Software Engineering Case-Based Learning Exercise

1. Identify all the stakeholders and users of the systems. Enlist all features of the LIC Market-Driven system by each user of the system, in the form of user stories. Can you prioritize them using the requirement prioritization techniques? (e.g., AHP, Numerical Assessment, MoSCoW method, etc.) How? Provide details.

Stakeholders:

- Insurers
- Insurance analyst
- Retinodes Software Company
- Brokers
- Banks
- Policy Makers/ Managers
- Government of India
- Agents
- Investors

Users:

- Insurers
- Agents
- Managers

User Stories(prioritized using the MosCoW method):

Customer:

- MUST: As a user, I need an authentication/verification button so that security is maintained
- MUST: As a user, I shall be allowed to make a profile and login with proper authentication.
- SHOULD: As a user, I would like to see all the insurance options and quotes available to me as per my age and income so that I can choose the best possible plan.
- SHOULD: As a user, I would want to view my previous plans so that I can choose a plan accordingly.
- COULD: As a user, I would want to have an option to talk to an agent or contact someone if I have a doubt.
- COULD: As a user, I should be given an option to compare different plans/pros and cons of all the packages.
- WOULD: As a user, I would get an option to customise my plan so that all my requirements are fulfilled.

- WOULD: As a user, I would want an interactive guide/quiz of all the plans so that I can choose the best one for myself.

Agent:

- MUST: As an agent, I should be able to login to the account to see all the details.
- MUST: As an agent, I should be able to access my customer plan's details so that I can give them the best advice.

Manager/Admin:

- MUST: As a manager I should be able to have access to non-confidential data so that I can take required decisions regarding policies.
- MUST: As a manager, I should have an option to change the plan structures etc.

2. Prepare a list of market-facing technologies helpful for this project. According to you, would market-facing technologies be helpful in the proper deployment of the product? Why?

- Content Management System (local contact management for better reach)
- Review and appreciation policy for various policies
- Customer Experience Software
- Marketing Attribution Software
- Email Marketing, Social media Marketing
- Analysis Of Data
- ChatBots - save a lot of time and resources(Policy Application, Filing Claims, etc)
  These are technologies that directly interact with the customers of any organisation. These technologies should be user friendly and easy to navigate. They are also responsible for casting the first impression of an organisation in front of their users. They are also very helpful in understanding the view of the customer and also ensuring that the website remains highly user friendly.

3. Suggest an effective requirement engineering framework that can be used in market-facing projects because there are no existing systems that can be analyzed for the development so we need to consider all requirements from the core.

- Develop requirements for the software
- Document Requirements
- Check completeness
- Analyze, refine, and decompose requirements
- Validate requirements

- Manage requirements
- Market Research
- Proper Stakeholder selection
- Interviewing people and take important feedback
- Improving system compatibility

Proposed model: agile process model:

We have to build the entire framework from scratch so we can build a basic product and also driven by use cases and user story then according to requirements we can add on features. so user involvement is highly required and that is provided in agile.

4. List out the possible features that are not feasible to consider. Can you provide justification for each of them in detail?

So, here it is not feasible to predict the best package from the analysis because it's not possible every time as parameters affecting the packages may change like, companies attract customers by taking many many things into consideration like fraud risk, risk of insurance cancellation etc if these change then the predictions too. Another thing which isn't taken care of is that suppose if a customer makes his own package and other competing companies don't have this kind of package then in order to minimize the price, the prediction may lead to the loss to give a minimum amount. Also sometimes it may be possible that claiming documents are forged and the system can't verify it.

5. Let us assume that the customized package developed by the customer (using your second product) is similar to the package available in your pre-defined package. What is the possible reason behind this defect? How can it be ensured that this would not happen? In which requirements engineering activity, this defect can be handled? Please provide a scenario to justify.

→Reasons for defects(Scenarios) : users may don't know that this package is already available and also there is the possibility that users just want to make little changes that are equally beneficial to them. That can also happen due to a poor requirement management analysis phase or requirement elicitation.

→ To ensure that it will not happen we may include a suggestion if that is nearly the same with predefined packages.

→ In the requirement management analysis phase analysts can detect such kinds of issues. So it can be handled later onwards.

6. Identify three different use cases where the conflicts between the requirements occur? Do you think that conflicts can be resolved? How?

→ customers can create their own packages and send requests for review.But if users make lots of requests it will be hard to review. We can make limits on making their own packages.

→ The system has to review the packages but suppose customers make such a package that can't be compared. How the system is going to tackle that? For that, we can allow customers to make only certain possible combinations of packages.
→ LIC wanted to make a consolidated package to compete with other insurance companies but not every company goes to the same asset management company. So some policies may affect a company's P&L. For a solution we can target the company's most profitable package and where there is a competition we can lower the price so that company P & L is not affected.

7. Considering the set of features you have identified, what are the non-functional aspects associated with this system? Explain the rationale behind the selection of each of them.

- Performance: Minimum maintenance time to ensure efficient performance of the system.
- Security: The documents uploaded must be secured at any cost.
- Availability: The system should be available 24*7 for all the users.
- Reliability: Considering the risk factor of involvement of finances, the system should be made reliable and trustworthy. Also, the transaction portal should be a safe and secure platform for monetary transactions.

8. Can there be 'Open Issues'- issues that are identified but not taken care of? If yes, what are they? Are there some alternative ways for their resolution, such that no requirements conflict will happen?

- To take all the factors into consideration might not be possible, as there can be multiple solutions according to the given conditions of the insurer, so to give one full proof package covering all the given aspects may not be possible every time.
- Trusting a company with money online is not yet feasible today. People would hesitate to share their personal information and their income or property related details. So being perfect at the technical things such issues would take time to get resolved.

Additional Question:
How do the requirements of similar systems (other similar applications) match with the system under study here?

- Mostly all the service-based applications such as insurance providers would be having the same requirements such as user login.
- Comparison of different plans
- Customisation of plans
- Authentication
- Giving the best policy as per the user's requirements.