

Study on Assessing the TAT and Identifying Non-Value-Added Activities of Retail Underwriting Process at Aditya Birla Health Insurance

By

Akanksha Jambusaria

*Dissertation submitted in partial fulfillment of the requirements of the degree
MBA Hospital and Health Management*

Academic year, 2018-2020



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HEALTH INSURANCE

Aditya Birla Health Insurance Co. Limited



ADITYA BIRLA
CAPITAL

PROTECTING INVESTING FINANCING ADVISING

June 12, 2020

To Whomsoever It May Concern

This is to certify that **Dr. Akanksha Jambusaria** has successfully completed her Internship Program with us from 5th Feb 2020 to 30th April 2020.

During the Internship, she was part of the Service Operations team and worked on the project "TAT and Identifying Non-Value-Added Activities of Retail Underwriting at ABHICL"

We take this opportunity to wish her all the best in her future endeavours.

Thanking you,

Yours sincerely,

For **Aditya Birla Health Insurance**

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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled “A Study on Assessing the TAT and Identifying Non-Value-Added Activities of Retail Underwriting Process at Aditya Birla Health Insurance”, and submitted by Akanksha Jambusaria, Enrolment No. 0707 under the supervision of Dr Alok Mathur, for award of MBA in Hospital and Health Management of the University carried out during the period of February 2020 to April 2020 embodies my original work and has not formed the basis for the award of any degree, diploma associateship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Signature

Abstract

Introduction

Insurance underwriting is the process of deciding what risks of the client the insurance company is willing to accept. Underwriters are professionals who evaluate and assess the risks involved in insuring people and assets. In health insurance, companies mainly do medical underwriting which means they evaluate the medical status of the proposer and to sum extent financial underwriting to see eligibility in case of high sum insured cases. The process of underwriting is dependent on the type of the plan opted for and the company's guidelines.

Every insurance company needs to enhance their service, wish to issue policies within a particular time. This study maps the process of the underwriting at Aditya Birla Health Insurance and identifies the turnaround time for underwriting a case and furthermore identifies the non-value-added activities associate with the process.

Rationale

Identifying the non-value-added activities can help eliminate the wasteful activities, reduce the turnaround time for processing a case thereby increasing the productivity of the underwriter and the department as a whole.

Methodology

First part of the study was based on observational data by shadowing underwriters on a daily basis for 8 hours a day. The second part of the study was collecting primary data using a checklist to quantify the observed nonvalue added activities and to obtain turnaround time for case processing.

Key Results

Average turnaround time is found to be 6.5 minutes per case. Non value Added Activities constitute 30% of the whole process. On an average 2 hours can be saved per day if the non-value added activities are eliminated. TAT can be reduced from 6.5 min to 4.6 mins per case.

Conclusion

Eliminating the Non value added activities can improve productivity by 16 cases per underwriter per day. Eliminating certain activities like maintaining excel base sheet, multiple tab movement and IT bugs, can increase efficiency and productivity of the underwriting process.

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This dissertation has been an important landmark in my career development and it has been a great honour to have been associated with such a prestigious and renowned organisation.

I will endeavour to use these invaluable lessons and skills to the best of my ability and continue to strive for improvement to attain my career objectives. Hope to continue cooperation with all of you in the future.

Sincerely,

Akanksha Jambusaria

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List of Symbols and Abbreviations

Abbreviation	Full form
NVAA	Non Value Added Activities
UW	Underwriting/ Underwriter
VA	Value Added
MER	Medical Examination Report
NVA	Non Value Added
IT	Information Technology
PPMC	Pre Policy Medical Check
STP	Straight Trough Pass
NSTP	Non-Straight Trough Pass
TAT	Turn Around Time
IRDAI	Insurance Regulatory and Development Authority of India

Introduction

Insurance seeks to provide financial protection to the insured in case of unfortunate events resulting in loss of assets, property, income earnings and even life. Insurance sector in India is broadly divided into: Life insurance and Non-life insurance. Non-life insurance is also termed as General insurance, and both are governed by the Insurance Regulatory & Development Authority of India (IRDAI). The Indian insurance sector includes a total of 57 companies out of which 24 are life insurance and 33 are non-life. As per IRDAI's annual report of 2018-2019, India's global market share in insurance sector was 1.92 percent in 2018.¹

Health insurance is the type of non-life insurance that deals with morbidity, meaning the type of insurance coverage that pays for medical and surgical expenses. It is relatively less well established in India as compared to many other countries, yet health insurance industry in India is the fastest growing segment in the non-life insurance sector². Health insurance occupies 27.3% of gross direct premiums in the non-life insurance group, second to motor insurance (36.6%)¹

Yet, the out of pocket health expenditure in India remains high, with only 1.5-2 % covered by insurance providers.

Insurance companies need to assess which risks can be onboarded by them, this is done by applying vast actuarial principles and techniques and a price model for premium is calculated.

Health insurance broadly includes the following activities:

- Underwriting
- Claims management
- Managing fraud and abuse
- Managing provider network

The life cycle of an insurance product is as follows²:



The process of risk management is done by the process of underwriting, It enables the insurer to categorise the risks into

- Preferred risk
- Standard risk
- Sub-standard risk
-

Types of underwriting are-

- Medical underwriting
- Financial underwriting
- Tele underwriting
- Technical underwriting

The underwriter performs this classification using the information provided into the proposal from and by careful analysis of medical reports and profile of the proposer. Underwriting is based on the principles of ²

- Equity & fairness
- Product pricing & claim management
- Regulatory and legal compliance
- Consistency
- Risk Evaluation
- Risk Classification
- Balancing convenience, cost and effectiveness
- Intelligent use of rating variable

By the end of the process the company decides which risks they are willing to accept and how, and those they are willing to reject. Insurance underwriters don't engage with the client face to face, they merely review their proposal and based on their profile and the company's risk model/guidelines, make an appropriate offer to the proposer.

The scope of this study is to study the underwriting process of the company and to identify the non-value-added-activities associated with the process.

Cases may be STP or NSTP, the cases that are STP do not require Underwriting, they are those cases wherein the proposer doesn't disclose any health declaration or personal habits and the sum insured and age also are within acceptable limits.

NSTP cases are those that are referred for underwriting. This include cases wherein the age, sum insured require underwriting consideration and/or when the proposer has disclosed some health issues or personal habits in the proposal form.

Types of cases received by the company are -

- New Business
- Renewal
- Roll over

Various decisions that can be given –

- Accept
- Reject
- PPMC/Tele MER/Video MER
- Discrepancy
- Counteroffer

The scope of this study is to assess the current Turnaround time of the underwriting process at Aditya Birla Health Insurance Pvt Ltd , and to identify activities that can be eliminated such that processing time can be reduces and efficiency of process can be improved.

Operational Definitions

Turn Around Time (TAT) refers to time taken for a case to be processed from the time an UW logs in the case to the time a decision is given in the system,

Value Added Activities refer to those that fulfil the following three criteria:

- The step transforms the item towards completion.
- The step is done right the first time (no rework).
- Customer would pay for the step to be done.

Non Value Added Activities (NVAA) are those that fail to meet any one or more of the above criteria or in other words actions that do not increase the worth of what is delivered to the customer.

Literature Review

Author	Title	Overview
S. Mkrtychev, O. Enik	Automated Underwriting Control in a Regional Insurance Company	- Underwriting is one of the key business processes of the insurance company operational activities. - Underwriting is the only operational business process of insurance activities, where the human factor still has a great impact on the accuracy of risks identification and decision-making as to whether accept or reject an insurance application from a potential client . - One of the obvious ways to increase the effectiveness of the underwriting process is to organize its automated control. - Suggested underwriting scale. - Authors propose an approach to the implementation of automated underwriting control in a regional insurance company based on combined decision-making carried out by the underwriting management information system (UMIS) and a human underwriter. - The use of the automated underwriting control solution built on the basis of the proposed approach in the insurance company ensured a reduction in the loss ratio for some types of voluntary non-life insurance by 28% .
Mutai K. Joram Bii K. Harrison and Kiplang'at N. Joseph	A Knowledge-Based System for Life Insurance Underwriting	- Enhance the life insurance underwriting process by building a knowledge- based system for insurance underwriting. - The objective of this study was to analyse the life insurance underwriting process and identify models to support the process and to design and implement a knowledge-based system using a rule-based approach to satisfy the needs of the life insurance industry. - Qualitative research approach - The study analysed the processes and tasks in life underwriting, in order to clarify what was necessary for the development of the KBS.
Christopher M. Murtaugh, Peter Kemper and Brenda C. Spillman	Risky Business: Long-Term Care Insurance Underwriting	- Insurers typically respond to the problem of adverse selection by underwriting. - By collecting information at the time of applying, insurers attempt to mitigate the irregularity of information between the applicants and insurers concerning expected claims.

		• The actual underwriting process begins with the completion of an application form. • The first stage, the application checklist is used to screen applicants. • Those who pass this screen go on to a second stage in the underwriting process for detailed medical information of the proposer. • Long-term care insurance underwriting criteria identify individuals who vary substantially in the financial risk they pose to insurers.
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Research question

Which are the Non-Value Added activities associated with the underwriting process of the company and how do they affect the process?

Rationale

Identifying the Non Value added activities will help to manage or eliminate them thereby help to improve process efficiency.

Objectives

1. To map the retail underwriting process (production).
2. To identify the value and non-value added activities in the existing retail underwriting process.

Methodology

First part of the study comprised of observation of the process by shadowing underwriters on daily basis.

Followed by noting down the observed challenges in the process.

The second half of the study included quantifying the challenges.

Study Type: Descriptive Cross Sectional

Data type: Primary

Tool: Checklist

Samples: 203

Time period for data collection: Three weeks

Data collection: Live online shadowing of underwriters via screen sharing.

Sampling method: Convenience sampling (subject to availability of cases and UWs)

Limitations of the Study:

- Due to COVID situation, TAT for PPMC cases was calculated based on past data.
- Majority of the study was conducted in work from home environment.
- Certain processing skills of UW are subjective and differ from one UW to another. Such subjective skill were beyond the scope of the study but may have had confounding effect.
- Certain UW remained unavailable for study on technical grounds.
- Complexity of cases differ from each other however for the ease of interpretation, it can be assumed that the effect may have been nullified over the samples.

Results

The first part of the study was to map the underwriting process.

Cases are received from either online or offline portals. Cases are treated depending on its type. STP cases are those which do not require intervention by underwriters and are accepted straightaway. NSTP cases are those which require the intervention by underwriters. The differentiation between the two cases is as per company's guidelines.

Process flow:

After a proposer fills the proposal form for an insurance policy, data is entered into the system, the system decides by pre decided parameters those cases which are STP and NSTP. STP cases are automatically issued hence they are not directed for underwriting. NSTP cases are those where the proposer has disclosed something in proposal form or requires medical tests or financial evaluation as per client profile and company guidance. Once the cases are marked as NSTP, it reflects in the system. An assigned person extracts the proposal number from the system and allocates cases to underwriters as per the authority level which is based on product and sum insured. Each underwriter receives an excel sheet with proposal number and name of the underwriter. Underwriters have to filter their cases from the excel and process them in the software. Processing involves steps like entering the proposal number, opening the case, reviewing the proposal form, seeing medical documents if any, see profile of the client, evaluate health status and financial status of clients. Assessment parameters are different for different products and also vary as per channel. As the underwriter processes cases, he/she is expected to maintain a comprehensive summary of every case in a excel sheet alongside. This excel sheet is to be sent to the concerned team member twice a day, the latter collates the data and saves it for record of the team.

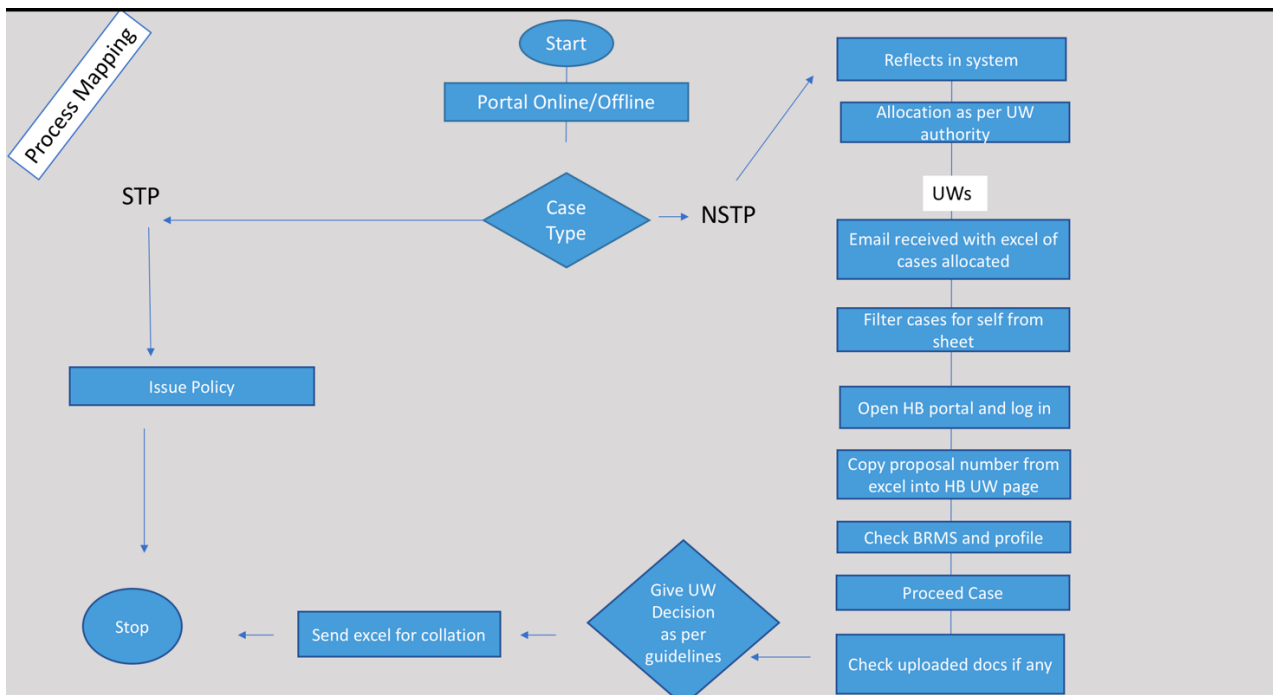


Fig 1: Process flow

The average TAT of the process was found to be six and a half minutes per case irrespective of the type of product and underwriter, excluding PPMC case. Out of the whole process, 30% of the process is comprised of NVA activities.

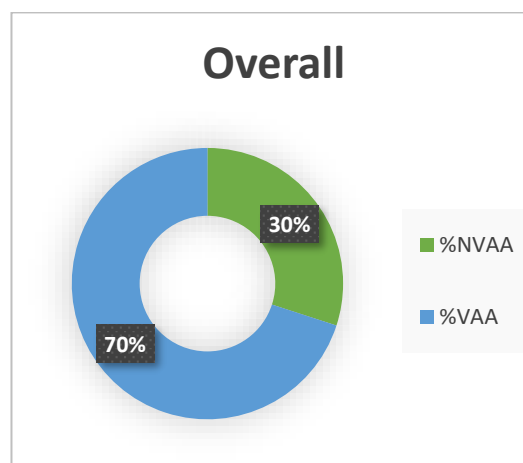


Fig 2: Graph showing distribution of NVA and VA activities of the UW process

The most popular products of the company were compared with the overall average TAT. For this, 20 random cases were selected from each product category. It was found that a particular product C took longer than average to process. The average overall TAT was found to be 6.5 minutes however the TAT of product C was found to be 7 minutes, i.e. 30 seconds more than average. This increase in time can be attributed to the additional steps of financial underwriting associated with this particular product.

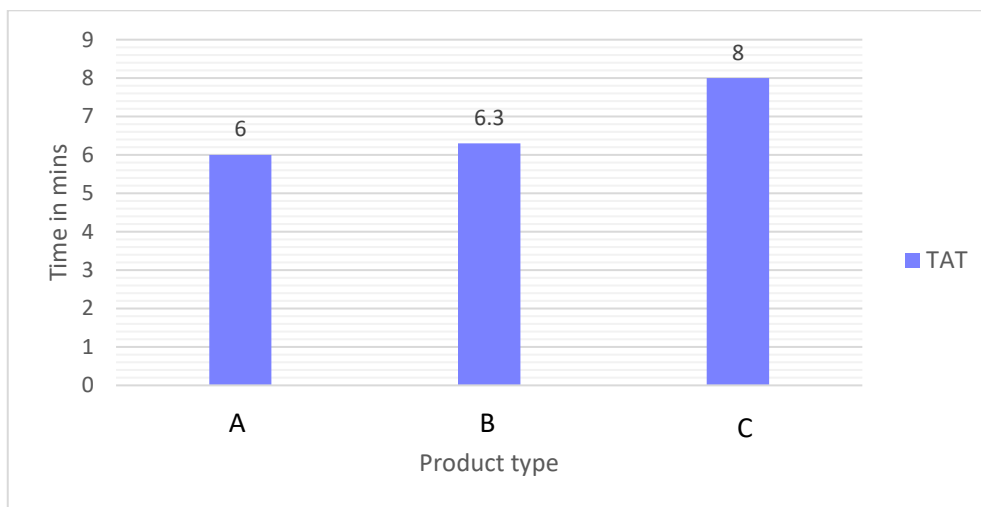


Fig 3: Graph comparing overall TAT with TAT of other products for 20 random cases.

Further, the average time consumed by NVA activities in percentage was found to be almost similar to the overall average of 30% for products A and B, at 27% and 26% respectively. Whereas it was found to be 35% for product C which can be attributed to the additional avoidable steps associated to financial underwriting.

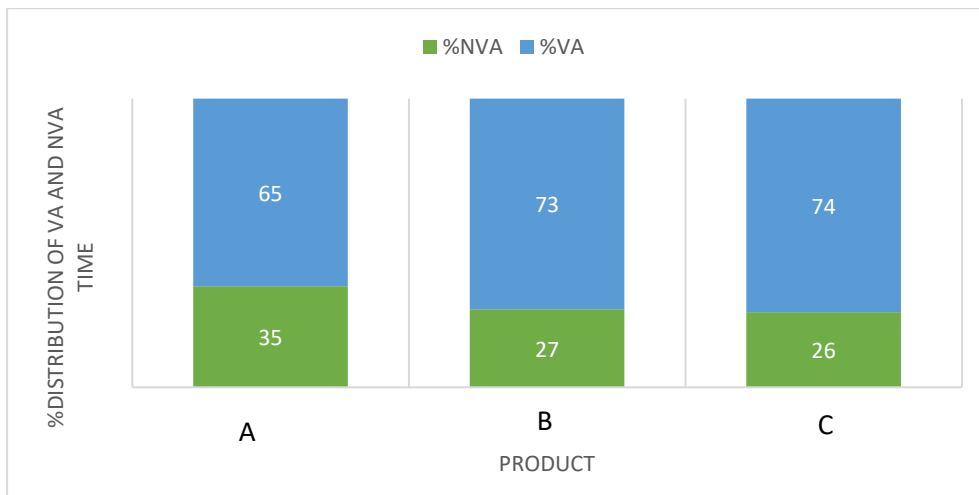


Fig 4: Graph comparing average time consumed by NVA activities in percentage, product wise.

The type of proposals that the underwriting team receives can be new business, renewal or roll over. New business refers to those proposals that are fresh cases, renewal cases are those whose tenure are coming to an end or are within the grace period of 30 days and the insured wishes to get the policy renewed, roll over cases refers to portability cases where in client is switching from one insurer to another. All three business types were found to have close to same amount of time spent on NVA activities. New business being highest at 31%, followed by renewal and rollover at 28% and 26% respectively.

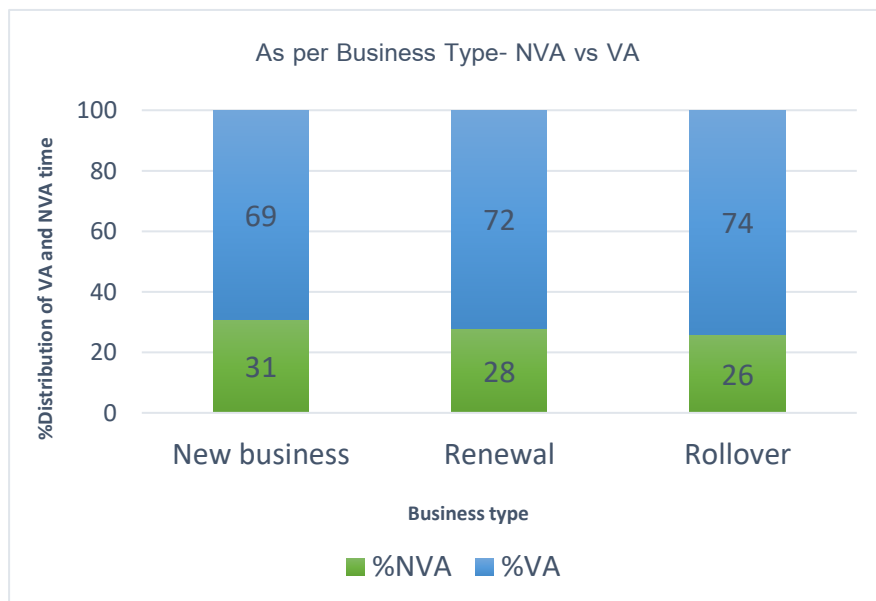


Fig 5: Graph comparing average time consumed by NVA activities in percentage, as per business type.

Further, to identify the impact of NVA activities on the TAT of the process, average of each NVAA was identified. The most occurring NVA activities and their average are as follows:

- Maintaining excel for case overview: As identified while mapping the process, underwriters have to maintain a case summary which is collated for the purpose of internal records. It is a repetitive effort which doesn't affect the decision in any manner. Hence it has been classified as a NVA activity. The average time spent on this activity per case is 55 seconds. This comprised 13.8% of the total TAT of 6.5 minutes.
- Multiple tab movements: This refers to wasteful clicks, windows that can be judged, repetitive tab movements that can be avoided in the system. The average time spent wastefully on this activity is 20 seconds/case, which contributes to 4.8% of the TAT of 6.5 minutes.
- Need to review case that was previously processed by another underwriter: Many a times cases are referred back to underwriting with additional reports, medical reports or other requested information, but allotted to a different underwriter the second time. In such cases, the latter needs to review the entire case again and discuss with the original underwriter to seek clarity. This causes repetition of effort of reviewing case details. Average time spent on reviewing details of such cases is 40 seconds/case. This is 10% of total TAT of 6.5 minutes.
- Lack of interdepartmental communication: Lack of SOP between departments leads to organisation drag i.e. unnecessary communication between members of the same team and different teams. This also involves communication via informal channels. These are non-value-added activities because they don't add value to the client. The time spent per case on such an activity can be up to 3 mins per case which means such an activity can double the TAT of a case.
- Other NVA activities include system errors such as hang, log out from system, unable to locate documents in the system and other technical glitches. Such activities can consume up to 30 seconds per case i.e. about 8% of the total processing TAT of 6.5 minutes.

In order to analyse the non-value-added activities as per their occurrence, Pareto analysis was done. By applying the Pareto principle or the 80/20 rule, we can identify those 20% NVA activities that affect 80% of the process. The occurrence of each NVA activity were counted.

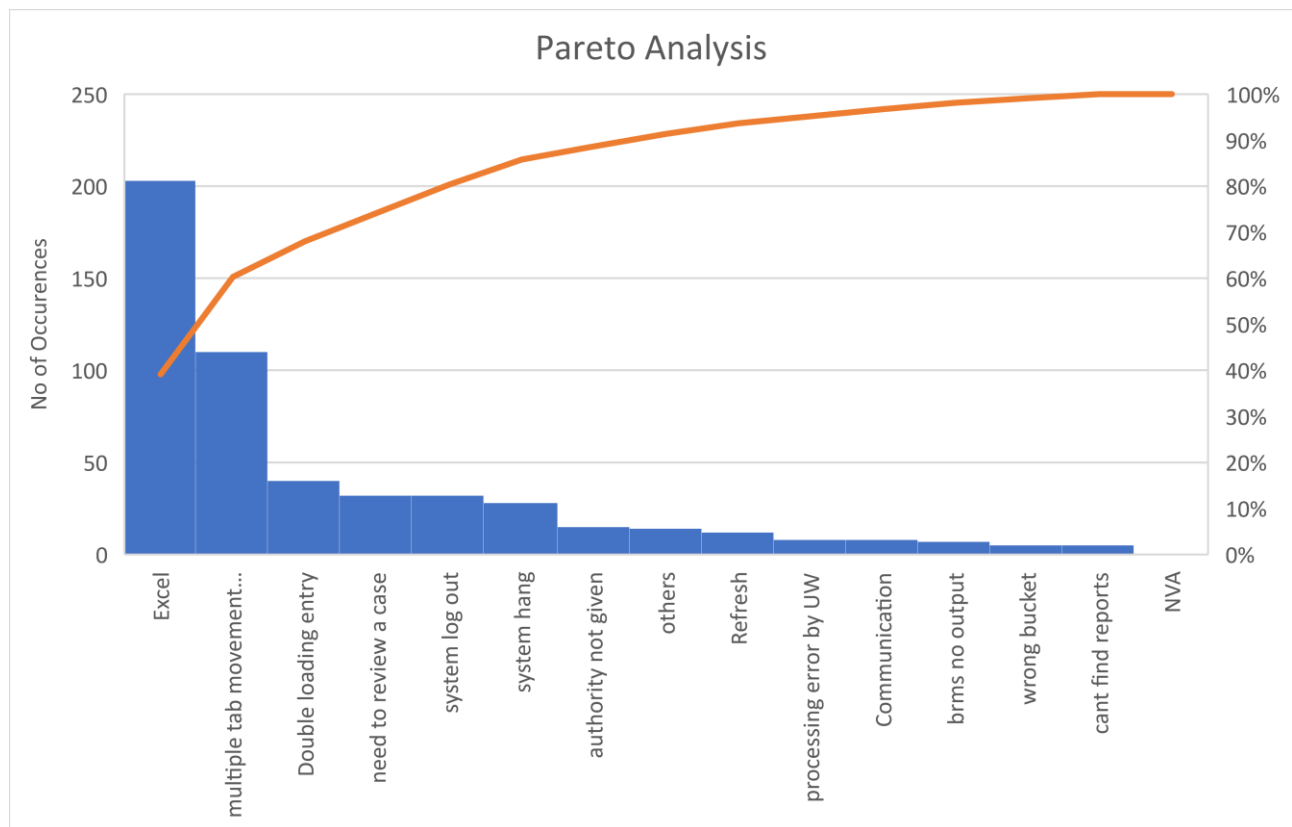


Fig 6: Pareto analysis of NVA activities

As per the pareto analysis, excel maintaining, multiple tab movements, system log out, system hang, double loading entry and need to review cases previously processed by other UW, were identified as those 20% NVA activities that have 80% impact on the process. Hence while prioritising tasks, these problems can be addressed first.

Another important factor that TAT depends on is the underwriter processing the case. While some subjective skills are difficult to quantify, the effect of underwriting level can be seen to influence TAT. Underwriting level increases with seniority, one being the least. For ease of comparison, average of same product, same sum insured, and same business type was selected.

Average time to process case for level 3 underwriter was found to be 5 mins / case which is lesser than overall average of 6.5 minutes, for level 2 underwriter it was similar to average and for level 1

underwriter it was found to be almost 9 minutes per case. Hence it can be inferred that TAT also depends on underwriting level.

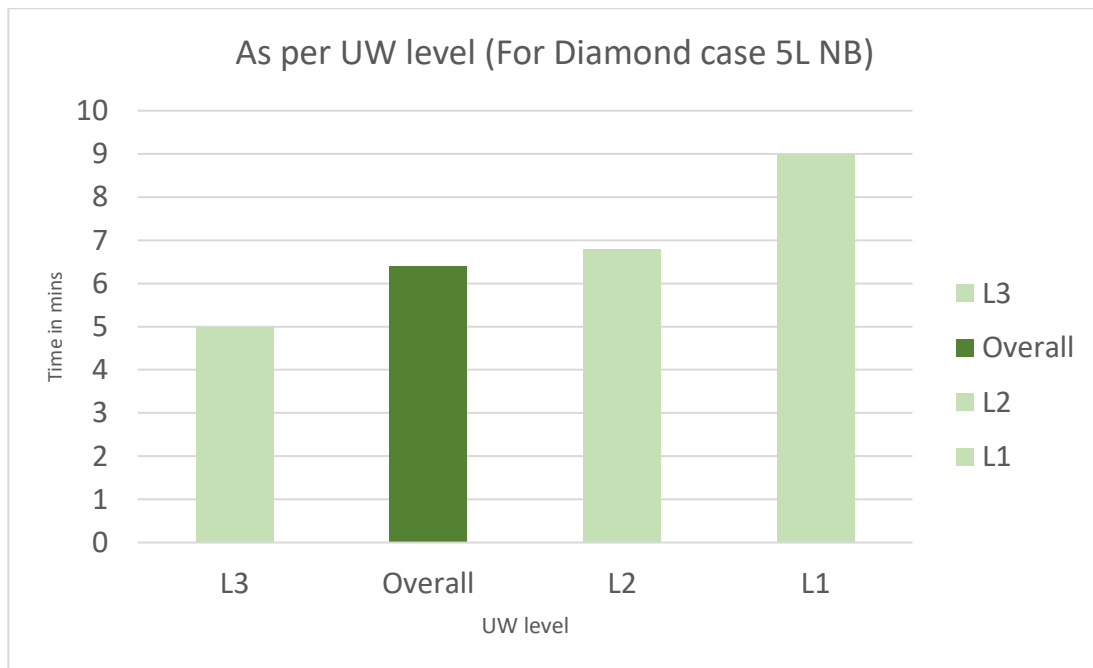


Fig 7: Comparing TAT as per underwriting level and with overall average TAT.

TAT was also seen to differ from one underwriter to another. Some underwriters took lesser time than average TAT while some took longer to process cases.

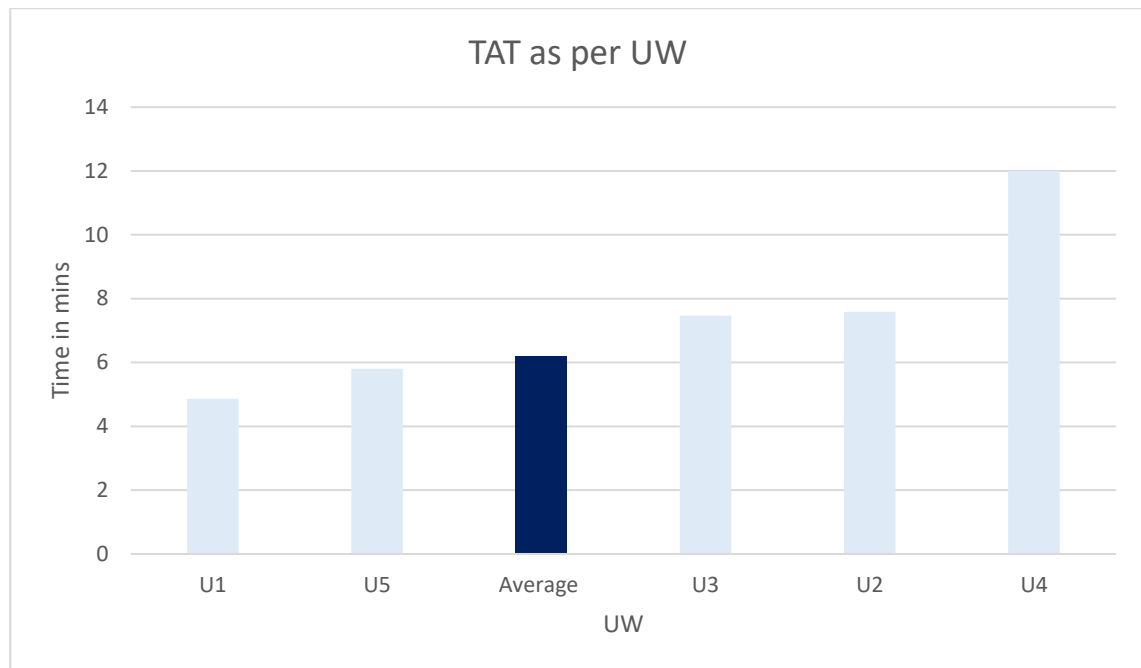


Fig 8: Comparing TAT as per underwriter and with overall average TAT.

The above two graphs point out to the fact that several factors affect TAT of a case, such factors could be both intrinsic and extrinsic in nature:

- Experience of team member
- Acquaintance with system
- Approach towards a case
- Complexity of case
- Technical support (laptop, tech equipment, connectivity)

Impact of each Non value added activity:

Challenge	Error % (out of 203 samples)	%time per total non-value added (6.5 hours)	Impact on productivity (No of extra cases per UW per day)	Improved Daily productivity (cases per day)
Maintaining Excel Base Sheet	100%	48%	8	65
Rework of cases of another UW	16%	6%	1	6
Multiple tab movements	54%	20%	3	24
Lack of organised communication	4%	10%	1	7
IT bugs	58%	16%	3	26

Maintaining excel base sheet constitutes 48% of the total NVA time, and affects the productivity by 8 cases per UW. It occurs in all the cases hence error percentage is 100%. Reworking of cases constitutes 6% of total NVA time with error% as 16%, Multiple tab movements constitutes 20% of the NVA, lack of communication constitutes 10% and IT bugs constitute 16% of the NVA time.

Finally, potential benefit of resolving NVA activities were analysed on an overall level. Assuming all the NVA activities are addressed, the average TAT of a case (irrespective of product and underwriter), can be reduced from 6.5 min to 4.6 mins. For a level 3 underwriter, TAT can be reduced from 5.4 min to 3.7 mins, from 6.1mins to 4.5 min and from 7 to 5.55 for a level 1 underwriter respectively.

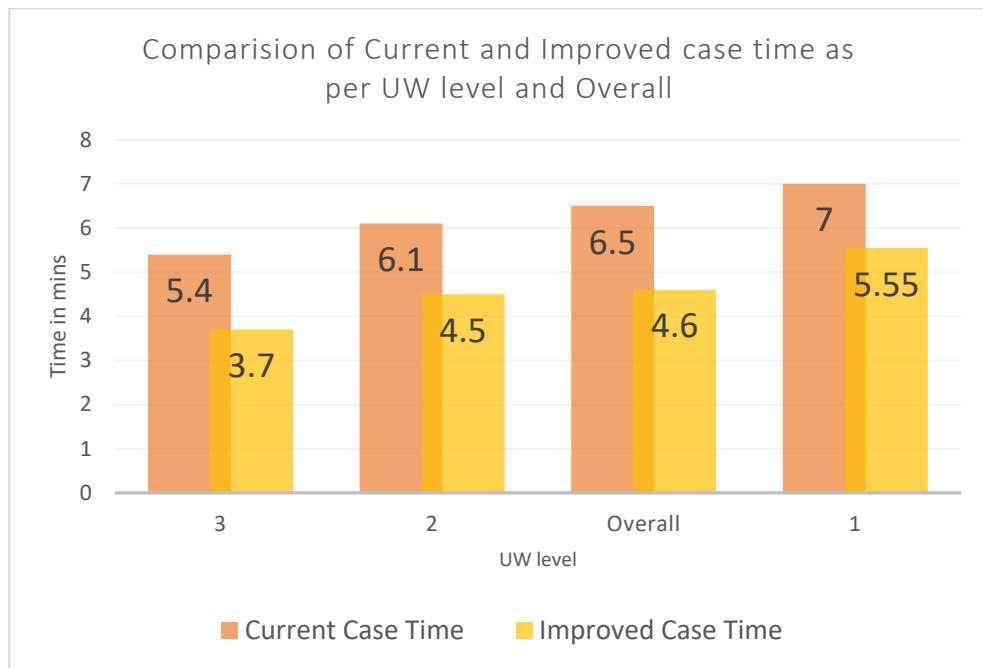


Fig 9: Current case time vs possible improved case time

In a working day of 9 hours, assuming that 390 minutes are dedicated to the cases within the scope of this study, each UW can process 60 cases. If the 30% NVA activities are reduced to 0%, 16 additional cases can be processed by an average underwriter on a daily basis.

Average case TAT can be reduced to 4.6 minutes from 6.5 minutes, i.e. nearly 2 hours out of 6.5 hours can be used for other value-added-activities.

Discussion

Fish Bone Analysis/ Ishikawa diagram:

A number of reasons lead to the overall increase in processing time. They have been classified under

- Nature of core system
- IT
- Communication
- Other

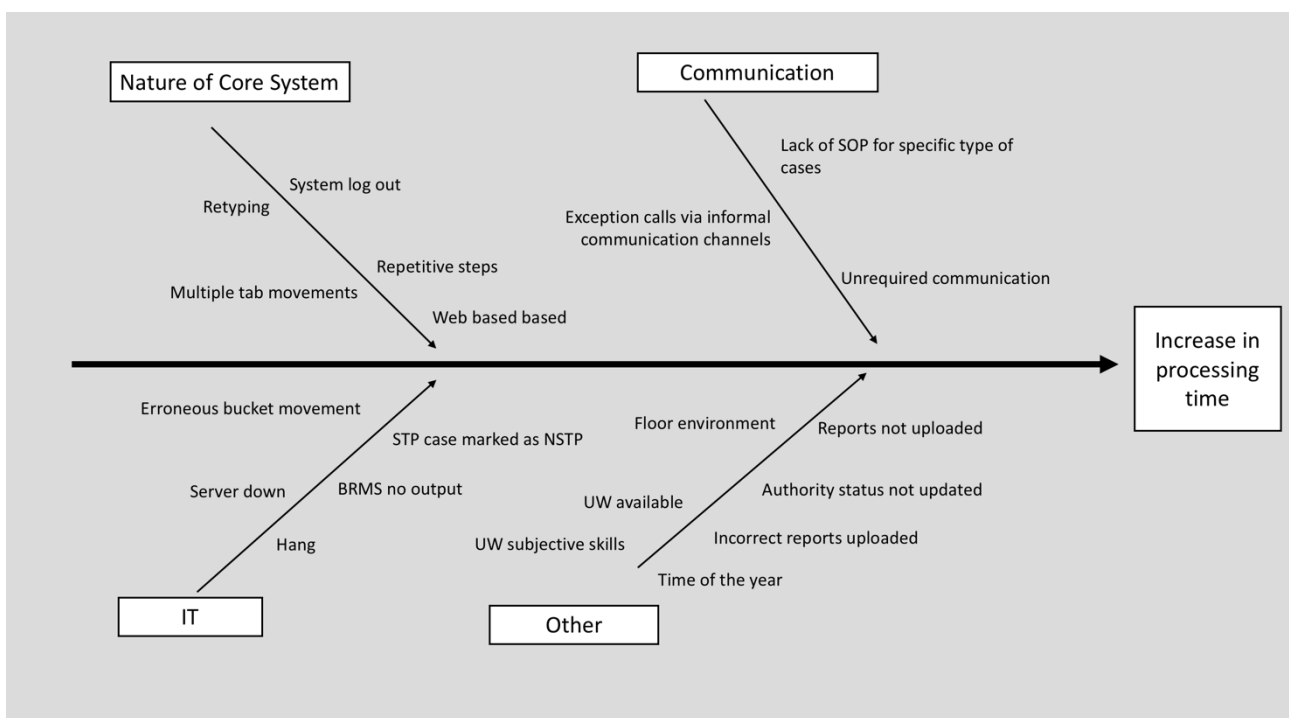


Fig 10: Fish Bone Analysis

A Senior UW may be able to dodge effects of NVA better than a mid and junior level UW. Resolving NVA challenges may benefit some UW more than others thereby increasing their capacity to process more cases.

Reverse Fish Bone Analysis:

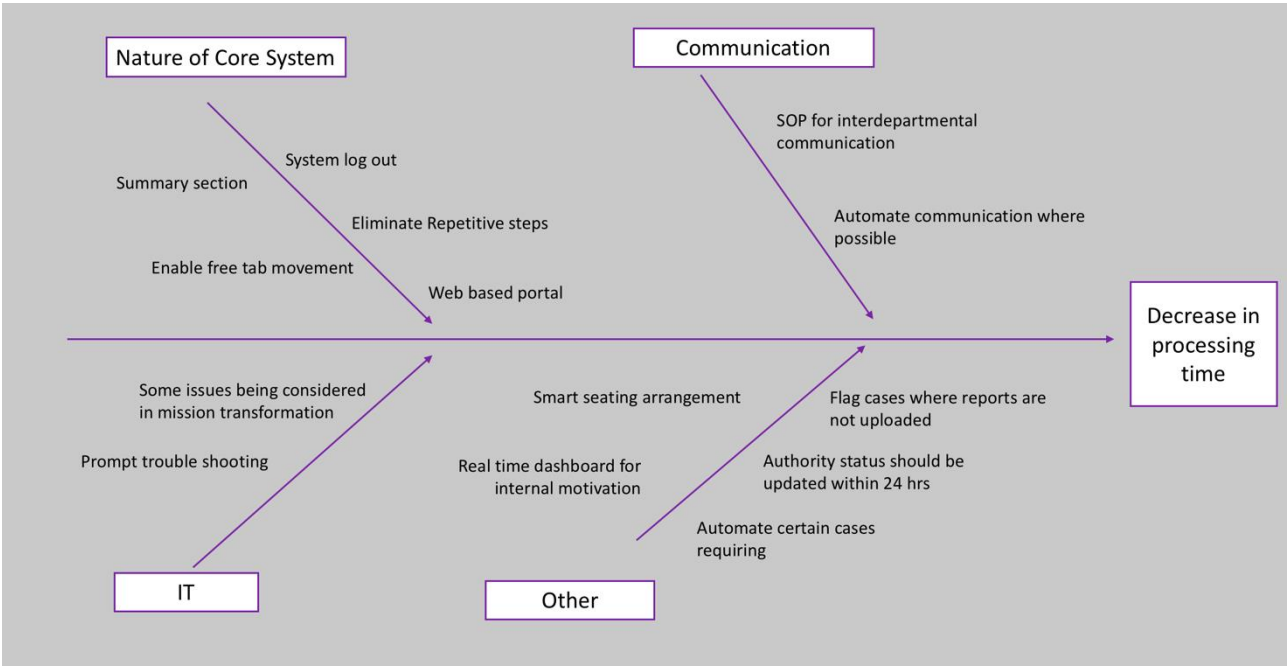


Fig 11: Reverse Fish Bone Analysis

Conclusion

Non-value-added activities comprise 30% of the overall process. Eliminating such activities can reduce the average process time from 6.5 minutes per case to 4.3 minutes per case.

TAT of each case was also seen to differ as per business type, product, underwriter level and subjective skills of underwriters.

Based on occurrences, NVA activities such as excel maintaining, multiple tab movements, system log out, system hang, double loading entry and need to review cases previously processed by other underwriters, constitute 20% of the total NVA activities; if they are addressed first, they can reduce impact of all NVA activities by 80%. This is based on Pareto's 80/20 rule.

Certain non-value-added activities such as increased effort due to lack of established communication between departments, was seen to affect the TAT of cases by 50% i.e. double the processing time. For this a proper SOP for interdepartmental communication should be established.

Provision of a summary section in the system such that on logging in, UW is able to view personal log of cases done and summary of each case appears alongside, exclusively for UWs, will eliminate the process of retyping findings.

Real time dashboard can help internal motivation of UW and allow them to track their progress with respect to other UWs. Smart seating arrangement can reduce movement from one place to another.

Currently an UW spends almost 2 hours per day on NVA activities. If these activities are eliminated, the productivity of each UW can increase by 16 cases per day. Overall number of UW can be reduced from 8 to 6. Total productivity can increase to 539 cases per day

Annexure

	<i>Check list</i>	
1	Date	
2	Case Number	
3	UW	
4	UW Level	
5	Start Time	
6	Sum Insured	
7	Type of product	
8	Type of Business	
9	Time spent on Excel	
10	Non Value Added Activities	
10.1	Multiple tab movements	
10.2	Release case takes you back to manage proposal page	
10.3	Lack of SOP communication	
10.4	Need to review proposal of case of another UW	

10.5	System log out	
10.6	System hang (>30sec)	
10.7	CF premium mismatch need to refresh multiple times	
10.8	PED addition	
10.9	Separate client id	
10.10	Labs of own choice	
10.11	Authority not given (5)	
10.12	Double loading entry	
10.13	Incorrect PPMC report	
10.14	No PPMC report	
10.15	BRMS no output	
10.16	Wrong bucket movement	
10.17	STP case marked as NSTP	
10.18	Other observed NVA activity (Mention)	
11	End time	
12	Total Time Taken to close case in mins (start time – end time)	
13	Notes	

Bibliography

1. IRDAI Annual report 2018-2019
[https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual reports/IRDAI English Annual Report 2018-19.pdf](https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual%20reports/IRDAI%20English%20Annual%20Report%202018-19.pdf)
2. Basics of Health Insurance IC-35, Chapter 4 Health Insurance and Underwriting Principles. p 113, 14.
3. Basics of Health Insurance IC-35, Chapter 4 Health Insurance and Underwriting Principles. p 128. Diagram 4
4. Global analysis of health insurance in India, EY and Oxford Economics, [https://www.ey.com/Publication/vwLUAssets/EY-global-analysis-of-health-insurance-in-india/\\$File/ey-global-analysis-of-health-insurance-in-india.pdf](https://www.ey.com/Publication/vwLUAssets/EY-global-analysis-of-health-insurance-in-india/$File/ey-global-analysis-of-health-insurance-in-india.pdf)
5. Emerging Health Insurance in India – An overview, J Anita, 10th global conference of actuaries, [https://www.actuariesindia.org/downloads/gcadata/10thGCA/Emerging Health Insurance in India-An overview J Anitha.pdf](https://www.actuariesindia.org/downloads/gcadata/10thGCA/Emerging%20Health%20Insurance%20in%20India-An%20overview%20J%20Anitha.pdf)
6. Anand Thakur and Sushil Kumar (2013), Health Insurance Penetration in India: Implications for Marketers, Special Issue: Proceedings of 2nd International Conference on Emerging Trends in Engineering and Management, ICETEM, International Journal of Advances in Engineering Sciences Vol.3 (3), July, 2013 e-ISSN: 2231-0347 Print- ISSN: 2231-2013.
7. Aggour, K. S., Bonissone, P. P., Cheetham, W. E., & Messmer, R. P. (2006). Automating the Underwriting of Insurance Applications. *AI Magazine*, 27(3), 36. <https://doi.org/10.1609/aimag.v27i3.1891>
8. Murtaugh, C., Kemper, P., & Spillman, B. (1995). Risky Business: Long-Term Care Insurance Underwriting. *Inquiry*, 32(3), 271-284. Retrieved June 18, 2020, from www.jstor.org/stable/29772556
9. Mohammad Mahdi Khalili, Mingyan Liu, Sasha Romanosky, Embracing and controlling risk dependency in cyber-insurance policy underwriting, *Journal of Cybersecurity*, Volume 5, Issue 1, 2019, tyz010, <https://doi.org/10.1093/cybsec/tyz010>
10. Mahal, A. (2002). Assessing Private Health Insurance in India: Potential Impacts and Regulatory Issues. *Economic and Political Weekly*, 37(6), 559-571. Retrieved June 18, 2020, from www.jstor.org/stable/4411719