Blockchain Prototype for Consortium of Life Insurance Companies

Objective

This proof-of-concept solution demonstrates how blockchain could be used to address two well-known problems in the insurance industry, namely unclaimed amounts and duplicate claims. It is implemented using the toolset Hyperledger Composer.

Functional Overview

Domain Definition

As unclaimed amounts are a well-known problem in Life Insurance, the solution domain is a consortium of life insurance companies in the USA. The prototype looks at the Term **Life Policy**, where if the Customer (the policy-holder) dies within the period specified in the policy (the "Term"), his or her Nominee gets paid the death benefit (sum insured). In order to model duplicate claims processing, the policy is allowed one specific rider (extra provision) - **Long Term Care- Reimbursement (LTC-R).** As per LTC-R provisions, if the customer is so indisposed as to need professional care, he/she will be reimbursed professional care expenses subject to a daily limit.

System set-up

In the consortium of multiple life insurance companies, data-sharing agreements are made pairwise between member companies and all searches will first check for this agreement before looking at other company records.

Each member company has two levels of employees, as a mechanism to prevent frauds. Agents can initiate a query or a transaction; managers need to approve queries and make decisions. A consortium supervisor can view reports from the history, providing one more level of check.

If a customer has activated the confidentiality clause then records pertaining to that customer will not be available for search by other member companies. However, in the case of policies with the LTC-R rider, LTC-R claims details will be shared with other companies, irrespective of the confidentiality clause.

It is mandatory that all customers of insurance companies have Social Security Numbers (SSN). Nominees are assumed to be individuals, not corporates; as the nominees need not be/ have been in the USA, SSN is not mandatory for them. Date of birth (DOB) of both customer and nominee are mandatory.

Unclaimed amounts

The prototype looks at amounts lying unclaimed with the life insurance companies following the death of the customer, because the nominee is unaware of the existence of the policy.

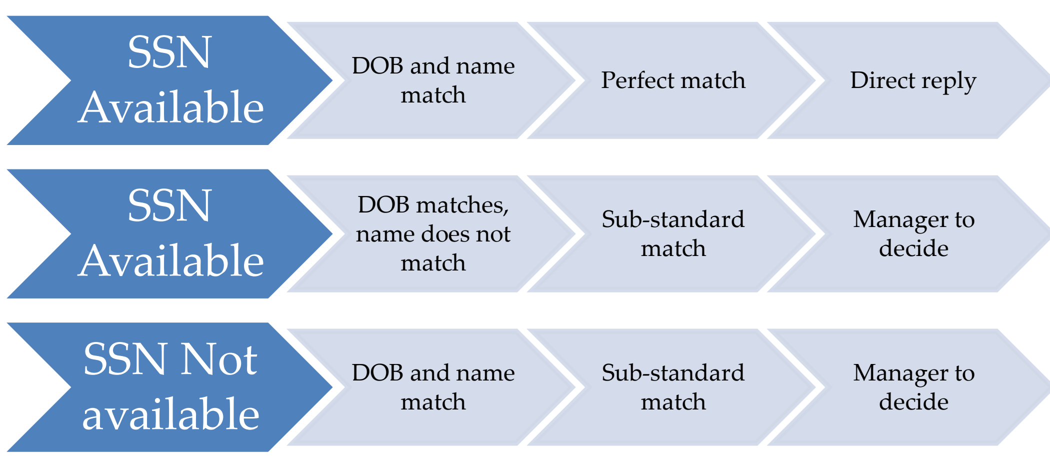
It is assumed that member companies know of death of their customers through linking with Death Master File of Social Security Administration. It is also assumed that companies have verified that they are insurable deaths before proceeding to contact the nominee.

When the nominee of a customer is untraceable, the agent requests a search of other company records for the address of the nominee. This facility is available only for policies of dead customers that have not yet been closed, thereby preventing the agent from phishing. After the manager approves the search, the system searches records within the shared records in the following manner using name, DOB and SSN (if available):

- If nominee SSN is present, then both customer records and beneficiary records are searched.
- If nominee SSN is not present, then only beneficiary records are searched.

Records relating to customers with confidentiality clauses are not searched.

The following graphic illustrates different kinds of matches and actions required in other companies.



Duplicate claims

The LTC-R rider to a policy specifies the daily limit applicable in case of an LTR-claim. The bill necessarily has a bill number, start date, end date and bill amount. The amount payable to the customer is the minimum of the bill amount and the daily limit*number of days. For example if a customer's daily limit as per a policy with Insurance Company A is 300$ and he submits a bill of 4000$ for 10 days.

Amount payable by Insurance Company A= Min(4000$,300$*10)= 3000$.

It is assumed that there is a single billing agency for all LTC claims of a given person. The agency can give multiple copies of the same bill if the person requires. The system demonstrates what happens when the same bill is submitted to different companies. It does not cover fake bills.

When the customer of a company submits an LTC-R claim, the agent enters in into the system. If the customer has already submitted the same bill (as identified by bill number) to this company the system will not accept it.

If the bill is accepted, then the system will look into records of all companies to see if the same person (as identified by SSN) has claimed the same bill. If yes, then the amount payable will be the minimum of the bill amount minus total amount paid by other companies and the daily limit* number of days.

If the customer in the above example subsequently submits the same bill to Insurance Company B where he has a policy with an LTC-R rider and a daily limit is 200$, this is how it will work.

Amount payable by Insurance Company B = Min(4000-3000(paid by company A), 200$*10)= 1000$.

If these claims can be shared with Medicaid and Medicare claims, then multiple claims of LTC-R across the system can be curtailed.