

***Individual report of COMP1787 Requirements Management.***

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# Introduction:

Over the dozens of years since the first computers were created, humans have created many new languages ​​and technologies. Now developing an information technology project is extremely easy. However, based on statistics from Chaos research (2012), about 21% of projects fail and 42% have problems when applying traditional software development solutions. From there, we can see the role of software development methods. There are several main causes of software project failures that are not meeting customer expectations or being delivered on time / over budget. Luckily, developers soon noticed this, and the Agile development method is a perfect solution to all these problems. For the purposes of this paper, I will focus on the Scrum (Agile) method.

Within the scope of this report, besides clarifying the definitions and issues related to Scrum and Agile concepts, I will practice adopting it into Lizzie's Leather Belts case study to solve their problems. Finally, the report will also cover issues such as Legal, Social, Ethical and Professional.

# Management Summary

## Company overview

According to baseline case study, Lizzie’s Leather Belts is a medium-sized company with a leather belt business. They have ten years of experience in this field, and now because of changing marketing strategies accordingly, the company is growing rapidly. And the business owner wants to expand it even further. To do this, they want their leather belts to be widely available to the public through a website.

The company will have to hire the software development department from outside because it does not own it. In addition, the Managing Director of Lizzie’s Leather Belts has had bad experiences with projects developed by the 'waterfall' traditional method and wishes to find alternatives. Finally, she decided to choose True Concepts as a development company for their website with SCRUM and Agile concepts. The project will be deployed in 3 months from now.

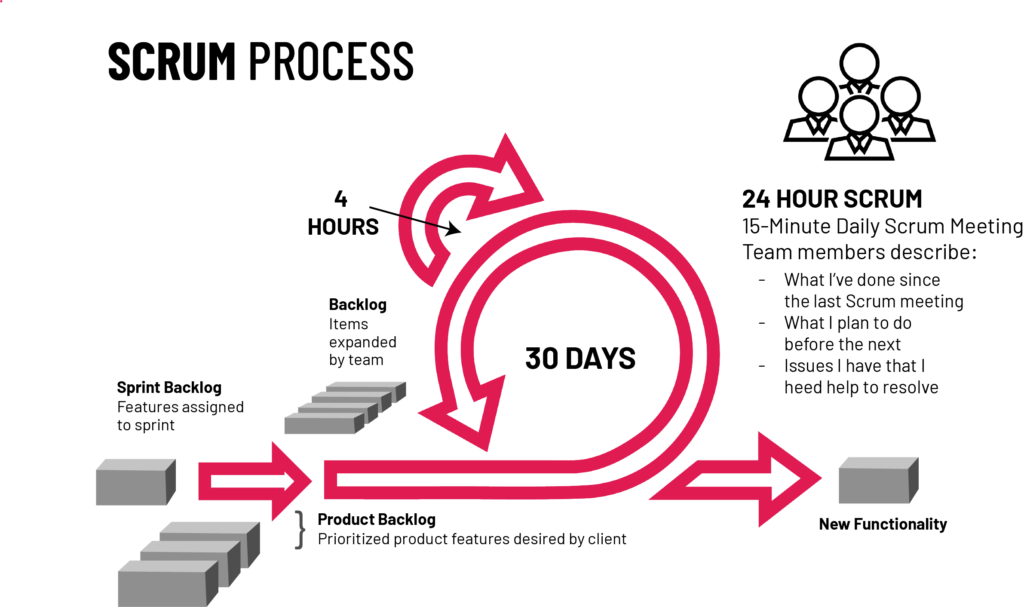
They and Lizzie’s Leather Belts have the same industrial estate address. They have adequate facilities such as SCRUM stand up meetings, facilitated workshops and apply DSDM Atern framework to all projects. In addition, they will designate a dedicated team for each of their projects.

## Scrum/Agile concepts overview

**Definition of Agile**: according to Alan Dennis, et al (2012, p.57), Agile methodology refers to a family of development methods that focus on continuous iteration throughout the development life of a project. Each iteration includes the full development activities of a software project such as planning, development and testing. It refers to any development process consistent with the concepts of the Agile Manifesto.

**Definition of Scrum**: Scrum is a lightweight agile development process. Scrum is considered a framework for an effective team collaboration to deliver the highest business value in the shortest time. Usually, after two weeks to a month, the feature with the highest priority will be delivered or further enhanced for another iteration. (<https://www.scrum.org/resources/what-is-scrum>)

**Scrum process:**



<https://www.cprime.com/resources/what-is-agile-what-is-scrum/>

In Scrum, the feature planned by the end user's perspective is called user-stories. The collection of all user-stories is known as a product backlog. Next, they will specify the desired product features and put it into the release backlog. These users-stories will be prioritized and estimate the total amount of work and time by the team. Then, the release backlog is further broken down and plan out into several sprints. Each sprint backlog known as a short duration milestone helps the team solve the features assigned to it and takes it to a ship-ready state.

The duration of a regular sprint is from 2 days to a maximum of 30 days. This depends on the total time estimated earlier. During the development of a sprint backlog, there will be a short 15 minutes meeting between members of the team called a daily meeting by stand-up. Here, the members talk to each other about lists of the work they have completed, the difficulties they have encountered and the upcoming plans in their way. Because the daily meeting ensures the team work will be synchronized and the main issues will be solved as soon as possible together.

At the end of each sprint, they will deliver a new functionality of product with fully tested. When a part of the product is released, the sprint is 100% complete. At the end of each sprint, it's really important to have a sprint retrospective meeting. The purpose of the meeting is to reflect and evaluate the sprint to see if it has gone in the right direction or areas of improvement.

**Techniques of Scrum:**

*Ceremonies*: In Scrum, there are 4 specific types of meeting: sprint planning, daily scrum, sprint review and sprint retrospective meeting.

* Firstly, sprint planning meeting is divided into 2 parts. Part 1 with all roles aims to unify the product backlog and determine the sprint's goals, part 2 includes only the scrum team and the scrum master. Here, they will continue to estimate and plan out sprint backlog.
* Daily Scrum: As I said earlier, this meeting takes place daily for a short period of 15 minutes by stand-up. The purpose of the meeting is to synchronize the team, helping members understand what each one has done, the obstacles encountered and the next plan.
* Sprint review meeting: Taking place after every sprint includes all roles. Here, the Scrum team will present what has been accomplished during the sprint and introduce new features to the product owner.
* A sprint retrospective meeting is a meeting that takes place after each sprint that includes only the Scrum team. This is a meeting to reflect the team's effectiveness throughout the sprint. Or it is also known as the feedback meeting.

*Burndown chart:* it is a graph that allows depicts the total Sprint Backlog hours remaining per day, calculated and estimated amount of time to release. It is very important for all roles in scrum when monitoring project progress.

**People in Scrum:**

There are 3 main roles in Scrum: product owner, scrum master, scrum team.

* The product owner represents the perspective of users and customers in defining features for the product. They will prioritize features based on factors such as profitability and market. In particular, they have the right to accept or reject products after each sprint.

In the project of Lizzie’s Leather Belts, the product owner includes managing director, customers, finance director, managing director, marketing director, warehouse manager, operations director, order handling clerk. They are the ones that define the features of the product as well as set the direction of the product.

* The scrum master is responsible for managing the project and ensuring it is processing smoothly. he sets up meetings, monitors sprint tasks, eliminates obstacles that create the best conditions for members of the scrum team.

In the project of Lizzie’s Leather Belts, Jonathan is considered as a Scrum master.

* The scrum team is self-managed with 5-10 people. They are the people who implement the project based on the task of a sprint with full development parts: QA, Programmers, Testers, UI Designers, etc.

In the project of Lizzie’s Leather Belts, scrum team consists of: Julie, Jeff, Sophie as programmers, Ken as programmer and tester.

## Explaining why Scrum/Agile are appropriate

In this section, I will talk about the factors that affect the success of the project and apply it in the scenario:

* User Involvement
* Executive Support
* Clear Business Objectives
* Emotional Maturity
* Optimization
* Agile Process
* Project Management Expertise
* Skilled Resources
* Execution
* Tools and infrastructure

Based on the practice provided by the Lizzie’s Leather Belts scenario, I will give an analysis of several important factors.

* Tools and infrastructure: According to the scenario, True Concepts has full infrastructure such as stand-up meetings and facilitated workshops for Scrum meetings. They also apply the DSDM framework to their development projects. Besides, True Concepts and Lizzie’s Leather Belts company are located on the same industrial estate. This allows them to organize scrum review meetings with the product owners conveniently.
* Skilled Resources: True concept designates a dedicated team for the development of the Lizzie’s Leather Belts company website project. This is a complete team, all team members have a good understanding of web site development, each of them can handle many different roles and possess many advantages. For example, Ken can be both a developer and a tester, Julie with good programming ability and a good communicator. Besides, the marketing director of Lizzie’s Leather Belts company as a product owner also has a certified Workshop for Agile Project Manager and Facilitated Workshop.
* Project Management Expertise: According to the scenario, Jonathan is not only knowledgeable about Web site development, he is also an experienced person in the lead role of many Agile development projects.
* Agile Process: the managing director makes a request to build a fully functional website in a short period of about 3 months. In addition, he wants the product development process to be flexible against changes in user requirements.
* Executive Support: the operations director and the marketing director of Lizzie’s Leather Belts with industry expertise. They are also experienced people in Agile project manager.
* User Involvement: The project has a diverse user engagement including Lizzie’s Leather Belts company as the managing, finance, operation, marketing director, ... along with their customers.
* Clear Business Objectives: The goal of this project is to develop a website that allows Lizzie’s Leather Belts company to expand its market to the general public.

## Advantages and Disadvantages of Scrum/Agile

* + 1. Advantages of Scrum/Agile:

Today, Scrum is known as one of the most popular project management methods. The reason is because it possesses a lot of advantages over traditional development methods. Here are a few outstanding advantages and apply to the scenario.

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| --- | --- |
| Advantage | Analysis in the scenario |
| The Scrum process allows projects to complete distribution quickly and efficiently | Lizzie’s Leather Belts company want to build a website in an urgent time of 3 months, this shows that Scrum is a suitable for this rapid development but still ensures the quality of the website |
| Scrum allows release and test of product functionality flexibly with short iterations | Under the scenario, the Management Director is known as having a bad experience with the traditional "Water Fall" development model because of the lack of support for changing requirements. This is solved very well in scrum, as it allows flexible development to repeat a feature until the consent of the product owner is achieved. |
| Scrum enhances and improves the communication, accept feedback from stakeholders | In the scenario, the warehouse manager is not available through this project. However, want to contribute and be authorized from the operation director to make a decision about agreeing or rejecting the features of the product. In addition, people with knowledge of Agile projects such as the marketing director can point out things that need to be improved or promoted of product |
| Using Scrum, the self-managed team can be flexible and effective in carrying a lot of responsibility. | In the scenario, the development team includes 5 members with full roles and fully equipped with website development knowledge, allowing the team to overcome all related issues without external assistance. |
| The team always has a clear vision, keeps the goals and direction through the scrum meetings | In the development team of the true concept, each member has different strengths and weaknesses as well as a different perspective. However, by scrum meetings such as daily meetings, they will be connected to each other to understand and promote common motivation to achieve the highest efficiency. |

1.4.2. Disadvantage of Scrum/Agile:

However, the Scrum likes other frameworks still has some disadvantages to consider:

* Applying Scrum in the team requires the full attendance of the members throughout the project implementation process. However, according to scenario, Ken can only be attending for 2 days a week and is the only person with knowledge about testing. This can be a huge obstacle for the team in daily meetings with the absence of Ken.

The solution to this problem is Ken and the team can conduct online meetings and choose working remote solutions like google meet, git control version.

* The project can get fail if members in the team is not committed to the rules. In the development team of True concepts, Jeff is known as someone who often has fierce arguments with customers. This can greatly affect the achievement of a final product feature.

The solution to this problem is that the team should decide who can communicate as well as Julie works directly with customers during the sprint review.

# High level requirements analysis and MoSCoW prioritization

## Examining of original requirements

### Specifying list of requirements are not high-level requirements

1. The high-level requirement (HLR) is considered to be a functional requirement. It means a list of services or actions the system provides to users. Basically, understanding as what I want it to do. Taking an example from the scenario, Customer can change their account details.
2. In contrast to HLR, low-level requirements include constraints, non-functional requirements, detailed requirements that the system has. Basically, understanding it as how I want it to do.
3. List of requirements are not the high-level requirements:

|  |  |
| --- | --- |
| Low-level requirement | Reason |
| As the Finance Director I want to ensure the safety of all online transactions of customers | This is a non-functional requirement |
| As the Managing Director, I want to website ensures compliance with Data Protection Act (personal data is protected) safe so that we will not be penalized | This is a non-functional requirement |
| As the Marketing Director, I want an ‘About Page’ so that it helps us promote our brand better | This requirement describes in detail about the about page which will display the brand information which should be considered as a low-level requirement. |
| As the Warehouse Manager I want to present the ‘out of stock’ notice on the appropriate products so that customers don't have to worry about waiting | This requirement describes in detail the message that every time an item is out of stock is considered not a high-level requirement |
| As a customer, I want to choose whether I am sent marketing information or not to don’t receive spam. | This requirement describes in detail the action of the system under the user's permission to send notification information to them |
| As a customer, I want to be gift wrapped and sent to an address that is not my own so I don't have to bother with gift wrapping and delivery. | This requirement describes in detail the process of the system in sending and package and transporting it to the requested place |
| As a customer, I want to be sent an SMS to remind me the delivery time | This requirement is constrained by only using SMS to send notifications to customers |
| As Marketing Manager, I would like to have an offer or discount page so we can notify our customers about the things mentioned above. | This Requirement describes in detail the content of a page |
| As Chief Accountant, I want the website to comply with VAT laws so that we don't get penalized | This is a non-functional requirement |
| As a customer, I want to be able to handle returns through the website so that I don't have to call and answer all those stupid questions instead of talking directly to people. | This requirement is bound by the designation during system processing, which is to skip the steps to answer the question. |

Based on experience and understanding, I want to identify some additional requirements needed to build this website:

* As a customer, I want to register a personal account on the system so that I can manage my own personal information.
* As the Warehouse Manager, I want product or catalog editing features on the website so I can easily manage them.
* As a customer, I can view the details of the product available on the website that I want to buy
* As a customer, I want to filter the products according to the desired fields.

### List of high-level requirements is rewritten

|  |  |
| --- | --- |
| Requirement | Classify |
| As a customer, I want to register a personal account on the system so that I can manage my own personal information. | Functional |
| As the Warehouse Manager, I want product or catalog editing features on the website so I can easily manage them. | Functional |
| As a customer, I can view the details of the product available on the website that I want to buy | Functional |
| As a customer, I want to filter the products according to the desired fields. | Functional |
| As a customer, I want to be able to edit my shopping cart so that I can make the necessary changes | Functional |
| As a warehouse operator, I want to check shipping addresses so I can deliver orders with the same post code at the same time | Functional |
| As the Managing Director I want a monthly report showing the profits earned from the belts sold through the website | Functional |
| As a customer, I would like to be sent a notice to remind me of the delivery time | Functional |
| As the Finance Director I want to ensure the safety of all online transactions of customers | Non-functional |
| As the Managing Director, I want to website ensures compliance with Data Protection Act (personal data is protected) safe so that we will not be penalized | Non-functional |

## Prioritizing updated high-level requirements list with MoSCoW/Timebox rules.

### List of updated high-level requirements with priority

|  |  |
| --- | --- |
| Updated high-level requirements | Priority |
| As a customer, I want to register a personal account on the system so that I can manage my own personal information. | Must have |
| As the Warehouse Manager, I want product or catalog editing features on the website so I can easily manage them. | Must have |
| As a customer, I can view the details of the product available on the website that I want to buy | Must have |
| As a customer, I want to filter the products according to the desired fields. | Could have |
| As a customer, I want to be able to edit my shopping cart so that I can make the necessary changes | Must have |
| As a warehouse operator, I want to check shipping addresses so I can deliver orders with the same post code at the same time | Must have |
| As the Managing Director I want a monthly report showing the profits earned from the belts sold through the website | Must have |
| As a customer, I would like to be sent a notice to remind me of the delivery time | Could have |
| As the Finance Director I want to ensure the safety of all online transactions of customers | Should have |
| As the Managing Director, I want to website ensures compliance with Data Protection Act (personal data is protected) safe so that we will not be penalized | Should have |

### Explaining about prioritizing of updated high-level requirements list

|  |  |  |
| --- | --- | --- |
| Updated high-level requirements | Priority | Reason |
| As a customer, I want to register a personal account on the system so that I can manage my own personal information. | Must have | The company's website Lizzie’s Leather Belts serves the exchange between them and customers. So, this is a basic first feature for customers to conduct other activities on the system. |
| As the Warehouse Manager, I want product or catalog editing features on the website so I can easily manage them. | Must have | This is an essential feature for every website, especially a commercial website like Lizzie’s Leather Belts. They can edit and update the latest information about their products |
| As a customer, I can view the details of the product available on the website that I want to buy | Must have | This is the basic feature of a commercial website. Customers need transparent and detail information about product to make purchasing decision. |
| As a customer, I want to filter the products according to the desired fields. | Could have | According to the scenario, Lizzie’s Leather Belts only has over 50 different styles of leather belts, so even without search filtering, customers can still find the products to buy. |
| As a customer, I want to be able to edit my shopping cart so that I can make the necessary changes | Must have | This is a basic feature for an e-commerce site. Customers may change their purchase decision at any time. |
| As a warehouse operator, I want to check shipping addresses so I can deliver orders with the same post code at the same time | Could have | This feature will allow a warehouse operator to increase productivity and reduce delivery costs. However it does not really matter |
| As the Managing Director I want a monthly report showing the profits earned from the belts sold through the website | Must have | This is an essential feature for Managing Director, because he really needs to track the effectiveness of the business on the website |
| As a customer, I would like to be sent a notice to remind me of the delivery time | Could have | The feature of sending notifications about delivery time to users really doesn't matter. Because customers can completely remind themselves to the time, or the shipper will contact them. |
| As the Finance Director I want to ensure the safety of all online transactions of customers | Should have | This is considered an important requirement for the website. Because according to Finance Director, their customers will feel more secure when shopping on the company's system |
| As the Managing Director, I want to website ensures compliance with Data Protection Act (personal data is protected) safe so that we will not be penalized | Should have | This is considered an important requirement for the website. According to the Managing Director, if they do not comply with the Data Protection Act, they can be fined up to hundreds of thousands of pounds. |

# Issues involve Legal, Social, Ethical and Professional.

# Conclusion:

# References

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