Sector Banks , Closure of banks , Increasing customer demands
- Strategies and Implementation to face the present challenges in economy
- How to face organisational challenges as well as from Competitors
- Business Intelligence and strong customer connect is required

- Impact of disruptive digital technology and building strong data base is required
- High order of learning and awareness of right business strategy

Address by: Mr. Ashish Bindra, Treasurer , Amity University , Chief Financial Officer RBEF

- Thrown light on Integrity and ethical issue in Banking & Financial Sector
- Banking is probably the best job in the world.
- When economy is growing great , one need to be cautious and when economy is passing through slowdown , one need to be aggressive to put back economy on the path of growth
- Regulations , compliance and integrity is a key to success in banking and finance sector

Address by Mr. Sunil Mehta, Non-Executive Chairman, Punjab National Bank, New Delhi

- Overview of Financial Markets
- Explained the period of Economic Cycle where things can be turned around
- Case Study and lessons learnt from Global Financial Sub Prime Crisis
- Role of Credit rating agencies in assets quality
- Reasons for 2007 Crisis - Excessive liquidity , lower interest rates and higher rate of lending
- Insurance industry plays an important role
- Improve Risk management and Governance
- Integrity & Transparency is the drivers for the growth in the Economy
- Regulators like Government, market players collectively responsible for compliance and integrity
- Impact of Private sector banks - Attitude, Service, Quality
- Role of Public Sector Banks in meeting the recent challenges of stressed assets, frauds, scams by talking timely decisions to protect the reputation of the institutions and strengthen the trust of customers.
- Important steps to address the above challenges:

1. Structural
2. Transformational
3. Innovation
4. Introspect

- In every adversity , there is a positive outcome for future that needs to be introspect
- Banks need to be fully compliant with regulators policies and improved governance.
- Focus on innovation, greater flexibility in dealing with customers , adequate capital and trained HR resources
- Success story of financial inclusion with more 35 crores accounts opened.
- Concluded by saying 5 Trillion Dollar Economy will be reality if all the stakeholders of the economy work together

Address by: Mr. Ajay Kumar, Regional Director Reserve Bank of India , New Delhi

- Case study of the great depression of 1930`s in Britain with over leveraged companies and stock market crash

- Markets are totally interconnected and integrated with impact on various sectors of the economy
- Few examples of real estate markets and auto market sector slow down in last few years
- US subprime mortgage impact on global economy but direct impact on India's banking sector was muted given stringent regulation and consequent limited integration with the global financial system
- Focus of RBI in increasing Financial Literacy since last 15 years.
- Explained the importance of Financial Education and types of Financial Literacy
- Different regulators identify economic growth differently
- Different types of risks in lending – Liquidity , market and credit risks
- Importance of Credit monitoring of borrower
- Biggest challenge is how to analyze borrower's appraisal process
- Each one of stakeholders of the economy has to be responsible, understand risk management, taxation, regulatory structure and to be aware about market
- To understand opportunities and challenges of growth in MSME Sector
- UK Sinha Committee has given 27 recommendations and Nandan Nilekani Committee on Digital cash
- MSME is silver line in India & future of Indian economy growth
- Focused on UK Sinha committee on MSME & Nandhan Nilkeni committee on digital pay
- Strong Financial literacy System will lead to advance financial inclusion.

Address by: Ms Arti Mattoo, General Manager Strategic Management , Punjab National Bank , New Delhi

- World Economy is facing slowing down
- GDP of Indian economy has reduced to 5% in June 2019 Quarter
- Economic health of the economy has direct bearing on the financial system and vice versa
- Challenge to address the decrease in consumption and cyclical and structural factors
- Improvement in asset quality in Banks and reduction in NPA
- Focus on improved technology and digital payment systems for example UPI transactions value rose by 2 million to 246 million in 2 years
- Digital Credit processing , biometric KYC and automatic loan processing system
- MSME 59 minutes loans processing up to RS. 1 crore.
- Importance of demonetisation and how it helped the technology to take over in shaping the banking industry.
- The technology is capable of recording the customer transaction pattern and accordingly offering credit and other products and services thus paving the way for customer centricity.
- JP Morgan and how other banks using multiple apps along with Alibaba.
- Axis Bank disburse loan in 30 seconds.
- Mentioned about corporate lending and IBC code
- KYC, AML's importance with Credit Card and Credit Card blocking facility.
- Importance of NBFC role in the growth of the economy

- Consolidation of Public sector banks to create global sized banks
- Five key to success and takeaways- mobile, partnering with Fintech, cyber security, risk management, workforce for Indian banking (talent + understanding + values)

Address by: Mr. Sukesh Gupta, Field General Manager, Oriental Bank of Commerce, New Delhi

- Indian economy passing through the critical phase
- Effective use of available resources to increase the growth of the economy
- Importance of Corporate banking as driver of economy growth but increasing NPA acted as a barrier
- Explained the reasons for slow growth relating to MSME and agricultural sector
- Strength of Retail / Consumer Banking as a better option for small volume loans and cross selling of products
- Trade Finance – Domestic as well as International Trade as an important source of revenue
- Shadow Banking and Risk Management
- NBFC`s challenges of liquidity and business commitments and ALM mismatch

Address by: Mr P. Ravichandran, DGM, Tamilnad Mercantile Bank Ltd.

- Reasons for slowdown in Indian Economy
- Tough times in banking and NBFC Sector
- Increasing NPA issues and recovery process through IBC Code
- RBI tools to control money supply and credit flow in the economy
- Impact of reserve ratios and policy rates
- Quality of Bank Loan Portfolio

Presentation of memento by Shri A. Singh, Director ASIBAS to Chief Guest and Guest of Honours

Technical Session -1 -Theme: Growth Drivers in Banking

Date: 22nd Oct, 2018, Time 11.30 – 12.30 pm

4. Theme –Ist. Technical Session : Growth Drivers in Banking

Lending by banks has always been the indicator of economic growth of any economy and it is one of the most critical macro-economic indicators for economic growth. For a growing economy, we need to have a vibrant and growing credit market. Banking essentially has the following segments – Retail Banking, Rural Banking, MSME Banking and Corporate Banking.

To enable lending and increased penetration of banking sector, some of the important measures announced by the Government for the Banking sector are:

- Capital infusion of Rs.70, 000 crore into public sector banks, which is aimed to boost lending and improve their liquidity situation. This capital infusion is expected to generate additional lending of Rs.5 lakh crore.
- RBI has released draft guidelines for "on tap" licensing of Small Finance Banks" in private sector to expand the banking services through high technology – low cost operations.
- Consolidation of Public Sector Banks (PSBs) – Mega merger of 10 PSU Banks into big four.
- New export Incentive Scheme which may cost Rs. 50000 Crore announced and fully electronic refund of GST for exporters.

- PSBs along with select NBFCs to fan out across 400 centres to boost lending under RAM -Retail, Agriculture and MSMEsector.
- GST refunds in 30 days and expeditious clearance of arrears for MSMEs,
- No MSME to be declared a non- performing asset till March 31, 2020 ….

4.a Conference Proceedings

Anchors introduced the Session Chair and Panelists followed by the theme introduction by Mr. R. Balasubramanian, Associate Professor. The details of Session Chair and Panelists are listed as below

Technical Session 1 – Session Chair and Penalists

1. Mr. Sanjeet Kumar – Chief Executive Officer, Care Advisory Research and Training Limited, Mumbai (Session Chair)

2. Ms. Shifali Jain - SVP & Group Head -Govt. Business Group -Axis Bank Limited. Noida

3. Mr. R. P. Jaiswal - DGM, Canara Bank, Bangalore

4. Mr.Jyoti Prakash Gadia, Founder & Managing Director, Resurgent India Ltd. Gurgaon

5. Mr. Vikas Miglani , Zonal head ,ICICI Bank , Capital Market, New Delhi

The summary of discussion and opinions of the panelistsare listed as below:

Mr. Sanjeet Kumar - CEO Care Advisory Research and Training Limited (Session Chair)

- Introduced briefly all the panelists in the sessions
- Overview of Banking Scenario in India and growth story in last few decades
- Challenges in Banking Sector in last five years relating to various banking reforms like Demonetization, GST, NPA
- Government Initiatives – Consolidation of Public Sector Banks, recovery process of NPA, Capitalization of PSB`S
- Its right time to take corrective decisions by banks for future growth and leaving the past baggage
- Revival of Corporate Banking is important along with other sectors of banking like Retail Banking, MSME sector.

2. Ms. Shifali Jain - SVP & Group Head -Govt. Business Group -Axis Bank Limited, Noida

- All the stake holders of the economy need to contribute for the growth of the economy
- Various initiative taken by the Government like reduction of corporate tax
- Corporate need to align and adopt new business models
- Short life cycle of products , product innovations and capex mix need to change f
- Adaptation of innovative technology
- Faster processing of loans as the speed is a key factor to change.
- Increase focus on Bills discounting to achieve the lending targets.
- Examples of Invoice mart -Axis Bank backed TReDs platform based and HDFC Bank GeM which provides banking solution to buyers and sellers for e procurements

- Push towards digital lending and reduce paper transactions

Mr. R. P. Jaiswal - DGM, Canara Bank

- Slowdown in Global scenario and its impact on Indian economy
- Share of listed company in GDP – 5%
- Share of all companies in GDP – 15%
- MSME Share in GDP – 50% - MSME contributes 90% of employment opportunity
- Slowdown in mismatch of MSME share
- Three Major sectors – Agriculture , Industry and Service Sectors need to grow
- Example of 59 minutes loan processing
- 20 % people still do not have bank account
- Focus on industry academic relation ship

Mr. Jyoti Prakash Gadia, Founder & Managing Director, Resurgent India Ltd.

- Discussed about various banking reforms – GST , Demonetization , RERA , IBC impacting the economic growth
- Explained the reasons for decreasing consumer demand
- Need to focus on the supply side of consumer demand
- Accountability and personal enquiry against senior level bank officials for business decisions taken in loan proposal turned NPA
- Alternative financing funds through refinancing to corporate after 2-3 years of business commencement
- Improvement required in IBC process relating to timelines and costing.
- Amendments in GST Return format
- Structural changes need to be done
- Economy is passing through transition stage and next 2 years are important for growth of Indian Economy.

Mr. Vikas Miglani, Zonal head, ICICIBank, Capital Market

- Recent developments in Indian Economy
- India `s grows story of fastest growing economy till last on year
- Global financial slow down is the main reason for slowdown in Indian economy
- Focused on sufficient deposits with the Banks for lending purposes but there is risk aversion among the bankers
- Focus on return of capital is important along with return on capital
- Increase in consumer demand so real disposable income can be increased
- More focus on retail banking and lending to smaller segment , scalable projects and increase inc ash flows
- Faster credit processing
- Mix of monetary and fiscal measure will leads to revival of economy

Mr. Sanjeet Kumar summed up the key points of the discussion and Mr. Balasubramanian delivered vote of thanks.

Technical Session -2 – Shadow Banking – The Road Ahead

5. Theme of 2nd Technical Session : Shadow Banking – Road Ahead

Shadow Banking or NBFC Sector is a crucial part of the Indian financial system which contributes to approx. 20% of the overall lending/credit of the Indian financial system. In the last few years the importance of NBFCs has grown significantly because of the increase in their overall share in lending.

As Public Sector Banks (PSBs) were busy sorting out the NPA mess, NBFCs steadily increased their market share and they were sufficiently funded by the mutual funds.

Due to a default in repayment by IL & FS, the fear of contagion effect led to banks and other financial institutions becoming more averse to lending to NBFCs.

Earlier they used to borrow from banks or sell commercial papers to mutual funds to raise funds. Due to tighter liquidity NBFCs have been finding it difficult to raise resources for financing their growth. In the last two years, the sector has seen many challenges of overleveraging, asset liability mismatch, and concentration of portfolio which has resulted in credit squeeze in this sector. Further, the cost of borrowing for NBFCs is still high as banks are risk averse or have reached exposure limits.

In an attempt to ease the problems and provide liquidity to NBFC sector, government and RBI have taken some of the steps mentioned below:

- RBI had recently raised the bank's exposure limit to a single NBFC to 20% of tier 1 capital from existing 15%.
- As announced in the budget, government has come with a scheme to provide a one-time partial credit guarantee with Rs.1 lac crore to public sector banks for purchase of pooled assets of financially sound NBFCs and HFCs. The partial credit guarantee will be for the first loss up to 10%.
- National Housing Bank to provide additional liquidity of Rs.30,000 crore to Home Finance Companies,

While government is proactively responding to the situation, it is not business as usual for many of the NBFCs and HFCs. This has prompted some NBFCs to tap alternative sources such as external commercial borrowings, public bond issuances, or sales of assets. But even then, some analysts are of the opinion that most of their borrowings will be used to repair balance sheets and refinance liabilities. A full-blown crisis might have been averted but it may still take a few quarters for NBFCs to be back on the lending track. Some experts and financial sector analysts are of the radical view that this crisis may result in a few NBFCs becoming unviable and may perish.

5.A Conference Proceedings:

Anchors introduced the Session Chair and Panelists followed by the theme introduction by Assistant Prof. Ms. Anita Kohli.

Technical Session 2 – Session Chair and Panelists

1. Mr. Jatul Anand - National Head Credit Retail Loan - PNB Housing Finance Ltd. New Delhi (Session Chair)
2. Dr. Pawan Singh -MD & CEO - PTC Financial Services Limited. New Delhi
3. Mr. Shailendra Kalra, Zonal Credit Head, IIFL Home Finance Ltd. Mumbai
4. Mr. Abhishek Banerjee - Regional Head -Home Loans, Tata Capital Limited. Mumbai
5. Mr. Santanu Basu - Business Head -Mortgages -Aditya Birla Finance Limited – Mumbai
6. Mr.S.K. Bhargava, Director, Indian Renewable Energy Development Agency, New Delhi

The summary of discussions and opinions of the panelists are as below:

Mr. Jatul Anand - National Head Credit Retail Loan - PNB Housing Finance Ltd. (Session Chair)

- Introduced all the panelists in the session
- Overview of Shadow Banking in India
- Explained briefly reasons of NBFC Crisis
- India`s Shadow Banks are in the midst of crippling liquidity squeeze that threatens to balloon into a full blown crisis
- How to put India`s Shadow Banks on Firmer Ground
- Importance of NBFC role in growth of economy

Dr. Pawan Singh -MD & CEO - PTC Financial Services Limited

- NBFC Coverage Shadow Banking
- NBFC – An important growth driver
- It's a time to act now and not only learn
- NBFC`s constitutes 7-8% of Financial Markets
- Robust Industry with NBFC
- Overview of BFSI Sector

Mr. Shailendra Kalra, Zonal Credit Head, IIFL Home Finance Ltd

- Mortgage to GDP – 10%
- Compliance , Integrity and Ethics in Shadow Banking Practices
- Critical role of NBFC
- Compliance and regulations

Mr. Abhishek Banerjee - Regional Head -Home Loans, Tata Capital Limited

- Importance of NBFC in the economy
- Role of MSME in the economy
- MSME has been depending on NBFC for lending
- Industry is passing through corrective measures

Mr. Santanu Basu - Business Head -Mortgages -Aditya Birla Finance Limited – Mumbai

- Discussed Key points for revival for NBFC`s
- Liability side Management – Get align with the banks – Outsource lending
- Steps taken by RBI to provide liquidity to NBFC
- Asset Side Management – Rely more on retail loans – Due Diligence Compliance –Government Compliance part is important
- Importance of Digital Shift

Mrs. Bhargava, Director, Indian Renewable Energy Development Agency

- Financing Norms and Schemes by IREDA
- Liquidity crunch in Shadow Banking segment

- Collapse of IL&FS
- Adverse Impact on Valuation of Money Lenders

Ms. Anita Kohli Assistant Professor delivered the vote of thanks to all the panelists of Technical Session 2.

Prof. R.C.Bhatnagar. Head of Department – Banking ASIBAS summarized the Key important points of the day long deliberations. Prof. Bhatnagar profusely thanked the Chief Guest, Guests of Honor, Session Chair, Panel members, Delegates and students for their gracious presence and contributions in the conference. He also thanked and appreciated the good work done by Team ASIBAS, Students Volunteers and all the supporting Institutions of Amity University, Noida towards successful conduct of the Conference.

Proceedings of National Conference on Impact of Industry 4.0 on Insurance Cector

B.R.Singh, Dr. Sunil Kadyan

[HELD ON 21 OCT 2019]

Inaugural Session

4. Theme of the Conference: Impact of Industry 4.0 on Insurance Sector

The fourth industrial revolution or Industry 4.0 has become quite a buzzword today. Advanced and growing Economies across the globe are all set to adopt it sooner than later. India has also embarked upon embracing Industry 4.0. in right earnest.

The term Industry 4.0 is synonymous with automation, data analytics, machine learning and advanced manufacturing technologies to increase production tractability, cost effectiveness and profitability. The main focus is on the intelligent networking of machines, systems as well as all other business processes along the entire value chain, in which everything is regulated and controlled independently.

The ultimate vision of Industry 4.0 is to evolve an ecosystem which will enable creation of intelligent factory/ service centre wherein all the business components, operations, activities, machines and devices communicate with each other to the maximum probable extent without human intervention unless warranted. 'Industry 4.0' is also used for digitized production with the ultimate goal of increasing production at lowest possible costs.

Over the last few years, the insurance industry has been collecting data and information for underwriting and evaluating it by linking new algorithms and artificial intelligence principles.

Today, advances in big data analytics, artificial intelligence and the 'Internet of Things' promise to transform the role of data in the insurance business model. These advanced technologies constantly produce a huge volume of real-time data. Systems based on artificial intelligence and self-learning algorithms use an enormous volume of real-time data and feedback.

5. Objective(s) of the Conference (Point-wise)

The main objectives of organizing this conference are -

- understanding various advanced technologies constituting Industry4.0 and impact thereof on the Insurance and allied Industries;
- taking a look at some of the processes and technologies currently being used in the insurance industry and results achieved so far;
- comprehending how advent of Industry4.0 may disrupt the present Insurance business model;
- anticipating the opportunities for and challenges faced by the Insurance Sector in wake of emergence of various new advanced technology trends associated with Industry4.0 in Insurance Sector;
- disseminating/sharing the latest information/developments on the foregoing issues with the delegates and participants including our students;

6. Conference Proceedings

Order of actions: -

- ➢ Welcome of dignitaries and audience by the anchors at the commencement of the conference.
- ➢ Agenda items of the conference were read out.

- Theanchors gave brief introduction of Amity University - its history, various institutes and departments, awards, achievements etc.
- Information was given about ASIBAS, constituent streams and different programmes being conducted by the Institute.
- Lightening lamp ceremony duly performed.
- Mr. A.P. Singh, Director, ASIBAS welcomed all dignitaries one by one with a sapling to each.

Director ASIBAS -Mr. A.P. Singh's Address:

- Shri Singh gave brief introduction of Industry 4.0, and shared his views how it is impacting the Insurance Sector, and
- talked about the usage of emerging technologies such as Big Data, Robotics, IoT, AI, Machine Learning, Analytics etc across insurance business processes;
- stated that India has the third largest penetration of AI skills, after US and China; as a nation we have third largest number of AI start-ups among G-20 nations and are growing at a CAGR of 86% since 2011;
- informed that Investment in AI start-ups in India has grown to US$ 73 million in 2017 from US$ 44 million in the previous year 2018 and around 38% of enterprises were using AI by the end of 2017, and this is expected to increase to 62% by the end of this year (2019);
- said that the conference aimed at fostering knowledge-sharing and deliberating on issues related to use of advanced technology in the insurance industry, through panel discussion among stalwarts of the insurance industry;
- expected that the learned panelists would be seized of these issues and efforts are being made by the insurance sector in reaping the benefits of Industry 4.0. and preparing themselves to face the challenges ahead;
- Also said that he was expecting vibrant sessions ahead on the sub themes of both the Technical Session and an active participation by all.

Address by Prof. D.K. Bandhopadhyay, Chief Advisor to the Founder President of Amity University:

- after welcoming the dignitaries and delegates, as the chairman of 'Education4.0'at Amity University he explained the term Industry 4.0 while touching briefly on the 4 revolutions - 1st Revolution – Steam Engine, 2nd Revolution – Electricity and Mass Production, 3rd Revolution – Computer and Internet, 4th Revolution – Automation; further he
- talked about the significance of the emerging technologies associated with Industry4.0 in the present scenario;
- said that the concept ofIndustry4.0 is going to be taken up in the context of education of Insurance, Banking and Actuarial Science in the Amity University and blue print has already been prepared to implement this;
- informed that Amity University was the first University to adopt 'Industry4.0' in education from session starting in 2019-20;
- ended his address with acknowledging contribution of our founder president Sir in putting education before industry and industry before education.

Address by Group Vice Chancellor Dr.Gurinder Singh

- He began by quoting Mr. Stephen Ross (Chairman, Million Dollar Round Table Conference) who emphasized that if the industry needs to survive, it needs to find a new concept, he also
- mentioned that there has been a paradigm shift in the way business is conducted due to digitization and also expressed his thoughts about the need to integrate the demand of industry with education pattern;
- informed the audience that Amity University is the first University to implement Industry 4.0 in education;

- talked about 'myth and truth' of the businesses: Myth – Public sector doesn't perform, Truth – LIC controls 72% of the life insurance business, Myth – Insurance sector is saturated because Sensex is not going to grow, Truth – It is expected to grow vastly because less than 18% people in India are insured and hence there is huge untapped market (82%).

Address byDr. W. Silwamurthy, President ASTIF

- He began by saying that he believes that India is no more a 'developing' country but a 'developed' one by stressing on the resilience of economic framework of the country tested in perilous times such as Global Recession of 2008 which shook the entire world. He further
- added that our education system is getting tuned to the emerging Industry4.0;
- talked about the Amity Institute of Competitive Intelligence and the education imparted by it which in congruence with Education 4.0;
- talked about the huge contribution of LIC in Finance Sector and in the growth of the Indian Economy in the last 7 decades;
- said that this conference was not a routine type of conference but it would have very concrete and fruitful outcome;
- appreciated the leadership of Mr. A P Singh Director ASIBAS and his choice of appropriate theme for this conference;
- talked about Hon'ble PM's vision of India becoming a $5 trillion economy and a global economic power by 2024-25 and said that there are 3 pillars to achieve the dream – education, occupation and healthcare;
- said that despite having huge intellectual capital, Indian Economy has not grown much faster because we leg behind in strategy, we should define the trajectory in which insurance sector needs to move.

Address by Mr. M R Kumar, Chairman, LIC of India

- He said that presently the whole industry is witnessing a disruption like never before, what is going to happen in the next decade that might not have happened in the last 20,000 years, and then he
- expected that many of fortune 1000 companies may be replaced by new 1000 fortune companies by virtue of their embracing emerging advanced technologies;
- informed the audience about some companies are already implementing pilots projects involving 'prioritized parts of value' which are bound to have a seismic impact in the next few years;
- said that insurance industry - Life and Non-Life would grow at phenomenal growth rate in the next few years as there is huge potential for growth;
- stated that by 2025, approximately one trillion products are expected to be connected and by 2030, most of the manual underwriting would cease to exist and would be replaced by models based on deep learning;
- shared that use of AI will revolutionize the insurance industry and reduce human involvement to very complicated cases, underwriting will be completed within few seconds and the claim management will become very efficient;
- stressed on the need of strategic plans – to touch operation, talent and resources as the innovation is accelerating and radically shaping the entire value chain.

Address of Mr. Amit Kalra, Head-Global Services, SwissRe Global Business Solutions India Pvt. Ltd.

- He began his address by presenting a global perspective of Insurance business which he said had two attributes – first, it was largely conventional (because insurance is more of a push industry) and second, it presents a wide opportunity (because it's poised to a $5 trillion market in years to come), and further

- talked about the present scenario saying that "Insurance industry has been UBERised" i.e. AI has revolutionized insurance industry in much the same way as UBER revolutionized transportation industry;
- talked about future possibilities by stating the various facets : first - risk focus (shift from 'protection' to 'prediction and prevention'), second – new risk pools (untapped market in terms of emerging risks), third – product (shift from 'product' focus to ' customer focused' approach), fourth – industry interaction with customers (engagement will decline), fifth – distribution (at present it is inefficient and in the future it will command more partnerships with various aggregators and need of technology), sixth – operation (from paperwork to digitization), high value low frequency claims to be settled within a couple of minutes);
- emphasized the significance of database and talked about success of a China based company which was said to have a database of 900 million people and he went on to say that "data is the new oil";
- also briefly discussed about the three approaches currently available in the industry: first - observation (watch but don't touch), second – experimentation (touch but don't use- investing in Insurtech), and third – value generation (touch, use and earn profit);
- Concluded the session by saying that he believed that the transformation requires more than just technology, it requires right mind set and effective leadership too.

Technical Sessions

Technical Session -1: Use of Artificial Intelligence in Underwriting and Claim Settlement in Insurance

Mr. Deepak Dhar, Sr. Vice President (Bajaj Allianz general Insurance):

- As the session chair he introduced the concept of Artificial Intelligence and set the tone for deliberation, and further said
- there is a huge power of AI if utilized to its full potential;
- every sector of the economy is in the transition state from human intelligence to artificial intelligence and a lot has to be done for realizing the full potential of artificial intelligence as it solely depends on the availability of huge relevant data;
- AI is being used to ease jobs which are competitive in nature i.e. it will help in reducing the human load and enhance efficiency in insurance business (i.e. renewal of policies);
- since AI is a simulation of human intelligence for given environment, it requires an enormous database in certain process like settlement of claims, which require each and every slight detail relevant for it;
- in case of underwriting the use of A.I will depend on the type of product, if the cover is provided for property like house, the requirement of data is simple but for property like big plants of oil, the data requirement is much more complicated;
- Gave an example of Motor claim which can be settled in a very short time by use AI on the basis of pictures of accidental vehicles without much of human intervention.

Mr Rakesh Yadav (Sr trading underwriter, Royal Sundaram General insurance co. ltd):

- According to Mr. Yadav, BFSI space is still not able to properly utilize the data for automation and the Insurance Sector is the last sector in BFSI to adopt AI, he further says
- AI is a combination of both intelligence and automation;
- anything with few parameters can be transported to AI and the insurance industry works on different parameters for different aspects;
- AI can be used for prudent underwriting i.e. in health insurance all information like age, habits, diseases, life style etc. can load or reduce the premium to be charged from a particular customer;

- AI has made claim management very efficient, for example photos of accidental vehicle can be sent by the insured in real time and with the use of AI claim can be settled within hours and money is automatically transferred to his Bank Account with least human intervention;
- One of the drawbacks of AI is that an intelligent machine has no emotional quotient and unable to take decision in very critical situations.

Mr. Rambir Singh (lead digital solution (AI), EXL services ltd:

- Mr. Rambhir Singh started with explaining the concept of AI and then differentiated between Innate and Acquired Intelligence; he further
- talked about the significance of Data management in AI in case of General Insurance;
- stated that AI requires a large amount of quality data for being used in the operations;
- informed that by adoption of AI,claimant gets his claim using his phone/Chat bot;
- use of chat bot is reducing heavy manual work and enhancing efficiency in insurance companies;
- a chat bot is easy to use by feeding therein all relevant data, identifying its purpose and train it for all possible scenarios;
- repetitive or monotonous tasks can be taken care by these chat bots.

Mr. Syed Sheikh, Corporate Vice President-Underwriting and Claims, Max Life Insurance Co. Ltd.

- He endorsed to the view of other panelists that sufficient and quality data is very important for data analytics and AI in insurance; he further says that
- he is of the view that we are in the initial stage of this A.I era, machines can only make work efficient but do not have the emotional quotient that's why human intelligence can never be overpowered by the artificial intelligence;
- most of life insurance companies are able to automate 75% to 80% of their underwriting process;
- by using AI supported by data analytics customer experience can be enhanced;
- data analytics makes underwriting personalized by using the past and present data for the future.

Technical Session -2: Role of Data Analytics in Insurance

Mr. Harjot Narula (Director, Global Logic):

- As the session chair he introduced the concept of Data Analytics, talked about the significance of data in the present scenario and set the tone for deliberation; according to him
- like other industries, Insurance industry also survives on data; all core activities like pricing , risk assessment, underwriting, claim management etc are done on the basis of data analytics;
- behavioral data of the customers is now considered as one of major factors for pricing and underwriting of the product;
- Behavior tracking of the customers should be done without invasion of the privacy of the customers.

Mr. Biswajit Nayak (Director, Grid Analytics India Pvt. Ltd):

- An expert on data analytics, he says with conviction that we are living in the data intensive world, every economy is data driven and there is huge potential of data analytics in all sectors including Banking and Insurance Sectors; he further says
- the beauty of data analytics is that it is domain independent-it can be used anywhere;
- there are five types of data analytics - descriptive, diagnostic, predictive, prescriptive and cognitive;

- descriptive analytics is a field of statistics that focuses on gathering and summarizing raw data to be easily interpreted; we can describe nature and characteristics of parameters;
- through diagnostic analytics one can find out anomalies, unusual behavior and strange pattern which give us warning signal to get proactive;
- predictive analytics is a form of advanced analytics that uses new as well as historical data to forecast trends, it is one of the major analytics which is being used for forecasting future business volume, claim ratio and even fraudulent claims;
- after having predicted that a fraud is going to take place we can ensure that system is in place to prevent fraud or prescribe some mechanism or measures to prevent or control that fraud- this is known as prescriptive analytics;
- Cognitive analytics deals with human psychology, sentimental analysis or opinion mining (way to determine and categorize opinions about a product, service or idea) taking decision and finally solving problems.

Mr. Sajja Praveen Chowdhary (Head, motor insurance, Policy bazaar):

- He believes that structured data should be maintained so that data analytics can be utilized at its best in any processes of insurance and further says that
- data analytics is used for enhancing product offering (making product available at a certain price);
- retention of the customers can be done by Insurers with the help of the data analytics;
- data analytics can be used for enhancing customer experience for example if an insured has not reported any claim for the last few years, such insureds must be paid claim instantly with least formalities;
- Insurance industry trying to provide best services to the new customers with the help of data analytics;
- Telematics is one such example which is a use of analytics in the field of motor insurance used for recording the data about the vehicle and the driver/ claimant;
- to check the authenticity of the customer, online valuation is done by OTPs and some special questions in case of online channels of insurance;
- Professional Surveyors' work is being now limited to only higher claims where complexities are high while dealing with claims scrutiny.

Mr. Rishi Aggarwal (VP, Conneqt Business Solutions Ltd):

- According to him data analytics and AI are interrelated; and
- data is the new oil and data analytics is the engine for the vehicle that is insurance;
- on the basis of data analytics Mobile Phone companies came to know that about 95% to 98% claims reported under mobile phone insurance were for replacing phone screens so they started offering mobile phone screen insurance free of cost at the time of sale;
- services of 'Insurtech' start-ups are taken in the industry for maintaining the database which is being used for many purposes including retaining customer with the same company;
- In US, an insurance product in which a car tracking device is installed for 2 weeks in the vehicle and the driving behaviour of the insured is observed and then premium is charged according to that information gathered, this is form of personalized policy premium.

Mr. Abhyendra Singh (VP data analytics, Max Bupa Health Insurance):

- He observed that gathering and analyzing data such as discharge summary from hospitals in case of health insurance, role of business translator, propensity model and retention of customers help in assessing the risks in underwriting and other operations of the firm; and further say

- database is vital for data analytics and customer engagement is very important for building data base;
- how to use analytics team for conducting business in an insurance company is a moot point to be taken care of;
- collection, capture, extraction, analysis and inference in the process of data analytics are very important stages and one has to be very careful at each stage to make best use of data analytics;
- the quality of data and how it is created are important for any data analytics;
- devices, apps and other ways of getting information are helping in enhancing the customer experience.

Mr. S. Kattamuri (VP, corporate solution, Swiss Reinsurance Company Ltd (Swiss Re) :

According to him:

- the major work for insurance sector is to identifying the risk and working on it;
- there are three major ways that analytics is working in insurance industry – (1) marketing and sales, (2) underwriting and operations, and (3) actuarial and claims;
- for marketing insurance companies depend on external data like information from Balance sheets of corporate clients and then targeting the market;
- data analytics helps in risk assessment for example from the number of warehouses in a low lying areas insurers can arrive at an estimate of loss owing to flood or inundation:
- Data analytics and machine learning together are bringing challenges to the existing practice of the actuarial work.
- by using traditional actuarial methods ten actuaries of different insurance companies may arrive at the same price of an insurance product but by virtue of data analytics and machine learning an insurer may have competitive advantage over other players in the market in determining a much more judicious price;

The conference came to end with the vote of thanks proposed by Mr B R Singh, Asst. Professor, ASIBAS.

To Develop a Classification Model for Health Insurance Sector

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Health insurance is used to cover expensive medical cost of the treatment. Many different types of health insurance policies are available in market to cover different types of medical treatment. These insurance policies are available for some specific disease or for generic treatment, hospitalization and other costs related to medical. This paper is trying to predict whether a particular policyholder will be taking an insurance claim or not under certain health conditions.

Key Words: Health Insurance, Classification, J48, Machine Learning, Insurance Claim

Introduction

Insurance can be defined as a contract between company and customer represented in terms of policy, according to which group or individual receives financial support or reimbursement from insurance company. The company pools clients' risks to make payments more affordable for the insured. This paper is trying to predict whether a particular policyholder will be taking an insurance claim or not under certain health conditions. According to this data, we will have attributes like age, gender, body mass index, children, smoker, region and the charges for building our model. We will also take into considerations the factors involved in this model majorly and also run our model through different datasets according to the time frame and then build a conclusion through the decision tree using Weka Machine learning software.

Literature Review

There are basically three main grounds for health insurance. First, one cannot predict illness. Second, it's very difficult to plan the cost of hospitalization. Third, the proportion of people require hospitalization during illness is less as compare to number of people take policy therefore permits of risk-pooling(Krishnan 1996).

Claim management heavily dependent on human resources has a fundamental problem dealing with appropriate claim processing when complex organizational issues are involved (Hodges, 2002). Assessment and review of claim process require heavy cost of administration for settlement of claims (Remler at al., 2003). With the use of IT the whole process of claim can be made more effective (Morraet al., 2011). Most of the hospitals are already using latest technologies of IT to provide better health services like maintaining electronic health records of customer and decision making using health care information system (Chae, 2011, Henricks, 2011, Kim et al., 2011, Devine et al., 2010).

Research Methodology

In this paper health insurance data was used which consist of 1328 recordsor instances. From this data seven attributes were selected details of which is given in Table I.Weka Machine learning software is used to develop a Classification Model for Health Insurance Sector. To develop that model J48 classification algorithm is used. Detail of different attributes along with class attribute "Insurance claim" is shown in Fig. 1.For example class attribute has 783 instances supported "Yes" label and 555 instances supported "No" label.It also show total attributes are 8 and total instances are 1308.

Table I: Attributes and their description

Attribute Name	Description of Attribute
Age	Age of policyholder
Sex	Gender of policy holder
BMI	Body mass index, providing an understanding of body, weights that are relatively high or low relative to height, objective index of body weight (kg / m ^ 2) using the ratio of height to weight, ideally 18.5 to 25.
Children	Number of children / dependents of policyholder
Smoker	Smoking state of policyholder
Region	The residential area of policyholder in the US (northeast, northwest, southeast, southwest)
Charges	Individual medical costs billed by health insurance
Insurance claim	yes, no

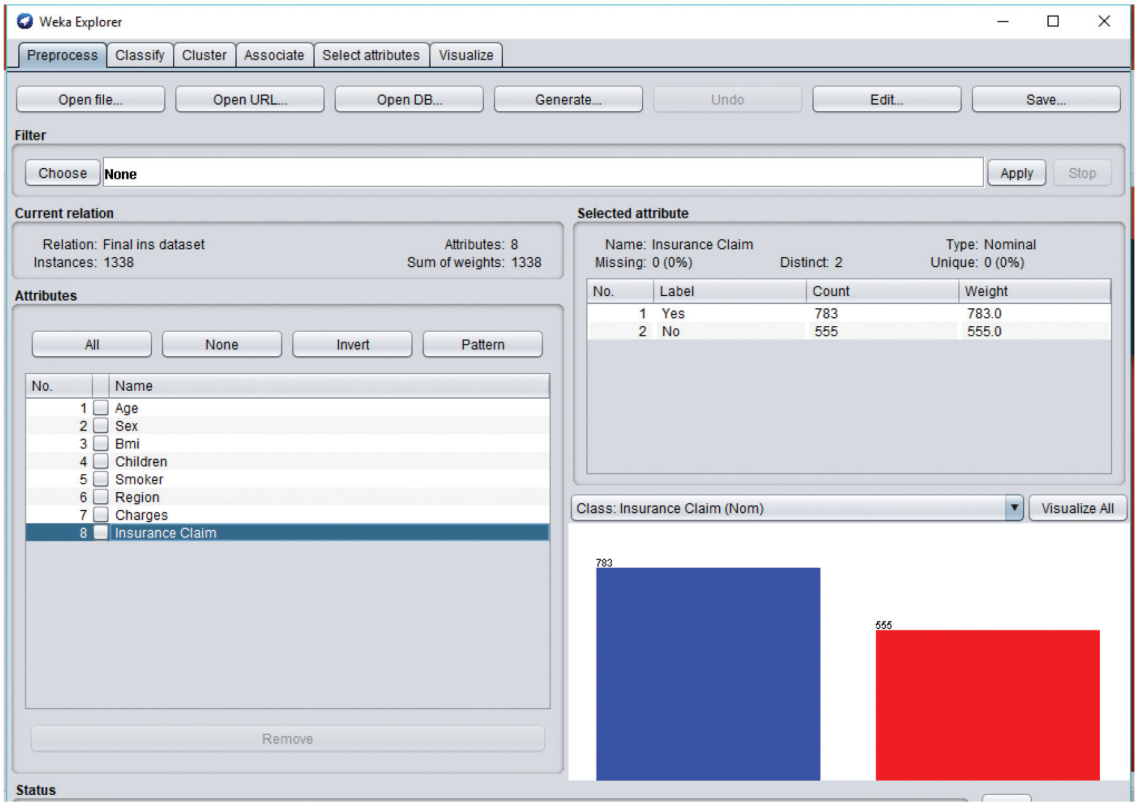

Fig. 1: Detail of attributes in Weka software

The visualization of all attributes is shown in Fig. 2. In which blue color (Dark shed) is showing the proportion of "Yes" label and red color(Light shed) is showing proportion of "No" label for the class attribute "Insurance claim. Where "Yes " means claim has taken by the customer and "No" means claim has not taken by the customer.

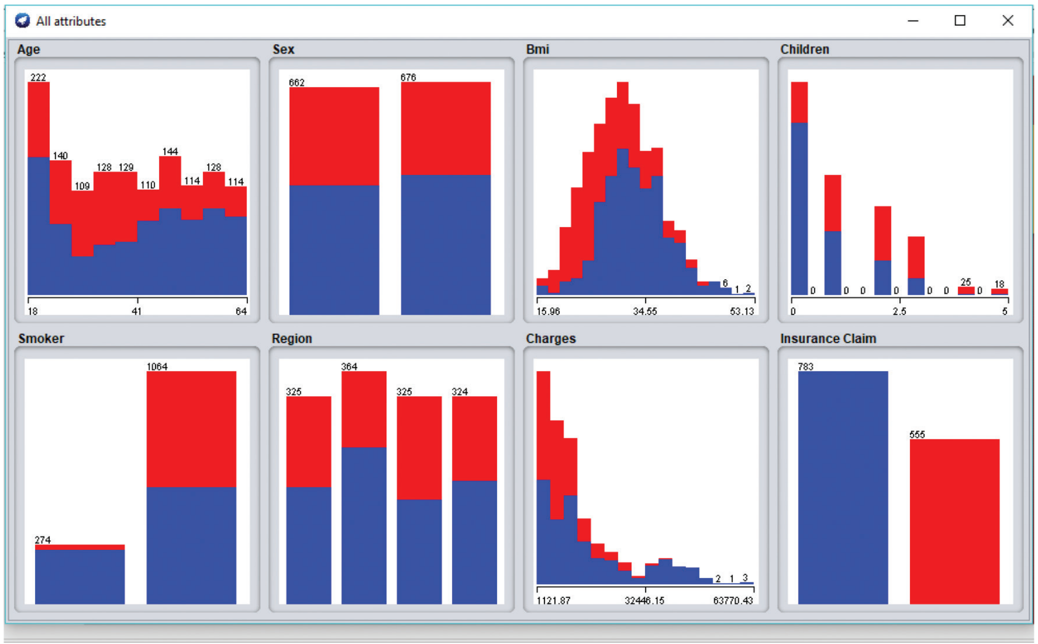

Fig. 2: Visualisation of attributes

The result of J48 classification algorithm is shown in Fig. 3. Which indicate 97.8 percentage of correctly classified instance and 2 percent incorrectly classified instances. In the lower portion of result, confusion matrix is showing the difference between actual and predicted class. The sum of diagonal element which is 1309, showing correctly classified instances. While non diagonal elements sum is 29, showing incorrectly classified instances.

The decision tree or predictive model obtained after applying J48 classification algorithm is shown in Fig. 4. With the help of decision tree various decision list can be prepared which support the historical data of insurance claim. In decision tree all the attributes are shown as node of the tree. The value of attributes on which decision taken represents as edge of the tree. The leaf of the tree indicates two labels of claim attributes "Yes" and "No".

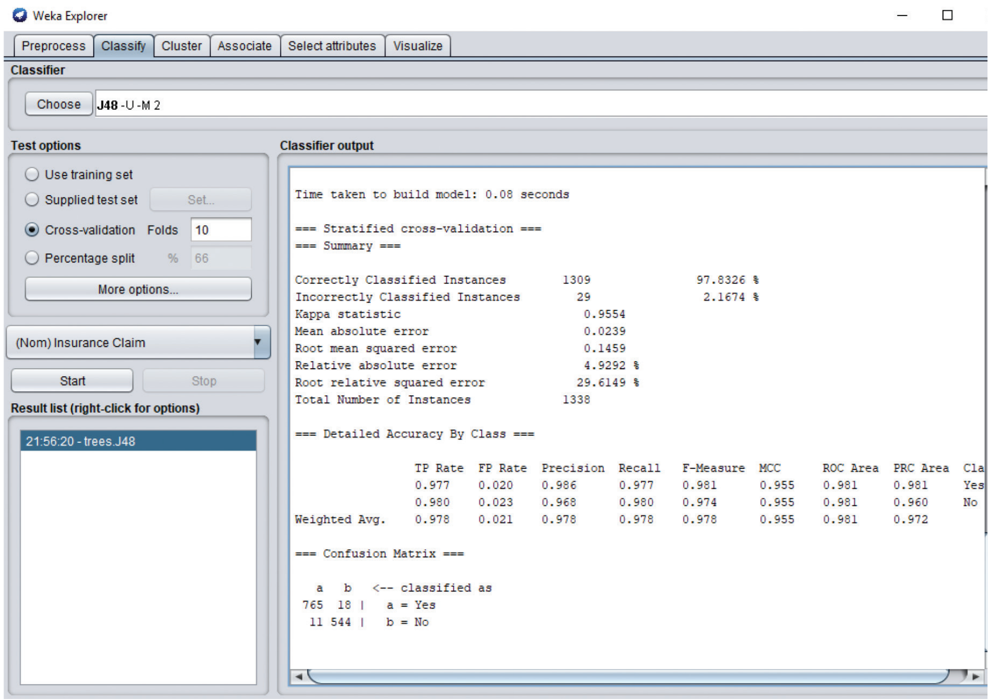

Fig. 3: Result of J48 classification algorithm

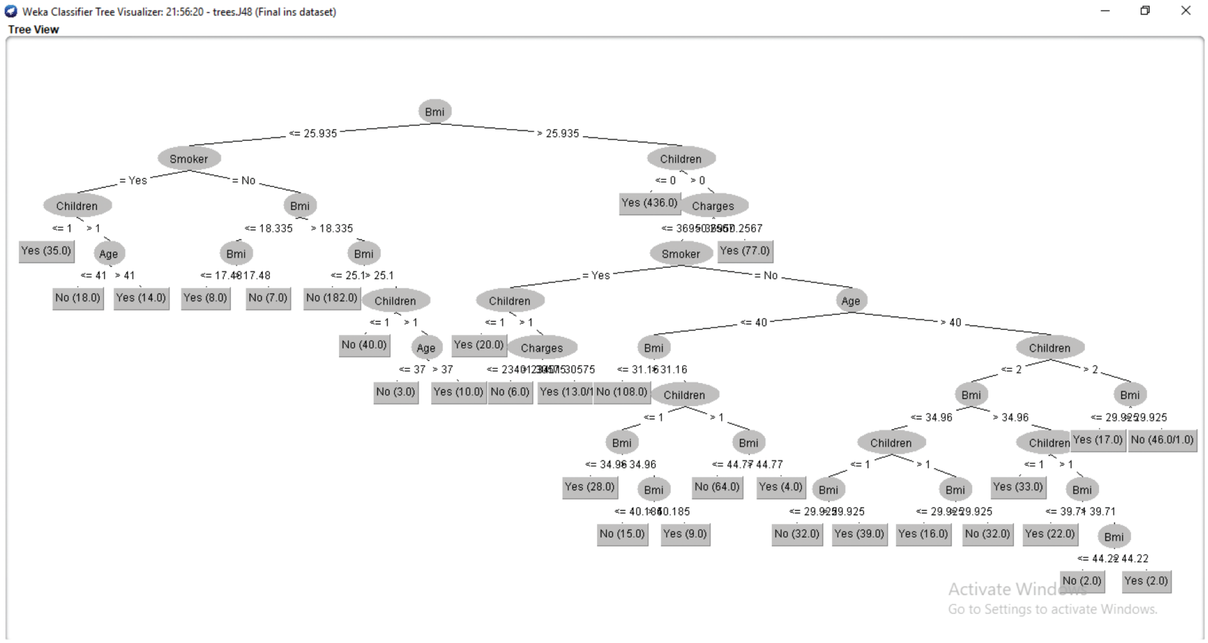

Fig. 4: Decision tree (Predictive Model)

Findings

In this data of health insurance, by applying J48 algorithm, the correctly classified instances, which tells us about the accuracy of the model is 97.8326% and incorrectly classified instances are 2.1674%. We observe that accuracy of about 98% is way too sufficient to prove that the model is good.

As we can observe from the decision tree that the major deciding factor that whether the policyholder will take a health insurance claim or not is the BMI (Body mass index) of an individual. If the BMI is less than or equal to 25.935 then we will observe whether the policyholder is a smoker or not, taking forward if the policyholder is a smoker then we will go ahead with the attribute of number of children he has, if he has less than or equal to one child then he will take the claim ; on the contrary if he has more than one children then there would be another factor for consideration that would be his/her age , if the age is less than or equal to 41 , then he will not take the claim but if the age is more than 41 than he will surely take the claim.

Similarly, we have a number of possibilities for different policyholders determining that they will take the claim or not.

Conclusion

The final conclusion of the study is that the predicted model is good as its accuracy is 97.8%. The major contribution of the attributes deciding whether customer will take claim of policy is BMI, Smoker, and No. of children and age of the children.

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Revamping Marketing Strategies in Competitive Insurance Environment of 2020

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In the second decade of the 21st century, we witnessed rapid technological advancement at phenomenal speed. In just 10 years, a huge portion of human life was affected by digitization. This technology disruption changed significantly every industry all over the globe and the insurance industry is no exception.

Insurers have traditionally been slow adopters of new tools and technologies. However, of late the insurance industry has been evolving and both vendors and consumers are looking to take advantage of the newly emerged technology advancements. Today, we are on the verge of a new decade that is being foreseen as even more disruptive in the wake of new technologies associated with insurance business.

Keywords: Content Marketing, Digital Ridesharing, Web Aggregators, Insurtech, Cyber Security, FNOL, SEO, Value Chain automation, Chatbots.

Introduction

Traditionally, the insurance business has been dominated by intermediaries who have played the role of understanding consumers' needs, and then matching and tailoring insurance products and solutions to their needs. Internet, mobility, connectivity and social networking have changed the game over the past decade and have created a new generation of customers who demand simplicity, speed and convenience in their interactions with insurers and intermediaries. These trends will accelerate, leading to a situation where customers will be more willing to buy direct using their online and offline trust network of friends and family to guide their choice. This will result in redefing the role of advice and the disappearance of distributors as a sales channel.

Literature Study/Review:

To conduct this study, researcher has extracted secondary data from research papers published in various national and international journals, published by eminent newspapers articles, blogs and websites. He also discussed the matter in detail with the Insurance professionals, intermediaries and corporate and individual customers.

Research design and methodology:

The nature of this study is descriptive and exploratory, wherein relevant data has been collected on secondary basis from various sources such as published research papers in national and international journals; published reports, newspapers and websites. The researcher has used content analysis technique to analyse the collected secondary data. To conduct this study, the researchers, applied their own experience varying from 20 to 35 years in the field while working as Insurance and Marketing executives thereafter as teachers of Insurance and Marketing Management.

Objectives of the study

The objectives of this study are as follows:

- to apprise the readers of emerging technology trends and impact thereof on the marketing strategy of insurance industry;
- searching the possibilities of transforming Insurance marketing through new emerging trends in global insurance market;
- to spotlight the ever increasing significance of social media in insurance sector;
- to highlight the new emerging innovative insurance products;
- searching the possibilities of transforming Insurance business practices through Social Media;

Scope of the study

- This paper provides valuable input for various players who are willing to revamp marketing strategies in their organizations.
- This paper should be found quite informative by the Insurers, Insurtech companies, and Web aggregators etc who have decided to embrace the emerging technologies.
- Through this paper insurance companies and other professional can conduct micro research paper.
- Apart from marketing strategies, this paper will dwell upon the judicious underwriting practices in the changing landscape.
- According to this research it can be inferred that in future emerging trends will bring new challenges and opportunities for insurance industry.

New Technology Trends and change in marketing strategy in Insurance

Following are the emerging insurance industry technology trends, which are expected to help those players who embrace them, stay competitive in business and satisfy their customers' needs.

1. Increasing internet and mobile penetration

Internet, mobility along with conversion to smart phones is growing speedily in India. As per McKinsey's report, India is one of the largest and fastest-growing markets for digital consumers, with 560 million internet subscribers in 2018. According to this report, India's internet user base has grown rapidly in recent years, propelled by the decreasing cost and increasing availability of smartphones and high-speed connectivity, and is now one of the largest in the world.

With 900+ million mobile subscribers and 451 million monthly active internet users at the end of financial year 2019, India is now second only to China in terms of internet users, according to a report published by Internet and Mobile Association of India (IAMAI). Internet users in India are expected to register double digit growth to reach 627 million by the end of 2019, driven by rapid internet growth in rural areas, market research agency Kantar IMRB said.

According to McKinsey, Indian mobile data users consume 8.3 gigabits (GB) of data each month on average, compared with 5.5 GB for mobile users in China and 8-8.5 GB in advanced digital economy of South Korea. In 2018, Indians hadabout 1.2 billion mobile phone subscriptions and downloaded more number of apps (12.3 billion) than residents of any other country in the world except China.

There is a general positive buzz about e-commerce which seems to transform the way we live, purchase and dispose of. The way general insurance products are bought and managed is changing fast. Today, a flyer is able to buy and change a travel insurance policy on the internet in sync with last minute changes in the travel plansowing to any reasons. Likewise, innovations to other areas of insurance would also become possible with high degree of connectivity and automation that is coming up rapidly.

2. Rise of Insurance Web Aggregation Channel

They started as simple lead-generation websites in the last decade but many of the Insurance Web aggregators have become now advisory platforms with advanced broker functionalities and robo-adviser features that help consumers choose among a wide array of products. Now consumers are increasingly using aggregators' services both at the start of their journey, to get an overview of the market, and at the end, by purchasing from the aggregator rather than the insurer. Today almost 50% of online insurance in Europe is sold through aggregators.

For many insurers, aggregators have become the customer-facing front liners of their business. Aggregators have the potential to become a permanent front end for customers searching for financial and insurance products.

The evolution of web aggregation will have significant implications for insurers who must first identify the leading aggregators and evaluate the pros and cons of aggregators' business models. Then they must choose how to react- steer clear completely, collaborate by designing products for aggregator channels, or actively pursue acquisition.

3. Digital Ridesharing Platforms

Ridesharing which has resulted in fewer people owning cars is transforming the whole landscape for the insurance industry, eroding premiums and in some cases reducing the size of the market.

One of the significant insurance industry trends is the ride-sharing service. Ridesharing companies like Uber could have a big and lasting impact on the insurance industry because of the emerging need for ride-sharing insurance. At the moment, not too many freelance drivers have ride-share insurance.

The results from a recent study show that only about 20% of them are insured. Uber alone has an estimated 400,000 drivers around the globe, which means there are several hundred thousand drivers involved in ridesharing who are not insured.

The complex part of rideshare insurance is when coverage applies- there are three "periods" of ridesharing: when you've turned the app on and are waiting to match with a passenger; when you've matched and are en route to pick them up; and then when the passenger is actually in your vehicle. During each period, there are certain limits or exclusions of coverage.

Getting insurance may not be as easy for the drivers as it may sound. Insurance industry considerrideshare drivers as independent contractors. Their vehicles are used for personal driving as well as for business purpose.

That makes insuring them in a somewhat of a gray area. This is because personal insurance offers no protection for the driver if he uses his vehicle for business, and a commercial insurance plan is only for vehicles used strictly for business.

4. Cyber Security

While risk management is something that insurers deal with on daily basis, they seem to be a bit behind in terms of cyber precautions, when compared to other financial sectors. Insurance agencies haven't been the targets of hackers all that much, however, as other targets become more secure and inaccessible, attackers are moving on to more unprepared targets.

General liability providers offer cyber security coverage because cyber risk is an emerging trend and line of business that keeps growing, with the potential to generate future revenue growth.According to Reportlinker.com the cyber security insurance market was valued at USD 5.48 billion in 2018, and is expected to reach USD 20.72 billion by 2024, registering a CAGR of 24.30%, during the forecast period (2019-2024). Cases ofclandestinely accessing sensitive business data, like employees' personal information, intellectual properties, financial records etc have been rising, which, in turn, is driving the cyber security insurance market.

5. Automated self-services enabled by insurance technologies for prompt claim settlement

Automated self-services enabled by insurance technologiesand resultant improved customer experience in Insurance claim settlementare becoming a trend in the industry. When handling an insurance claim, a large part of the customer's premium is spent on the process itself.This is due to many reasons such as everything being manual, the carrier wanting to double-check the claim and customers not always telling the truth. The solution is to have the customer manage the claims process. While taking a self-service approach may sound counter-intuitive, the customer provides video and images at First Notice of Loss (FNOL) and is in control of the claims process.

When a good portion of the minor claims are handled and reviewed autonomously instant pay-outs can easily be achieved and only in a matter of hours the customer can have his claim amount credited to his Bank account.

6. All-in-One Insurance Policy

The All-In-One form of insurance is steadily turning itself in an emerging trend. From a customer's point of view, it makes perfect sense and provides great convenience to something that is usually a hassle.

When companies in the insurance industry have all details about their customers (cars, home, health, travel, pets, and possessions), they are able to provide a single overarching policy at a competitive price. Since for the most part, this is AI territory, it would be fairly easy to be automated.

Bajaj Allianz General Insurance Company has been one of the pioneers in issuing such policy a few years back in the form of Star Package Policy. The policy offers to cover multiple risks and contingencies faced by an individual under a single policy.

7. Changing business model

The conventional insurance model used to be product centric and marketing-channel driven, while the modern model will keep the customer at the core along with a suite of digital technologies and ecosystems to tap the customer base. Incumbents needs to embrace the changing business models or they risk losing a major chunk of pie to new participants. Though unimaginable today, a 'wallet vs. banks' type of battle could break out in the insurance sector too. A common topic of debate is whether existing distribution channels will be relevant in the digital world or become redundant. Technology is rapidly enabling all parties involved in the value chain to become more productive and thus improve their returns on effort.

8. Insurance Value Chain Automation

The emerging trend of automation will certainly have lasting effects on the insurance industry, because a significant part of its business still operates via pre-Internet methods, which are considered outdated in today's world.

Another reason is the fact that many personal lines are being automated. Small parcels of insurance protection cannot be packaged and sold using only human effort and remain cost-effective.

The customer demand for automated solutions is a considerable factor in favour of the automation in insurance. The increasingly demanding customer of today wants a purely digital experience for the sake of effectiveness and simplicity.

9. Engaging consumers actively on social media

There are over 270 million uses of Face book in India, making it the largest country in terms of Face book user size. That means if Face book audience in India were a nation, then it would be ranked fourth in terms of largest population worldwide.

Historically, insurance isn't known as being an industry that emotionally connects and interacts with consumers. Yet, some of insurance policies cover very emotional events and incidents in the life of a person. Social media is known to be a powerful tool to create customer connections and to engage with consumers on a more personal level. If used judiciously, social media can establish your brand's reputation as being customer focused, reputable and trustworthy.

Consumers often turn to social media when they are looking for relevant information to help them take a decision about which insurance company to purchase insurance from. A study conducted by Accenture says that about 48% of consumers consider comments on social media while making insurance-buying decisions. Another research done by Celent indicates that insurers stated marketing as being the top benefit of social media, followed by customer service and new sales leads.

Insurance, has not penetrated much in India. Currently, only 20 per cent of women and 23 per cent of men in the country are covered by health insurance. Social media is an influential way to develop your brand identity and consistently engage with your target audience.

10. Cohesive brand message across channels

Most of the Insurance companies in India today mainly operate in the offline space, not only in terms of marketing but operations also. When transitioning to digital, companies need to ensure that their branding is consistent and interconnected on all platforms. It is crucial to have a uniform, consistent and strong brand image to improve recall value (information retrieval) among customers. All of future communications, promotions and other marketing activities will depend upon the brand image that a company creates.

If the customers are provided a constant flow of content they keep your brand at the forefront of their minds and also they remain engaged and connected. This is precisely where many companies fall short. By maintaining a consistent presence, you gain brand equity that will keep your brand relevant over time.

Here are some of the main benefits that will result from a cohesive brand strategy:

a) Recognition - By keeping all components consistent and cohesive in your brand strategy, audience will start recognizing your voice and will know who you are and what is your USP (unique selling proposition). This goes hand-in-hand with making sure that your logo is present and consistent on all items promoted to the public.

b) Trust - By incorporating a consistent tone and voice into all of your messaging, you create your own brand personality. If you are bouncing around with your messaging, members of your audience will question your intentions and feel less convinced about your brand.

c) Loyalty - Once people know who you are and your brand has earned their trust and customer loyalty, you have established a group of active audience members who will be always by your side and, by all probability, will share your message with their friends.

11. Create and maintain a comprehensive & performance driven website

A study on Customer Behaviour and Loyalty in Insurance conducted by Bain & Company found that more than half of all insurance holders choose a provider only after doing research on digital platforms. When developing a website for your insurance brand, you need to ensure that it isn't just visually pleasing, but is also easy to navigate and user-friendly. Your website must be able to provide consumers with all the information they need to make an informed decision.

Homepage personalization is one of the most popular types of personalized and positive user experience. It is also important to ensure that the pages are focused on driving action and driving enquiries or purchases. You can consider creating a login for your customers, which allows them to see details of their plans and customized suggestions based on their needs. It's also important that you optimize your website with strong SEO (Search Engine Optimization) techniques to drive organic traffic and gain greater visibility.

12. Establishing the brand as a thought leader through Content Marketing

As many of us know content marketing is a type of marketing that involves the creation and sharing of online material (such as videos, blogs, and social media posts) that does not explicitly promote a brand but is intended to stimulate interest in products or services depicted or talked about. Content marketing is distinctively suited to the marketing needs of insurance brands. Choosing an insurance provider is, generally, not a quick decision, nor is it a one-time process. Customers need to review and renew their plans periodically, at which time they can even decide to switch providers. Effective content marketing techniques can help the insurers gain the trust of their audience by establishing their brand as a thought leader in the field. When supported by effective SEO strategies to increase organic traffic and help their content rank higher, content marketing can be one of the most useful ways to reach a wider audience.

13. Use of chatbots for improved customer service

Large insurance companies usually handle enormous volumes of customer queries every day. According to a Google Report, there has been a 64 per cent growth in queries related to motor insurance, which has also been a key driver in generating leads. It will be appreciated that timely resolution of the queries is essential to improve customer experience and to generate leads. But insurance companies may not always have the requisite manpower to perform this task effectively. To handle large-scale customer queries and streamline their various processes many players are turning to AI-powered solutions like chatbots.

As a majority of insurance-related queries are related to broadly similar topics like the price, duration and terms of various insurance plans, chatbots can resolve them much faster and more efficiently than human beings can do. But the advantages of chatbots are not just for the companies themselves but for the customers too. According to the '2018 State of Chatbots Report' 69% of consumers prefer interacting with chatbots over human customer service representatives.

Supported by AI, chatbots become very smart and intelligent.They has ushered in new standards in efficiency and customer satisfaction for the insurance industry. These chatbots are able to redirect Chats to a Human representative where the robot is unable to answer complex questions.

14. Staying ahead of consumer trends

To be successful in any business or industry, a service provider needs to remain ahead of consumers. Customers patronize vendors that can anticipate their needs and provide them with outstanding products and services they were not even aware of the subconsciously felt or wanted. By routinely analyzing their marketing, customer, business, and industry data, vigilant players can stay on top of competitive market and provide cutting-edge service to their customers.

Conclusion

Like almost all the other components of the financial sector, the insurance industry is ever-changing. Because of the presence of plethora of competitors who offer similar products, plans, services at competitive price, insurance companies need to follow the emerging trends in order to remain in the competition. In today's age, the internet is the key to success and insurance companies have to review their approach towards different social media platforms and digital marketing strategies. With the help of a well-planned digital marketing strategy along with SEO, rich content, insurance companies can not only improve the relationships with existing customers but also enlarge their client-base.

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'Insurtech – The beginning of digital transformation'

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This article focuses on the concept of insurtech , how it is reshaping the insurance market by examining case studies of two of the widely renowned insurtech startups that have earned a great name in the initial years of their operations. The insurtech market is seen as a disrupting force to the traditional insurance market. It is progressing at an exponential rate. This qualitative article evaluates all the key aspects of the insurtech industry which have lead it to grow at such huge rates and also concentrates on the potential threats (present as well as future) to this industry. This industry has a great potential in future as it is attracting large investments and it may be called an integrating or a transformation force rather than disrupting force for the whole insurance industry as it integrates the traditional insurance principles and expertise with the new technology like Artificial Intelligence, Big Data, Internet Of Things to create a whole new industry with the advanced and sophisticated systems which can do the work with more accuracy, in lesser time along with providing great customer care.'

Key Words: Insurtech, Innovation, Disruption, Insurance, Tech-Oriented, Artificial Intelligence, Transformation

Introduction

1.1 What is Insurtech?

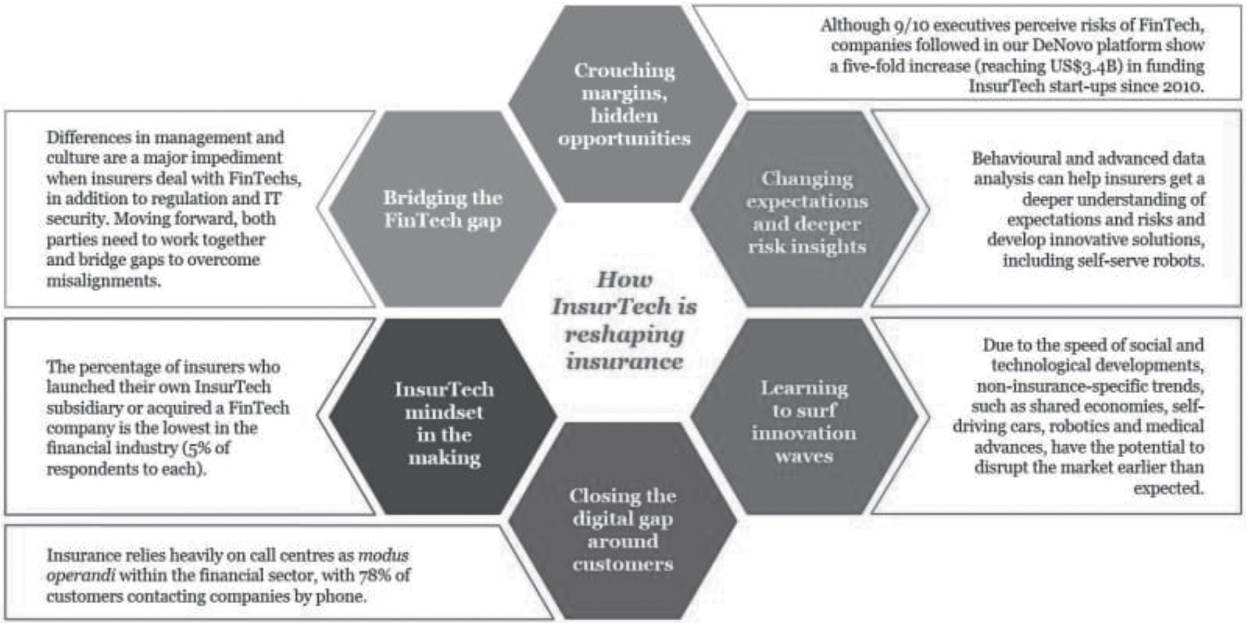
Insurtech, the word itself sums up stating that it is a combination of insurance and technology. The beginning of Insurtech marks the recent phase of digital and technological transformation of the traditional insurance industry. It is a term coined to refer to the innovative creations in the insurance sector with the help of technology in order to save costs, make startups just as common in insurance industry as they are in any other industry and has been seen as an attempt to disrupt the traditional well settled insurance market by new start ups' innovations giving much better experience to draw customers.

1.2 Why is insurtech seen as an explosive growth in past few years?

- Despite the fact that the initial set up costs are high in Insurtech, the Insurtech startups such as lemonade, friendsurance have received large sums of money for investments. The new forms of processes that have developed are more efficient in intermediation procedures and claims management.
- They provide a great customer experience by the application of Artificial Intelligence. They also demand less commission for products from the policyholder due to less dependency on agent based selling and more on technically equipped marketing. Due to the growing popularity of such innovative startups that have driven the market crazy and completely unpredictable regarding the traditional insurance industry, the traditional Insurance Keymen have started investing in these start ups to be a strategic stakeholder in their progress.
- There are certain features that these Insurtech startups have (which are discussed in detail in later case studies) to attract customers to provide a whole new experience – whether it is charging a flat fee or giving customers a satisfaction to contribute to charity and donations of their choice out of the premiums they pay. It is obvious that the combination of variety of features have contributed to an explosive growth in past few years. More than 1000 start ups currently make the Global Insurtech Industry which are backed by more than $18 billion in committed funding.

1) How is Insurtech reshaping the global insurance market?

For knowing how the startups are changing the global insurance market and are on a way to disrupt the traditional insurance industry, we will have to look at the following case studies that show the significant facts related to some of the top Insurtech startups. These will help us ponder how they are structurally, functionally and radically different from the old insurance industry and way better and advanced and capable of reshaping the industry.



Lemonade

- Lemonade insurance company was launched by the parent company lemonade incorporation on September 21, 2016 in New York City.
- It is an American Property and Casualty Insurance Company offering rental and home insurance policies for homes, apartments and cooperatives.
- Lemonade's business model differs from traditional insurance model. It keeps flat 20% of all the premium inflows as profit and rest 80% is used to pay the claim ,for charges associated with processing of policy and for payment to the re insurer to protect the organization against severe losses.
- Under the company's GIVEBACK policy, the unclaimed amount goes to nonprofit organizations of the customer's choice annually. However this giveback feature is not guaranteed and is only paid in case the pool receives excess of premiums over claims. However, if claim exceeds then reinsurer is there to take care of the group's claims.
- It uses artificial intelligence and chat bots (artificially designed customer services robots to reply to customer's messages, queries over the discussion forums) to provide insurance policies and handle claims. Policyholders file claim with lemonade app whose AI robot reviews the circumstances and decides whether or not to approve the claim.
- In 2016, a man filed a claim for a stolen coat on the app and the AI technology set a world record by asking a few questions from the claimant and paying the claim amount in just three seconds.
- Lemonade is registered as a public benefit organization and it states that it has a motive to transform insurance from a necessary evil to a social good.
- It promises zero deductibles, zero rate hikes and an instant switch to lemonade insurance options.
- The new and innovative design of the website displays how many people have switched to lemonade insurance policy from their traditional insurance policies.

Metromile

- Metromile is a san Francisco based startup that offers pay per mile insurance and a driving app for car insurance.

- Pay per mile is a usage based insurance model where the user pays a base rate along with a fixed rate per mile. It ignores driving style or behavior and intends to benefit low mileage drivers.
- The pulse device provided records the trip history and car health.
- It is a tech innovative start up that has revolutionized the car insurance industry and is one of the top Insurtech companies that have driven the insurance market towards them.

By the above two case studies we see how the new innovations have the potential to disrupt the traditional insurance markets. And it is certain that this fear has led the insurers to invest in these new startups as a part of their strategic financial planning so that they become a stakeholder in the progress of this new industry.

The combination of insurance with social sector and the Artificial intelligence sector offers a wide new bucket of goodies to the policyholders.

The lesser the time in claim processing, the happier is the policyholder and more is the inflow of premiums from their side.

The mobile technology and applications have enabled the industry giants to reach a wider audience and this is a positive sign for emerging markets which have a low insurance penetration and a large audience which can be targeted according to their needs.

Use of artificial intelligence, robo-advice and algorithms to provide insurance and for claim assessment cuts time taken for various processes during each stage of buying a life insurance policy.

The insurance industry is all set to be driven by innovation and technology, be it, features such as customized insurance products, social benefit imbedded contributions or new phase of recording user data by devices such as techno-wrist bands to observe movement and exercise pattern of insured or internet enabled devices and applications to sense driving patterns so that premiums can be priced as per observed behavior.

3) What are some of the new and emerging Insurtech models and technologies in India?

The key features of most of the emerging Insurtech startups in India are :

- PROMOTING USAGE BASED INSURANCE- Wearable technology such as fitbit, Apple watch or Samsung gear is undoubtedly the new buzz in town which have the potential to aid usage based insurance. Large insurance companies have started using personalized data from these small wearable and fashionable devices to decide premium rates for your driving skills, give you discounts if you follow a regular workout routine etc.
- INNOVATIVE PRODUCTS – Promoting customized products as per individual needs and discovering new methods of pricing them effectively.
- ONLINE COVERAGE, WIDER REACH –In a fast paced world, it is very important to have online presence and reach to build a faster connection with the client. It results in lower costs due to lesser land acquisition, low manpower requirement etc.
- JOINT VENTURE WITH E COMMERCE GIANTS- Some Insurtech startups have ventured with e commerce giants such as Amazon to provide point of sale insurance for various products to its customers.

Let us understand how these features are put to work by the companies by looking at five innovative recent Insurtech startups in India.

Digit Insurance

- This is a general insurance company which claims to make insurance products easier and simpler to understand by customers.
- It is backed by Fairfax, one of the largest insurance companies in the world having operations in over 30 countries.
- They not only sell insurance online but also make people aware about the latest issues through their blog.

For Example, they recently uploaded an article on the safety measures to be taken by CNG car holders to prevent fire accidents.

- It is a company which claims to settle claims within 10 to 20 minutes over a phone call. Now it is targeting to reduce the claim settlement time to 7 minutes.
- It aims to make buying and selling of insurance products completely digitized for Indian consumers.
- The company has also come up with innovative products like jewellery insurance, insurance against flight delays.
- Over mobile, the company is settling over 20 claims per day at present.
- The company sells car insurance, travel insurance, health insurance, mobile insurance etc.
- They have a user friendly interactive website to engage customers asking them to get quote for their individual needs.

Coverfox

- Coverfox Insurance Broking Pvt Ltd provides insurance brokerage services online. It offers two wheeler, car, health insurance, term plans, life and general insurance products.
- The company, based in Mumbai, was incorporated in 2013.
- In 2017, it won coolest startup of the year award.
- They have tie ups with major insurers and explain all technical words in policy in simple and plain English. They assist the customers in claims management.
- They will pick your car up, get it serviced, do all the documentation themselves and fight for your claims with the insurers they have tie ups with.
- They are backed by some of renowned companies like International Finance Corporation, Transamerica, Accel partners etc.
- They simply make money by getting brokerage commission from the insurers whose policies they sell.

Acko General Insurance Company

- It is a private sector general insurance company in India.
- It is an online insurer selling
- It partnered with Ola cabs to provide in trip insurance to the commuters.
- It also partnered with Amazon to sell mobile insurance to retail customers through the e commerce platform at the time of purchasing a new mobile.
- Its investors are Amazon, Accel partners, SAIF partners .
- It has products such as bike insurance, car insurance, mobile insurance, travel insurance.
- It also covers damages to your bike due to natural calamities or riots.

Policy Bazaar

- Policybazaar is an IRDAI approved web aggregator for comparing different insurance policies such as car insurance, bike insurance, term plans, endowment options.
- It was founded in 2008 in Gurugram, Haryana.

- Customers can get an online quote and compare same kind of insurance products from different companies by seeing their claim paid ratio, premiums, add on benefits etc.
- Once you register on their site with your phone number, their customer process executives will call you up to assist you in the process of buying insurance.
- They also undertake financial and insurance literacy workshops in different segments of their market to connect with their customers on the ground level.

Toffee Insurance

- Toffee insurance provides bite sized, customizable, digitized, and easy to understand insurance policies built to fit your lifestyle.
- They work with major insurance companies to offer bite sized insurance for everyday moments.
- Some of the unique products offered by them are dengue insurance (pay around Rs 600 annually to cover yourself against hospitalization expenses), comprehensive international travel insurance covering all the countries for a period of 1-80 days, home renter /owner insurance to insure your belongings against fire / theft and damage, daily commuter insurance for accidental injuries while travelling in any vehicle, fitness insurance against injuries due to running, cycling , gyming and more.

4) How can traditional insurance companies benefit from integrating insurtech technologies from current models?

With the advent of Insurtech, many companies are already benefiting as they also have transformed them digitally to offer convenience, security, choice and comparison to their modern customers.

➢ Lower Insurance rates:

– Fitness apps or wearable devices:

Fitness apps like Wysa and wearable devices help you maintain your weight, food habits, boost your energy and mood. And most importantly they can help insurance providers to tap into them to keep updating their customers to stay in shape and healthy and offering them many discounts and benefits to customers who maintain a fit lifestyle.

➢ Fraud Prevention:

Frauds are the biggest source of worry for insurers and lead to increasing premiums even for innocent policyholders as the extra costs out of company's pockets for paying fraudulent claims have to be settled by distributing them evenly in a large population. Insurance fraud costs companies billions of dollars per year worldwide. Insurance companies can establish a technology framework, tap into advanced automation and analytics, and take steps to prevent it. This way a clean network of insurance would be provided to the people grnuinely willing to have insurance covers for their needs.

➢ Digital Signature Technology:

Digital signature technology lowers fake insurance account activation and hence a fraud. For example, the claims on a said date when insurance is purchased after accident can be brought to notice of the insurer with digital signatures verifying the date of purchase if it is after the incident.

➢ Data analytics:

With vast amount of data generated online, the analytics on claim patterns sorted as per agent, area or a network hospital can be identified. This saves time taken by a data entry operator to record data digitally as well as prevents possible errors while he does his job. This time hence saved can be used by the companies to innovate their product base by providing new solutions to customer's daily needs as per data trends recorded.

➢ Lower underwriting cost:

The number of internet-connected devices and sensors will reach 50 billion by 2020, which will have a worthy impact on the availability of real-time information that insurers can use for better pricing/underwriting. Also, with improvement in technological infrastructure, the costs of performing such analysis will significantly reduce, hence making underwriting process cheaper, manageable and more effective.

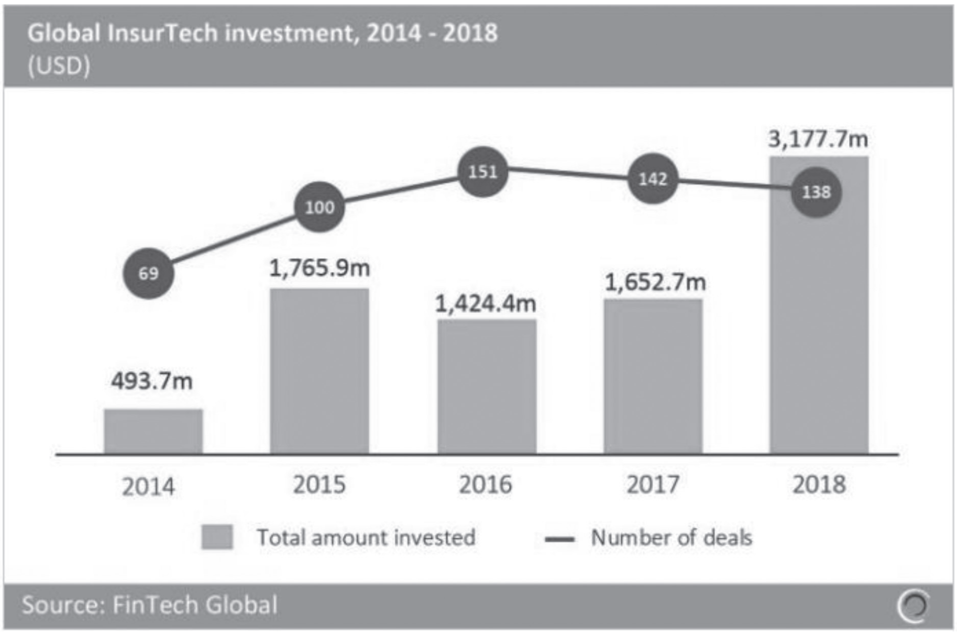
➢ Billing efficiency:

When Billing systems accept varied forms of payments allowing flexibility to the customers, it becomes easier to sell insurance. The automated systems can be used to inform and remind customers of the approaching due date for premiums or giving renewal premium reminders thereby lowering unintentional defaults.

➢ Specialized insurance:

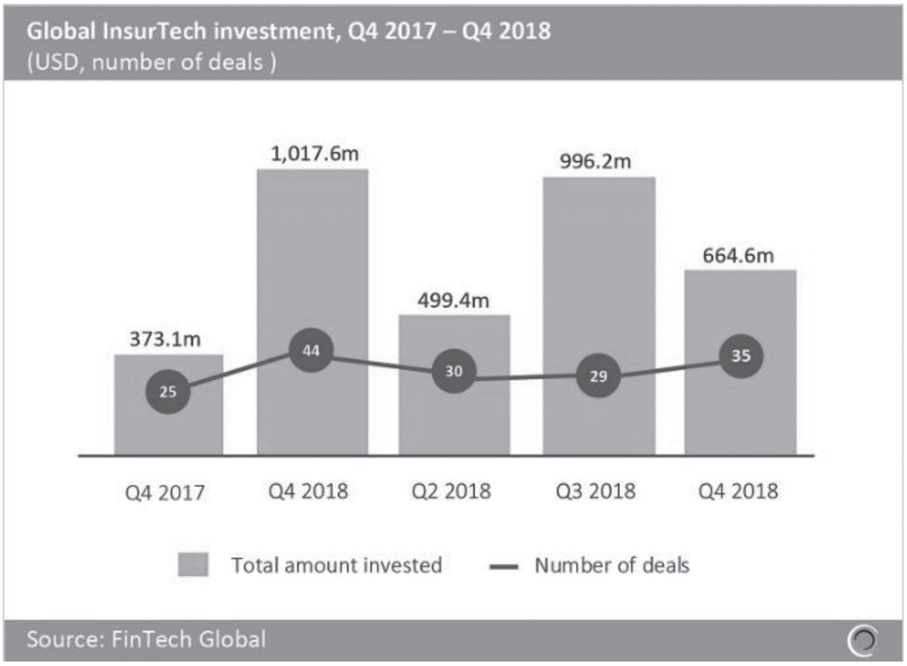
Each insurance seeker is different from the other and the factors that are suited to one while evaluations are not suited to the other. This requires the insurance agents to have specialized knowledge of each and every client of theirs and the internet has helped them seamlessly in this direction. However, Machine learning plays an important role here. It has the capability to learn and analyze billions of patterns and identify suitable underwriting clauses already set by the underwriters as well as identifies specific customized plans for the customers based on the data provided. This can change the customer's perception towards the Insurance Company that they had earlier seeing them as the ones who cheat innocent policyholders. Emerging technologies have produced various opportunities for Insurers to walk as per today's world, providing seamless experience to their customers and create new, innovative and cost effective services and products.

5) Who funds these Insurtech startups and why?



- Global Insurtech Investment has doubled between 2017 and 2018.
- More than $8.5bn was raised by Insurtech companies globally between 2014 and 2018, with 599 deals completed during the period.
- The number of transactions peaked at 151 in 2016, with over $1.4bn raised by Insurtech companies that year. Oscar, a New York-based health insurance provider, raised $400m of private equity funding at a $2.7bn valuation. This round, led by Fidelity Investments, was the largest Insurtech deal of 2016 and is the third largest Insurtech deal to date.

- Investment almost doubled from over $1.6bn in 2017 to almost $3.2bn last year, while deal activity dipped slightly from 141 transactions to 138 during the period. Armour, a Bermuda-based P&C insurance business, raised $500m from Aquiline Capital Partners in Q1 2018 to create a new reinsurance group. This was the largest Insurtech deal of 2018.



- Global Insurtech investment reached $664.6m in Q4 2018 which is 78% higher than the capital raised in Q4 2017.
- Prima Assicurazioni, a Milan-based online insurance company, raised $115m from investors including Goldman Sachs Private Capital Investing and Blackstone Group in October 2018. This was the largest Insurtech deal in Europe last quarter and Prima intends to use the funds to invest in new technologies and expand its marketing and sales teams.
- Insurtech funding surged in Q1 2018 with over $1bn raised across 44 deals however, $500m of this investment was raised by previously mentioned Armour.
- Q3 2018 was also very strong with Insurtech companies raising $996.2m across 29 transactions. Aforementioned health insurance provider Oscar, raised $375m from Alphabet in the largest deal of the quarter. The funding will allow Oscar to increase its headcount of engineers and data scientists.

Insurtech Funding in India:

- Founded in 2008, the Gurugram-based company 'POLICYBAZAAR' is backed by SoftBank, Tiger Global Management, PremjiInvest, Temasek Holdings, and IDG Ventures India among others. In June, PolicyBazaar became a Unicorn when parent company ETechAces Marketing & Consulting Pvt Ltd raised $200 million.
- Owned by Digit Infoworks, Digit Insurance has raised $94 million from investors, including one of the biggest insurers of Canada, Fairfax Financial, which holds close to 35 percent stake in Digit Insurance as of May this year.
- Founded in 2013 by Varun Dua and Devendra Rane, Coverfox is a Mumbai-based startup that has raised around $40 million so far from investors including IFC (sister organisation of the World Bank Group), Transamerica Ventures, SAIF Partners, Accel, NR Narayana Murthy, and Catamaran Ventures
- Backed by investors such as Amazon, Accel, SAIF Partners, Catamaran Ventures, NR Narayana Murthy, and Kris Gopalakrishnan among others, the insurance startup Acko General Insurance launched by Varun Dua raised eyebrows in May 2017 for raising $30 million in seed investments even before it started operations. In May 2018, it raised another $12 million.

6) What are the challenges faced by Insurtech startups in the world?

➢ Insurers Have Access to More and Better Data Than Ever Before. How are they going to manage it ?

Insurers now have knowledge about more things, with more certainty than ever before. While traditionally insurers' ability to price the insurance products, underwrite the policies, detect fraudulent claims and manage them had been restricted by relatively limited data (e.g., proposal forms or historical claims data), the amount and quality of available data is all set to explode in the coming years for this industry. Insurers will soon be collecting, analyzing , interpreting and incorporating significant changes to be done(as reflected by study of data patterns) into their business models the data created by the following modern day sources :

- devices that monitor health with the help of physical movements and biometrics for proper identification of the policyholder while making the claim.
- wearable automobile sensors (personal, rental and commercial) to sense driving patterns in case of motor insurance.
- home sensors to sense safety of property insured.
- sensors for business office operations and supply chains (e.g., crates and containers in shipping, cranes for construction or warehouses for storage)
- drones footage and satellite imagery
- complaint cells and forums (e.g., Glassdoor)
- U.S. government websites for studying various world level indicators (e.g., data.gov, NASA)
- international organizations' data for various estimates (e.g., World Health Organization)
- Google searches information, Map routes searched by the policyholder, their location and history
- Facebook, Twitter, LinkedIn, Instagram data to keep a check on insured's lifestyle, hobbies and activities etc.

The access to more and better data than ever might seem to be an advantage rather than a challenge but this isn't the case always. Given the fundamental right to privacy of people whose data has been shared with the insurer, the insurer has to make sure that his technological infrastructure is much updated, resistant to data privacy breach by handling all the viruses, bugs and security attacks properly for the security of policyholder's personal data which might be used too dangerously if it goes into wrong hands. These companies might have to face not just moral guilt but legal litigations against insecure storage of their customer's sensitive data. Also, to enable them to get valuable insights out of this data, it is important for these startus to integrate with newer technologies capable of handling large data sets and find the right amount of staff with appropriate skill set that can be given this task.

➢ Lesser trust amongst people

It has been seen that despite their tremendous efforts to market themselves and their products by spending large amounts on advertising, they are not able to create the much required trust to engage policyholder's wealth with them for a long run. As a large segment of our country relies on the goodwill of the insurance companies and on the mouth to mouth publicity, the initial phase of expansion for these startups has been miserable. However Insurtech startups are coming with a very smart idea to integrate big and renowned insurers with them as funding partners or as venture partners in policy and product making to gain the trust of wide population.

➢ Regulatory challenge

The innovation in the insurance domain demands change in the normative framework to sustain itself in the long run. Customers are constantly evolving, and so are their expectations. There is a need for the regulatory bodies also to evolve from the retrospective approach followed in the present scenario to the real time monitoring of financial situation of a company because of the virtue of abundance of technology in the market which they need to adopt and the training of their workforce to develop such skills.

➢ Not tapping the underprivileged sections of society

The traditional insurers are known to provide insurance to the rural section of our society (who is proportionately much greater than the urban tech savvy section) which enhances their customer base and affects their profits. The major disadvantage of insurtech startups is that they are focused on digital and online presence , so , they cannot be a provider of insurance to a remote village which might not have access to internet or in which the people might not have any know how of using smartphones or internet. So this makes insurtech a sweet offering limited to a percentage of a huge economy which limits its scope to capture budding as well as underdeveloped markets.

Conclusion

The time has come for the Indian Insurance market to adopt as per the changing definition of 'being modern' adopted in other countries. However, mere technology isn't also going to prove a perfect model in the market due to high volatility to market changes. There has to be a blend of technology and traditional suite to make a continuous effort to grow unbeatable in the modern insurance industry.

In the times of increasing hue and cry for insurtech, the regulators are expected to apply the latest tech advancements to enable broad, deep and real-time supervision of the insurance market (which is what they could not have dreamt of ten years ago). It is essential the regulators also evolve in synchrony with the modern insurers and adopt newly available technology and tools to expand their regulatory arsenal, and be able to respond to the changing tech-driven industry. Regulatory environment needs more complete, dynamic and granular perspective of the market and its constituents.

This phase of insurtech transformation would lead to an enhanced customer experience, up gradation of techniques and skills of the existing workforce and real timely monitored changes (like stock prices in financial markets).

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Application of Artificial Intelligence in Insurance Industry

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Across all industries, Artificial intelligence is being used to address a wide range of challenges by making interactions with machines and systems smarter and simpler. In the changing scenario with the fast evolution of artificial intelligence technologies, insurers have started redefining how they work, how they create innovative products and services, and how they deliver customer services and experiences.

Key Words: Artificial Intelligence (IA),Internet of Things (IoT),Machine learning, Deep learning, Intelligent automation, Neural Network, Big Data,Robotic Process Automation (RPA),Predictive Modelling, Telematics, Insurance

Introduction

Artificial intelligence (AI) is abranch of computer science that focuses on the making of intelligent machines that work and respond like human beings. With the advent of 'Industry 4.0', AI has become an essential part of the technology industry.The primary problems of AI comprise programming computers for certain characters such as:

- Knowledge
- Reasoning
- Problem solving
- Speech recognition
- Perception
- Learning
- Planning
- Ability to manipulate and move objects

In simple terms, AI aims to enhance the efficiency and capacity of mankind in tasks of remaking nature and regulating the society through intelligent machines, with the final objective of envisaging a society where people and machines coexist harmoniously together. While already under intense pressure on multiple fronts, Insurance companies are entering the Artificial intelligence age.

A huge number of insurance claims, ever increasing customer queries and enormous volumes of diverse data make the insurance industry a natural use case for AI and cognitive technologies. A recently conducted study by Tata Consultancy Services revealed that the insurance sector has invested about $125 million in AI, compared to an average of $70 million invested by other industries.

Literature Study/Review:

To conduct this study, researcher has extracted secondary data from research papers published in various national and international journals, published by eminent newspapers articles, blogs and websites. The researcher has also deliberated on the subject with at least twenty five working and erstwhile insurance executives, some of them are now professors in various institutes.

Objectives of the study

The objectives of this study are as follows:

- To enhance the reader's understanding of Artificial intelligence (AI), and its application in the insurance industry;
- Searching the possibilities of transforming Insurance practices through AI;
- To spotlight the increasing significance of AI in the insurance sector;
- Evaluating the disruptive power of AI in context of insurance sector;
- Assessing the potential AI hold for Insurers in improving their operational efficiency;
- Exploring the prospects of Insurers' making use of AI in various areas;
- Anticipating the opportunities for and challenges faced by the insurance sector in wake of fast evolution of AI in the last few years.

Scope of the study

- This paper provides valuable input for various players who are willing to enter the Artificial intelligence age.
- This paper will be found quite informative by the Insurtech and start-ups who have already embraced AI.
- Through this paper insurance companies and other professional can conduct micro research paper.
- Apart from AI, this paper will dwell upon the related technologies i.e. Iot, Machine Learning, Deep Learning, Telematics etc.
- According to this research we can say that, in future AI will bring new challenges in our society. • In future AI give a lot of job or opportunity in different areas like data analysis, Robotics, Machine learning and financial etc.

The Genesis of the term- 'Artificial intelligence'

In 1950 English mathematician A M Turing wrote a landmark paper titled "Computing Machinery and Intelligence" in MIND (a quarterly peer-reviewed academic journal published by Oxford University Press) wherein the author asked the vital question: "Can machines think?" Further important work came out of a 1956 workshop held at Dartmouth in Hanover, sponsored by John McCarthy, Marvin Minsky and Nathaniel Rochester. In the proposal for that workshop, John McCarthy coined the phrase "study of Artificial Intelligence" It was two-month, ten-man study which was to proceed on the basis of the conjecture that every aspect of learningcould in principle be so precisely described that a machine could be made to simulate it. Father of Artificial Intelligence, as he is known to be, John McCarthy said "AI is the science of making intelligent machines."

'Artificial Intelligence' as defined today

Artificial intelligence is a branch of computer science that aims at creating intelligent machines. AI may also be defined as a computer system that can sense, comprehend, learn and act. In other words, a system that can perceive the world around it, understand and analyse the information it receives, decide and take actions based on that understanding, and if required, improve its own performance over a period of time.

Artificial intelligence is related to machine learning and deep learning precisely. Machine learning makes use of algorithms to discover patterns and generate insights from the data they are working on. Whereas, deep learning is a subset of machine learning that brings AI closer to the goal of enabling machines to think and work as much possible as humans do.

Artificial intelligence as an academic discipline

Subsequent to the "study of Artificial Intelligence"proposed in the 1956 workshop held at Dartmouth, Artificial

Intelligence was founded as an academic discipline in the same year (1956), and in the years since then AI has experienced several waves of optimism, followed by disappointment and the loss of funding (known as an "AI winter"), which was further followed by new approaches, success and renewed enthusiasm and funding. As an academic discipline AI uses various tools - versions of search and mathematical optimization, artificial neural networks, and methods based on probability, statistics and economics. The AI field draws upon various disciplines like computer science, information engineering, mathematics, psychology, linguistics, and many other fields. These sub-fields are based on various technical contemplations, such as the use of particular tools ('logic' or 'artificial neural networks') particular goals (e.g. 'robotics' or 'machine learning'), etc.

Artificial IntelligencePractices in the 21st Centaury

With the advent of new Centaury, Artificial Intelligence practices have experienced a resurgence following parallel innovations in computer science, availability of huge amounts of data and use of IoT. AI techniques are now vital part of the technology industry, and are helpful in solving many perplexing problems in computer science. AI has become more and more collaborative, diverse, and challenging during the first 18 years of the 21st Century. In this century it may be possible that AI becomes more powerful than human beings.

In the new era of innovation, competition has become fierce in all the industries including Insurance Sector. This is worth noting that about 55% of Fortune 500 companies have gone out of business since 2000. AI is poised to take this disruption to a new level in the years to come.

How technology innovations are disrupting the Insurance Sector?

Insurance business is among the few most regulated sectors andhas been one of the laggards - industries which are last to adopt technology innovations.In technology innovations, Insurance sector has been slower as compared to its peers in the BFSI segment. However, over the last few years, the changes are occurring at a rapid pace and as discussed in the following paragraphssome technology innovations are disrupting the traditional business model in Insurance Industry.

Many insurance solution providers are contemplating to introduce AI and ML technologies to their existing solutions to make it superior, smart and faster. These solution providers have a vast amount historical data which not only enables them to build a better predictive model to manage the risks as well contain costs effectively but also predicting and assisting in managing fraud. They have also started creating a newer solution which will replace the old traditional way of managing claims. One of the more recent examples is that they developed a 'photo based estimation model using the ML/AI technology'.

Telematics has started impacting Motor insurance significantly. Insurance companies which have already introduced this technology, are of the view that Auto Insurance will be transformed by connected devices as telematics can transmit valuable data for assessing an individual's risk profile and driving habits (behaviour).

Data from Internet of Things (IoT) & advanced sensors is enabling insurers to model risk and underwriting policiesmore effectively. Data collected from smart house monitoring systems will help incontrolling major risks and minimizing the losses and claim.

Health and life insurance will be transformed with wearable biometric sensors, such as Fitbit, that provide insurance firms with unprecedented data on the health of their clients which in turn help to proactively better manage the overall health, behaviour, cost of insurance and claim.

The impact of AI on the Insurance Industry in near future

According to Ari Libarikian, senior partner at McKinsey & Company "Artificial intelligence will fundamentally disrupt and transform insurance underwriting."Insurance experts believe that Artificial intelligence will soon deliver more accurate risk assessments, better customer experiences and substantial cost benefits for insurance companies.

AI has the potential to shift underwriting from a detect-and-repair mindset to a predict-and-prevent attitude. That means fewer educated guesses, more accurate information and not only making sense of treasure troves of data but using it as a competitive advantage. The AI revolution is coming, and underwriting will never be the same.

We are already quite familiar with AI in our everyday lives than we may realize. A navigation system in cars that adapt and re-calculate directions when we make a wrong turn is just one example. One area that appears especially promising for AI applications is disease management and better chances insurance of people once considered uninsurable. Those diagnosed with diabetes, for example, can now access technology that continually provides digital biomarkers, such as glucose levels, blood pressure, and heart rate.

Major 10AI Use Cases in Insurance Industry

Many insurance companies are already using AI, or contemplating to do so in the near future, to get an edge over their competitors. AI can help insurers in a lot of different ways, and it is going to be a must-have tech very soon. So let's have a look at what the future of insurance holds and how the innovation brought by AI can be used. Some Insurance players have started using Big Data technologies comprehensively to determine risk, process claims and hence improve customer experience. Let's take a look on the following use cases in Insurance Industry:

1. Speeding up the underwriting process

In underwriting, AI can update analysis instantly, as the underwriter can have access to the new data, and enhance risk management insights. By using predictive modeling, the insurers can identify whether the vehicle drivers are likely to be involved in an accident, or have their car stolen, by combining their behavioral data with the exogenous factors such as road conditions or safe/unsafe neighborhoods. AI has the potential to make this process much faster, especially with large number of no-risk applicants. Their risk profile could be evaluated against tens of thousands of previous applicants in a matter of seconds, so that human underwriters can focus only on the most complicated cases that really warrant their attention.

2. Collecting Customer information and assessing risk

Calculating risk is critical to estimate costs and determine the optimal price of premium. However, collecting all the necessary data to make future predictions in the real world is complex, time-consuming and requires significant resources. Real-time information will provide a much clearer picture and a better risk assessment than financial models built on statistical samplings of past performance. With no need for any human resources except for a handful of AI experts and data analysts, machines can consume enormous amounts of data to produce actionable insights that can be used to have a clearer understanding of risk at a reduced cost.

3. Better pricing through telemetric

Together with the implementation of sensors and Internet of Thing (IoT), AI can help insurers draw a clearer picture of individual customers and their behaviour, to customize plans/products. For example, sensors installed in a vehicle may be used to gather information on how the insured drives – how quickly he accelerates and brakes, how frequently he exceeds the speed limit, etc. This information could be used to study user's behaviour, correctly assess the risk (such as how likely he is to cause an accident), and provide him with distinctive premium discounts (or penalties) based on his performance. Bajaj Allianz General Insurance Co.has successfully introduced long awaited telematics car insurance model for the first time in India.

4. Expeditious Claim Settlement

Insurers often implement fast-track processes that settle claims instantly to lower processing costs and ensure fairness. By automating claims processes, insurers can access and extract the relevant information from documents and can fast-track claims, reducing the time and costs of processing while enhancing customer experience through smart automatization or RPA (robotic process automation).

5. Reducing Frauds

Fraudulent cases can be detected more easily, sooner and more reliably, capturing patterns and traits that would be invisible to the human eye. AI-powered identity verification services such as Shufti Pro, IDnow or Jumio can also help establish the authenticity of a submitted claim by checking the identity document, insurance card and other related documents.

6. Enhancing Customer Experience through customised product/plan

Most of the customers are more than willing to share their personal information to receive a benefit in return – such as in the form of customized products which are tailored to fit their unique needs with reducedcosts or increased coverage. Insurance providers now offer customized product to their customers based on their preferences and behavioral data as well as offering them innovative services.

7. Quality Underwriting of Cyber Risk

AI is proficient in consuming large quantities of data meaning thereby it has a greater understanding of cyber security threats. From there, Artificial Intelligence in cyber security uses reasoning to identify threats (strange files, suspicious addresses, etc.) before launching a response to a legitimate threat.With AI and Big Data, underwriter can churn through billions of scenarios and make educated predictions, said John Cusano, senior managing director in Accenture's Financial Services Management Consulting Practice.AI can help in underwriting risks even where there limited historical data- like cyber risk or weather risks.

8. Predicting Events on A Global Scale

Advanced level of AI is able to predict future climate-related risk (tsunami, earthquake, wildfires, flooding, and storms) on time frames of up to several decades in the future. These amazing technologies such as the one invented by Jupiter use satellite and sensor data for climate analysis to predict changing climate effects, create reliable flood maps, and make other predictions that could help insurer's measure catastrophic risk.

9. Keeping pace with Insuretech Companies

Several insurance start-ups that have based their entire business on cognitive computing such as Fabric, Trov or GetSafe have already mushroomed up. These so-called insurtech companies use chatbots, AI-based claim analysis, 2-minute signup processes, and mobile- and desktop-based products. AI can simply become a powerful force to drive marketing efforts and show a brand's continuous commitment to innovation and modernization.

10. Enhanced Marketing Efforts

Custom-built machine learning algorithms can be used to track leads' preferences, understand their needs, and finely tune a business marketing strategies. The AI can use data to determine the user persona of the prospective buyer and then target specific market segment.

Challenges of Artificial Intelligence

Experts belonging to various industries are quite sure that artificial intelligence will rule the new era of advanced technology, but there are some challenges related to use of artificial intelligence, some of which are briefly discussed hereunder:

- AI Human Interface – One of the challenges is the scarcity of data science skills in humans to get maximum output from artificial intelligence. Insurance companies need to train their professionals to be able to reap the substantial benefits of this technology.
- Sizable Investment – As huge amount of funds is required to set up and implement AI, not all insurers are willing or able to invest in it.
- Limitations of software –Like human no technology is perfect. In case of software crashes, it may be difficult to trace what went wrong. However in case of human, tasks performed by whom can be traced.
- Every task can't be replaced byAI–with the advent of 4th Industrial Revolution, we all think that all tasks, minute or a gigantic, can be managed by artificial intelligence. However, fact is that not all the tasks can be undertaken by AI.
- Too high expectations –Over the last few years, AI has seen much hype across various industries. However so far as implementation is concerned, AI is still in its nascent phase.

Conclusion:

As AI becomes more deeply integrated in the industry, carriers must position themselves to respond to the changing business landscape. Insurance professionals must knowand understand the factors that will contribute to this change and how AI will reshape underwriting, pricing,distribution and claims and with this understanding, they can start developing the skills and talent, embrace the emerging advanced technologies, and create the culture and perspective required to be successful players in the future insurance industry.

AI will allow insurers to redefine current processes, create innovative products and enhance customer experiences. Insurers must adopt anHR strategy that adapts, upskills and augments the human workforce. They must evolve how they should work, from simpleRPA towards AI-powered intelligent decisions. They must unlock trapped value inexisting and new datasets, by allowing AI to leverage data in creative ways across the entire value chain.AI in insurance is not indeed a disruptive Technology – on the contrary, those who are going to adopt it at the earliest possible, will be able to provide their customers with innovative and rationalised products that will harness the full potential of cognitive learning.

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