



## CASE STUDY: COMPLEXITY REDUCTION

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Most contractual agreements between an insurance company and its clients are governed by policy contracts that capture the applicable benefits, limitations, exclusions, procedures, terms and conditions. These contracts can be extremely lengthy, involved and complex – making them difficult for the client to understand, interpret and update. This in turn creates the risk of disputes, legal loopholes and generally dissatisfied clients.

The complexity of an insurance company – in terms of its benefits, rules, processes and systems – is often mirrored in its policy contracts. However, it must be acknowledged that the products, benefits, documentation, processes, rules and systems of an insurance company are interdependent: a change in one of these areas affects the other areas as well, making it difficult to implement change. A South African-based insurance company experienced difficulty in maintaining and updating its core contract governing its obligations to clients and vice versa. The company was also aware of several legal risks due to possible ways of interpreting the contract. A pilot project was designed to address the immediate threats and deficiencies in the contract document and to devise a way of supporting the process of coherently updating the contract in the future. A subsequent project – to analyse and address the complexity of the entire company – was planned to follow the pilot project.

## PROJECT OBJECTIVES

The broad objective of this project was to analyse and address the complexity of the company in order to reduce its operational costs and to simplify its products, processes, systems and documentation – and simultaneously to increase client satisfaction.

The main project objectives were:

- To analyse the company's fundamental contract with the goal of optimally restructuring the contract
- To assist the legal department to consistently neutralise any existing risks in the contract
- To create a mechanism for assessing what impact a change in a given contract clause would have on the rest of the contract
- To analyse the complexity of the business
- To suggest strategies for simplifying the business

## MODELLING THE INSURANCE CONTRACT

The existing contract was an intricate document that required time and effort to amend. Changes to the contract were made by means of endorsements, hard copies of which were then mailed to all policyholders. The complexity of the contract obviously increased with each endorsement. One of the first steps was to create a model of the current insurance contract in order to understand its complexity. As a first step, a diagram of the contract was compiled – a tree with the respective contract sections, sub-sections and clauses as nodes. Next, all the explicit and implicit cross-references in the contract were added to the diagram, thus making them visible and traceable. The final contract diagram consisted of 434 nodes with 568 cross-references and was created in an electronic mind map format. The purpose of the contract diagram was to provide a better understanding of the structure of the contract, to detect inconsistencies in the numbering of the contract clauses and to arrive at suggestions for simplifying the contract structure. The diagram could also be a useful aid when making changes to the contract, as it would allow the company to detect how changes would potentially impact other areas.

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In the third step, the content of the contract was modelled as a network of entities and (named) relations. This step gave a better understanding of the implicit inter-relatedness of the various contract clauses, as well as the relation of each of these clauses to clauses in other documents (e.g. the endorsements to this contract, intermediary training manuals, etc.). This network was constructed by first identifying the various entity types (classes) within the contract (Policy Holder Type, Benefit Type, Exclusion, Procedure, Claim Requirement, Contract Clause, Time Period, Role Player, Cost, etc.).



Each contract clause was then taken in turn and modelled as an entity in the network and linked to the relevant text of the clause (as it occurred in the electronic source document). The relevant clause was then further broken down into its various constituent smaller entities, which were then systematically added to the network and also linked to the clause being analysed.

Here is an example illustrating this process:

The clause “...*the Policyholder submits to InsuranceCompanyX without delay and not more than six months from the date of onset of ConditionY a claim for Benefit Z and a certificate from the medical or dental practitioner or...*” was modelled like this:

An entity of type “Procedure” called “Claim Procedure” was created based on this clause. This clause was then modeled as follows: “Clause” *is part of* “Claim Procedure”; “Medical Certificate” *is a* “Claim Requirement”; “Medical Practitioner” *issues* “Medical Certificate”.

Other entities types were then also extracted and modelled:

- (1) “Policyholder”, “Company X”, “Medical Practitioner” and “Dental Practitioner” as entity type “Role Player
- (2) “Medical Certificate” as entity type “Documents”
- (3) “6 months from onset of ConditionY ” as entity type “Time Period”, etc

This specific clause was then linked automatically to any other clauses addressing the claims procedure, medical certificates, and so on.

This process was followed for all the significant clauses in the contract. Once that was done, the same process was followed for each of the endorsements to the contract, resulting in a network that represented the essence of the entire contractual agreement between the insurance company and the client.

This network was very useful for several purposes:

- (a) For obtaining a list of all the entities of a certain type in the contract (e.g. all time periods, all claim requirements, etc.)
- (b) For finding all the entities associated with a given entity, as well as the nature of the association. (E.g. This network revealed not only that the entities “Increase Cover Requirement”, “Claim Requirement”, “Medical Practitioner”,

- “Dental Practitioner”, “Underwriting Requirement”, “Age Restriction”, “Documents” and “Cost” are all associated with the entity “Medical Certificate”, but it also showed how each of these entities relates to “Medical Certificate”).
- (c) For finding all contract clauses that are associated with any given clause (with the added facility of being able to automatically navigate to the specific clauses in the relevant electronic documents).
  - (d) For finding what entities are addressed in a given contract clause.

This network is thus a very practical and useful tool for facilitating an understanding of a contract and for determining the nature and extent of impact any potential changes to the contract may have.

## COMPLEXITY INVESTIGATION

The second part of this project dealt with the analysis of the complexity of the insurance company in order to propose changes that would reduce its overall complexity. As the company’s operational costs were above industry standards; they recognised that reducing the complexity of the business should be their chief strategy in addressing this problem. Reducing the complexity of a business potentially implies simpler business rules, systems, training requirements, etc. that will be accompanied by cost savings, increased productivity and improved client satisfaction.

The first step towards achieving these goals was to identify and understand the high-level complexity drivers of the business. The history of the company, its international operations, complex benefit structure, large variety of products, laws and regulations, alliances with other insurers and the sophistication of the target market were identified as high-level complexity drivers.

The next step was to understand the interdependencies among these drivers, as well as their direction and weight. (For example, does the complex benefit structure influence the large variety of products and does the large variety of products influence the benefit structure, and if so, how much in each case?).

Once these questions were answered for each combination of complexity drivers, the most influential complexity drivers were identified. In this case, the complexity of the insurance company’s benefit structure stood out as a major complexity driver. Having established this, a rigorous investigation of the benefit structure was then initiated.

## SIMPLIFYING THE BENEFIT STRUCTURE

A thorough analysis of the insurance company's benefit structure provided an understanding of its complexities and revealed routes of potential simplification. It was clear that the complex benefit structure greatly increased the complexity of the contract documents of the various products, added to the number and intricacy of the rules, and made heavy demands on the IT system dealing with policy administration. It also increased the difficulty of intermediary training and of advising clients on their cover portfolio, among other things.

The benefits - individual and other linked benefits - were then singled out and scrutinised for uniqueness. This exercise revealed that although there were only seven benefits types, 216 unique permutations of cover were possible under the rules of the benefit option structure. In order to govern such a wide variety of options, a very complex set of associated business rules and IT systems were also required.

Furthermore, it was found that the seven benefit types in essence only provided five distinct benefits to the client. Five benefit structure simplification scenarios were then designed and the disruptive impact of each of these scenarios was subsequently determined, using the model.

The most radical of these scenarios suggested having five benefit types providing only 12 cover options that would have a minimal impact on the clients' ability to have cover tailored to their individual needs. This specific scenario implied substantial simplifications to the contract documentation, business rules, training documentation, IT system and business processes.

Adopting such a strategy would have the added benefit of making it easier for clients to understand the benefits of their cover and simplify advising clients around their specific cover needs.

On the other hand, this also implied major changes to several aspects of the business. Indutech analysed the possible gains that would be achieved by the various complexity reduction scenarios together with their respective ease of implementation. A recommendation was then made as to the optimal scenario in respect to both gains and required implementation effort.

At this point the network model constructed in the earlier phase of the project was expanded to include the various business processes, IT systems, system

processes and training manuals of the insurance company. The model was then used to give a more accurate assessment of the potential disruptive impact of the respective improvement scenarios.

It was also recommended that a thorough business case first be completed in order to quantify the potential gains and costs of the selected scenario. Based on this, an informed decision could be made about the feasibility of such an endeavour.



## OUTCOMES

Before the initiation of this project, the legal department had used hardcopies of the various contracts to assess the impact of a change to a given contract clause. This proved to be a time-consuming, difficult and sometimes inaccurate process. Having the mind map diagram showing the various contract sections, clauses and their interrelationships, greatly improved the ease with which changes could be made and their impact of such changes assessed.

In addition, the initial network model of the contract documents provided an additional level of detail, as it contained the explicit and implicit concepts addressed by a given contract clause, and provided links to other instances of these concepts in the contract documentation. This model thus really proved to facilitate a better understanding of the contract - in particular, the implicit relations between various contract clauses and the relations between the clauses of the main contract and those of the various contract endorsements.

The model further proved to be a very useful mechanism for searching for concepts – for finding all the occurrences of implicit topics that were not explicitly addressed in the same place in the contract documentation (e.g. time periods, age restrictions, costs, etc.).

The extended network model proved to be an effective way of understanding and analysing the interdependencies between an array of organisational entities at different levels of detail (e.g. contract clauses, business processes, IT systems, etc.). This greatly facilitated the task of investigating the complexity of a business division.

Simplifying its benefit structure would appear to be a potentially a good way for an insurance company to simultaneously increase client satisfaction and to reduce its operational costs – although this would still need to be confirmed by a complete business case.

The successful implementation of the proposed simplification scenario of an insurance company's benefit structure should definitely be considered as a real product and an organisational innovation initiative.