Canada’s Life Insurance Industry

ECO349H Fall 2018 Group Project

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Introduction

Technological innovation continues to grow at an unprecedented rate, as a result, the insurance industry is adapting to new game-changing tools that will offer opportunities to strengthen its core. Implementing artificial intelligence and blockchain applications to the field of behavioural analytics allows insurance companies to foresee lower risk and reduced inefficiencies that may arise due to asymmetric information, hence optimizing their sales. The focal point of this paper is to give insight into the Canadian life insurance industry, including the key players and their activities, as well as the impact of current technological factors on their business operations.

An overview of the Canadian Life Insurance Industry

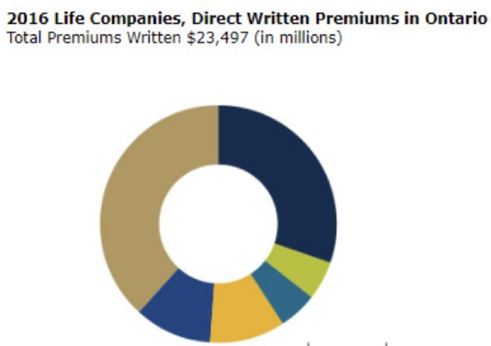
With most markets in Canada, regardless of products or services provided, there tends to be two or three firms amongst many that occupy a large market share. For instance, looking at cable or telephone providers, Rogers, Bell and Telus are commonly known to hold a majority of the market. It is to no surprise that the life insurance industry is very similar in that way with three major groups. The Great-West Group, Sun Life Financial and Manulife collaboratively hold approximately sixty percent of the market as of 2016 (*The IIJ Staff, 2017*).

2016			2015		2014	
Premiums	Share (%)	Premium Growth (%)	Premiums	Share (%)	Premiums	Share (%)
GREAT-WEST GROUP						
14 920 346	24.61	7.76	13 845 858	24.28	13 460 695	24.17
Great-West Life						
6 468 643	10.67	7.19	6 034 808	10.58	5 905 126	10.60
Canada Life						
5 312 686	8.76	11.02	4 785 506	8.39	4 678 945	8.40
						London Life
3 139 017	5.18	3.75	3 025 544	5.31	2 876 624	5.17
SUN LIFE FINANCIAL						
11 047 212	18.22	4.32	10 589 865	18.57	9 759 764	17.52
Sun Life of Canada						
11 013 717	18.17	4.30	10 559 949	18.52	9 711 943	17.44
Sun Life Limited						
33 495	0.06	11.96	29 916	0.05	47 821	0.09
MANULIFE 1						
10 134 978	16.72	10.85	9 143 323	16.04	8 441 773	15.16
Manulife (Manufacturers Life Insurance Company)						
10 094 035	16.65	10.97	9 095 960	15.95	8 441 773	15.16
Manulife of Canada						
40 943	0.07	N/A	N/A	N/A	N/A	N/A
Standard Life Canada						
N/A	N/A	N/A	N/A	N/A	1 285 874	2.31
Standard Life Assurance Ltd						
N/A	N/A	N/A	47 363	0.08	55 428	0.10

<u>Figure 1:</u> Premiums and market share of the largest life insurers in Canada – 2016 (*The IIJ Staff, 2017*)

As noted in *figure 1*, these three groups contain firms that are commonly thought of when discussing the life insurance sector including but not limited to Manulife, Sunlife, Canada Life and even Standard life. The remaining forty percent of the market is held by smaller insurance corporations and groups such as Desjardins

Group, including State Farm, iA Financial and Empire life. In addition, there are many life insurance and assurance organizations branching off from major Canadian banks such as Royal bank of Canada, Bank of Montréal, Toronto Dominion, Bank of Nova Scotia and Canadian imperial bank of commerce (ordered from greatest market share to least). Each bank occupies 2.44 percent or less of the total market as of 2016 (*The IIJ Staff, 2017*). In the province of Ontario alone, there are 66 providers as of December 31st, 2016, illustrating how concentrated the market is *(Mills, 2016)*.



COMPANY	$	%
Life: individual	7,160	30.5
Annuities: individual	1,202	5.1
Accident & sickness: individual	1,251	5.3
Life: group	2,434	10.4
Annuities: group	2,506	10.7
Accident & sickness: group	8,944	38.0

<u>*Figure 2:*</u> 2016 Life Companies, Direct Written Premiums in Ontario *(Mills, 2016)*

Figure 2 divides life insurance into group and individual, with an approximate 1:4 ratio based on premiums. Group life insurance policies are essentially those provided by employers to their employees as part of their benefits programs. Group coverage generally comes at a lower cost than individual policies providing roughly the same amount of protection *(AXA, 2016)*. In 2015, revenue from life insurance premiums was 18.5 billion dollars; 78% of that being from individual policies and 22 percent being from group plans. In 2015, the population of Canada was 35.83 million Canadians; 22 million of which owned a life insurance policy. With 61.4% of the population collectively having 4.3 trillion dollars worth of life insurance coverage and only 18.5 billion dollars in revenue from premiums, life insurance companies must have large investments and securities in order to pay out claims and remain profitable.

Total Canadian Life Companies
CONSOLIDATED ASSETS
As At Q4 - 2017
(in thousands of dollars)

Cash and Cash Equivalents	20,051,856
Assets held for sale	114,823
Short Term Investments	10,038,707
Accrued Investment Income	4,614,977
Accounts Receivable	9,168,839
Policy/Certificate Loans	12,529,174
Bonds and Debentures	432,447,226
Mortgage Loans	79,549,885
Preferred Shares	1,478,100
Common Shares	41,555,785
Investment Properties	24,853,111
Derivative Financial Instruments	17,574,132
Reinsurance Assets	53,922,855
Property and Equipment	2,975,947
Interests in Associates & Joint Ventures	7,525,415
Segregated Funds Net Assets	634,489,356
Other Loans and Invested Assets	26,201,736
Current Tax Assets	952,283
Deferred Tax Assets	6,131,059
Goodwill	13,938,168
Intangible Assets	6,734,005
Defined Benefit Pension Plan	733,535
Other Assets	17,559,494
Total Assets	1,425,140,468

Figure 3: Total Canadian Life Companies – Consolidated assets *(OSFI, 2018)*

Depicted in *figure 3*, segregated funds net assets, or seg funds for short are the largest assets held by Canadian life insurance companies. Segregated funds are essentially contracts sold by life insurance companies that guarantee a principle so long as funds are held for a set amount of time *(OSC, 2017)*. Bonds and debentures are the largest category of securities held. Since bonds are known to be relatively safe investments, especially those issued by the government, the expectation for an industry that is almost guaranteed to have to pay out its policies in the long run would be to heavily invest in lower risk securities. Observing the higher risk securities held by the industry such as policy/certificate loans or even mortgage loans, they are collectively 78% less invested in then bonds and debentures.

The Great West Group, Sun Life Financial, and Manulife, collectively hold most of the net premiums earned from Canadian Life Insurance policies. As illustrated by *figures 4 and 5*, total net premiums garnered by all Canadian life insurance companies was around $33 bn, while Great-West, Sun Life, and Manulife, together, shared $25.5 bn (77%) in net premiums on policies in 2017 *(OSFI, 2017)*.

While the companies shared in the net premiums, we find that they have also ceded around $12 bn (80%) of the $15 bn premiums ceded by the entire industry through reinsurance. This indicates that while these companies essentially form an oligopoly in direct premium writing, they must necessarily share the large amount of risk they are exposed to with reinsurance companies. In *figure 5*, we find that barely any Canadian life insurance companies assume premiums through reinsurance. Rather, foreign life insurance companies reinsure Canadian life insurance companies against those risks as evidenced by a collective assumed reinsurance premium of $9.3 bn and a direct premium value of $0.9 bn.

Note: Figure 4 to Figure 10 use Q4 data.

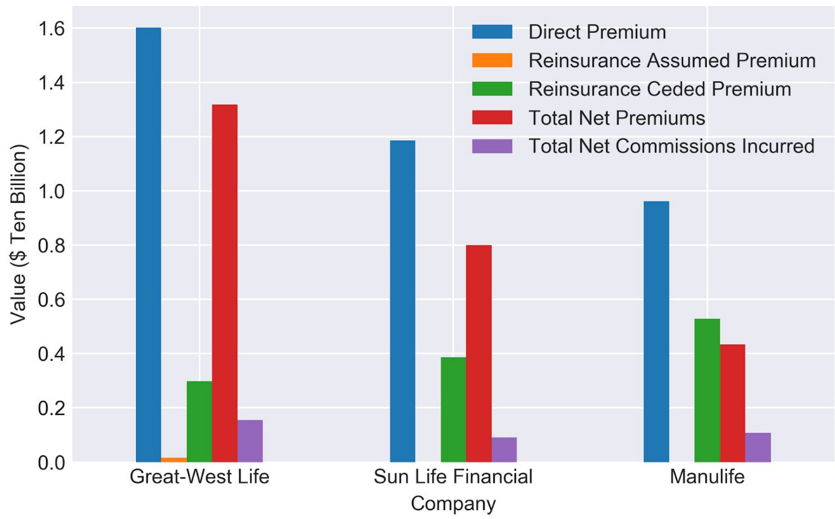


Figure 4: 2017 Premiums: Major Canadian Life Insurance Companies *(OSFI, 2017)*

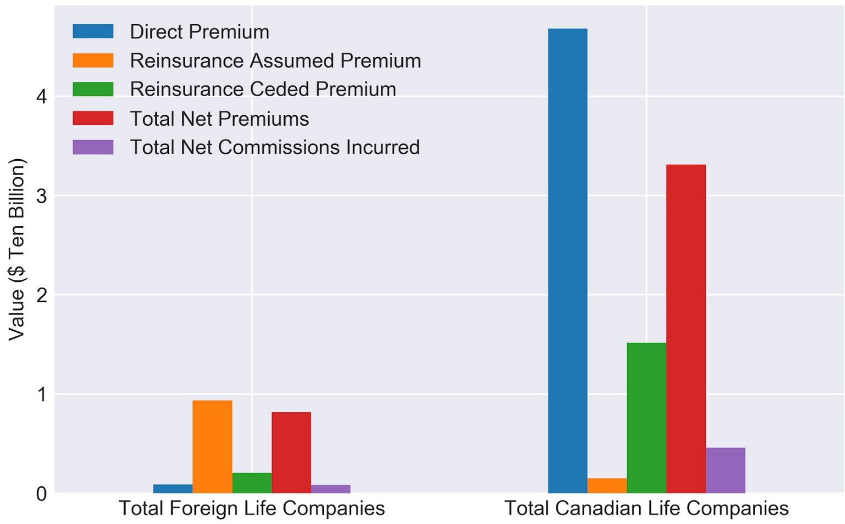


Figure 5: 2017 Premiums: Total Foreign and Canadian Life Insurance Companies *(OSFI, 2017)*

When a company reinsures another, the policyholder of the reinsured policy is essentially being insured by both companies, while paying premiums and receiving settlements from only the initial one. Reinsurance allows for the initial insurers to not only sell more policies and get more market share, but to also remain solvent in the case that many of their policies suddenly increase in risk *(Outreville, 1998)*. From this perspective, foreign reinsurance companies, essentially 'clean' the Canadian life insurance industry of risk. One of the largest global reinsurance companies, Munich Reinsurance company, assumed $7.3 bn (48%) of the $15 bn *(OSFI, 2017)* of all premiums ceded by the entire Canadian life insurance industry. Since insurance companies would rather be reinsured for risky policies, reinsurance companies that operate in Canada tend to be global insurance companies, in order to spread the risk attained in Canada, elsewhere.

Another mechanism that protects the purchasers of life insurance in Canada is the Office of the Superintendent of Financial Institutions (OFSI). It supervises all insurance companies regulated by the government of Canada. It exists to protect policyholders and consumers' perception of the strength of the insurance market by ensuring that these insurance companies maintain solvency. In the case where a life insurance company becomes insolvent, Assuris, a non-profit organization whose members companies make up the entire Canadian life insurance industry, will transfer policies that were held by the failing company, and allocate then to another solvent member company *(OSFI Guide to Intervention, 2018)*. Membership to Assuris is a requirement to selling life insurance in Canada.

While these mechanisms of governance and risk-spreading are invaluable tools in Canada's life insurance industry, it is not enough to ensure that they will remain solvent. To support this, insurance companies invest in securities that pay out interest over time in order to remain solvent and profitable for its investors. Additionally, if an insurance company believes it can earn well on it's investments, they have the additional freedom to accept more risk in their policies, insuring the lives of more people, while also growing their surplus and profits.

The main securities that the Canadian life insurance industry purchases and sells are: bonds and debentures, segregated funds, and mortgages *(OFSI, 2007-2017).*

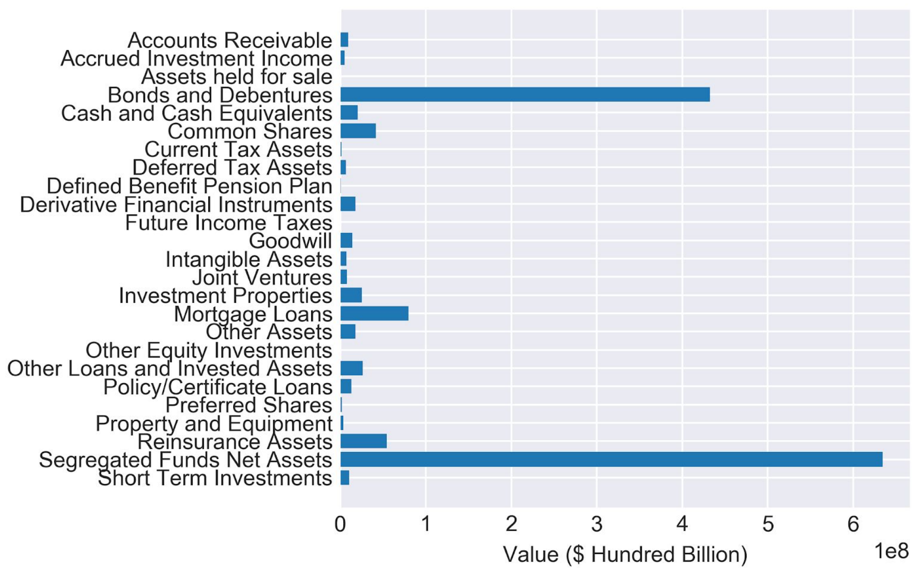


Figure 6: 2017 Total Consolidated Assets: Canadian Life Insurance Industry *(OSFI, 2017)*

Figures 7 and 8 highlight the growing importance of bonds in the portfolios of life insurance companies, given that they are a safe investment. It is apparent that life insurance industries are becoming a larger creditor in the bonds market, which may heighten their importance as a source of funds for the government and as a lender. One can observe an increase of 1.25% in value share in bonds that the life insurance industry acquired following the 2008 financial crisis (*OFSI, StatCan*).

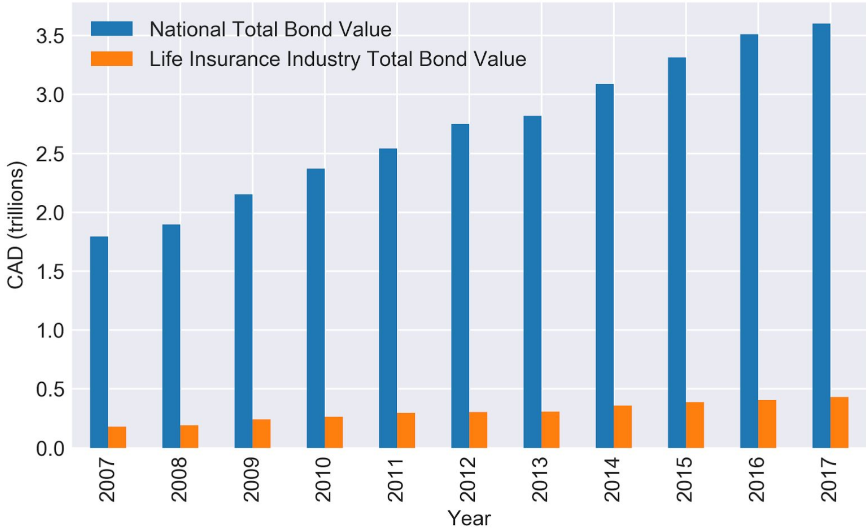


Figure 7: 2007 - 2017 Total Bond Value: National Total and Canadian Life Insurance Industry Total *(OSFI, 2007 - 2017), (Statistics Canada. National Balance Sheet Accounts, 2007-2017)*

Figure 8: 2007 - 2017 National Bond Value Share: Canadian Life Insurance Industry *(OSFI, Statistics Canada: National Balance Sheet Accounts, 2007-2017)*

Mortgages, being the 3rd largest asset held collectively amongst all Canadian life insurance companies, have seen a fall in popularity amongst the industry. The total national mortgage value steadily rose from 2007 to 2017, while the market share of those mortgage values held by the life insurance industry has been steadily declining as seen in figures 9 and 10 (*OFSI, Statistics Canada, 2007-2017)*. This highlights the importance of reliable investments for this industry in order to remain solvent in the case of having to pay a large number of settlements.

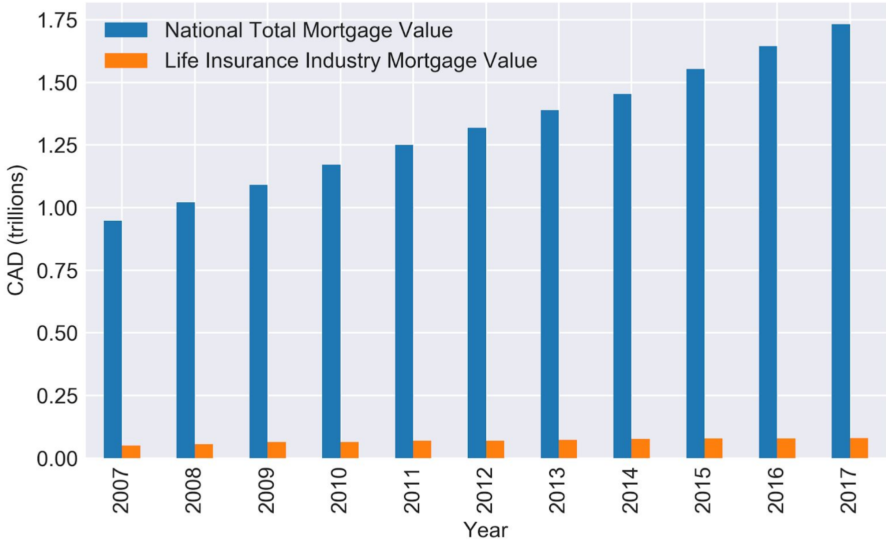


Figure 9: 2007 - 2017 National Bond Value Share: Canadian Life Insurance Industry *(OSFI, 2007-2017), (Statistics Canada. National Balance Sheet Accounts, 2007-2017)*

Figure 10: 2007 - 2017 National Mortgage Value Share: Canadian Life Insurance Industry *(OSFI, 2007-2017), (Statistics Canada. National Balance Sheet Accounts, 2007-2017)*

Segregated Funds, the largest asset held by the Canadian life insurance industry, is a financial product that allows life insurance companies to function as investment funds. Accompanying this potential for investor money growth is essentially an insurance policy, which guarantees a high percentage return on the premiums paid out in the event of an investor's policy maturity or death (Ontario

Securities Commission, 2017). As evidenced by figure 11, it is rising in importance for investors, going from $366 bn in 2011, to $634 bn in 2017 across the entire industry.

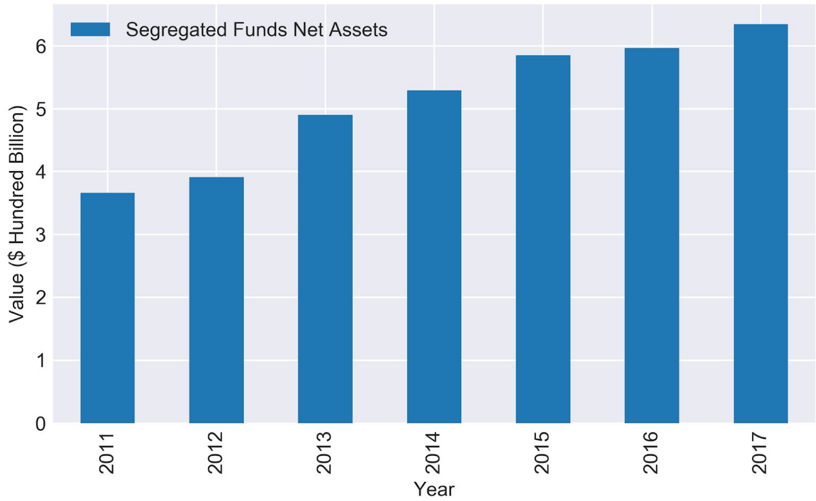


Figure 11: 2011 - 2017 Life Insurance Industry Total Segregated Funds Net Assets *(OSFI, 2011-2017)*

In terms of security and asset ownership, the 3 largest players in the Canadian life insurance industry also maintain a majority share amongst all life insurance companies. It is interesting to note that while Sun Life Financial and Great-West both hold greater shares in policy premiums *(figure 4)*, *figure 12* illustrates how Manulife focuses more of its efforts on it's investments and growing in that fashion.

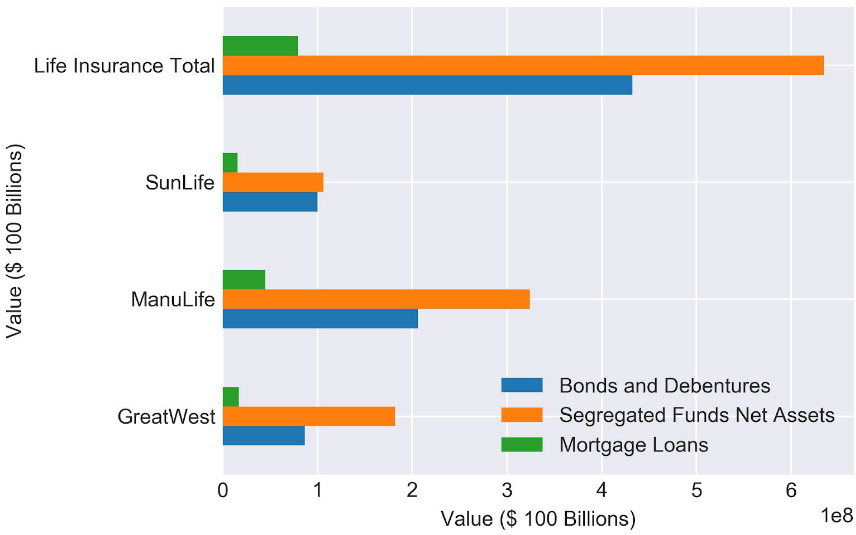


Figure 12: 2017 Major Life Insurance Companies and Industry Total Value of Major Securities Held *(OSFI, 2017)*

Evolving Technological Factors and its Impact on the Life Insurance Industry

Innovation through new technologies is a crucial driver of change in the financial sector. Using new technologies to create new methods of providing services to customers, InsurTech and FinTech in the financial market allow companies to provide services digitally and improve the efficiency of their business. With developments in technology leading to new methods of service provision as well as greater data collection that lead to better risk and return identification. Blockchain technology and Artificial Intelligence (AI) are the most popular technologies that are being discussed in the financial world. “Blockchain can improve the efficiency and speed of traditionally inefficient complex commercial insurance processes,” says Vanderlip (*Griffiths, 2018*). The traditional insurance processes are time-costly and requires a large amount of information to be printed on paper. By using blockchain insurance companies can communicate with their customers on a secure and transparent network. Nowadays, people are more willing to get an answer online than spending time with an insurer.

AI has been rapidly introduced into the Canadian insurance industry and has impacted the industry in many ways. For example, AI is currently being used in the area of insurance marketing, which helps insurance companies use data to target customers with products that align with their needs. AI can also assess claims more accurately and at a much faster pace than humans. While humans are still vulnerable to error and fatigue, computers can determine valid claims and possible frauds more effectively. Insurance is an extremely competitive industry, only those who adapt quickly and serve the customers better can have a sustainable business in the market.

As more insurance companies adopt such technologies, government regulation of insurance should also adjust appropriately to assure the interests of all parties. In Canada, tight regulations make it difficult for startups to enter the market and obtain their insurance license. Canadian regulators have developed a stricter tests, “The Life Insurance Capital Adequacy Test”, which limits the amount of risk companies can take on.

The fundamental reason for government regulations is to protect customers. As insurers adopt the latest technologies at a rapid pace, regulators are expecting to increase the use of technology as well. The *Insurance Regulator Technology Adoption Survey*, published by *Deloitte*, found that insurance regulators expect to increase the usage of new technologies in order to improve oversight of the market and respond to market changes in an increasingly technology-driven industry. By adopting more advanced technologies, regulators can examine the financial products and companies in the market thoroughly.

In 1996, there were a number of insurance-oriented websites that provide consumers with access to online quotes for insurance products *(Jeffrey R, 2018)*. Nowadays, most insurance websites offer online quotes for insurance, however, it only includes the price and necessary information about the service. People still need to contact the insurance company offline to do the body test and negotiate their insurance plan. This situation may be different in the near future.

"Your experience with life insurance will become more convenient, and the products will become more personalized," says Nate Root, vice president of data and analytics for the insurance industry at Capgemini. *"You're going to be able to buy short-term life insurance when you go on trips."* （*Leo Almazora, 2018*). The invention of internet and smartphone allows people to access more information about different life insurance services. People can compare several life insurance products at any time. Online quotes and health condition check lowers the purchasing costs which should ultimately benefit the customer and the insurance company. An article from Capgemini said: "*Some life insurers are already offering policies that reward policyholders who record and share their physical activity using wearable devices." (Leo Almazora, 2018)*. A company can get more health information about their clients from their wearable devices and social media accounts instead of allocating time and labor in conducting a full health check. All this data can be analyzed by computer and provide a very personalized insurance plan for their clients. It is possible in the future each person will have one unique life insurance based on the data collected by your smartphone, wearable device, and/or social account. The insurance company may know about their clients even more than they themselves.

Technological innovation allows insurance companies to collect and analyze data more efficiently, however, it also raises concerns regarding consumer privacy. When an insurance company collects health data from social accounts, mobile devices and other electronics, they may also collect some personal data that is not necessary. It is too difficult and time consuming for clients to know what types of data insurance companies are collecting. *"They have to be free not to want to share that kind of data with their insurance company."* said Ann Cavoukian, who served as Ontario's Information and Privacy Commissioner from 1997 to 2014 (CBC NEWS, 2018). Drawing a line between the necessary health information and people's private information, especially when it is related to your social account, can be quite problematic. Nonetheless, there must be more regulation regarding this issue in the insurance industry. Governments need to play a key role in regulating such behaviour by insurance companies as to protect customers. It is important that the moral issues that may arise as a result of these newly developed technologies be observed and regulated.

Conclusion

Following the great recession, regulatory agencies around the world have imposed tight requirements on financial companies including those operating in the insurance sector. Here in Canada OSFI has imposed Basel III capital requirements as well as Life Insurance Capital Adequacy Tests (LICAT) for federally regulated life insurance companies effective Q1 2018 (*2017 EY Canadian life insurance outlook*). Such regulatory pressures give incentives for insurance companies to seek new operational methods in hopes of improving their solvency. According to a 2017 report by *Celent*, global spending by insurance companies on IT will reach US$184.8 billion, which includes spending on digitalization as well as analytics. By applying machine learning or artificial intelligence to the field of behavioral analytics, insurance companies can identify customer patterns more accurately and thus enhance their threat detection which ultimately can reduce costs. According to a WNS report *"Organizations that are able to leverage analytics will be positioned to achieve a sustainable competitive advantage".* It is thus important that governments anticipate and regulate the impact of technology, as well as the gathering and use of data, in the insurance industry in order to ensure consumer protection and transparency.

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