# Healthcare Self-Insurance and Consulting Group

"We help you Self-Insure"

REPRICING CLAIMS

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GROUP 6 – CRITICAL ANALYZERS

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MEETINGS – 2:30 PM to 4:00 PM, Tuesday, Bird Library

# Context

In our IT solution, we try to achieve an automated repricing IT solution which would assist the Claims Processing Team in verifying provider contract and apply appropriate discounts on every claims efficiently. The various functions included in our solution are as follows:

1) Checking provider network, contracts and applicable discounts on the incoming claims sent by the Claims Processing Team.
2) Verifying applicable discount on the claim based on the contract and claim amount.
3) Repricing the claim using the appropriate discount type and amount.
4) Generating reports and send it back to Claims Processing Team.
5) Add loyalty points in the customer database after every successful processing of the claim.
6) Auditing of random reports every month and verifying compliance of healthcare rules.

The following document complies the project's requirements in detail covering every Use Case and functionality of the system. It talks about the behavior of the system through Behavior Model and risk associated with the system. Broadly, it includes stakeholder and solution requirements which further includes different classification of requirements.

# Business Objectives

The main business objectives of this project are as follows:

1) To align with the industry standards in repricing claims, giving benefits to the customers.
2) To expand provider networks and partner with more hospitals, labs and pharmacies.
3) Provider other benefits like coupons and loyalty points to the customer on every successful repricing of claim.
4) To comply with the industry standards while providing discounts.

# Stakeholders Requirements

Below are the stakeholders of this project:

| Stakeholders | Expectations |
|---|---|
| Healthcare Self-Insurance Company | <ul><li>The system shall provide a seamless IT Repricing system.</li><li>The system design architecture should be fairly</li></ul> |

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|---|---|
| Employees: Patients | <ul><li>Clarity regarding their hospital bills,</li><li>Clear communication: patients want to be told about how much their medical costs are</li><li>A well-defined IT system that meets their needs as well as preferences</li><li>Streamlined Billing Process</li><li>Low Repricing costs</li><li>Quality, Affordability and Transparency</li><li>Medical bills are accurate and easy to understand</li><li>Seamless payment process</li><li>24/7 support (representatives should be available for any kind of emergency)</li><li>Employer provides accurate, complete and up-to-date information after the bills are repriced.</li></ul> |
| Employers | Employers should be:<ul><li>Notified if there is any ambiguity in the claims processing</li><li>Notified if there any new or unexpected changes introduced into claim processing</li><li>Want to keep their costs down</li><li>24/7 support (representatives are available for any kind of emergency)</li><li>Medical bills are accurate and easy to understand</li><li>Seamless payment process</li></ul> |
| Providers (Hospitals, Pharmacy, Labs) | Providers should be:<ul><li>Notified if there are any errors in the medical bills</li><li>Notified if there are any pending queries or clarifications needed from the clients</li><li>Notified at every stage of claims processing</li><li>Notified if there are any potential new clients</li><li>The IT system should be have an easy-to-use User Interface for submission of medical bills</li><li>Maintain an open communication between the provider and the HealthCare Self Insurance Company (HSIC)</li><li>24/7 customer support: in case of escalation</li></ul> |

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|---|---|
| Repricing Administrator | ▪ Repricing Administrators should receive formal training on claim handling and how the HealthCare Self Insurance Company (HSIC) Repricing IT system works.<br>▪ Claims received from the Claims department are accurate and ready for repricing. |
| Compliance and Auditing Team | ▪ Provide access to original claim, repriced claim and contracts to auditors for auditing<br>▪ Auditors can access these reports from login to their accounts in the system<br>▪ Auditors will update the report against each claim using the system<br>▪ Employees can login to the system and check audit reports so that they can improve their functions accordingly |

# General Requirements

## Functional Requirements

| Requirement Number | Name | Description | Details |
|---|---|---|---|
| | | *Data Verification* | |
| FR001 | Login Access | System should be able to allow access to the system for authorized users. | The system shall provide a login page for the Repricing Administrator to login using a username and password. Only authorized users are allowed to access the database that contains all the |

| | | | claims received from the Claims department. |
|---|---|---|---|
| FR002 | Access to Original Claims | System should be able to display all the original claims. | Once a Repricing Admin logs in, the system will display all the claims that were received from the Claims department. |
| FR003 | Data Verification | System should be able to perform Data Verification check of the original claim. | The system will check the claim bill for missing data. i.e, null, encrypted & completeness.<br>• The system will verify if the member ID exists in the system or not.<br>• The system will verify if the member is active or not.<br>• The system will verify for the 'date of service' information.<br>• The system will verify the claim policies for expiry dates.<br>• The system will check if the provider network mentioned in the claim is valid. |
| FR004 | Error Message | System should be able to display an error messages after data verification. | Errors found during Data Verification are sent back to the 'Claims Department' for re-verification. |
| | | *Discount Verification* | |
| FR008 | Network Verification | • System should be able to perform Network Verification of the incoming claim.<br>• The Claim's Processing Team would forward the claims once they are done with their processing.<br>• Every claim would contain some information regarding the network, source, contract, amount etc. | Once the claim enters Discount Verification phase, the system would first verify the network of that claim. It will compare the incoming network provider name with the existing providers in the database. |
| FR009 | Source Verification | • System should be able to verify the source which has requested for the claim.<br>• A claim might come from a hospital, lab or pharmacy. | The system would verify whether the source exist and is a part of the provider network group found earlier. It will first verify the source existence and then its provider network details. |

| FR0010 | Contract Verification | System should be able to verify contract validity. The self-insurance company has different contracts with hospitals, labs and pharmacies. | The system should verify the existence of the contract between the source and insurance company. The system must also verify the validity of the contract. |
|---|---|---|---|
| FR0011 | Discount Checking | The system must check the applicable discount | The system checks for the discount type which is associated with the contract. There are two types of discounts: absolute and percentage. Depending on the claim amount, the discount would be applied. A contract might not have any applicable discounts available. |
| FR0012 | Display Message | The system must display appropriate messages based on the result of every backend verification. | |
| | | **Repricing Claims** | |
| FR0013 | Apply discount | Step 1 : The system should be able to retrieve the discount amount calculated from the database. | After the discount verification phase is complete and discount has been calculated, the discount needs to be updated in the database. This value is then retrieved for repricing calculation. |
| | | Step 2 : The system should apply the discount amount retrieved while apply this discount while calculation of repricing amount. | The retrieved discount value needs to be applied for calculation or repriced amount. |
| FR0014 | Apply coupons if available | Step 1 : The system should be able to check and validate coupons. | There are coupons available additional to discount amount. The system needs to check if the coupons are valid. |
| | | Step 2 : The system should then apply the valid coupons. | The system needs to apply the valid coupons while calculating the repricing of claims. |
| FR0015 | Create new claim | Step 1 : System should be able to create a new claim with a new repriced amount after applying discount and coupons. | After the discount and coupons are applied, the new repriced amount is calculated and a new repriced claim value is generated. |

| | | Step 2 :<br>In the new report generated for the new repriced claim, the system needs to retrieve the charged amount, allowed amount and repriced amount from the database and include in the reports. | All the detailed information needs to be included in the report after calculation of new repriced claim. All the information fields like charged amount, allowed amount and repriced amount needs to be displayed to showcase the insurance group's competitive advantage.<br>Charged amount – is the actual claim amount.<br>Allowed amount – is the amount covered under insurance as a contract.<br>Repriced amount – is the amount to be paid by the client after applying discounts. |
|---|---|---|---|
| FR0016 | Add loyalty points if applicable | Step 1 :<br>The system must check if customer is applicable for loyalty points. | After the repriced claim is finalized, loyalty points need to be added to the customer's account. |
| | | Step 2 :<br>Add loyalty points if applicable as per the repriced claim amount. | Add loyalty points for applicable customers depending on the repriced claim amount value.<br>If below $1000, add 2 loyalty points.<br>If amount between $1000-$10000, add 5 loyalty points.<br>If between $10001- $100000, add 10 loyalty points.<br>If above $100000, add 15 loyalty points. |
| | | *Compliance And Auditing* | |
| FR0017 | Access to contract details | System should be able to give details regarding all the contract details present in the system | The auditors will login to the system and retrieve details regarding original claims based on some pre-defined filters |
| FR0018 | Auditors should have login | System should have a separate login for each auditor | Auditors will be able to login to the system using their login id and password |
| FR0019 | Employees should have login | System should have a separate login for each employee | Employees should have their own login to system using their own login id and password |
| FR0020 | Filters for Original Claims | System should have filters which can be used by auditors to retrieve | Auditors should be able to filter repriced claim and original claim based on following: |

| | | repriced claim and original claim data | 1) From Date<br>2) To Date<br>3) Settled/Non Settled<br>4) Audited/Non Audited |
|---|---|---|---|
| FR0021 | Filters for Re-priced Claims | System should have filters which can be used by auditors to retrieve contract details | Auditors should be able to filter contract details based on following:<br>1) Start Date<br>2) End Date<br>3) Discount<br>4) Provider Network<br>5) Hospital/Pharmacy/Lab |
| FR0022 | Audit results | System should enable the auditors to mention appropriate comments against each claim after auditing | Auditors can login to their system, find the original/re-priced claim against which he can mention his comments and update status of audit. The following comments can be updated in the system:<br>1) Audit From Date<br>2) Audit End Date<br>3) Audit Report (Original Report in PDF format)<br>4) Audit title<br>5) Priority<br>6) Comments<br>7) Repriced claim audit status |
| FR0023 | Audit result saving | System should enable the auditors to save the results of multiple audited claims in one go | Auditors will login to the system, write comments and status against each re-priced claim and save all of them in one button click "Save" |
| | | *Report Generation* | |
| FR0024 | Reporting and stop loss tabs | Once a user is logged in the system, the claims tab should display reporting and stop loss as optionwhen hovered | When the end user logs in to the system and wants to access the reporting department section he needs to navigate through Claims tab and then click on reporting tab |
| FR0025 | Network provider and discount information | When the user enters the reporting department, the system should display the network provider the user is part of and the percentage discount applied for the same | The end user will be provided with information regarding the network provider and the amount of discount that the user is eligible for.<br>Network A - 15%<br>Network B - 10%<br>Network C – 5 % |

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|---|---|---|---|
| FR0026 | Loyalty Points | The system will display the loyalty points used and the amount of discount applied on the transaction because of the loyalty points | If the user has applied any loyalty points during the claims repricing process, it would be displayed in this section. The relevant discount for the loyalty points applied will also be displayed |
| FR0027 | Coupons | The system will display information about the coupons used and the discount applied on the transaction | If the user has applied any coupons during the claims repricing process, it would be displayed in this section. The relevant discount for the coupons applied will also be displayed |
| FR0028 | Repriced Claims report | The system should be able to generate repriced claims report when user clicks on generate report as PDF | The user can get access to the repriced claims report by downloading a pdf version of the same from this page |
| FR0029 | Money Saved Report | The system should be able to generate money saved report as PDF when user tries to generate it | The user can get access to the money saved report by downloading a pdf version of the same from this page |

## Non-Functional Requirements

| Requirement Number | Name | Description |
|---|---|---|
| | | *Data Verification* |
| NFR001 | Performance | <ul><li>The system should be able to process about 5000 claims per hour.</li><li>The system should have a failover solution.</li><li>The system should be up and running all the time.</li><li>Data needs to be backed up every 1 hour.</li></ul> |
| NFR002 | Efficiency | <ul><li>The system should have a centralized database to avoid duplicate medical bills and redundancy.</li><li>The system should have an efficient customer error handling system.</li><li>The system should take less than 5 minutes to generate the final repriced reports.</li></ul> |

| NFR003 | Security | • The system should ensure that confidential data is protected from unauthorized access.<br><br>• The system shall restrict any type of modification of the medical claim bills. |
|---|---|---|
| NFR004 | Usability | • The system should display a "Please Wait" dialog box if there is a delay of more than 5 seconds.<br><br>• The system should have an intuitive interface, and the Repricing Administrator should be able to accomplish his/her tasks in less than 4 clicks. |
| *Discount Verification* | | |
| NFR005 | Performance | • The system shall be active all the time.<br>• The system must be able to process maximum of 5000 claims per hour.<br>• The system shall respond in an average of 0.72 seconds once the discount verification starts on a claim.<br>• The system shall maintain a performance guarantee of 24 hours for the discount verification time. |
| NFR006 | Accessibility | • The system shall provide access to repricing admin only. |
| | | • Access to update/modify databases shall be restricted.<br>• The system shall allow only admin to prioritize claims verification. |
| NFR007 | Efficiency | • The system shall maintain centralized data to avoid redundancy.<br>• Discount verification shall occur step by step to maintain performance.<br>• Invalid records shall be automatically deleted to reduce latency. |
| NFR008 | Reliability | • The system shall have automatic failover database cluster during breakdowns.<br>• The system shall scrap out a claim from the system if it takes more than 2 minutes to process.<br>• The system shall identify the contracts and apply appropriate discounts with accuracy. |
| *Repricing Claims* | | |

| NFR009 | Performance | • The system shall be active all the time.<br>• The system must be able to reprice maximum of 1000 claims per hour.<br>• The system shall respond in an average of 0.60 seconds once the repricing of claims process starts.<br>• The system shall maintain a performance guarantee of 24 hours for the repricing of claims calculation.<br>• The system shall respond to loyalty points addition within 24 hours. | | |
|---|---|---|---|---|
| NFR0010 | Accessibility | • The system shall provide access to repricing admin only.<br>• Access to update/modify databases shall be restricted.<br>• The system shall allow only repricing admin to update/delete/add coupons.<br>• The system shall allow only repricing admin to change loyalty points schemes and rules. | | |
| NFR0011 | Efficiency | • The system shall maintain centralized data to avoid redundancy.<br>• Repricing calculation shall occur step by step to maintain performance.<br>• Invalid records shall be automatically deleted to reduce latency. | | |
| NFR0012 | Reliability | • The system shall have automatic database backup in case of system shutdown and a daily backup routine.<br>• The system shall identify the valid coupons and apply accordingly.<br>• The system may add loyalty points as per applicable. | | |
| *Compliance & Auditing* | | | | |
| NFR0013 | Performance | Query and reporting time | System should display 100 records of either Claim/Re-pricing Claim/Contract (whichever filtered) in less than 2 seconds | |
| | | Response time | System should enable login for employees/auditors in less than 2 seconds | |
| NFR0014 | Capacity | Throughput | System should be able to update up to 100 audited records in one click on save | |

| | | Storage | System should be able to store 6 months of Claim, Repriced claims, contract and audit data in database |
|---|---|---|---|
| NFR0015 | Availability | Hours of Operation | System should be available 24*7 for both auditors/employees |
| | | Location of Operation | All the data should be available from main system database |
| NFR0016 | Reliability | Mean time between failure | In case of downtime, the system can have a maximum of 120 mins in a year |
| | | Mean time to recovery | In case of failure, system should be recovered back in 10 minutes |
| NFR0017 | Usability | Look and Feel Standards | The UI should have very easily accessible pages and navigation system for employees/auditors for access purpose |
| | | Internationalization | The UI should support multiple languages |
| *Report Generation* | | | |
| NFR0018 | Performance | • The system should be able to provide the Repriced Claims report and Money Saved Report in 5 sec , in PDF format<br>• Once in the reporting page, the system should display the discount details and information about loyalty points in 1 sec | |
| NFR0019 | Reliability | • The system will accommodate all possible discount options when generating the final repriced claim report<br>• System will generate the money saved report based on the different discount options selected by user<br>• System will generate money saved report or repriced claims report relevant to the logged in user | |
| NFR0020 | Efficiency | • Repriced Claims records that were generated 10 years or before will be archived automatically<br>• Only one report can be downloaded by user at a time to improve efficiency | |
| NFR0021 | Accessibility | • The reporting department pages should be accessible to end user 24/7<br>• Claims department admin will get a view of all claims once he logs in to the system | |

| Requirement Number | Name | Description |
|---|---|---|
| | | • The claims department admin can download all reports for a fiscal year simultaneously |
| NFR0022 | Scalability | Multiple users can log in to the system and access reports simultaneously without any lag or errors |

## Maintenance Requirements

| Requirement Number | Name | Description |
|---|---|---|
| *Data Verification* | | |
| MR001 | Database Backup | The system shall perform data backup every day. |
| MR002 | Data Purge | The system shall purge all the unnecessary files every 6 months. |
| MR003 | Database Backup | The system shall perform data backup every day |
| MR004 | Data Verification | • The system shall remove all the policy expired claims.<br>• The system shall remove all the inactive members who do not meet the eligibility criteria for claims repricing.<br>• The system shall remove all the members who are not enrolled into the Health Care Self Insurance Company.<br>• The system shall remove all the physicians who are not in the system. |
| *Discount Verification* | | |
| MR004 | Database Updating | The system shall allow users to add/update database with new provider networks, source, contracts etc. |
| MR005 | Set claim verification priority | The system shall allow repricing admin to prioritize claims verification depending on the request from Claim Processing Team |
| MR006 | Database backup | The system shall allow the repricing admin to take full backup of the database |

| MR007 | System Restart | The system shall allow the admin to restart the system in case of any slowness or breakdown |
|---|---|---|
| **Repricing Claims** | | |
| MR008 | Database Updating for coupons | The system shall allow admin to add/update database with new coupons and delete invalid coupons. |
| MR009 | Loyalty Points Scheme update | The system shall allow repricing admin to update schemes and rules of adding loyalty points to the customer's account. |
| MR0010 | Database backup | The system shall allow the repricing admin to take full backup of the database. |
| MR0011 | System Restart | The system shall allow the admin to restart the system in case of any slowness or breakdown. |
| **Compliance & Auditing** | | |
| MR0012 | Contract Renewal | Renew all the expired claims or remove the claim from the system |
| MR0013 | Update provider network list | Remove Labs/Hospitals/Pharmacies from the system that are no longer active. Move Labs/Hospitals/Pharmacies across provider network lists base on whether they have started having contracts or removing contracts |
| MR0014 | Database Backup | Take backup of database weekly |
| MR0015 | Database Data Purging | Regularly take backup of all data & purge claim/repricing data every 6 months |
| MR0016 | Log File | Regularly check whether necessary log files are created by the system. Delete log files after every 6 months |
| **Report Generation** | | |
| MR0015 | Coupon Application | The system should allow users to change provider networks, coupons applied, loyalty points used before generation of report |

| MR0016 | Access to Claims | The claims department admin should be able to access claims for a fiscal year and he can prioritize based on priority decided by Claims processing team |
|--------|------------------|-----------------|
| MR0017 | Restarting | The system should allow the end user to restart the web application in case of network issues |
| MR0018 | Backup | The claims department admin is allowed to take full backup of database |

## Business Intelligence Requirements

| Requirement Number | Name | |
|--------------------|------|--|
| **Data Verification** | | |
| BI001 | Verify Data Completeness | The system shall check for completeness of the medical bill. |
| BI002 | Verify Missing Data | The system shall check for any null data that is missing in the medical bill. |
| BI003 | Verify Network Provider | The system shall check if the network provider mentioned in the claim is valid. |
| BI004 | Redirecting Claims | The system shall re-route the claims back to the Claims Processing Team if there are any errors found in the original claims. |
| **Discount Verification** | | |
| BI005 | Incoming Claims | The system shall count the number of incoming claims in a day. |
| BI006 | Applicable Discounts | The system must be able to count and categorize number of absolute and % discounts applied on the claims. |
| BI007 | Verification Completeness | The system shall ensure that there are no pending claims in the queue and that all claims passes through discount verification phase. |

| BI008 | Delete expired contracts | While doing contract verification, the system must be able to delete a contract from database if it is already expired. |
|---|---|---|
| BI009 | Redirecting claims | The system shall redirect claims back to the Claims Processing Team if, at any point, the verification process fails at some step. |

| | *Repricing Claims* | |
|---|---|---|
| BI0010 | Incoming Claims to be repriced. | The system shall count the number of incoming claims to be repriced in a day. |
| BI0011 | Applying discounts. | The system must be able to count and categorize number of absolute and % discounts applied on the claims and the discount amount applied. |
| BI0012 | Repricing Completeness | The system shall ensure that there are no pending claims with discounts to be applied in the queue after discount verification and that all claims pass through repricing calculation process. |
| BI0013 | Delete expired coupons | While applying coupons for further discount, the system must be able to delete an invalid coupon. |
| BI0014 | Loyalty Points | The system must be able to provide details about the loyalty points added to the customers. |
| BI0015 | Redirecting claims | The system shall redirect claims back to the Claims Processing Team if, at any point, the verification process fails at some step. |

| | *Compliance & Auditing* | |
|---|---|---|
| BI0016 | Audit Report | System should convert database audit report data into excel sheet |
| BI0017 | Claim Report | System should convert database claim/re-price claim data into excel sheet |
| BI0018 | Original Claims | System should show original claim data in a legible and table format so that auditors can analyze it and perform necessary audit analysis |

| | Report Generation | |
|---|---|---|
| BI0019 | The system should provide information about the minimum and maximum loyalty points per user | |
| BI0020 | The system should provide information about coupons used by a user | |
| BI0021 | The system should provide information about maximum and minimum amount of money saved by a user | |
| BI0022 | The system should give information about the number of repriced claims reports generated in a day | |
| BI0023 | The system should give information about the number of money saved reports generated in a day | |

## Data Requirements

| Requirement Number | Name | Description |
|---|---|---|
| | | |
| | Data Verification | |
| DR001 | Claims Department | Claim details such as enrollment information, policy expiry, network provider, claim amount, patient information, member ID must be accurate. |
| DR002 | Patient Information | Patients first and last name is required for the system to perform data verification. |
| DR003 | Network Provider | The Network Provider name is required for the system to perform data verification. |
| DR004 | Claim Amount | The Claim Amount is required for the system to to perform data verification. |
| | Discount Verification | |
| DR004 | Network Provider Name | The Network Provider name is required for the system to verify it with its own database |
| DR005 | Source Name | Source Name is the name of hospital, lab or pharmacy from where the claim request is coming |

| | | |
|---|---|---|
| DR006 | Contract Number | The Contract Number is used to verify the existence of the contract in system's database. It is also required to verify its validity and check the expiry date |
| DR007 | Claim Amount | The Claims Processing Team should forward the claim amount requested by the source. Using the amount the system would verify what kind of discount is applicable on the claim |
| DR008 | Department Name | The incoming claim must have a department name/ID which would identify the department who is sending the claim for repricing. Using this name/ID, the repricing system would forward the repriced claim back to the department |

### Repricing Claims

| | | |
|---|---|---|
| DR009 | Claim Amount | The system must have access to original claim amount from the database for calculation or repriced amount. |
| DR0010 | Valid Coupons | The system must have all the data related to valid coupons that can be applied for further application of discount. |
| DR0011 | Loyalty Points | The system needs to have details about the loyalty points applicable that can be added to customer's account. |
| DR0012 | Discount applicable | The system needs to have the discount value to be applied in calculation of repricing claim amount. |

### Compliance & Auditing

| | | |
|---|---|---|
| DR0013 | Original Claim Data | System should have access to all original claim data from database for auditors including:<br>1) Claim Amount<br>2) Claim Processed Date<br>3) Claim Due Date<br>4) Claim Patient Name<br>5) Claim Self-Insured Status<br>6) Claim Self-Insured employer<br>7) Claim Source<br>8) Claim Provider Network<br>9) Claim Valid Date |

| DR0014 | Re-priced Claim Data | System should have access to all re-priced claim data from database for auditors including: |
|---|---|---|
| | | 1) Repriced Amount |
| | | 2) Reprice Processed Date |
| | | 3) Reprice Due Date |
| | | 4) Reprice Patient Name |
| | | 5) Reprice Self-Insured Status |
| | | 6) Reprice Source |
| | | 7) Reprice Self-Insurance Employer |
| | | 8) Reprice Provider Network |
| DR0015 | Contract Data | System should have access to all Contract related details from database including: |
| | | 1) Contract Start Date |
| | | 2) Contract End Date |
| | | 3) Contract Discount |
| | | 4) Contract Discount Type |
| | *Report Generation* | |
| DR0016 | Claim Amount | In order to generate the reports with repriced claims and money saved for the user, the claims department has to forward the information about the claim amount |
| DR0017 | Loyalty Points Used | The system should be aware about the loyalty points used to generate reports accordingly |
| DR0018 | Coupons Used | The system should be aware about the coupons used to generate reports accordingly |
| DR0019 | Network Provider Name | The network provider information needs to be present to display the discount received in the reporting page |

## Error Handling & Notification Requirements

| Requirement Number | Name | Description |
|---|---|---|
| | *Data Verification* | |
| ER001 | System not able to find the Patient First Name and Last Name | Error! No Record found! |

| | | |
|---|---|---|
| ER002 | System not able to find the Policy Expiration Date | Error! Missing Data! |
| ER003 | System not able to find the Network Provider name | Error! Missing Data! |
| ER004 | System not able to find the Claim amount details | Error! Missing Data! |
| ER005 | System not able to find the Enrollment ID details | Error! Missing Data! |
| ER006 | System not able to find the Claim amount details | Error! Missing Data! |

## Discount Verification

| | | |
|---|---|---|
| ER007 | System is not able to find Network name in database. | Invalid Network Provider Name |
| ER008 | The provider network is not in association with the insurance company. | Network Found: Out Network |
| ER009 | The provider network is associated with the insurance company. | Network Found: In Network |
| ER0010 | System is not able to find Source (hospital/lab/pharmacy) name in database. | Source Not Found |
| ER0011 | Source is found in the database. | Source Verified |
| ER0017 | No contract found between insurance company and source. | Contract Not Found |
| ER0018 | The contract has already expired in the present date. | Contract Expired |
| ER0019 | No applicable discount found for the claim. | No Discount Found |

## Repricing Claims

| | | |
|---|---|---|
| ER0020 | System is not able to find discount amount to be applied. | Discount Amount Not found! |
| ER0021 | System is not able to find valid coupons | Unable to find any valid coupons! |

| ER0022 | The system is not able to find original claim amount. | Original claim amount to be repriced not found. |
|--------|---------|---------|
| ER0023 | Loyalty Points could not be applied. | Loyalty to be applied Not found |
| ER0024 | System is not able to apply coupons. | Invalid coupons. |
| ER0025 | System is not able to calculate repriced amount. | ERROR: Unable to reprice claim! |

| | *Compliance & Auditing* | |
|--------|---------|---------|
| ER0026 | System is not able to find Original Claim based on date | Sorry! No Records found on this date |
| ER0027 | System is not able to find Repriced Claim based on date | Sorry! No Records found on this date |
| ER0028 | System is not able to find Settled data | Sorry! No Settled records found |
| ER0029 | System is not able to find Audited data | Sorry! No Audited records found |
| ER0030 | System is not able to find Non-audited data | Sorry! No non-audited records found |
| ER0031 | System is not able to update audit comments | Records could not be updated. Please try again later. |
| ER0032 | System is not able to generate excel sheet | Records could not be downloaded. Please try again later. |

| | *Report Generation* | |
|--------|---------|---------|
| ER0033 | Incorrect User ID | The system shall prompt the user with "Incorrect User ID or Password. Please re-enter" message |
| ER0034 | Incorrect Password | The system shall prompt the user with "Incorrect User ID or Password. Please re-enter" message |
| ER0035 | Repriced Claim Report Not Generated | The system will throw an error message "Repriced Claims Report not ready to be viewed, Please contact Customer Support for more help" |

| ER0036 | Money Saved Report Generated | The system will throw an error message "Money Saved Report not ready to be viewed, Please contact Customer Support for more help" |
|---|---|---|
| ER0037 | Inactive Employee Login | The system will throw a message saying "The employee record has been deactivated, Contact Admin for more help" |

## Behavior Model

## Use Case 1: Data Verification

| Input Data Clusters | Complete Data* | Incomplete Data |
|---|---|---|
| Claims Eligible for Repricing | X | |
| Claims not Eligible for Repricing | | X |
| IT System | Display all the claims that are verified, eligible for Repricing and update the database. | Display all the claims that are not eligible for Repricing, generate a report and send it back to the Claims department. |

*Complete Data: Data should include accurate information about the claim bill, i.e.

- Enrollment information
- Network Provider
- Patient information
- Claim expiry
- In-network or out-of-network

## Use Case 2: Discount Verification

| | Rule 1 | Rule 2 | Rule 3 |
|---|---|---|---|

| Network Provider Verification | | | |
|---|---|---|---|
| **Condition 1** | Network name verified successfully in the database. | Network name verified successfully in the database. | Network name not found in the database. |
| **Condition 2** | Network is associated with the insurance company. | Network is not associated with the insurance company. | |
| **System Response** | The system would display a message on UI saying 'Provider Network Name Verified: In Network'. The claim should be forwarded to the next phase. | The system would display a message on UI saying 'Provider Network Name Verified: Out Network'. The claim should be forwarded to the next phase. | The system would display 'Network Not Found' error message on the UI. The claim should be sent back to the Claims Processing Team. |
| Source Name Verification | | | |
| **Condition 1** | Source Name found in the database. | Source Name found in the database. | Source Name not found. |
| **Condition 2** | Source is a part of Provider Network found earlier. | Source is not a part of earlier found network provider. | |
| **System Response** | The system would show a message: 'Source Verified'. The claim should be forwarded to the next phase. | The system would show a message: 'Error verifying source and network'. The claim should be sent back to the Claims Processing Team. | The system would show a message: 'Source Not Found'. The claim should be sent back to the Claims Processing Team. |
| Contract Verification | | | |
| **Condition 1** | Contract found in the database. | Contract found in the database. | Contract not found in the database. |
| **Condition 2** | Contract is valid. | Contract has expired | |
| **System Response** | The system would show a message: 'Source Verified'. The claim should be forwarded to the next phase. | The system would show a message: 'Contract expired: //Expiry Date//'. The claim should be sent back to the Claims Processing Team. | The system would show a message: 'Contract not found'. The claim should be sent back to the Claims Processing Team. |
| Discount Verification | | | |

| | | | |
|---|---|---|---|
| **Condition 1** | Discount found in the contract. | Discount found in the contract. | Not discount found in the contract. |
| **Condition 2** | Claim amount below lower threshold. | Claim amount between lower and upper threshold. | |
| **System Response** | Display appropriate absolute discount on UI. The claim should be forwarded for repricing. | Display appropriate percentage discount on UI. The claim should be forwarded for repricing. | The system should show a message: 'Claim Not Found' |

## Use Case 3: Repricing Claims

| | **Rule 1** | **Rule 2** | **Rule 3** |
|---|---|---|---|
| Apply Discount | | | |
| **Condition 1** | Discount amount data valid. | Discount amount valid data. | Discount amount invalid data. |
| **Condition 2** | Valid claim. | Invalid claim. | |
| **System Response** | The system should show a message: ' Discount amount valid to be applied' | The system should show a message: 'Discount amount cannot be applied as claim invalid' | The system should show a message: 'Discount amount invalid' |
| Apply coupons if Available | | | |
| **Condition 1** | Coupon found in the database. | Coupon found in the database. | Coupon not found. |
| **Condition 2** | Valid coupon | Invalid coupon (Expired) | |

| | | | |
|---|---|---|---|
| **System Response** | The system would display a message: 'Coupon Verified'. Coupon discount to be applied for repricing of claim. | The system would show a message: 'Invalid coupon as expired'. The coupon discount should not be applied for repricing of claim. | The system would show a message: 'Invalid Coupon'. The coupon discount should not be applied for repricing of claim. |
| Create New Claim | | | |
| **Condition 1** | Original claim amount available. | Original claim amount available. | Original claim amount not available. |
| **Condition 2** | Repricing successful | Repricing not successful | |
| **System Response** | The system would show a message: 'Original claim amount available. Claim Repriced Successfully' | The system would show a message: 'Repricing successful' | The system would show a message: 'Original amount not found. Repricing unsuccessful' |
| Add loyalty points if Applicable | | | |
| **Condition 1** | Loyalty points found in the contract. | Loyalty points found in the contract. | Loyalty points not found in the contract. |
| **Condition 2** | Customer applicable for loyalty points. | Customer not applicable for loyalty points. | |
| **System Response** | The system should show a message: 'Loyalty Points applied successfully' | The system should show a message: 'Customer not applicable for loyalty points' | The system should show a message: 'Loyalty points Not Found' |

## Use Case 4: Compliance & Auditing

## Business Decision Model

| **Conditions** | | |
|---|---|---|

| | | |
|---|---|---|
| Contract Available & Valid | Y | *ELSE |
| Original Claims Available & Valid Data | Y | |
| Repriced Claims Available & Valid Data | Y | |
| **Conduct Audit** | **Y** | **N** |

*ELSE – Any other input condition auditing cannot be conducted

## Technical Decision Model

| | Rule 1 | Rule 2 | Rule 3 | Rule 4 | Rule 5 | Rule 6 |
|---|---|---|---|---|---|---|
| Retrieve Original Claims | **From Date has to be within 6 months and cannot be greater than today's date** | **To Date has to be greater than From Date and within 6 months** | **No audited original claims within past 6 months** | **Audited claims within past 6 months** | **Settled Claims present in the system** | **Non-Settled claims in the system** |
| **Condition 1** | When From Date is greater than today's date | When To Date is lesser than From Date | Search based on Audited claims | Search based on Audited claims | Search based on Settle claims | Search based on settled claims in the system |
| **Condition 2** | When From Date is lesser than 6 months | When To Date is greater than today's date | | | | |
| **System Response** | The UI will display message "Please enter a From date which is either today or within the last 6 months" | The UI will display message "Please enter a To Date which is same as or greater than From Date and within last 6 months" | The system would display "Cannot find claims" | The system would display all the audited records present in the system | The system would display all the settled records in the system | The system would display all the non-settled records in the system |
| Retrieve Re-Priced claims | **From Date has to be within 6 months and cannot be greater than today's date** | **To Date has to be greater than From Date and within 6 months** | **No audited repriced claims within past 6 months** | **Audited repriced claims within past 6 months** | **Settled repriced Claims present in the system** | **Non-Settled repriced claims in the system** |
| **Condition 1** | When From Date is greater than today's date | When To Date is lesser than From Date | Search based on Audited repriced claims | Search based on Audited repriced claims | Search based on Settle claims | Search based on settled repriced |

| | | | | | | claims in the system |
|---|---|---|---|---|---|---|
| **Condition 2** | When From Date is lesser than 6 months | When To Date is greater than today's date | | | | |
| **System Response** | The UI will display message "Please enter a From date which is either today or within the last 6 months" | The UI will display message "Please enter a To Date which is same as or greater than From Date and within last 6 months" | The system would display "Cannot find repriced claims" | The system would display all the audited records present in the system | The system would display all the settled claims in the system | The system would display all the non-settled claims in the system |
| Auditor Login / Employee Login | **Auditors/Employees are given login details** | **Auditors/Employees are given login** | **Auditors/Employees are given login and not active in the system** | **Auditors/Employees are given login and active in the system** | **Auditors/Employees are given login and active in the system** | **Auditors/Employees are given login and not active in the system** |
| **Condition 1** | Login with wrong user id | Login with correct user id | Login with correct user id and password | Login with correct user id and password | Login with wrong user id and password combination | Login with wrong user id and password combination |
| **Condition 2** | Login with wrong password | Login with correct password | | | | |
| **System Response** | The system would display the message "Please use correct login id or password to login" | The system would login to necessary user account | The system would show a message "Please contact customer care to activate your account" | The system would login to necessary user account | The system would show a message "Please enter correct user id and password combination" | The system would show a message "Please enter correct user id and password combination" |
| Audit Report | **Auditing has been finished** | **Auditing has been finished** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Condition 1** | Filled all the necessary mandatory fields in the report | Did not fill all mandatory fields in the report | | | |
| **Condition 2** | | | | | |
| **System Response** | The system should display "Audit Report success" | The system should display "Audit report failed. Please fill all the mandatory fields" | | | |

## Use Case 5: Report Generation

| | Rule 1 | Rule 2 | Rule 3 |
|---|---|---|---|
| **Loyalty Points** | | | |
| Condition 1 | User has applied loyalty points to the transaction | User has applied loyalty points to the transaction | User had not applied loyalty points to the transaction |
| Condition 2 | Loyalty points sufficient for discount | Loyalty points insufficient for discount | |
| System Response | The system would display text in we page saying "Discount Applied _ %" | The system would display text in we page saying "The loyalty points are not sufficient for any discounts" | The system would display text in we page saying "Please use loyalty points if applicable to avail more discounts" |
| **Coupons** | | | |
| Condition 1 | User has applied coupons to the transaction | User has applied coupons to the transaction | User had not applied coupons to the transaction |
| Condition 2 | Coupons sufficient for discount | Coupons insufficient for discount | |

| | | | |
|---|---|---|---|
| System Response | The system would display text in we page saying "Discount Applied _ %" | The system would display text in we page saying "The coupons used are not sufficient for any discounts" | The system would display text in we page saying "Please use coupons if applicable to avail more discounts" |
| **Repriced Claims Report** | | | |
| Condition 1 | User clicks on repriced claims report radio button | User clicks on repriced claims report radio button | User does not select any radio button |
| Condition 2 | User clicks generate report as PDF | User clicks on generate report as PDF but system does not have required information | |
| System Response | The repriced claims report is generated as a PDF | The repriced claims report is not generated and an Error message is displayed "Unable to generate report, Please try again later" | The repriced claims report is not generated and a message is displayed "Please select a radio button and click on generate report button" |
| **Money Saved Report** | | | |
| Condition 1 | User clicks on money saved report radio button | User clicks on money saved report radio button | User does not select any radio button |
| Condition 2 | User clicks generate report as PDF | User clicks on generate report as PDF but system does not have required information | |
| System Response | The money saved report is generated as a PDF | The money saved report is not generated and an Error message is displayed "Unable to generate report, Please try again later" | The repriced claims report is not generated and a message is displayed "Please select a radio button and click on generate report button" |

## Behavior Requirements

The following requirements are deduced from the Behavior Model:

### *Discount Verification*

1) There should be 2 separate databases for In Network and Out Network provider networks to make the system more efficient.
2) If a Network Name is not found in the database, the system should flag that name and send it for further verification.
3) The Claims Processing Team must ensure that the source is a part of the provider network.
4) The system must delete all expired contracts.
5) If the system is not able to find a contract in the database, it should flag and send it for further verification.
6) If no discounts are found in a contract, the system must flag that contract and in future, it must ensure that any incoming claim having same contract id is automatically sent back to the Claims Processing Team.

### *Repricing Claims*

1) The system shall notify the user if coupons are valid and applicable for discounts.
2) The system generates a new claim report on successful calculation or repriced claims indicating the charged amount, allowed amount and the repriced amount.
3) The system notifies the customer on successful addition of loyalty points.
4) The system must delete all expired coupons.
5) The system must still maintain a backup of deleted coupons.

### *Compliance & Auditing*

Business Requirements

1) Auditing can be conducted only when contract data is available and valid, original claim data is available and valid, & re-priced claim data available and valid

Technical Requirements

Retrieve Original Claims

1) From Date has to be within past 6 months and cannot be greater than the date on which filtering is done
2) To Date cannot be lesser than From Date and it has to be within past 6 months
3) Audited claims will be the output only if there were any claims audited in past 6 months
4) Settled and Non-Settled option will retrieve respective outputs of past 6 months

Retrieve Re-priced claims

1) From Date has to be within past 6 months and cannot be greater than the date on which filtering is done
2) To Date cannot be lesser than From Date and it has to be within past 6 months
3) Audited claims will be the output only if there were any claims audited in past 6 months

4) Settled and Non-Settled option will retrieve respective outputs of past 6 months

Auditor/Employee Login

1) Auditor/Employee can only login using correct user id and password combination
2) Auditor/Employee can only login if their respective accounts are activated in the system

Audit report update

1) Auditors can update report only after filling all the mandatory details required for audit report

## *Report Generation*

1) If loyalty points are not eligible for a discount, the system should notify user before he/she applies it
2) If coupons are not eligible for a discount, the system should notify user before he/she applies it
3) The radio buttons should be highlighted with a tool tip to ensure user is selecting one of the radio buttons before clicking on generate report
   4) The system should give information about the number of repriced claims reports generated in a day 5) The system should give information about the number of money saved reports generated in a day

## Other Requirements

## Transition Requirements

| Requirement Number | Description |
|---|---|
| TR001 | The system shall require training for repricing admins |
| TR002 | There should be user manuals/ Game Plan document with detailed instructions. |
| TR003 | The system shall contain FAQ for troubleshooting. |
| TR004 | All the data related to network provider, contracts etc. must be migrated to production database. |
| TR005 | Security and Accessibility rights must be transited with the database. The Repricing Admin must be given full permissions over the system. |
| TR006 | There should be pilot testing on the system using dummy claims. |

| TR007 | The system must be compatible with the new infrastructure (servers, network and storage). |
|-------|-------------------------------------------------------------------------------------------|
| TR008 | New communication and process flow must be communicated well across internal stakeholders. |
| TR009 | All database connections related to contracts, provider networks, source etc. must be verified |

## Risk and Mitigation

| Risks | Mitigation | |
|-------|-----------|---|
| **Use Case: Data Verification** | | |
| Repricing Admin Login | Admin forget his/her password. | System provides a mechanism to generate a |
| Repricing IT system | System fails to initiate the data verification process. | Display an error message. The Admin will intervene to |
| Data Verification | System fails to verify the data. | Display an error message. |
| Data Verification | System hangs or freezes randomly | Displays an error message. |
| **USE CASE : Discount Verification** | | |
| System is not able to access the databases. | The Database Administrator must be alerted to give appropriate permissions | |
| System fails while verifying a claim. | The system should automatically save the claim in process and resume verification once back in process. | |
| The system is not updated with new details related to contracts, provider networks etc. | Automatically perform background refresh and sync the databases with central server. | |
| Number of claims in queue exceeds the maximum limit. | System should send an alert to Claims Processing Team to cease forwarding claims for repricing. | |
| The system is not complying with the government set policies while repricing. | The Compliance Team should thoroughly audit the reports ensuring compliance. | |
| **USE CASE : Repricing Claims** | | |

| | |
|---|---|
| The discount calculated by the system may contain errors. | Provide a mechanism to validate the discount applied and notify on incorrect discount application. |
| Invalid coupons may be applied. | Update the database and delete invalid coupons. |
| Repricing calculation may contain erroneous data. Also new claim creation may create other data which might be faulty. | Validate after creation of new claim by repricing administrator. Also have validation checks on creation of new claim. |

## Business Process Requirements

1) Any claim, once repriced, must be sent back to the Claims Processing Team.
2) Notification must be sent to the concerned departments during failure in claim verification.
3) Reports must be sent to hospital, labs, pharmacies as well as the customers regarding repricing status.
4) New source must be enrolled in the provider network database.
5) New contracts must be updated in the database.
6) Compliance and Auditing must happen at the end of every month. All the reports must be shared with the stakeholders.
7) The system must have a scalable It infrastructure which could adjust itself with the changing requirements.

## Evaluation Details

| Use Case | Created By | Reviewed By | Review Comments |
|---|---|---|---|
| Data Verification | Rashmi Polepalli | Pradeep Raja, Rajith Jayadevan, Anuj Jayaswal, Ruchi Shah | Requirements need to be atomic |
| Discount Verification | Anuj Jayaswal | Pradeep Raja, Rajith Jayadevan, Ruchi Shah, Rashmi Polepalli | Functional requirements should be with respect to business requirements |

| | | | |
|---|---|---|---|
| Compliance & Auditing | Rajith Jayadevan | Pradeep Raja, Anuj Jayaswal, Ruchi Shah, Rashmi Polepalli | Requirements need to be atomic |
| Repricing Claims | Ruchi Shah | Pradeep Raja, Rajith Jayadevan, Anuj Jayaswal, Rashmi Polepalli | Include more requirements for loyalty points and coupons |
| Report Generation | Pradeep Raja | Rajith Jayadevan, Anuj Jayaswal, Ruchi Shah, Rashmi Polepalli | Requirements need to be atomic |

*Compiled and Integrated by Anuj Jayaswal and Rajith Jayadevan*