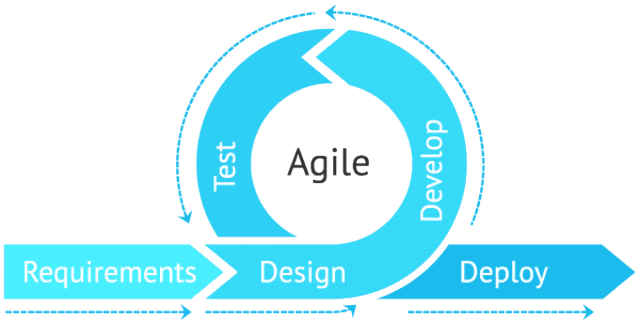
AGILE ELEMENTS REPORT



Master of Science in Business Analytics

Course: Experiential Projects

S24 – 004 – Group 4 – Project 1

Prof. Noah Zikmund

Group Members

Amandeep Bhardwaj
(amandeep.bhardwaj@colorado.edu)

Anubhav Dubey
(anubhav.dubey@colorado.edu)

Sai Arvind Atluri
(saiarvind.atluri@colorado.edu)

Sandeep Reddy Modugu
(sandeep.modugu@colorado.edu)

Table of Contents

Description of Agile Stages

Inception Phase

The inception phase of Rudi's Bakery route optimization project marked the beginning of our journey. At this early stage, our priorities were to understand the bakery's delivery processes, identify inefficiencies, and define precise project objectives. To uncover areas for improvement, we analysed delivery timings, route patterns, and client feedback, thereby determining the project's scope. Establishing a strategic direction during this phase was crucial to ensure that the project's goals aligned with Rudi's Bakery's operational needs and long-term vision for efficient and effective service delivery.

Sprint 1: Planning and Data Preparation

In the first sprint, we focused on thorough planning and data preparation. The Product Owner played a pivotal role in prioritizing the backlog and defining project goals, providing the team with a clear direction. The Scrum Master facilitated sprint planning sessions and organized the project in JIRA, ensuring team alignment. The leads for data analysis and optimization models collaborated closely to prepare the initial dataset and understand data requirements. This sprint laid the foundation for model development, with activities centered on data cleansing, analysis, and preliminary model structuring. The outcomes included a well-defined project backlog, a prepared dataset ready for use, and initial considerations for the model framework, setting a solid base for the development phase.

Sprint 2: Model Development and Initial Testing

The second sprint was dedicated to the development and preliminary testing of the model. The Product Owner continued to play a crucial role in aligning the project with its goals through feedback on the optimization model. The Scrum Master focused on facilitating mid-sprint reviews and addressing any impediments, keeping the project on track. The Optimization Model Lead led the development and testing efforts, conducting preliminary tests to evaluate the model's effectiveness. Simultaneously, the Data Analysis Lead began creating visualizations and compiling KPI reports. The efforts of this sprint were instrumental in refining the model, yielding an improved optimization model and early signs of enhanced route efficiency.

Sprint 3: Optimization, Testing, and Finalization

During the final sprint, the team concentrated on testing, optimizing, and finalizing the project deliverables. The Product Owner and Scrum Master worked closely to ensure a successful project conclusion and the validation of the final deliverables. The Optimization Model Lead focused on completing and refining the model by incorporating feedback and performance insights to enhance route efficiency. The Data Analysis Lead was responsible for integrating the model outputs, culminating in comprehensive KPI reports and visualizations. This sprint resulted in a fully optimized delivery route model, detailed performance reports, and visuals, signalling the project's successful completion.

The project's inception phase, followed by the structured execution across three sprints, exemplified a disciplined Agile approach, driving significant improvements in Rudi's Bakery's delivery operations. Each phase's objectives, activities, and outcomes were intricately linked, collectively contributing to the project's

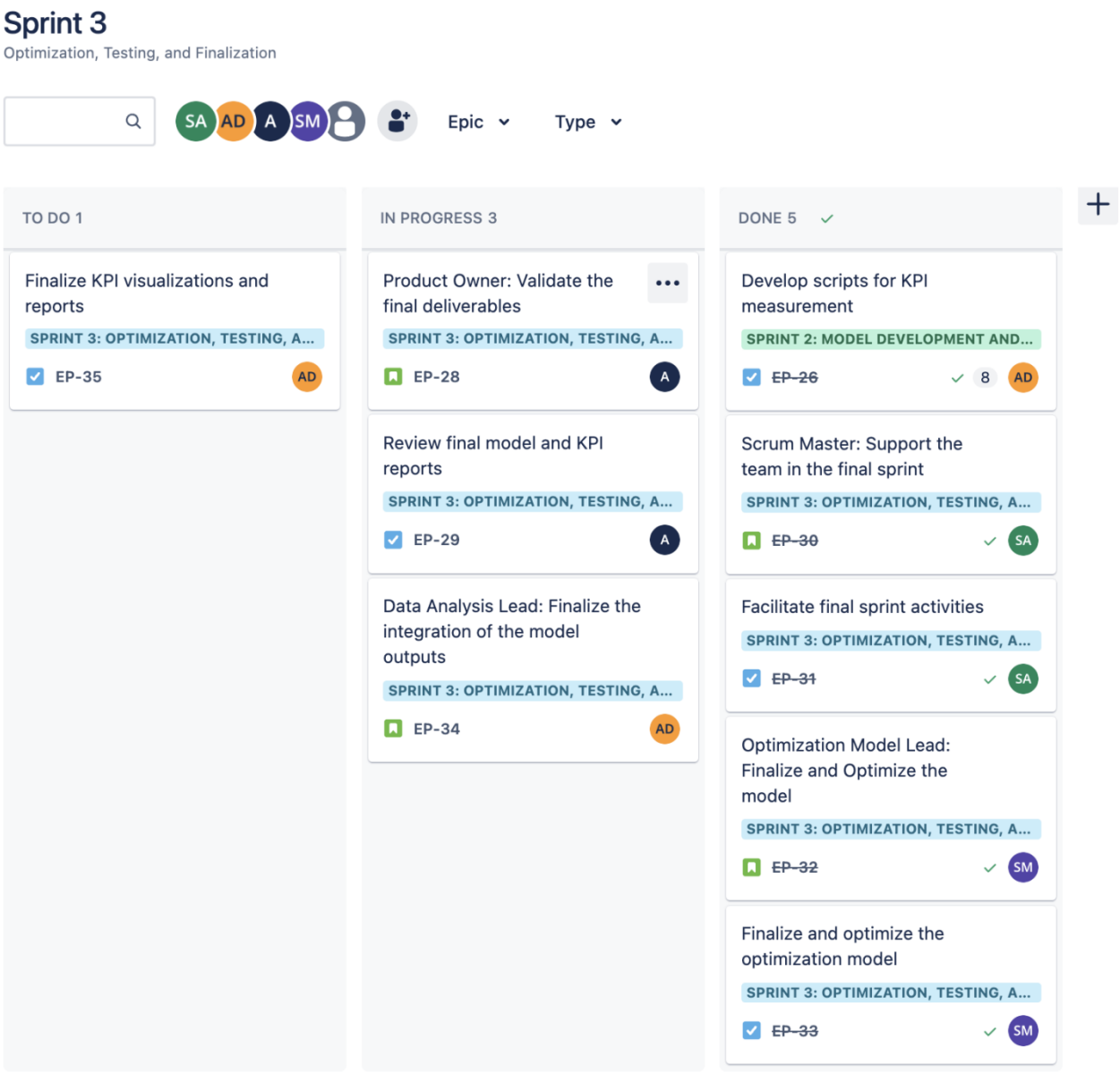
overarching goal of optimizing delivery routes to enhance efficiency, reduce costs, and improve customer satisfaction.

Product Backlog

Story ID	User Story	Story Points	Status	Sprint
EP-6	As a Product Owner, I want to establish a clear vision for the Rudi's Bakery route optimization project so that I can ensure the scope and objectives are well understood and aligned with the bakery's operational needs.	15	Completed	Sprint 0
EP-7	As a Product Owner, I am tasked with defining and prioritizing the project's goals and the backlog, creating a focused and actionable plan for the team to execute upon.	13	Completed	Sprint 1
EP-12	As an Optimization Model Lead, I aim to develop a foundational structure for the optimization model, ensuring it is tailored to the bakery's unique data requirements and delivery processes. This will set the stage for a robust model capable of identifying efficiencies.	8	Completed	Sprint 1
EP-15	As a Data Analysis Lead, my goal is to meticulously prepare and cleanse the data for the Optimization model, paving the way for accurate analysis and effective model outcomes.	8	Completed	Sprint 1
EP-10	As a Scrum Master, my focus is on setting up the project in JIRA, ensuring that the sprints and tasks are clearly organized and that the team can begin their work with clarity and structure.	5	Completed	Sprint 1
EP-22	As an Optimization Model Lead, my responsibility is to continue the development and initial testing of the optimization model, iterating based on feedback to enhance efficiency and functionality.	13	Completed	Sprint 2
EP-25	As a Data Analysis Lead, I am charged with the creation of KPI reports and the development of scripts for their measurement, ensuring that our progress can be quantified and visualized.	8	Completed	Sprint 2
EP-18	As a Product Owner, I will review and provide critical feedback on the optimization model, guiding its alignment with the project's strategic goals.	5	Completed	Sprint 2
EP-20	As a Scrum Master, I am committed to facilitating the mid-sprint reviews, addressing any blockers that arise, and keeping the project on a steady course towards its milestones.	5	Completed	Sprint 2
EP-32	As an Optimization Model Lead, I am dedicated to finalizing and optimizing the model, fine-tuning its parameters to ensure the most efficient delivery routes are identified and implemented.	13	Completed	Sprint 3
EP-34	As a Data Analysis Lead, my objective is to finalize the integration of the model outputs, delivering comprehensive KPI visualizations and reports that clearly communicate our findings and the project's impact.	8	Completed	Sprint 3
EP-30	As a Scrum Master, I will support the team through the final sprint, facilitating activities and collaboration, thus steering us towards a successful project conclusion.	8	Completed	Sprint 3
EP-28	As a Product Owner, I must validate the final deliverables, ensuring that all components of the project meet the high standards set forth and reflect the project's goals.	8	Completed	Sprint 3

The table above us is like a big picture made of many small user stories. Each story shows how we worked on the project from the start to the end of the three sprints and the inception phase. Every story shows our commitment to the goals we set, especially focusing on making delivery routes better. We put our efforts where they're needed most. These stories were assigned story points that indicate their significance. The higher the points, the more important the story, guiding our team's work and making sure it matches the main goal of the project. This approach, where the most important stories lead the way in each sprint, has been key to how we manage our project. It helps us work efficiently, clearly, and stay focused on our goal.

JIRA Board – Sprint 3

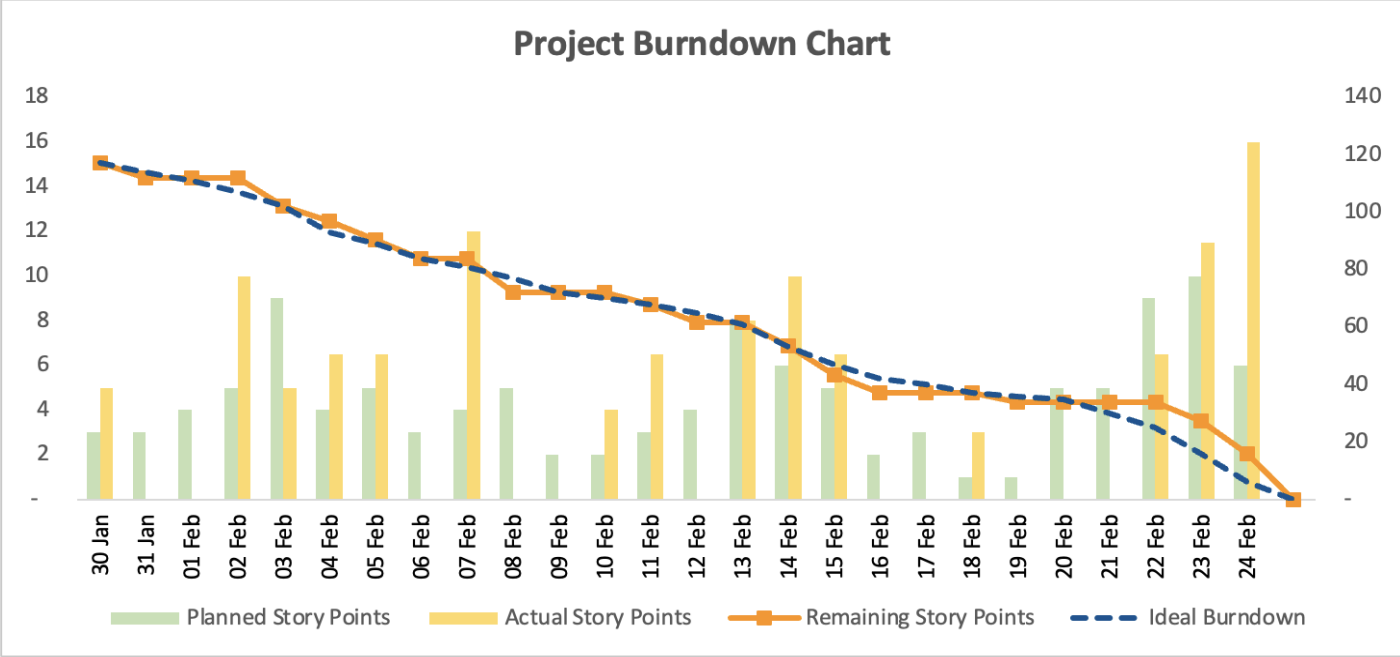


During our mid-sprint review for Sprint 3 of Rudi's optimization project, we meticulously examined our JIRA board. The board accurately reflected all tasks completed, in progress, pending to mirror our project's status. We prioritized finishing the KPI reports and visualizations, marking them as 'To Do'. Our 'In Progress' column was vibrant, showcasing ongoing efforts, such as the Data Analysis Lead's integration of model outputs and the Product Owner's verification of deliverables.

We experienced a sense of achievement upon reviewing the 'Done' column, which highlighted our efficiency in completing tasks, including the creation of KPI measurement scripts and model optimization. This mid-sprint snapshot provided a clear overview of the week's backlog, enabling us to adjust our strategy and maintain momentum towards our project goals.

Project Burndown

Sprint 0	Sprint 1	Sprint 2	Sprint 3	Total 4 Sprints
30 January - 2 February	3 February - 10 February	11 February - 17 February	18 February - 24 February	30 January - 24 February
15	34	31	37	117
Story Points	Story Points	Story Points	Story Points	Story Points

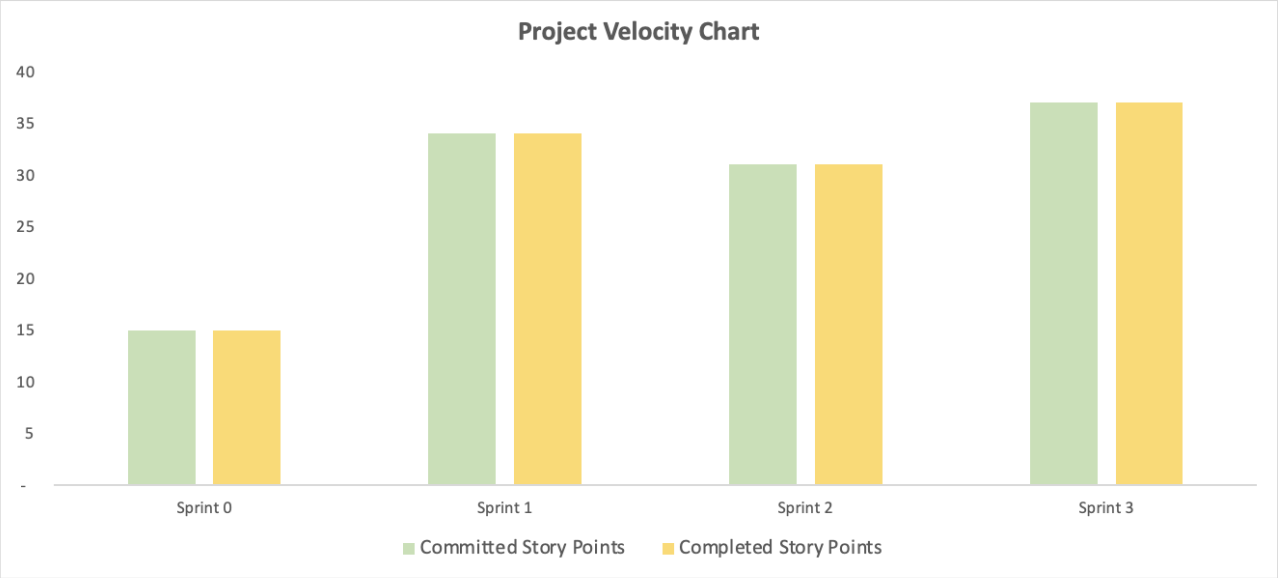


The Project Burndown Chart, which tracks development from January 30 to February 24, initially shows a measured start, with the rate at which story points are completed lagging behind the optimum burndown estimate. During the project, a significant increase in task completion was observed, and from February 10th onwards, there was a noticeable spike in actual story points.

This significant increase caused the number of remaining story points to drop sharply, effectively adjusting the project's trajectory to align with the optimal burndown. As the monitored interval came to an end, the project team skilfully adhered to the planned timeline, demonstrating the adaptability and flexibility that are fundamental to project management. The final convergence with the intended burndown path demonstrates a thorough project lifecycle, attesting to the completion of all planned tasks within the allotted time.

Velocity

The Rudi's optimization project unfolded over a four-week period, racing against time itself. Each of the three sprints and inception phase was completed within its respective week, adhering to this tight schedule with remarkable precision. The clear definition of goals and objectives established during the inception phase meant that there was no need to reshuffle the product backlog between sprints. This foresight allowed the team to progress with unwavering accuracy, ticking off story points like notes in a well-rehearsed symphony, each one echoing the satisfaction of tasks expertly completed.



Sprint	Committed Story Points	Completed Story Points
Sprint 0	15	15
Sprint 1	34	34
Sprint 2	31	31
Sprint 3	37	37

Other Tools

Throughout the three sprints and the inception phase of Rudi's optimization project, we closely monitored our product backlog using the JIRA project management platform. This platform enabled us to assign tasks and user stories to team members, fostering both individual accountability and collaborative synergy wherever needed.

Nevertheless, we encountered a limitation with JIRA Software while attempting to view our progress on the project as a whole. While JIRA Software adeptly produced burndown charts for each sprint, it did not provide the advanced analytics required for a holistic overview of the entire project. To address this challenge and

gain precise insights into our total progress, we turned to Excel. This allowed us to create a project-wide burndown chart, offering a comprehensive view of our journey, highlighting our accomplishments and the hurdles we overcame.