

**UNIVERSITY OF GREENWICH**  
COMP1787 – Requirements Management

Coursework

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# Section A – Management Summary

1. **Introduction the case study**
2. **About Green Groceries**

Green Groceries is a mid-sized company that specializes in locally sourced, organic grocery items. Through partnerships with neighboring farmers and environmentally conscious suppliers, the company has gained a strong position. Their business objective is to produce and promote and expand the range of organic goods to increase consumer access to the company's products.

1. **Introducing Green Groceries' project goals**

The goal of this project is said to be to develop an online platform for the company within the next three months.

The goals that the company set when implementing the project include:

* The firstly is expanding its market reach: This expansion allows the company to serve customers who prefer the convenience of online shopping or who cannot access the company’s brick-and-mortar stores.
* Secondly increase access to sustainable products: Green Grocers seeks to make organic and locally sourced grocery products more accessible to consumers and support its mission of promoting the company's eco-conscious lifestyle.
* Third is strengthening brand reputation: The launch of the online platform strengthens Green Groceries' reputation as a supplier of high-quality, sustainable goods.
* Fourth Drive Revenue Growth: Expansion into the online space presents an opportunity for Green Groceries to increase its revenue streams and allow the company to enter new markets and capitalize on growing demand for organic and locally sourced products, driving sales and profits.
* Finaly, enhance customer interaction: Through the online platform, Green Groceries can interact with customers beyond the point of sale.

1. **Introduction to Online Platform Development**

* Given that Green Groceries lacks an in-house software development team, the decision to outsource the development of their online platform underscores their commitment to efficient resource allocation and expertise acquisition. By partnering with an external team, such as System Concepts (SC), Green Groceries can leverage the specialized skills and experience of professionals who are well-versed in software development methodologies.
* The Online Platform Development project employs the SCRUM methodology, a widely used Agile approach designed for small teams and characterized by sprint cycles. In SCRUM, a Scrum master takes the lead role, addressing impediments hindering the team's daily tasks. Similarly, in SCRUM, team members convene daily to address ongoing tasks, obstacles, and other factors influencing the team's progress, facilitating problem-solving and project advancement (According Schwaber, K. and Sutherland, J., (2011)).

A diagram of a scrum

Description automatically generated[[1]](#footnote-1)

Figure 1. CRUM methodology

* The Online Platform Development project has opted for the DSDM framework, an agile project framework centered around iterative development practices. DSDM aims to blend traditional project management approaches, like the waterfall methodology, with software and systems development requirements. Its core objective is to facilitate the adaptation of proven best practices and expertise within the agile framework to ensure the development of a suitable framework for the project(Stapleton, J., 1997)).

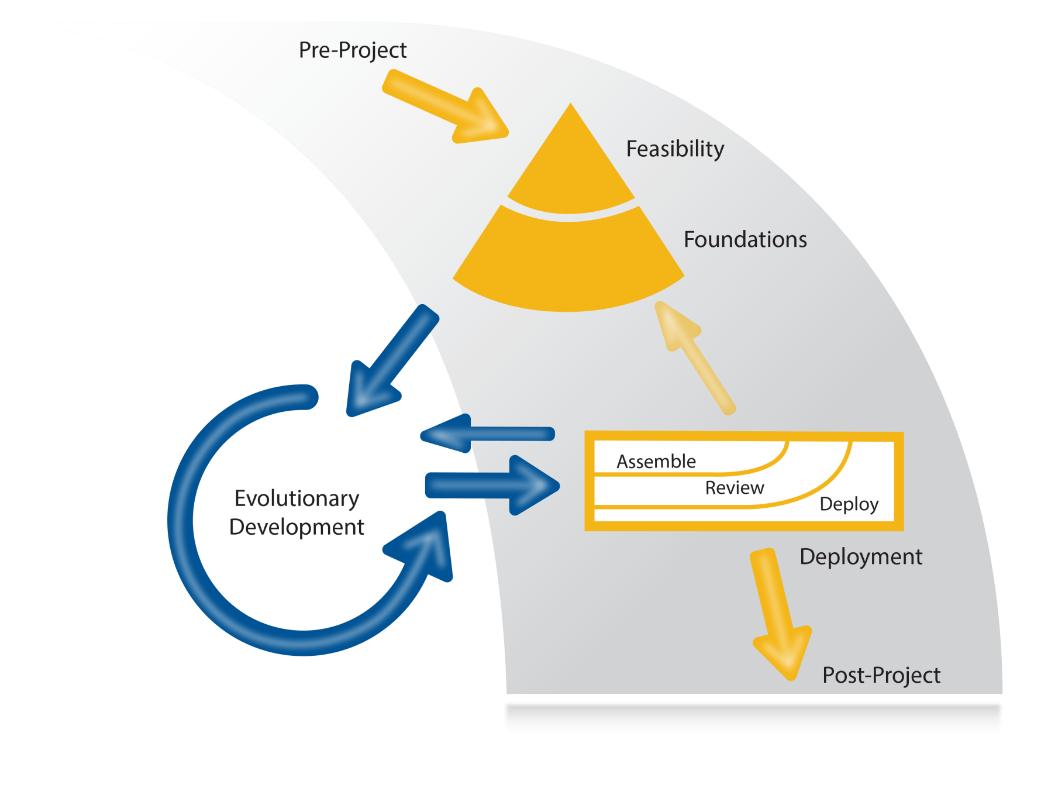
[[2]](#footnote-2)

Figure 2 DSDM framework

* The members receiving this project are the staff of the prestigious software consulting company Aglie (SC), including 5 members: Millie is a skilled programmer with high expertise. Peter, a highly specialized web developer, but sometimes disagrees with clients.Anita, has strong web development skills. Cheryl, is an experienced Agile development team leader as well as extremely good web development skills. And finally Pat, a part-time employee throughout the project, has good skills and understanding of web development and testing.
* For stakeholders including positions: CEO and Founder, Operations Director, Chief Accountant, Logistics Director, Financial Controller, Marketing Director. Each position has important tasks. Like CEO and Founder are the people who see things and the main decision makers. Financial Controller, a position with a very busy schedule but still makes time to attend meetings. Operations Director, a position with extensive background experience in Aglie software development. Chief Accountant, position Financial position in meetings. Marketing Manager, is a certified workshop facilitator and project manager, and contributes insights from a marketing perspective.

Evaluation of the members of this team is quite consistent with each other, each member has high skills and understanding of web development according to the Aglie model. And there is also a member named Cheryl, who has experience managing groups as a group leader. This person will lead the team as well as act as a bridge between team members and customers, because Peter in the team sometimes disagrees with customers. For the stakeholders, it is a good combination. The project development team is full of members with many skills in Agile web development and the stakeholders have positions with a broad vision. , has experience in project management as well as providing opinions and full support for the company's online platform development project.

1. **Introduction to Agile**
2. **Agile information**
   1. Definition

A diagram of a diagram

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Figure 3. Aglie[[3]](#footnote-3)

The Agile methodology is actually a project management framework that emphasizes iterative development and collaboration between cross-functional teams. It typically involves breaking the project into smaller parts called sprints, which typically last from one to four weeks. During each sprint, the team works on a set of predefined tasks, with the aim of delivering a deliverable increment by the end of the sprint. After each sprint, there is a period of time dedicated to reflection and improvement called a sprint retrospective. During this phase, the team gathers to review what went well during the sprint, what didn't go as planned, and what lessons can be learned. The goal is to identify areas for improvement and make the necessary adjustments to enhance the team's performance in upcoming sprints (According Manifesto, A., 2001)).

* 1. Advantages and disadvantages of Agile

Like any other methodology, Agile also has its advantages and disadvantages. Here, the advantages and disadvantages of Agile will be discussed in detail below(According Pargaonker, S (2023)).

* About advantages of Agile

**Punctual Delivery**: Agile methodology aims at delivering functional components incrementally. After each sprint, a portion of the software is transferred to the client, ensuring steady progress and contentment(According Pargaonker, S (2023)).

**Flexibility and Adaptability**: Agile methodology permits alterations in requirements even during the development phase. It encompasses flexibility and adjusts to changing needs(According Pargaonker, S (2023)).

**Daily Engagement**: Agile stresses the importance of daily engagement between business stakeholders and developers, fostering collaboration and ensuring alignment with customer expectations(According Pargaonker, S (2023)).

**Emphasis on Quality Design**: The development process under Agile methodology pays significant attention to product design, resulting in higher quality software(According Pargaonker, S (2023)).

**Enhanced Customer Satisfaction**: Consistent delivery of features keeps customers involved and content. Their feedback can influence the direction of the product(According Pargaonker, S (2023)).

**Organizational Harmony**: Agile methodologies, dismantle organizational barriers, nurture trust, and unite teams towards shared objectives(According Pargaonker, S (2023)).

* About disadvantaged of Agile

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**Enhanced Customer Satisfaction**: Consistent delivery of features keeps customers involved and content. Their feedback can influence the direction of the product(According Pargaonker, S (2023)).

**Organizational Harmony:** Agile methodologies, like Scrum, dismantle organizational barriers, nurture trust, and unite teams towards shared objectives(According Pargaonker, S (2023)).

1. **Identify the Agile framework as a suitable method for the project.**

Upon examining Green Groceries' plans to introduce an online platform in the next three months and taking into account their outsourced project goals, it is evident that DSDM, would be a perfect fit for this project. Below is a breakdown of the reasoning behind this recommendation along with potential advantages and disadvantages:

* Appropriateness of Agile Framework:
* Agility to adapt to changing requirements: Agile framework such as SRUM prioritize iterative development cycles, enabling the project team to continuously adjust to evolving requirements and priorities. This aligns seamlessly with the dynamic nature of software development projects and can effectively address Green Groceries' evolving needs and market demands.
* Incremental Delivery of Value: Agile framework, such as DSDM, facilitate the division of the project into smaller, manageable increments known as sprints. This framework enables the team to deliver functional software components at regular intervals. By doing so, Green Groceries can begin to realize the value of the online platform early in the development process. Moreover, this approach allows for the collection of feedback from users and stakeholders, which can be used to refine and improve the platform iteratively.
* Collaboration and Transparency: Agile framework foster tight collaboration among the development team, stakeholders, and the client. In the context of Green Groceries, this collaborative approach can enhance communication between the company and System Concepts, ensuring that the provided solution closely aligns with Green Groceries' vision and requirements.
* Risk Mitigation: Agile framework provide inherent mechanisms for mitigating risks through frequent inspection and adaptation. By conducting regular sprint reviews and retrospectives, the project team can identify potential issues at an early stage and make necessary adjustments to minimize risks, thereby ensuring the success of the project.
* Advantages of Agile framework
* Rapid Delivery: Agile framework facilitate quicker time-to-market by prioritizing the delivery of valuable functionality in brief iterations. This can provide significant advantages for Green Groceries, enabling them to launch their online platform earlier and gain a competitive advantage in the market.
* Customer Satisfaction: Agile framework prioritize customer collaboration and responsiveness to change, resulting in higher customer satisfaction. By actively involving Green Groceries in the development process and iteratively incorporating their feedback, System Concepts can ensure that the final product meets or exceeds Green Groceries' expectations. This collaborative approach fosters a sense of ownership and ensures that the delivered solution aligns closely with Green Groceries' vision and requirements.
* Disadvantages of Agile framework
* Resource availability: Agile framework necessitate active customer participation throughout the development process. Green Groceries should allocate ample resources and involve key stakeholders in regular meetings, ensuring timely feedback to guarantee project success.
* Scope management: Agile framework may encounter challenges in handling expanding scope, particularly if requirements evolve frequently during the project. Green Groceries and System Concepts must establish clear priorities and mechanisms to manage scope changes effectively, thus averting project delays or budget overruns.

# Section B – High level requirements analysis and MoSCoW prioritisation

The table... below presents the initial list of requirements for the website.

|  |  |
| --- | --- |
| **No.** | **Requirements** |
| F1 | As an Order Handling Clerk, I want to use the website to process telephone purchases, replacing the paper-based system. |
| F2 | Maintain at least 20 office plants as part of the company's commitment to a green and healthy workspace. |
| F3 | As a customer, I want to be able to change my account details to ensure my most up-to-date information is recorded. |
| F4 | Organize a virtual celebration on the website for the CEO's birthday to showcase the company's fun and friendly culture. |
| F5 | As the Managing Director I want to be ensured that the site is Data Protection Act safe so that we do not get fined hundreds of thousands of pounds. |
| F6 | As a customer register an account. |
| F7 | As a Customer I want a choice of delivery slots so that I can arrange my diary appropriately. |
| F8 | As a customer, I want to be able to modify my shopping cart so that I can change my mind about what I want to buy. |
| F9 | The company should adopt pet-friendly policies to create a positive and inclusive work environment. |
| F10 | The system must be designed to handle a 30% increase in traffic during peak periods without degradation in performance. |
| F11 | As a customer, I want to enter separate delivery and invoice addresses so that I can receive bags when staying at a friend’s house. |
| F12 | As a Customer I want to be able to change my account details so that my most up to date details are recorded. |
| F13 | As an Order Handling Clerk I want to use the Web site to process telephone purchases so that I can stop using the paper-based system. |
| F14 | As a customer, I want to choose whether or not I am sent marketing information to avoid receiving excessive junk mail. |
| F15 | All user data, including personal information and payment details, must be encrypted to ensure the highest level of security. |
| F16 | Maintain consistent branding elements and design across the website to reinforce their brand identity. |
| F17 | The development team should participate in a team-building event every quarter to foster collaboration and a positive work environment. |
| F18 | As the Marketing Director I would like an offers or discount page so that we can inform our customers of the aforementioned. |
| F19 | As the Chief Accountant I want to the Web site to adhere to legislation regarding VAT so we are not hit with a hefty fine. |
| F20 | As the Operations Director, I want to accept all forms of payment to capture the largest market possible. |

1. **Review the ‘base line requirements’ list**
2. **Present nonconforming requirements at a high-level requirement level.**

**The table ... below presents the requirements that are determined to be inconsistent with the high-level requirements of the system and the reasons why those requirements are not suitable for the project.**

Table 1. Nonconforming requirements at a high-level requirement level

|  |  |  |
| --- | --- | --- |
| **No.** | **Requirements** | **Reason** |
| F2 | Maintain at least 20 office plants as part of the company's commitment to a green and healthy workspace. | The reason this requirement is not very relevant is because it is a non-functional requirement (NFR) in the first place. Second, it has nothing to do with the company's goals and also has nothing to do with the business goals and the project's goal is to develop an online platform. While the company's request is to develop an online platform to promote to many customers, here it is about the company's working environment. So this request is definitely inappropriate. |
| F4 | Organize a virtual celebration on the website for the CEO's birthday to showcase the company's fun and friendly culture. | This reason is not suitable because first it should be used to share the organization's fun and friendly cultural activities. Second, it goes against the company's original wishes when developing an online platform. Finally, because the project has a short implementation period, it should only focus on the main goal of the project and this requirement can be implemented in the next development phase in the future. |
| F9 | The company should adopt pet-friendly policies to create a positive and inclusive work environment. | The reason this requirement is not very relevant is because it is a non-functional requirement (NFR) in the first place. Second, it has nothing to do with the company's goals and also has nothing to do with the business goals and the project's goal is to develop an online platform. While the company's request is to develop an online platform to promote to many customers, here it is about the company's working environment. So this request is definitely inappropriate. |
| F17 | The development team should participate in a team-building event every quarter to foster collaboration and a positive work environment. | First, it concerns non-functional requirements (NFRs), which are necessary for system performance but do not directly address the functional needs of the system. Therefore, focusing on NFR may detract attention from core functions that are important to meeting user needs. Second, the solution involves project management rather than project development . While effective project management is certainly important, allocating resources to the project at this stage may be premature and may divert attention from important development tasks. Finally, the proposed solution was not related to the company's main goal of developing an online platform. Due to misalignment with project goals, investing time and resources in non-essential areas risks slowing progress toward achieving company goals. |
| F10 | The system must be designed to handle a 30% increase in traffic during peak periods without degradation in performance. | Firstly, it falls under the category of non-functional requirements (NFR), which typically encompass aspects such as performance, reliability, and scalability, rather than directly addressing the core functionalities of the platform. Secondly, the request pertains to performance design and optimization, which requires ongoing improvement over time. However, given that this is the company's inaugural venture into developing an online platform, prioritizing such a request may not be necessary at this stage. Instead, initial efforts should focus on establishing a solid foundation for the platform's core functionalities and ensuring its stability and usability. Therefore, while performance optimization is undoubtedly important, it may be more prudent to defer this request until the platform has matured and the company has gained more experience in online development. |
| F15 | All user data, including personal information and payment details, must be encrypted to ensure the highest level of security. | The stated solution is not suitable for many reasons. It essentially falls under the category of non-functional requirements (NFR), making it inadequate to address the specific functional needs of the system. Additionally, it also involves technical aspects in that established protocols already exist to support encryption for secure data transmission. Furthermore, modern development frameworks, like the modern frameworks that support Therefore, considering these factors, it is clear that the proposed solution lacks feasibility and suitability in addressing the requirements. system needs effectively. |
| F16 | Maintain consistent branding elements and design across the website to reinforce their brand identity. | Firstly, it belongs to the realm of non-functional requirements (NFR), which are critical for system performance but do not directly address the functional needs of the system. Secondly, the solution involves design development, particularly in terms of UI/UX (User Interface/User Experience). While crucial for enhancing user engagement and satisfaction, delving into UI/UX design may not be appropriate at this stage, especially if clear functional requirements have not been established.Thirdly, the absence of clear requirements, compounded by the organization's lack of brand identity standards, further complicates the feasibility of implementing the proposed solution. Brand identity standards are essential for ensuring consistency and coherence across all aspects of the platform. However, since the issue of brand identity is anticipated to evolve over time, allocating resources to address it at the project's outset may be premature. |
| F5 | As the Managing Director I want to be ensured that the site is Data Protection Act safe so that we do not get fined hundreds of thousands of pounds. | The stated solution is unsuitable for several reasons. Primarily, it falls under the category of non-functional requirements (NFR), rendering it inadequate for addressing the specific functional needs of the system. Additionally, it pertains to technical aspects where established protocols, such as HTTPS, already exist to support encryption for secure data transmission. Furthermore, contemporary development frameworks, like those supporting encryption methods such as bcrypt, offer robust solutions for safeguarding sensitive information. Therefore, considering these factors, it is evident that the proposed solution lacks viability and relevance in addressing the system's requirements effectively. |
| F7 | As a Customer I want a choice of delivery slots so that I can arrange my diary appropriately. | Firstly, it introduces a reliance on a third party for delivery, which deviates from the project's primary goal of expanding market reach and enhancing user accessibility. Secondly, while it may fulfill a customer request, the logistics involved-such as coordinating schedules and accommodating carrier requirements-pose considerable challenges. These logistical hurdles not only complicate the delivery process but also potentially disrupt the project timeline and resource allocation. Therefore, considering these constraints, the proposed solution is not aligned with the project's objectives and presents practical difficulties that may impede its successful implementation. |

1. **Present the high-level functional requirements necessary to build the system.**

The table... below presents requirements consistent with the high-level requirements of the project, necessary when implementing a website. In the table presented to the stakeholders, the FR/NFR requirement for each requirement and especially the reason why it was chosen as appropriate for the project.

Table 2. The high-level functional requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **High level functional requirements** | **Stakeholder** | **FR/NFR** | **Reason** |
| F3 | As a customer, I want to be able to change my account details to ensure my most up-to-date information is recorded. | Users | FR | Because this is one of the benefits of customers when using the company's online platform. When using the company's platform, customers who have problems with their account information can update it, for example, they can change their Phone Number when they use a new phone number. |
| F6 | As a customer register an account. | Users | FR | Because this is one of the benefits of customers when using the company's online platform. When registering for a customer account, they can secure their account, manage their translation history orders, and receive support when there are problems. |
| F1 | As an Order Handling Clerk, I want to use the website to process telephone purchases, replacing the paper-based system. | Sale staff | FR | First, because using phones to process transactions has become common in e-commerce applications, it is necessary to keep up with the trend, as well as everyone having a phone number and communication. better between people, deducing this feature is very useful. Third, when implementing this request, it will be very useful for elderly users who are not very familiar with technology. This is to simplify ordering as well as be more accessible to users, as well as being on track with the company's goals. |
| F8 | As a customer, I want to be able to modify my shopping cart so that I can change my mind about what I want to buy. | Users | FR | Because customers often change their mind about what they want to buy while browsing. Allowing them to easily modify their shopping cart ensures they have control over their shopping experience and can make adjustments as needed, improving user satisfaction and reducing frustration. |
| F18 | As the Marketing Director I would like an offers or discount page so that we can inform our customers of the aforementioned. | Marketing Director | FR | Developing this requirement can have several beneficial outcomes for the company. Firstly, it aims to attract more customers interested in the company's products by offering them a convenient and user-friendly online platform. This enhanced accessibility can lead to an increase in customer acquisition and potentially expand the customer base.Secondly, by providing a seamless online shopping experience, the company can increase the satisfaction of existing customers who have been loyal to the brand over time. Satisfied customers are more likely to continue patronizing the company and may even become advocates, recommending the platform to others.Furthermore, by establishing an online presence, the company can effectively compete in the digital marketplace, increasing its visibility and positioning itself alongside competitors. This not only enhances the company's market share but also allows it to capitalize on new selling points and stay relevant in a competitive environment.Additionally, an online platform can facilitate inventory management and clearance. By reaching a broader audience and streamlining the purchasing process, the company can move surplus inventory more efficiently, reducing carrying costs and maximizing profitability. Overall, developing this requirement aligns with the company's objectives of attracting and retaining customers, increasing competitiveness, and optimizing inventory management, ultimately contributing to the company's growth and success in the market |
| F11 | As a customer, I want to enter separate delivery and invoice addresses so that I can receive bags when staying at a friend’s house. | Users | FR | Because customers may need to deliver to an address different from their billing address for a variety of reasons, such as when staying at a friend's house. Providing the option to enter separate delivery and invoice addresses addresses these needs and enhances customer convenience. |
| F14 | As a customer, I want to choose whether or not I am sent marketing information to avoid receiving excessive junk mail. | Users | FR | Some customers may not want to receive marketing communications to avoid flooding their inboxes with unwanted emails. Providing the option to opt in or out of receiving marketing communications respects your customers' preferences and helps maintain positive relationships with them. |
| F19 | As the Chief Accountant I want to the Web site to adhere to legislation regarding VAT so we are not hit with a hefty fine. | Accountant | FR | Indeed, ensuring compliance with legal and tax regulations is crucial for any organization, including developing an online business platform. Providing invoices and fulfilling tax obligations are basic requirements prescribed by law. Failure to comply with these obligations can result in legal consequences and financial penalties for the organization. Therefore, integrating features into online platforms that facilitate invoicing and tax contributions is not only necessary but also legally required. These features not only ensure compliance with regulatory requirements but also help maintain an organization's reputation and reliability. Therefore, while it may not directly contribute to the functionality or user experience of the platform, prioritizing the development of tax compliance and invoicing features is essential to meet these obligations, legal services and operate online business platforms legally and responsibly. |
| F20 | As the Operations Director, I want to accept all forms of payment to capture the largest market possible. | CEO | FR | Provide multiple payment options that meet diverse customer preferences and increase platform accessibility. Accepting different forms of payment ensures that customers can complete transactions using their preferred method, reducing barriers to purchase and maximizing market reach and revenue potential. power. |

1. **MoSCoW/Timebox rules to prioritise the requirements ‘high level requirements list’**

The company's Online Platform project will be developed within 3 months. Because the project must be implemented in a short time, the SCRUM method should be applied. When applying the SCRUM method, the project will be divided into Sprints, each Sprint is divided into 2 weeks.

For the development team members from System Concepts company, there are 5 members (four full-time members and 1 part-time member) as introduced above. From there, the total time can be calculated. members' working hours, and it is shown below:

Team member: 5 members (4 full-time dev and 1 part-time dev)

Total effort: (4\*8 + 1\*4 for 1 day)\* 5 days per week \* 4 weeks per month \* 3 months

=> 2160 man.hours

From the above numbers, it can be deduced that each Spint takes about 360 hours

Table number…. Below shows the high requirements in accordance with the needs of the project, and it includes Work breakdown with corresponding time.

Table 3. Estimation for each requirements (WBS - Work breakdown structure)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Num** | **Requirement ID** | **Requirement** | **Break tasks** | **Estimation (man.hour)** |
| 1 | F3 | As a customer, I want to register an account. | 1, Create tables in DB(40)  2,Design UI for register page(40)  3, Create Authentication(40)  4, Test API for register user(90)  5, Create route and method for register user(40)  6, Testing(10) | 260 |
| 2 | F1 | As a customer, I want to be able to change my account details to ensure my most up-to-date information is recorded. | 1, Design UI for change account page(40)  2, Test API for change account user(90)  3, Create route and method for change account(50)  4, Testing(10) | 190 |
| 3 | F8 | As an Order Handling Clerk, I want to use the website to process telephone purchases, replacing the paper-based system. | 1. Create tables in DB (60 man.hours)  2, Link and create a modal for inputing all info from telephone purchase (70 man.hours)  3, API for submission (150 man.hours)  4, Create route and method for data processing. (50 man.hours)  5, Testing(40) | 370 |
| 4 | F11 | As a customer, I want to be able to modify my shopping cart so that I can change my mind about what I want to buy. | 1, Create tables in DB(40)  2, Design UI for shopping cart(40)  3, Code function for shopping cart ( View cart, add cart, remove cart, update cart, payment cart)(190)  4, API for function shopping cart(140)  5, Testing(20) | 440 |
| 5 | F19 | As a customer, I want to enter separate delivery and invoice addresses so that I can receive bags when staying at a friend’s house. | 1, Design UI for choose Address delivery(20)  2,Code function for choose address delivery (90)  3,Testing(10) | 120 |
| 6 | F20 | As the Chief Accountant, I want the website to adhere to legislation regarding VAT so we are not hit with a hefty fine. | 1, Learn about tax regulations Value Added Tax (VAT)(30)  2, Configure the website backend to accurately apply the appropriate VAT rate to the products(60)  3, Implement the function to automatically create VAT compliant invoices for each transaction.(60)  5, Testing(10) | 160 |
| 7 | F18 | As the Operations Director, I want to accept all forms of payment to capture the largest market possible. | 1, Research payment methods(20)  2, Design UI for Accept all Payment(30)  3, Develop features that integrate all payment features(900)  4, Test API for all accept payment(100)  5, Testing(10) | 260 |
| 8 | F14 | As the Marketing Director, I would like an offers or discount page so that we can inform our customers of the aforementioned. | 1, Design the user interface for the promotion page(40)  2, Create promotional incentives for users(70)  3, Create data processing methods(110)  4,Testing(10) | 230 |
| 9 | F3 | As a customer, I want to choose whether or not I am sent marketing information to avoid receiving excessive junk mail. | 1, Design DB tables for marketing priorities(20)  2, UI design users choose to prioritize marketing (50)  3,Develop features for users to choose marketing priorities(70)  4, Testing(10) | 150 |

Below is a table… showing the requirements prioritized according to the “high-level requirements list” according to the MoSCoW/Timebox rules

Table 4. MoSCoW/Timebox rules to prioritise the requirements ‘high level requirements list’

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Requirement ID** | **Requirement** | **MoSCoW** | **Reason for prioritization** | **Effort** | **SUMMARY (man.hour)** | **Scale** |
| F3 | As a customer, I want to register an account. | M | This is the first step to allow customers to access the system and use its features by creating an account. | 260 | 1260 | 58.33% |
| F1 | As a customer, I want to be able to change my account details to ensure my most up-to-date information is recorded. | M | Ensure that customers can maintain accurate and up-to-date information, which is vital for effective communication and transactions. | 190 |
| F8 | As an Order Handling Clerk, I want to use the website to process telephone purchases, replacing the paper-based system. | M | Replacing the paper system with online processing helps improve efficiency and streamline the ordering process and also update the system's database. | 370 |
| F11 | As a customer, I want to be able to modify my shopping cart so that I can change my mind about what I want to buy. | M | Give customers flexibility to adjust their orders before completing their purchase, improving user experience and satisfaction. | 440 |
| F19 | As a customer, I want to enter separate delivery and invoice addresses so that I can receive bags when staying at a friend’s house. | S | While not critical for basic functionality, this feature enhances customer convenience and accommodates diverse delivery scenarios. | 120 | 520 | 24.07% |
| F20 | As the Chief Accountant, I want the website to adhere to legislation regarding VAT so we are not hit with a hefty fine. | S | Ensure legal compliance and minimize the risk of financial penalties, which is important for the stability and reputation of the organization. | 160 |
| F18 | As the Operations Director, I want to accept all forms of payment to capture the largest market possible. | S | While necessary to capture a larger market, this function is a bit less important than mandatory requirements as the website can still function without accepting accept all forms of payment. | 240 |
| F14 | As the Marketing Director, I would like an offers or discount page so that we can inform our customers of the aforementioned. | C | While beneficial for marketing purposes, this feature is not necessary for basic site functionality. It can be deployed once the core features are ready and functional. | 230 | 380 | 17,60% |
| F3 | As a customer, I want to choose whether or not I am sent marketing information to avoid receiving excessive junk mail. | C | Allowing customers to manage their communication preferences contributes to a positive user experience and reduces frustration from unwanted marketing materials, but this is not Basic functionality should be implemented later. | 150 |

Priority requirements according to the “high-level requirements list” are presented in table …. Above, as mentioned, the requirements are classified according to Rule 60:20:20 of MoSCoW. The above requirements were prioritized according to MoSCoW principles almost exactly, as the Must Have level requirements accounted for a project implementation time of 1260 man.hour (Total time 2160 man.hour) corresponds to 58.33%. Similarly, the Should Have request has a time of 520 man.hour (Total time 2160 man.hour), corresponding to 24.07%; and the Should Have request has a time of 380 man.hour (Total time 2160 man.hour) corresponding to 17.60%.

According to the plan set out in the table... above, this project can be completed according to the estimated plan with MoSCoW's priority level.

By applying the SCRUM principle, the table below shows the tasks that will be divided into Sprints with corresponding priority tasks.



# Section C – Legal, Social, Ethical and Professional issues

1. **Data Controller**
2. **Discuss about data protection (DPA - Data Protection Act)**

Data protection, frequently enforced by regulations like the Data Protection Act (DPA), is a key feature of modern society due to the rising digitalization of information and the possible hazards connected with its abuse (Data-protection, 2018). Dưới dây trình bày về data flow in data protection:

**Data collecting:** a basic component of many business procedures. Data gathering from consumer analytics is used for many things, from policy decision-making to service improvement. However, the acquisition of personal data also brings up important privacy and data protection issues, including the need for data gathering to be transparent and limited or minimized. for reasons of privacy, finally guaranteeing the safety of all information gathered.

**Data storage** is a crucial part of data management, which includes keeping data organized and easily accessible. On-site storage, cloud storage, and hybrid storage are a few types of data storage techniques. While those techniques offer benefits of their own, security is crucial while utilizing those kinds of storage. Additionally, data backup and disaster recovery plans need to be in place, and data privacy regulations like the CCPA in California and the GDPR in the European Union need to be followed.

**Data sharing**: It refers to the process of sharing data with other parties for cooperation, analysis, decision-making, and other objectives. It also plays an important part in modern industry, scientific research, government activities, and many other sectors.

**Data transfer:** Migration refers to the movement of data from one location to another, either inside the same system or between systems. It is a critical component of data management, enabling collaboration, synchronization, backup, and other functions.

**Data processing** is the manipulation and transformation of data to produce meaningful results. It consists of a set of actions or procedures that turn raw data into a structured format, then analyze the data to produce insights or outcomes. It serves an extremely vital function.

**Data access:** refers to the ability of an authorized user or system to retrieve, manipulate, and interact with data stored in a database or information system. The first is to say user authentication and authorization, user authentication mechanisms must be implemented to verify the identity of individuals accessing online platforms. Once authenticated, users will be granted appropriate access based on their roles and permissions. Second, data privacy and compliance, must ensure that data access complies with relevant privacy regulations, such as GDPR or CCPA, to protect the privacy and rights of individuals. Finally, data encryption and security, the platform uses encryption techniques to protect data during transmission and storage. Access controls such as firewalls and other security measures should also be implemented to prevent unauthorized access or data breaches

**Data retention or deletion:** Platforms should establish retention periods for different types of data. This includes customer orders, transaction records, user accounts, communication logs and other related data. And minimize data by only retaining data needed for legitimate business purposes. And finally, a process should be established to securely delete data when it is no longer needed or when requested by the data subject (e.g., a customer wants to delete their account).

**Data breach response:** refers to an organization's efforts following a security incident in when sensitive or secret information is hacked, accessed, or exposed without authority. Responding swiftly and efficiently is crucial for mitigating the damage of a data breach, safeguarding impacted individuals, and rebuilding trust in an organization's data security safeguards.

1. **Role of Data controller in Green Groceries**

The role of the Data Controller in Green Grocery is crucial, especially in the context of launching an online platform. The reason, Green Groceries aims to expand its market reach through the online platform, the collection, storage and processing of customer data becomes an indispensable part of the business strategy. Below are some tasks for Data controller in Green Groceries:

**Data will be collected:** The data that will be collected when developing the online platform includes, first collecting information about potential product suppliers for organic and environmentally friendly products. Because this can be relevant to researching supplier practices, product availability and pricing. The second is about customer preferences, data can be collected about organic and locally sourced products that customers are interested in, which can involve surveys, market research or analysis of patterns. Past purchase patterns. Third is gathering about market trends. Collecting data about current trends in the organic food industry, online grocery shopping habits and sustainable consumer preferences can help companies companies make informed decisions about the features and services on their online platform. Finally, collect customer opinion information about the platform's services through surveys or inquiry calls. opinion.

**Data storage:** It is extremely important, so choosing a data storage method and system is essential. As mentioned, Green Groceries needed a suitable database management system to store structured data such as customer information, product details, orders, and inventory. According to the above assessment, a cloud storage solution like Amazon or Google Cloud is the most reasonable, because it has high security as well as great scalability and can back up and restore when a disaster occurs. Additionally, data protection regulations such as GDPR (General Data Protection Regulation) must be complied with.

**Data processing:** refers to the manipulation and transformation of raw data into meaningful information that can be used for decision making, analysis, and many other purposes. The way the platform processes data is first shown when processing orders. When customers place orders on the online platform, the data processing process will involve order validation, calculating the total (including taxes and shipping costs), update inventory levels, and generate confirmation emails or invoices. Next comes inventory management, which refers to tracking inventory levels, tracking inventory movements (such as incoming shipments and outgoing orders), and creating alerts for items. Out of stock or out of stock. It ensures that the information displayed on the lun platform accurately reflects the product status to customers. Finally comes analytics and reporting, with data processing allowing analysis of various metrics and key performance indicators (KPIs) related to sales, customer behavior, site traffic web and marketing effectiveness. It helps in aggregating, filtering and summarizing data to create insights and reports for decision-making about the company's commercial direction.

**Data transfer**: refers to the process of moving data from one location to another, either within the same system or between different systems. For example, product information includes details such as product name, description, image, price, and availability. Customer orders, when a customer places an order on the online platform, data transmission takes place when the order details (e.g. items purchased, quantity, delivery address) are transferred from the customer's browser to Green Groceries' servers for processing and fulfillment. Or maybe in payment transactions, inventory updates, payment transactions and most especially data backup and recovery (regular data to backup systems or cloud storage ensures that data Important data is preserved and can be restored in the event of an error).

**Purpose for data usage:** Regarding the purpose of using the collected data, including first order processing, personal data such as customer name, shipping address and payment information may be collected and used for processing. and fulfill orders on the online platform. The second is marketing and promotion. Based on customers' purchasing preferences and purchasing history, we can launch campaigns to reduce prices on products and notify customers via email about promotions. sales aim to increase sales as well as reduce inventory. Finally, developing and improving products, based on customer feedback through surveys, the company can improve and develop the platform.

1. **Legal, Social, Ethical and Professional issues**
2. **Legal issues**
3. **Social issues**
4. **Ethical issues**

**Fairness:** When developing online platforms, a number of ethical issues related to fairness will arise, especially with regard to data privacy, accessibility and environmental sustainability. For example, fairness dictates that customer data collected through online platforms must be processed ethically and securely. And equity also includes fair representation and treatment of all stakeholders involved in the development process

**Exmaple**: During the registration process, customers will be provided with a consent form that clearly explains how their data will be used. They are given the option to consent to specific data collection methods, such as email marketing or personalized recommendations, ensuring transparency and fairness in data processing. Implementing features such as alt text for images, keyboard navigation, and adjustable text sizes can enhance accessibility and promote equity by providing access equal for all users.

**Protect consumer:** This is an important aspect in the development of the online platform as demonstrated by, for example, transparent pricing and product information. Green Groceries ensures the prices of products listed on the online platform are transparent. and accurately reflects the price that consumers pay. Next is payment processing, System Concepts deploys a secure payment processing mechanism on the online platform to protect consumers' financial information. Finally, a fair and clear return policy Green Groceries establishes a fair and clear return policy, which clearly outlines consumers' rights to return products for a refund or exchange within a reasonable period of time. certain number of conditions

**Example:** On the platform there is a clear pricing structure as a package of organic fruit can be listed with a total price as well as a price per pound or kilogram. The second product description on the online platform includes information about the product's origin, the farming method used (e.g. organic, sustainable), and any relevant certifications (e.g. USDA Organic, Fair Trade).For example, a description of locally sourced honey might include details about beekeeping methods, the area where the honey is harvested, and the benefits of supporting local beekeepers . And finally Green Groceries will provide fast customer support through multiple channels, including live chat, email and phone support.

**Protect business data and information:** This is paramount when developing an online platform like Green Grocery. Demonstrated in data security, access control data encryption protocols and regular security audits must be implemented to identify and address vulnerabilities. Platforms must comply with relevant data protection regulations such as GDPR (General Data Protection Regulation) or CCPA (California Consumer Privacy Act), depending on the company's location. company and the markets it serves. And Supplier Security , because Green Groceries is outsourcing software development to System Concepts, it is essential to ensure that the supplier follows strict security measures. This includes signing strong confidentiality agreements, conducting due diligence on the supplier's security measures and monitoring compliance with their security protocols throughout the project

1. **Professional issues**

**Compliance with Standards and Regulations: :** Because the company emphasizes sustainability and environmentally conscious operations, the following are some compliances that need to be considered. First and foremost is the issue of environmental protection principles, which can include minimizing the environmental impact of server hosting, using environmentally friendly development methods, and ensure compliance with relevant environmental standards and certifications and handle customers' personal information

**Example**: The platform will only collect customers' names and email addresses for account registration and purchase transactions, avoiding unnecessary information collection, and they can freely change the information they have provided to the party. in their personal page functionality. Green Groceries engages third-party service providers to perform data processing activities, such as cloud hosting or email marketing services, who enter into data processing agreements that comply with comply with GDPR requirements. These agreements will outline the responsibilities and obligations of the parties in relation to the processing of personal data and ensure that third-party providers comply with GDPR standards

**The BCS code of conduct**: It is understood to be a set of ethical principles and professional standards established by the British Computer Society (BCS), the Registered Institute of Information Technology. It provides guidance on behavioral expectations and ethical principles that BCS members, including information technology professionals, practitioners and students, should adhere to in their professional work. In the said project that includes System Concepts and Green Groceries, the interests of the community, especially those who use their services, must be prioritized. In the case of Green Groceries, developing an online platform will help make local and organic products more accessible to the community. System Concepts employees, like Emma and other colleagues, need to be highly competent and regularly update their knowledge to meet project requirements without harming the customer or the company. . And finally Both companies must avoid unfair discrimination based on any characteristic such as gender, age, or ethnicity. They should promote diversity and equality in their work environment

**Example:** In this project because Emma is a software developer at System Concepts, tasked with developing a shopping cart module for Green Groceries' online platform. During the development process, she was well aware that protecting user privacy was extremely important, so she prioritized developing solutions without affecting the interests and trust of customers. .

# Section D – Conclusion

The company's initiative to develop an online platform aligns perfectly with the current technological landscape, where advancements are rapid and digital presence is crucial. Opting for the Agile methodology over the traditional Waterfall approach demonstrates a forward-thinking strategy. Specifically, the adoption of the Atern DSDM framework combined with Scrum methodology has proven instrumental in overcoming challenges and ensuring timely project completion.

By embracing the iterative and collaborative nature of DSDM Atern alongside the structured approach of Scrum, the project not only addresses immediate requirements but also positions itself for a competitive edge in the market. This methodology allows for quick adaptation to evolving needs, facilitating effective team collaboration and maximizing efficiency.In essence, selecting the Agile methodology proves highly advantageous for the project, enabling it to navigate the complexities of development while capitalizing on the benefits of flexibility, adaptability, and streamlined teamwork.

# Section E – Referances

Pargaonkar, S., 2023. A Comprehensive Research Analysis of Software Development Life Cycle (SDLC) Agile & Waterfall Model Advantages, Disadvantages, and Application Suitability in Software Quality Engineering. *International Journal of Scientific and Research Publications (IJSRP)*, *13*(08).

Manifesto, A., 2001. Manifesto for agile software development.

Schwaber, K. and Sutherland, J., 2011. The scrum guide. *Scrum Alliance*, *21*(1), pp.1-38.

Stapleton, J., 1997. *DSDM, dynamic systems development method: the method in practice*. Cambridge University Press.

De Capitani Di Vimercati, S., Foresti, S., Livraga, G. and Samarati, P., 2012. Data privacy: Definitions and techniques. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, *20*(06), pp.793-817.

1. The image SCRUM methodology refenence from : https://hygger.io/guides/agile/scrum/scrum-artifacts/ [↑](#footnote-ref-1)
2. The image DSDM framework reference from: https://agile-mercurial.com/2018/07/09/a-full-lifecycle-agile-approach-dynamic-systems-development-methodology-dsdm/ [↑](#footnote-ref-2)
3. The Aglie imge reference from: “https://learn.microsoft.com/en-us/devops/plan/what-is-agile” [↑](#footnote-ref-3)