WEEK 3
CASE STUDY

How many numbers can you crunch?

9-Oct-2022

CONSULTSCHOOL

X Desklamp

Status-quo:

Your client is "**LifeLong**", an insurance provider. They are one of the largest players in the Indian market with adequate visibility across the country. They have been steadily growing in the market at a rate of **2.5%** since the pandemic commenced. However, last week, a major **data breach** took place leading to an emergency measure of **arresting & deleting** all the data stored in their servers. They could retrieve very few numbers, which proved futile in conveying the entire story. Unable to mitigate this situation themselves, they've approached your consulting firm to help them better gauge their current situation & initiate new growth strategies, while preventing such mishaps in the future.

Background & context:

One of the largest & most trusted insurance firms in the country, your client has a reputation for shelling out a positive performance review for the last 10 years, consecutively. This is one set of data points they could recover from their server:

Operating results	**2017-18**	**2016-17**
Gross global premium	96.92	83.46
Premium ceded for risk	(25)	(23.43)
Net premium income	71.92	60.03
Adjustment for unearned	(7.19)	(2.92)
Net earned premium	64.73	57.11
Net incurred claims	(65.24)	(51.32)
Acquisition cost &	(25.92)	(22.98)
Net underwriting results	(26.43)	(17.19)
Investment income earned	22.32	20.78
Net profit or (Loss)	(4.11)	3.59
Adjustment for income tax	(0.1)	0.31
Dividend proposed	NIL	(0.85)
Fund transferred to reserves	(4.21)	3.05

(Reference Link)

However, they've lost the balance sheets for all the years post 2018. Using predictive analysis, the market growth rate of the insurance sector & the increase in death rate, thanks to the pandemic (and any additional rates you mind find via research), they require you to financially model the profitability from 2018-current (2022), using historical data from 2016 & 2017.

Additionally, you are required to guesstimate the market size for this insurance company in India, based on geography & demographic, while also estimating/ predicting the average mortality rate so as to work out the life-insurance liability has to incur. Triangulate the guesstimates' values with ratifiable sources online, so as to please your client.

Data breaches have become increasingly common with time, and incidents such as these could greatly tarnish the client's reputation in the Indian market as well as the brand value they possess. Design a foolproof strategy, citing sources from the past for various methods suggested as well as means to determine the credibility of your creative ideas, to better protect the client's data in the years to come. Guesstimate the number of frauds that occur on a yearly basis to further invigorate the need for such a design strategy.

Helpful hints:

- Perform a thorough review of all available, pertinent resources to enhance your knowledge of the landscape. This is a continuous process, not one that ends post rudimentary understanding of the problem statement. For more tips on efficient resource extraction, handling & interpretation, look out for our insider tips on the same.
- While performing financial calculations, clearly state all the assumptions involved. The software we would suggest for financial modelling is excel. Kindly attach all supporting Excel files while submitting your case presentation.

CS245

Gauri Menon
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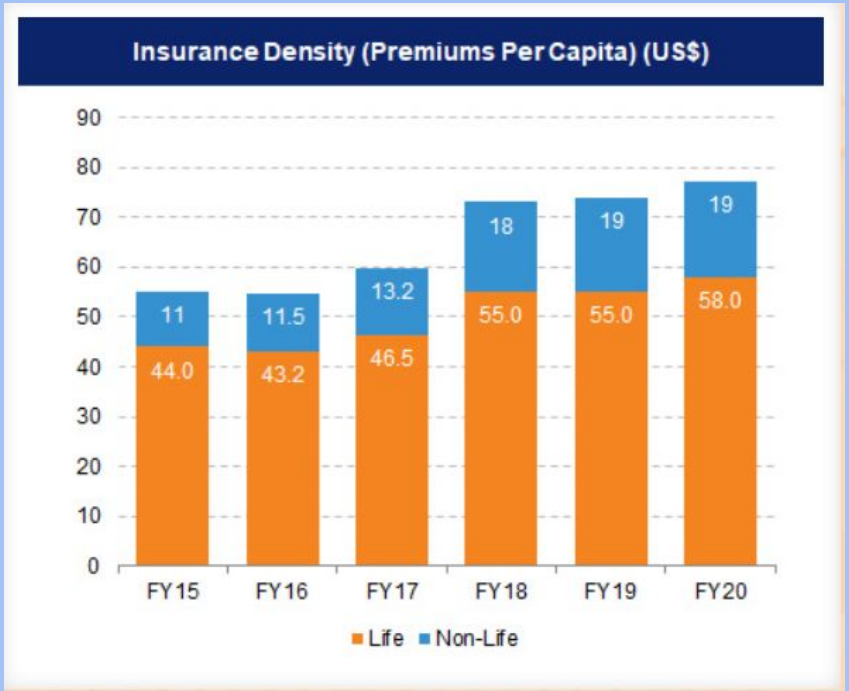
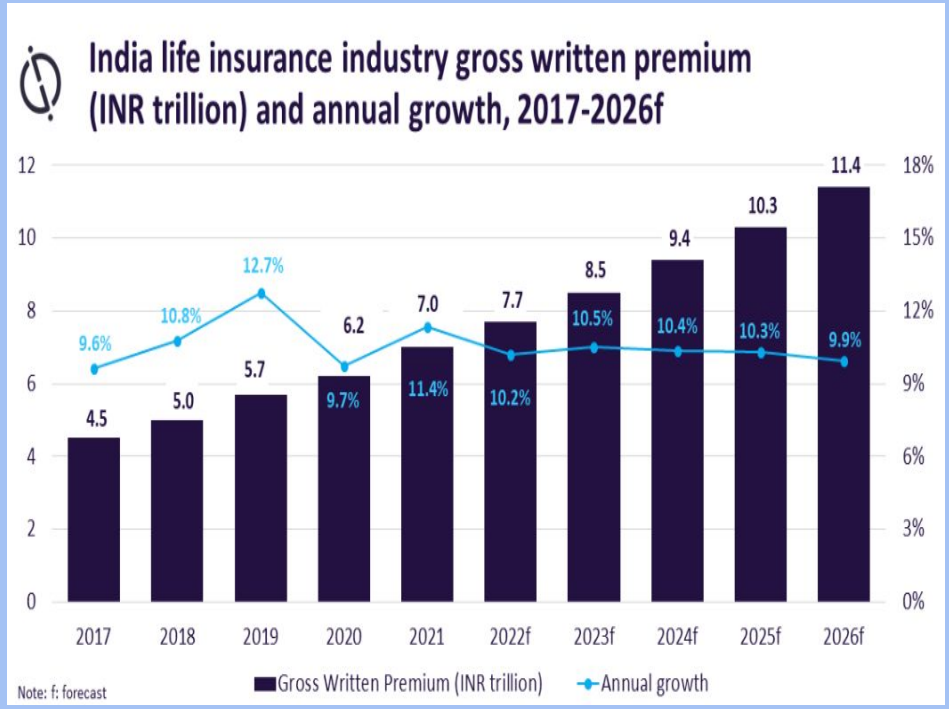
Present market situation

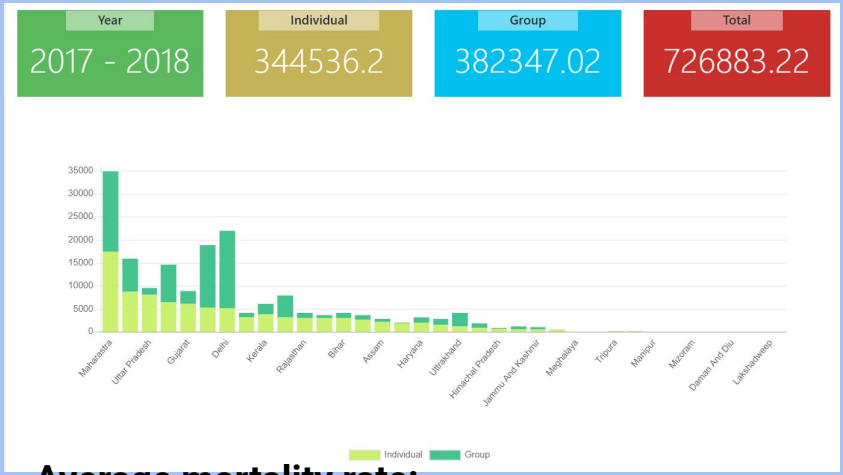


Estimated Growth in market size

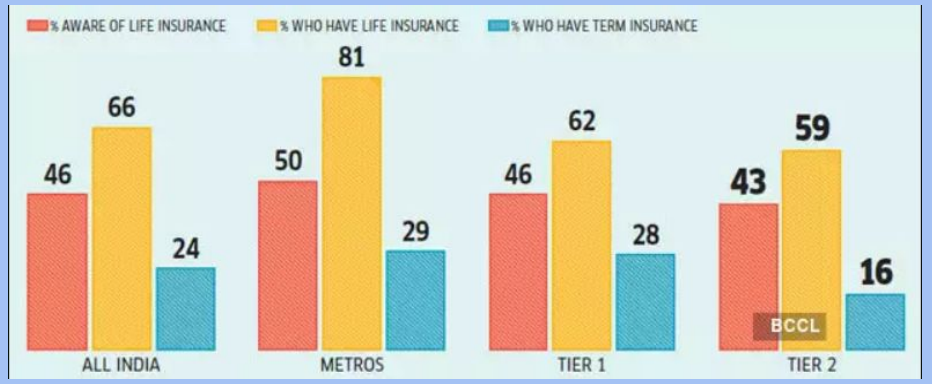


Life Insurance Distribution by:

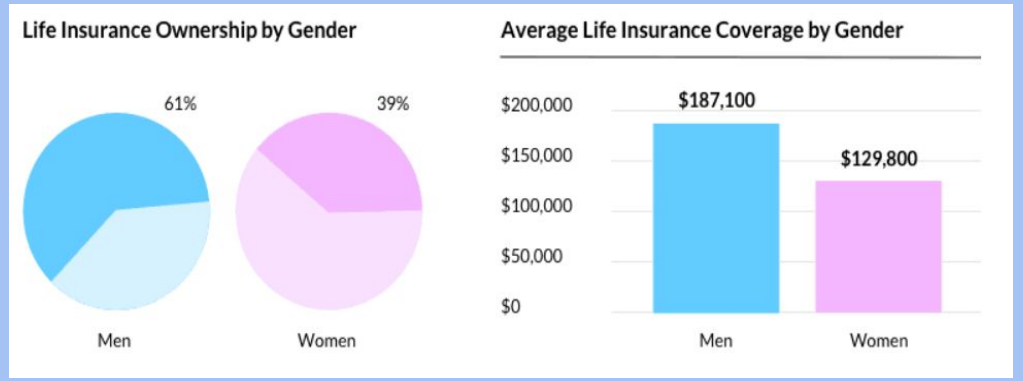
Geography



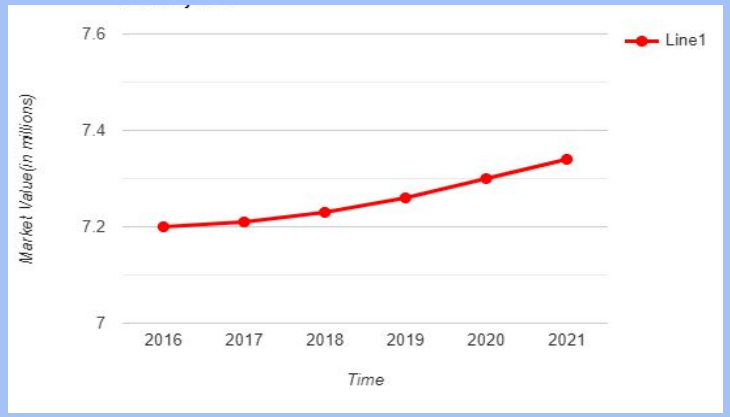
Locality

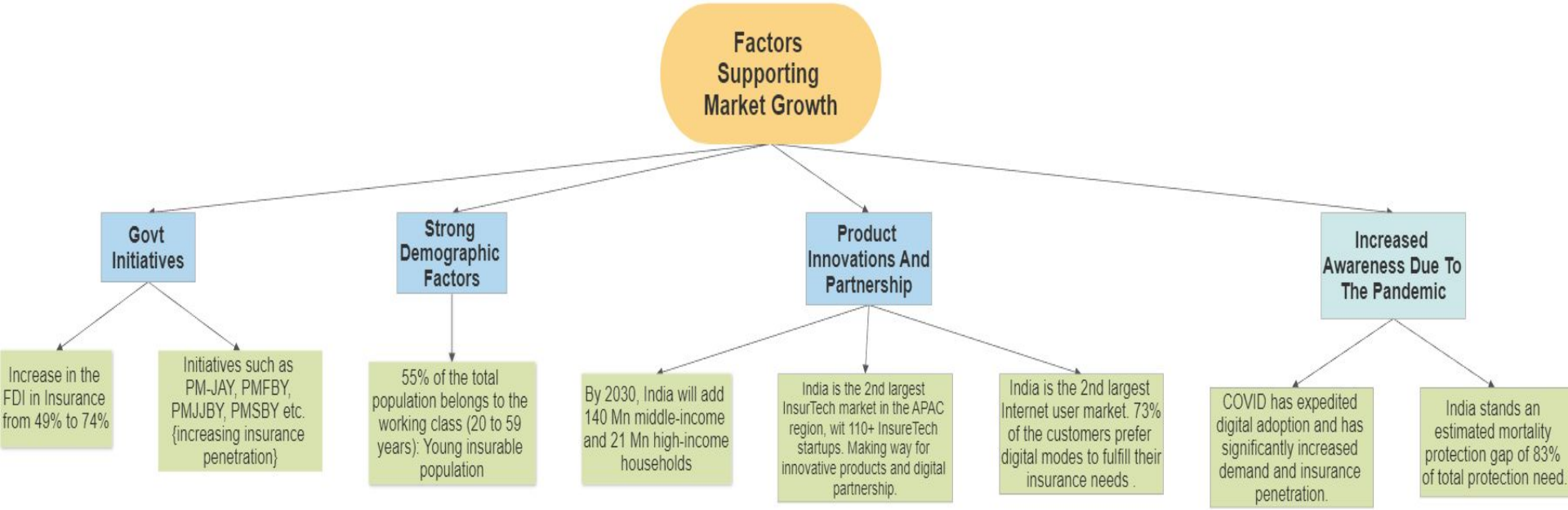


Gender



Average mortality rate:





Based on the present situation, demographic distribution, estimated growth and supporting factors, we have predicted the market growth and the probable financial model with operating result till 2022 in further slides.

Predictive Analysis

https://docs.google.com/spreadsheets/d/1ZknyhVt_ru3hfOpassFE5QbvHRgXwWnDmShwVoqosDY/edit?usp=sharing

Operating results	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Gross global premium	83.46	96.92	112.5507596	131.9392037	157.3198206	176.8459634
Premium ceded for risk	-23.43	-25	-30.3887051	-35.623585	-42.47635155	-47.74841012
Net premium income	**60.03**	**71.92**	**82.16205454**	**96.3156187**	**114.843469**	**129.0975533**
Adjustment for unearned	-2.92	-7.19	-8.34001129	-9.776694995	-11.6573987	-13.10428589
Net earned premium	**57.11**	**64.73**	**73.82204325**	**86.53892371**	**103.1860703**	**115.9932674**
Net incurred claims	-51.32	-65.24	-76.424	-80.152	-95.41904762	-113.5941043
Acquisition cost & management expenses	-22.98	-25.92	-30.3887051	-35.623585	-42.47635155	-47.74841012
Net underwriting results	**-17.19**	**-26.43**	**-32.99066185**	**-29.23666129**	**-34.70932886**	**-45.34924703**
Investment income earned	20.78	22.32	22.74113208	24.17298113	22.06732075	26.69977358
Net profit or loss	**3.59**	**-4.11**	**-10.24952978**	**-5.063680158**	**-12.64200811**	**-18.64947345**
Adjustment for income tax	0.31	-0.1	-0.1	-0.1	-0.1	-0.1
Dividend proposed	-0.85	0	0	0	0	0
Fund transferred to reserves	**3.05**	**-4.21**	**-10.34952978**	**-5.163680158**	**-12.74200811**	**-18.74947345**
Growth rate of Gross global premium		16.12748622	17.2264	19.2366	12.41175	14.185
Market growth		9.6	10.8	12.7	9.67	11.4
Growth in market		5.8	5.8	5.8	2.5	2.5
Cession ratio	3.498682003	7.418489476	7.41	7.41	7.41	7.41
Growth in claims		27.12392829				
Growth in claims ratio			1.171428571	1.048780488	1.19047619	1.19047619
Indian economic multiplier		1.074109721	1.018867925	1.062962963	0.9128919861	1.209923664
Acquisition cost ratio	-0.2753414809	-0.2674370615	-0.27	-0.27	-0.27	-0.27
Premium ceded for risk ratio	-0.2807332854	-0.2579446967	-0.27	-0.27	-0.27	-0.27
Death rate India		7.27	7.27	7.27	7.3	7.34

Predictive analysis: Rationale

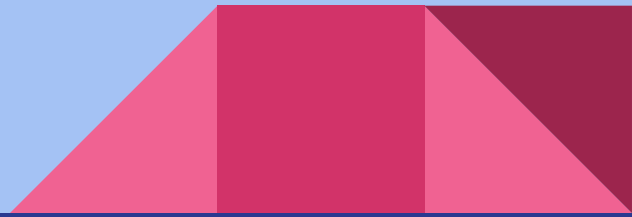
Terms	Gross global Premium	Premium ceded for risk	adjustment of unearned	Net incurred claims	Acquisition cost & management expenses	Investment income earned	Adjustment for income tax	Dividends proposed
Rationale	In the financial year 2017-18, the market grew by 9.6. Our firm made a growth of 16.13. So the growth in market share was 5.8%	Factors are ambiguous, hence past data is the reference used	Minimum Obligatory cession rate was 5% from 2017 to 2022.	Growth of death claims are available till 2021. The growth rate was thus found.	The factors are proportional to the market size.The ratio for 2016 and 2017 were consistent	The major factors influencing this would be the overall economic growth.	Depends on the govt.	Depends on the company
Assumption	Growth rate of 5.8% was assumed till 2019-2020, after which the growth is 2.5%	Assumed to be the average of the ratio obtained from the data provided	As the maximum cession rate of the company was 7.41 in 2017-2018, we have assumed that for all the years till 2022.	The growth of 2022 is assumed to be similar to 2021	The ratio is assumed to be constant for all the financial years	We have assumed that that is the only governing factor for the same		

Need for data protection strategies

- Increase in the incidence of cyber crime and data frauds in the nation
- Companies in the financial services sector, including insurance companies, are heavily targeted by cyber attackers due to large volume of sensitive data
- Insurance providers have multiple data compliance needs in other nations which might be implemented in India. Eg: PCI DSS, HIPAA/HITECH, GLBA
- Data breaches tarnishes trust in insurer and affects brand value
- Positively benefit the company and save it from losses by intelligent recognition of fraud claims using collected data

Foolproof strategy for data protection

- Appoint a data protection officer
- Conduct a risk assessment
- Ensure secure access to data
- Manage privileged employees
- Monitor user activity
- User training
- Reduce third-party risks
- Prepare for a fast incident response



Guesstimate insurance fraud in India

Total life insurance claims in India in 2020 = **Rs. 26,422 crore**
Total number of settled claims in India in 2020 = **10.84 lakhs**
=> Average claim amount in 2020 = **2.44 lakhs**
8.5% of all insurance claims is fraud

“All types of insurance policies are prone to fraudulent claims. However, a fake claim on life insurance policies is six times more likely as compared to other types of policies.” - Internet
Let us assume that the number of life insurance policies is one third to that of non life insurance policies.
This means that the fraud rate in the life insurance industry could be **as high as 15%**

Source:
https://economictimes.indiatimes.com/wealth/insure/life-insurance/how-much-money-did-ind...net-as-life-insurance-death-claim-in-2020-21/articleshow/88897644.cms
https://www.mordorintelligence.com/industry-reports/life-non-life-insurance-market-in-in...
https://www.managementstudyguide.com/abcs-of-insurance-fraud-in-india.htm

Need for data to detect insurance fraud

With rising cases of data theft and cyber fraud, forgery and computer offences; there is more chance of data breach. Protecting and utilising this data effectively will result in at least 50% reduction in fraudulent claims with improving technologies in Big Data.

Data theft cases in India in 2021: 98
Ransomware attacks in India in 2021: 727

The Road Ahead

Partnering with Insure-Tech firms will be a massive growth opportunity as digital insurance is picking up pace. With assurance of safety, people will gravitate towards the same and for innovative and assured products can be delivered. This will increase reach across the demographic. We must also aim to deliver products specific to the customer group.

Source:
https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/TABLE%209A.2.pdf