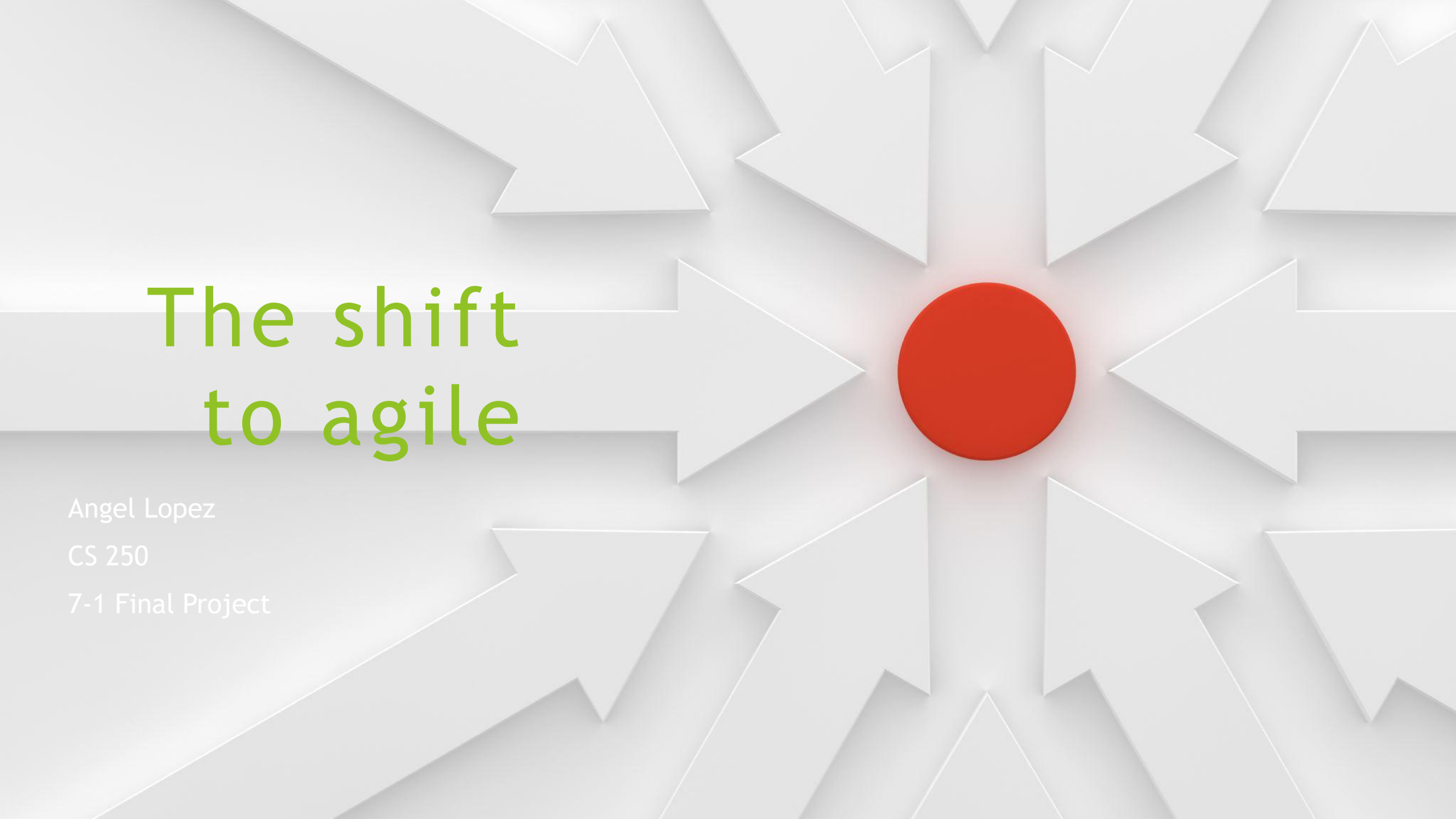
The shift to agile



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CS 250

7-1 Final Project

Introduction

- This presentation will provide a summary of the Scrum-agile methodology, highlighting its essential components, and will explore the distinctions in processes between waterfall and agile development methodologies.

SCRUM-AGILE TEAM ROLES

Scrum-Agile Team Roles

Scrum Master

- The Scrum Master plays a crucial role in ensuring that the principles and practices of Scrum are well understood and effectively implemented by the team.
- They are responsible for making sure that the Scrum team follows the established theory, practices, and guidelines associated with Scrum.
- Oversee the management of the Product Backlog to ensure it is organized and prioritized appropriately.
- The Scrum Master also assists the development team in creating products that deliver high value to stakeholders

Product Owner

- The product owner is tasked with enhancing the overall value of the product while also optimizing the efforts of the Development team.
- Product owners hold exclusive responsibility for overseeing the Product Backlog, ensuring that it is well-managed and aligned with business objectives. Acting as a representative of the business sponsor, they serve as a key decision-maker within the project.
- Their role involves providing clear guidance to the team and establishing priorities for the tasks that need to be accomplished.

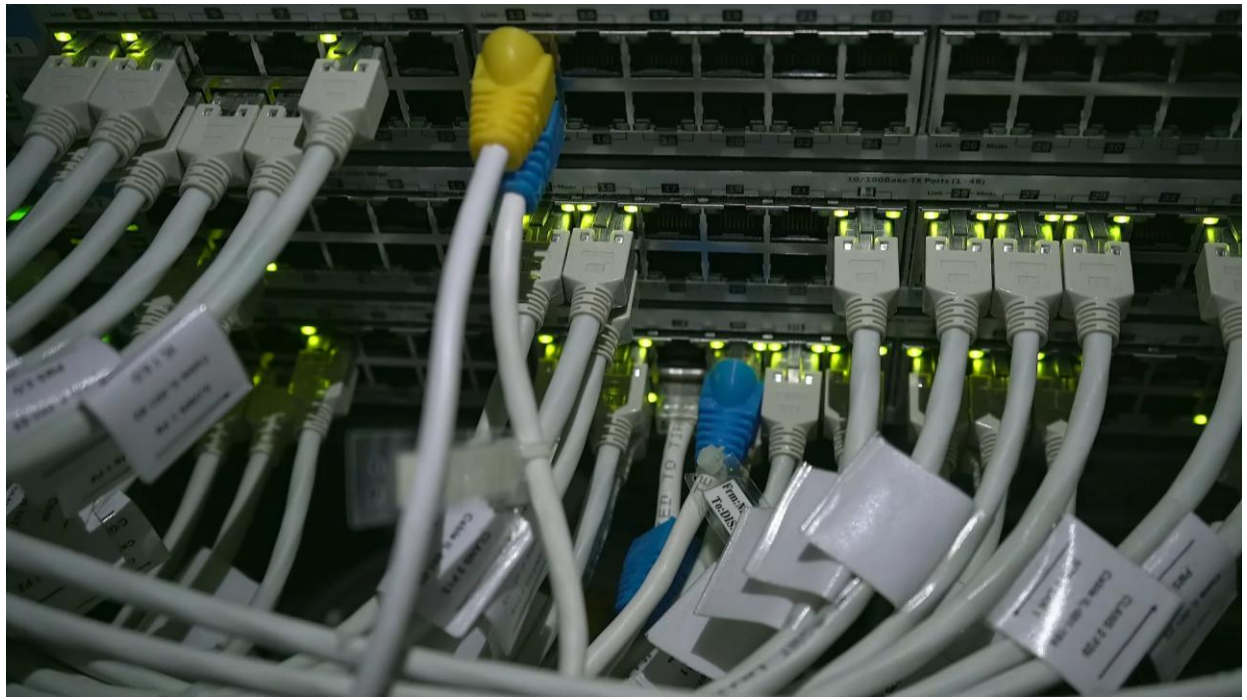
Scrum-Agile Team Roles

Tester

- Acceptance criteria and acceptance tests are defined to ensure clarity in project requirements.
- Any ambiguities present in the code and user stories are addressed to provide a clear understanding of expectations.
- Testing is conducted, and the results are analyzed to determine if they meet the established criteria.
- Collaboration with the team is essential for identifying and resolving any issues or defects that arise during this process.

Developer

- The developer creates and develops software code following established engineering principles.
- They engage in peer evaluations to ensure quality and collaborate with their team to create a design that is sufficiently flexible, allowing for future modifications and enhancements.



SOFTWARE DEVELOPMENT LIFECYCLE PHASES IN AGILE

SDLC in Agile

SDLC Phases

- Planning
- Requirements
- Design
- Development
- Testing
- Deployment
- Maintenance

Scrum-Agile Methodology

- The adaptive method of continuous improvement emphasizes short iterative cycles. It relies on an empirical process characterized by regular adaptations and evaluations.
- This approach utilizes trial and error, where knowledge is gained through experimentation and observation. The stages of the Software Development Life Cycle (SDLC) are cyclical, rather than following a linear or sequential order.

SDLC in Agile

Planning

Sprint Planning Overview

- The meeting occurs before the start of each sprint. During this session, the Product Owner collaborates with the team to determine which user stories will be included in the upcoming sprint.
- Following this discussion, the team outlines the specific tasks necessary to implement these user stories. These tasks are then allocated among team members to ensure efficient execution throughout the sprint.

Requirements

- The product backlog is a dynamic and prioritized compilation of tasks that need to be accomplished throughout the course of a project. This list is primarily composed of user stories, which articulate the requirements and expectations from the perspective of end users.
- The Product Owner plays a crucial role in this process, as they are responsible for continuously updating and managing the backlog to reflect changes in priorities, new insights, and feedback. This ongoing refinement ensures that the team focuses on delivering the most valuable features and improvements at any given time.

SDLC in Agile

Design, Development, Testing, and Deployment

- In Agile project management, the various phases of development occur simultaneously within each sprint. Typically, these sprints span a duration of one to four weeks and conclude with a Sprint Review followed by a Retrospective.
- Daily Scrums are conducted to track progress and pinpoint any challenges that may hinder advancement. At the conclusion of each sprint, the team showcases their completed work during the Sprint Review.
- They engage in discussions about what aspects were successful, what did not go as planned, and identify opportunities for improvement that can be applied in subsequent sprints.

SDLC in Agile

Final Deployment and Maintenance

- **The Final Sprint Review and Retrospective will take place, allowing the team to enhance their productivity and deliver a superior product to their clients.**
- **Once the product is launched and accessible to end users, it enters the deployment phase, transitioning into maintenance mode. During this maintenance period, the product will receive updates as issues arise and further enhancements are requested by customers.**

IN CONTRAST: WATERFALL DEVELOPMENT

Waterfall Development

- The traditional development model is characterized by a structured approach that delineates specific objectives for each stage of the development process. This methodology follows a linear and sequential path, emphasizing a plan-driven framework. It necessitates comprehensive documentation to be completed before the actual development work begins, ensuring that all requirements and specifications are clearly defined and agreed upon in advance.

Waterfall Development

- The development of the SNHU travel booking system would have been significantly different if a waterfall development approach had been employed. In this methodology, all requirements would be established at the outset and documented in detail. This upfront documentation would create challenges for implementing changes or adaptations as the project moved forward.
- The development phase would conclude before any testing occurs. Identifying bugs or issues only after the completion of development complicates the process of rectifying them, often resulting in increased costs, extended timelines, and greater resource expenditure.
- Specifically, by using an agile approach in the SNHU Travel Project, SNHU Travel was able to change the focus of the travel booking site while in the middle of development. Since requirements were not completely defined up front (as they would have been in a waterfall approach) and development was being done in iterations, the team was able to easily adjust and adapt to the changing needs of the client.


CHOOSING
WATERFALL
VS AGILE

Choosing Waterfall vs. Agile

Factors to Consider

Predictability

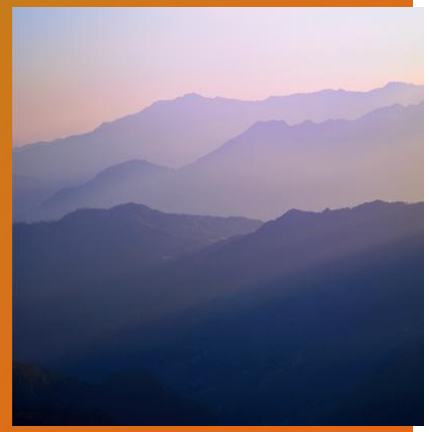
- Waterfall - Requirements are clearly defined from the outset, and there is a mutual understanding of the final product vision. Changes are not anticipated.
- Agile - Requirements evolve as more information becomes available throughout the project's progression, making it challenging to define a clear final product vision at the outset.

Relations with clients

- Waterfall - Tasks are set and stone, rarely needed for client adjustment
- Agile - Project is unknown at some stages causing high client collaboration necessary to develop a high-value product.

Timeline

- Waterfall - Clear defined scope outlines the specific tasks and necessitates to complete project, allowing for project managers to allocate time more accurately
- Agile - More of a flexible scope, causing an issue when determining the project’s complete date



Summary

By implementing a Scrum-agile methodology in the development of the SNHU Travel application, we successfully created a product of superior quality that prioritizes customer needs. Although transitioning all of ChadaTech's development teams to this Scrum-agile framework will present challenges, it is expected to improve the overall product.

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