# Memo

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| TO: | Tabatha Dominguez |
| RE: | Assignment #1 Part A - Problem Topic Selection |
| Date: | October 6, 2024 |


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|---|---|
| Names and Student ID#'s: | Amrit Kaur Klair, Student ID 21106395 |
| | Karen Sue Ann Yao, Student ID 20860523 |


1. Business Issue

Sony Interactive Entertainment's PlayStation gaming console is a leading platform that provides a wide range of games and services to players globally. Despite its diverse range of games, PlayStation's recommendation system does not leverage gameplay data effectively, resulting in missed revenue opportunities. Research shows that personalized game recommendations can boost user engagement by up to 40% and drive significant sales increases (Source: GameDaily).

**One key gap in game recommendations arises after players complete a game. After players complete a game, they currently receive limited or irrelevant suggestions, leading to frustration and decreased retention.**

Players can benefit from simple recommendations based on basic patterns such as similarities in genre, price range, gameplay, and reviews, helping them discover new titles that align with their interests and reducing frustration and the risk of churn. Utilizing these common game criteria can serve as an entry point to improving the overall game discovery experience on the platform and can lay the foundation for more sophisticated algorithms in future iterations.

2. Justification

This issue directly impacts both player engagement and revenue generation. An ineffective recommendation system can lead to player frustration and decreased retention, which ultimately

affects the platform's reputation and growth. By improving the game discovery experience, we can enhance player satisfaction, encouraging users to explore more titles and spend more time on the platform.

Additionally, improving the recommendation system also benefits game producers and developers. By facilitating better game discovery, developers can reach a wider audience for their titles, leading to increased sales and greater visibility for their games.

However, Personalized discovery systems require gathering and analyzing user data, as well as designing algorithms for each individual player. This presents a significant challenge due to the vast number of variables involved, including millions of user behavior data points and patterns. A solid foundation for improvement is to focus on a common trait shared by games: their completion.

Finishing a game indicates a strong interest from the player. By utilizing a game's properties—such as gameplay, genre, narrative, price, and reviews—we can create a pathway that benefits all parties involved: players remain entertained, PlayStation enhances user retention, and game providers gain the opportunity to showcase relevant titles or series.

3. Stakeholders

The primary beneficiaries of an improved recommendation system are the **players**, who would enjoy a more personalized game discovery process. This enhancement would lead to increased satisfaction and engagement, as players receive relevant recommendations tailored to their recent gaming experiences and preferences. **Game developers** would also benefit from greater visibility for their titles, resulting in higher sales and strengthened relationships with PlayStation. **Sony Interactive Entertainment (PlayStation)** itself would experience increased user retention and revenue growth, as a more satisfied player base contributes to a stronger brand reputation.

Other internal departments, such as **marketing teams**, could leverage insights gained from player behavior to create more targeted promotional strategies, thereby enhancing the effectiveness of their campaigns. Additionally, **gaming communities** and **customer support teams** could experience a reduction in inquiries related to recommendations, allowing them to focus on other areas of player assistance and improve overall service quality.

4. How Might We

How might we improve the game discovery experience for PlayStation users after completing a game?

5. Deliverable Ideas

**Enhanced Notification System:** Develop an improved in-app and email notification system that alerts players to relevant game recommendations after they complete a title. This system would

focus on timely and engaging notifications that encourage players to explore new games, triggered by their game completion.

**Improved Post-Game User Interface:** Design a streamlined UI feature that showcases game recommendations immediately after a player finishes a game, inspired by how Netflix presents similar content post-movies or post-shows. This interface would visually display relevant titles based on the recently completed game, utilizing factors such as genre, gameplay style, and player reviews to guide recommendations.

**Feedback Mechanism for Recommendations:** Create a simple feedback tool that allows players to rate the relevance of the recommendations they receive. This could be a quick survey or thumbs-up/thumbs-down feature. The collected feedback would help refine future recommendations and provide valuable data for future iterations of the recommendation system.

**Utilizing Friend's Recently Played Games:** Integrate a social feature that shows users games recently played or finished by friends after completing a game. This feature could utilize data about users' connections to display relevant titles. This idea relies on the user's friends having similar tastes, giving PlayStation the ability to make meaningful recommendations.

# Memo

TO: Tabatha Dominguez
RE: Assignment #1 Part B – Sprint Planning (Team Silver)
Date: October 27, 2024


Names and Student ID#'s: Amrit Kaur Klair, Student ID 21106395
Karen Sue Ann Yao, Student ID 20860523

Development Team Members Rachel Han, Student ID 21083374
Karla Renic, Student ID 21100174


## 1. Iteration Selection

For this sprint, our team has selected the **Improved Post-Game User Interface** as our primary deliverable. This feature aims to design and develop a streamlined UI that showcases game recommendations immediately after a player completes a game.

The interface will draw inspiration from successful content presentation models, such as Netflix, which effectively highlights similar titles following movies or shows. By utilizing key factors like genre, gameplay style, and player reviews, the UI will provide personalized and relevant game suggestions tailored to each player's preferences.

This decision is influenced by feedback highlighting the importance of understanding player profiles and what is needed for enhancing game discoverability. Recognizing players' experiences and gaming flow—including the quiet pauses often felt after finishing a game—provides an opportunity to present recommendations and access to our inventory, allowing players to maintain their excitement and continue engaging with the platform. This approach effectively leverages gameplay pauses for maintained momentum and continued engagement with the platform.

This sprint focuses on building basic logic to support a greater idea, allowing us to execute or implement a Minimum Viable Product (MVP) version from which we can learn and iterate.

## 2. Team Assignment

| Role | Name |
|---|---|
| Product Owner | Amrit Kaur Klair |
| Scrum Master | Karen Sue Ann Yao |
| Developer No. 1 | Rachel Han |
| Developer No. 2 | Karla Renic |

## 3. Product Backlog

Sony Interactive Entertainment (SIE) operates the PlayStation gaming console, a global, leading gaming platform. Alongside their primary product PlayStation provides complementary features such as the PlayStation Network (PSN) for multiplayer gaming and game distribution, as well as personalized user experiences through its game library and recommendation systems. The current recommendation system fails to leverage gameplay data effectively and present the data on a surface that fits in within the game playing journey, leading to missed revenue opportunities and reduced player engagement. This project aims to enhance game discovery by improving the recommendations provided after players complete a game. **Improving the recommendation system aligns with SIE's goals of increasing player engagement, boosting revenue, and enhancing user satisfaction. Tailored recommendations can reduce churn and strengthen the gaming experience and community.**

| | Product Backlog Items | Details | Rationale |
|---|---|---|---|
| 1 | Collection and Organization of Game Data (Data Architecture, Backend) | Team must collect and/or organize relevant data of each game in the library. This can be a re-used model found in the Search Experience of the platform's Store application. PlayStation's current search experience pulls, uses and utilizes organized data about the game's genre, reviews, and pricing. | To set a foundation for the recommendations system. Utilizing the algorithms and filters that currently exist in the Play Station Store's Search experience can save us time. |
| 2 | Recommendation Impact Tracker (Data Architecture, Backend) | Implement a tracker to monitor user actions related to post-game recommendations, such as whether they saved a game or added it to their cart specifically because of the recommendation. | To gather valuable data on the effectiveness of post-game recommendations, allowing for data-driven adjustments |
| 3 | Utilize Post-Game Screen Time (Improved Post-Game User Interface & Feedback | Most games will have credits shown upon completion of the game. Inspired by platforms like Netflix or Prime Video, we can utilize this screen time to | To leverage post-game credits and capture players' attention during a natural pause in gameplay, while providing an option |

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| | Mechanism for Recommendations) | showcase recommendations. This will also include a "Why am I seeing this?" option, allowing players to provide feedback if they are not interested in a recommendation, similar to how Instagram handles ad preferences. | for feedback to refine future recommendations based on their preferences. |
| 4 | Dynamic Recommendation Engine | Develop an algorithm that adapts in real-time based on user interactions, such as game feedback, to deliver more relevant suggestions. | Users can fine tune their recommendations as they are looking for them as they are showing intent to find a new game. |
| 5 | Enhancing the Homepage UI (Improved Post-Game User Interface) | Redesign the homepage UI to prominently feature game recommendations immediately after a player finishes a title, similar to streaming platforms that label this section “Because you watched {Title}.” | To provide, direct, evident tailored game suggestions even if they skip the credits or have just logged in. |
| 6 | Updated Game Searching Experience (Improved Post-Game User Interface) | Create a dedicated section in the Search experience that displays game recommendations based on the player’s recent activity, labeled “Because you played {Game Title}.” | To seamlessly embed the post-game recommendations with the purchasing experience. |
| 7 | Improved In-App Notifications (Enhanced Notification System) | Inn-app notifications should be updated. This includes adding a notification type in the notifications feed and an in-app pop-up. | To ensure players receive timely, obvious and engaging communications for game recommendations. |
| 8 | Improved Email Notifications (Enhanced Notification System) | This includes upgrading email notifications and newsletters to provide tailored game recommendations based on players' completed titles, ensuring timely delivery of engaging content directly to their inbox. This must respect any communication consents or preferences attached to the user profile. | To ensure that game recommendations reach users directly, reducing the risk of missed in-app alerts and keeping players engaged even when they’re not actively using the app. |
| 9 | Integrate friends’ gaming activity into a recommendation algorithm | Modify existing game recommendation algorithm to include data from the user’s friend’s gaming activies. This will | To make recommendations more personalized and relevant, potentially increasing user |

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| | | involve capturing and analyzing the most recent games played by friends and including these in the recommendation engine. | engagement and satisfaction. |
| 10 | Create a Friends Recent Games section on the recommendation page | Design and implement a new section on the game recommendation page that specially lists games recently played by the user's friends. This section should include game titles, brief descriptions, and links to view more details. | To help users quickly discover new games. This feature increases visibility and fosters community interaction. |
| 11 | Implement feedback mechanism for recommendations from friends | Add a feature where users can provide feedback on the relevance of recommendations based on friend's activities. This could be in the form of thumbs up or down buttons or a short survey. | To gather user feedback to help continuously refine and improve the algorithms. This feedback mechanism can ensure the changes meet user expectations. |

## 4. Sprint Goal

Our sprint goal is **to deliver a basic post-game recommendation feature that presents relevant game suggestions immediately after gameplay**. This sprint focuses on achieving a lightweight, functional version that can be improved on in future sprints. To measure success, we aim for a **click-through rate of at least 8%** on the post-game recommendations within the first month of implementation. Here we are defining the click-through rate (CTR) as taking the number of users who click on a recommended game after completing a game and dividing it by the total number of users who saw the recommendations x 100 to get a percentage. This will help us see how well the recommendation feature gets users to check out new games right after they finish playing.

**Selected Backlog Items for This Sprint**

1. **Collection and Organization of Game Data (Data Architecture, Backend)**
   We need to develop an algorithm that will become the foundation of the post-game recommendations. The system should be able to organize, categorize and retrieve post-game recommendations efficiently.

2. **Utilize Post-Game Screen Time (Improved Post-Game User Interface)**
   Implementing post-game recommendations provides a simple solution to apply and test our post-game recommendations algorithm. It leverages gameplay pauses, similar to how streaming apps like Netflix or Amazon Prime Video promote content after a show.

**Rationale**

With only two developers and a two-week sprint, we prioritized achievable tasks that provide immediate value. These align with the broader goal of enhancing player engagement by

creating meaningful touchpoints during gameplay transitions, with MVP-level development effort required.

## 5. User Stories and Acceptance Criteria

| User Story | Acceptance Criteria |
|---|---|
| **Collection and Organization of Game Data (Data Architecture, Backend)** | |
| **As** Sony (internal stakeholder), **I want** an algorithm for post-game recommendations, **so that we** have an organized dataset that is easily accessible and streamlined for efficient retrieval of game suggestions. | ● The algorithm must categorize game data based on genres, price, gameplay history, gameplay duration, player downloads, player preferences, reviews to ensure easy retrieval.<br>● The algorithm should generate recommendations that are at least 80% relevant based on user interaction history, ensuring they align with user interests.<br>● The system must retrieve recommendations within 2 seconds to ensure a seamless user experience. |
| **As** Sony (internal stakeholder), **I want a** tracker that logs user actions related to post-game recommendations, **so that we** can analyze how many users save games based on these recommendations. | ● The tracker must accurately log each instance when a user clicks, saves, and/or adds a recommendation to their cart from post-game recommendations, including the game title, user ID, and timestamp.<br>● The logged data should be accessible in a structured format (e.g., database or report) within 24 hours of user actions, allowing for timely analysis.<br>● The tracking mechanism must adhere to privacy regulations (e.g., GDPR, CCPA) by ensuring that user data is anonymized and that users are informed about data collection practices. |
| **Utilize Post-Game Screen Time (Improved Post-Game User Interface)** | |
| **As** Gaby the Gamer, **I want a** game recommendation on the credits screen of this game that I just finished, **so that** I can keep the excitement going and easily discover similar games to play next. | ● When a game is completed, utilize the credits reel (usually played when games are completed) to showcase a post-game recommendation, relevant to the game just accomplished. Ex. If user finishes Kingdom Heart 1, recommendation can be Kingdom Hearts 2. Use the post-game recommendation algorithm to find the best match.<br>● The top recommended game appears alongside the credits of the finished game within 10 seconds of completion.<br>o The recommendations are relevant to the completed game, considering genre and gameplay style.<br>● The credits reel plays normally, while the recommendation features a scaled-down image of the finished game in the upper left corner. |

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| | ● The feature video for the recommended game plays in full screen behind the credits, muted.<br>● The title, brief description, and price (including any applicable promos) of the recommended game are displayed in the lower right corner.<br>● Both the credits reel and the game recommendation video play at the same time.<br>● Users must have a “Learn more” action button to allow user to go the Store’s game details page where they can add-to-cart, bookmark, watch trailers, etc.<br>● A back button is available to return to the home screen of the game.<br>● The UI is consistent with the overall PlayStation branding. |

## 6. Sprint Backlog and Story Points

Developers will work simultaneously for increased efficiency. The first week will focus on developing and testing backend components, together with building the user interface—all while ensuring the endpoints align with the UI. The second week will be allocated for connecting the endpoints and ensuring event logging.

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| **Story 1: As** Sony (internal stakeholder), **I want** an algorithm for post-game recommendations, **so that we** have an organized dataset that is easily accessible and streamlined for efficient retrieval of game suggestions. | **Approach:** Conduct an analysis of player profiles and preferences to enhance the recommendation system's effectiveness, ensuring that the proposed solutions align with player interests. Develop an algorithm that categorizes and retrieves game data based on genres, price, gameplay history, and player preferences, utilizing existing data sources for efficient real-time queries.<br><br>**Story Points: 8**<br><br>**Rationale:** This foundational algorithm is crucial for categorizing and retrieving recommendations, making it essential for the overall functionality. This task involves significant complexity due to the need for data organization and retrieval efficiency. |
| **Story 2: As** Sony (internal stakeholder), **I want a** tracker that logs user actions related to post-game recommendations, **so that we** can analyze how many users save games based on these recommendations. | **Approach:** Implement a logging mechanism that captures user interactions with the recommendations, including clicks that exit the recommendation or to learn more about the game. Store this data in a structured format for easy access and analysis.<br><br>**Story Points:** 3<br><br>**Rationale:** This adds valuable insights into user behavior and how effective the recommendations are, while still being feasible within the sprint timeframe. |
| **Story 3: As** Gaby the Gamer, **I want a** list of game recommendations on the credits screen of this game that I just finished, **so that** I can keep the excitement going and easily discover similar games to play next. | **Approach:** Design and implement a feature that displays one (1) recommended game on the credits screen. Use the post-game screen time effectively, ensuring that the recommendation is visually integrated and does not disrupt the credits display.<br><br>**Story Points: 8**<br><br>**Rationale:** This user interface maintains a uniform UI with the content recommendation changing. It engages with players immediately after gameplay, providing a practical application for the recommendation algorithm. |

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## 7. Key Considerations & Insights

- This project operates under the understanding that PlayStation offers over 4,000 games (Source: PlayStation). For the purposes of this initiative, we assume that there is a sufficient inventory of titles that align with player preferences.
- While the current inventory boasts over 4,000 titles, there may be limitations in game diversity, genre and availability that could impact the effectiveness of personalized recommendations.
- Reports and tracking play a significant role in potential revenue generation. PlayStation can create sellable opportunities for game developers, fostering partnerships that incentivize the creation of diverse titles. As developers see their games gain visibility through tailored recommendations, they may be more motivated to collaborate with PlayStation, ultimately enriching the gaming ecosystem for players.
- Ongoing evaluation and feedback will be essential to refine the recommendation system further, allowing for adaptability based on player engagement and market shifts.

## 8. Backlog for Future Sprints

The following user stories are work items for future sprints to be scheduled for refinement and backlog grooming.

| User Story | Acceptance Criteria |
|---|---|
| **Utilize Post-Game Screen Time (Improved Post-Game User Interface) V2**<br>Product Backlog | |
| **As** Gaby the Gamer, **I want a** save function on this post-game credits and recommendation screen, **so that I** can revisit this recommendation when I get the chance. | ● As the credits of the finished game and the feature video of the recommended game plays, display a bookmark icon that allows user to save the recommendation in their saved items. |
| **As** Gaby the Gamer, **I want an** add-to-cart function on this post-game credits and recommendation screen, **so that I** can directly add this recommendation to my cart. | ● As the credits of the finished game and the feature video of the recommended game plays, add a shopping cart icon that allows user to add the recommendation directly into their cart. |
| **As** Gaby the Gamer, **I want a** way to say that I am not interested in this recommendation, **so that I don't** have to see it ever again. | ● As the credits of the finished game and the feature video of the recommended game plays, add a small text link for: "Hide game"<br>● If selected, show a pop-up modal that confirms their action.<br>● When confirmed, hide the game from any recommendations given to the user unless the cache is explicitly cleared. |

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| | ● Modal must have an optional feedback survey question for, “Why are you hiding this game?” with options: “It’s irrelevant,” “It’s inappropriate,” “I already bought this,” and “Something else”<br>o If user selects “Something else,” show our standard keyboard screen and allow user to type in plain text, limited to 300 characters.<br>● Collect any responses provided to the survey question.<br>Once submitted, take the next top recommendation and replace the first recommendation (repeat post-game screen time flow). |
| **Enhancing the Homepage UI (Improved Post-Game User Interface)**<br>Product Backlog | |
| **As** Gaby the Gamer, **I want a** list of game recommendations on the homepage based on the games I just finished, **so that I** can easily browse through new, relevant games immediately upon logging in. | ● Take the most recent game the user finished and pull the top 10 most relevant games based on the post-game recommendations algorithm. Display these in a horizontal, scrollable band on the homepage.<br>● Use the games’ 16:9 / 4:3 / 1:1 feature images which is also used in the PlayStation store to represent each game on the band.<br>● Place a Header for the band, entitled “Because you played {Recent Game Title Here}”<br>● Each recommended game must be selectable. When selected, opens the game’s details page with its information (e.g., description, ratings).<br>● Add a “See all” link that directs the user to a more complete list of recommendations based on the recent game they finished.<br>o Recommendations feed is similar to the Search Results feed in the PlayStation Store. Header is the same as the band header. |
| **Updated Game Searching Experience (Improved Post-Game User Interface)**<br>Product Backlog | |
| **As** Gaby the Gamer**, I want a** list of game recommendations based on the games I just finished found on the ‘Search’ page when coming from the console homepage, **so that I** can easily browse through new, relevant games when looking for more games. | ● Take a few of the most recent games the user finished and pull the most relevant games based on the post-game recommendations algorithm. Display these in a horizontal, scrollable band on the Search landing page.<br>● Use the games’ 16:9 / 4:3 / 1:1 feature images which are also used in the PlayStation store to represent each game on the band.<br>o Similar design to the bands already existing in said Search page (when entering the ‘Search’ icon).<br>● Place a Header for the band, entitled “Because you played {Recent Game Title Here}” |

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| | ● Each recommended game must be selectable. When selected, opens the game's details page with its information (e.g., description, ratings). |
| **As** Gaby the Gamer**, I want a** list of game recommendations based on the games I just finished found on the "Latest," "Collection" and "Browse" pages of the PlayStation Store app, **so that I** can easily browse through new, relevant games when looking for more games. | ● Take a few of the most recent games the user finished and pull the most relevant games based on the post-game recommendations algorithm. Display these in a horizontal, scrollable band on the Search landing page.<br>● Use the games' 16:9 / 4:3 / 1:1 feature images which are also used in the PlayStation store to represent each game on the band.<br>o Similar design to the bands already existing in said pages of the Store.<br>● Place a Header for the band, entitled "Because you played {Recent Game Title Here}"<br>● Each recommended game must be selectable. When selected, opens the game's details page with its information (e.g., description, ratings). |
| **Improved Email Notifications (Enhanced Notification System)**<br>Product Backlog | |
| **As** Gaby the Gamer, **I want an** email after I finish a game that shows me a post-game report (e.g. trophies) and a few game recommendations similar to the game(s) I just finished, **so that I** can revisit my game accomplishment and recommendations in my spare time while I'm away from the console. | ● An email is automatically sent to Gaby after she completes a game.<br>● The email includes a summary of her post-game report, such as trophies earned, playtime, and achievements.<br>● The email features at least three game recommendations similar to the completed game, based on her gameplay history.<br>● The email is formatted for easy readability on both desktop and mobile devices.<br>● The email must be sent within 24 hours of completing the game.<br>● The email must comply with GDPR and CCPA regulations regarding user data and provide an option to unsubscribe. |
| **As** Gaby the Gamer, **I want to** subscribe to a mailing newsletter list with game recommendations, **so that I** can stay updated with recommendations even when I'm away from the console. | ● If a user interacts on a game recommendation from one of the feed bands or from the post-game screen time (including selecting it, saving it, or adding it to their cart), prompt a modal that will ask the user if they want to subscribe to a newsletter with game recommendations based on games completed.<br>● Also add an option to subscribe to the mailing newsletter list on her notification preferences page.<br>● User should receive the newsletter |

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| | ● This newsletter based on post-game recommendations algorithm should be sent monthly, starting on the date of subscription.<br>● The newsletter includes curated game recommendations tailored to Gaby's preferences and gameplay history.<br>● Each newsletter email contains an easy-to-find unsubscribe link that allows Gaby to opt out at any time.<br>● The subscription process must comply with GDPR and CCPA regulations regarding user data. |
| **Improved In-App Notifications (Enhanced Notification System)**<br>Product Backlog | |
| **As** Gaby the Gamer, **I want to** receive a notification with a game recommendation immediately after I finish a game, **so that I** can maintain my momentum and quickly install another game. | ● An in-app notification appears immediately after user finishes a game, displaying a game recommendation.<br>● The notification includes the title, feature image, genre, and a brief description of the recommended game.<br>● The recommendation notification is also saved in the notifications feed for users to review later.<br>● The notification includes an actionable button that allows the user to purchase or learn more about the recommended game.<br>● The notification must be visually distinct and easy to read, following the app's design guidelines.<br>● User can dismiss the notification if she is not interested, and it should not reappear once dismissed. |
| **Utilizing Friend's Recently Played Games**<br>Product Backlog | |
| As Gaby the Gamer, I want to see what games my friends have been playing recently, so that I can discover new games that might interest me based on their choices. | ● Dedicated section on the recommendation page titled "Friends Recent Games"<br>● The section should show a list of games, each with a title, description and option to view more details.<br>● The order should be shown by most recently played by the users friends<br>● User can navigate to detailed page of each game from this section |

# Memo

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| TO: | Tabatha Dominguez |
| RE: | Assignment #2 – A.2: Definition of Done & A.3: Acceptance Criteria |
| Date: | November 2, 2024 |


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| | Karen Sue Ann Yao, Student ID 20860523 |
| Development Team Members | Rachel Han, Student ID 21083374 |
| | Karla Renic, Student ID 21100174 |


## A.2 Definition of Done

The following criteria must be met for a product backlog item to be considered "Done":

1. Acceptance Criteria Met
    - All specified acceptance criteria for the product backlog item are met. This includes functional requirements, such as:
        - Data categorization and recommendation generation based on user interaction history.
        - Logging of user actions related to post-game recommendations.
        - Display and functionality of post-game recommendations in the UI.
2. Quality Assurance (QA) and Testing
    - The feature has been thoroughly tested, including unit tests, integration tests, and user acceptance tests.
    - Performance benchmarks are met (e.g., recommendations retrieved within 2 seconds, as specified).
    - Usability tests confirm that the UI aligns with the PlayStation branding and provides a seamless user experience.
3. Data Privacy and Compliance
    - The implementation adheres to relevant data privacy regulations, such as GDPR and CCPA.
    - User data is anonymized in line with best practices, and users are informed of data collection practices.
4. Documentation
    - Documentation has been created or updated, detailing how the feature works, including backend data organization and UI behavior.
    - Any necessary instructions for future updates or maintenance are provided.

5. Code Review and Approval
    - Code has been reviewed by at least one other developer or team member, with any identified issues addressed.
    - Approval from the Product Owner is obtained, ensuring all business requirements are satisfied.
6. Feature Demonstration and Sign-Off
    - The feature has been demonstrated to stakeholders, with feedback gathered and any necessary adjustments made.
    - Final approval is received from the Product Owner and Scrum Master.

## A.3 Acceptance Criteria

| User Story | Acceptance Criteria |
|---|---|
| **Collection and Organization of Game Data (Data Architecture, Backend)** | |
| **As** Sony (internal stakeholder), **I want** an algorithm for post-game recommendations, **so that we** have an organized dataset that is easily accessible and streamlined for efficient retrieval of game suggestions. | ● The algorithm must categorize game data based on genres, price, gameplay history, gameplay duration, player downloads, player preferences, reviews to ensure easy retrieval.<br>● The algorithm should generate recommendations that are at least 80% relevant based on user interaction history, ensuring they align with user interests.<br>● The system must retrieve recommendations within 2 seconds to ensure a seamless user experience. |
| **As** Sony (internal stakeholder), **I want a** tracker that logs user actions related to post-game recommendations, **so that we** can analyze how many users save games based on these recommendations. | ● The tracker must accurately log each instance when a user clicks, saves, and/or adds a recommendation to their cart from post-game recommendations, including the game title, user ID, and timestamp.<br>● The logged data should be accessible in a structured format (e.g., database or report) within 24 hours of user actions, allowing for timely analysis.<br>● The tracking mechanism must adhere to privacy regulations (e.g., GDPR, CCPA) by ensuring that user data is anonymized and that users are informed about data collection practices. |
| **Utilize Post-Game Screen Time (Improved Post-Game User Interface)** | |

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| **As** Gaby the Gamer, **I want a** game recommendation on the credits screen of this game that I just finished, **so that** I can keep the excitement going and easily discover similar games to play next. | ● When a game is completed, utilize the credits reel (usually played when games are completed) to showcase a post-game recommendation, relevant to the game just accomplished. Ex. If user finishes Kingdom Heart 1, recommendation can be Kingdom Hearts 2. Use the post-game recommendation algorithm to find the best match.<br>● The top recommended game appears alongside the credits of the finished game within 10 seconds of completion.<br>○ The recommendations are relevant to the completed game, considering genre and gameplay style.<br>● The credits reel plays normally, while the recommendation features a scaled-down image of the finished game in the upper left corner.<br>● The feature video for the recommended game plays in full screen behind the credits, muted.<br>● The title, brief description, and price (including any applicable promos) of the recommended game are displayed in the lower right corner.<br>● Both the credits reel and the game recommendation video play at the same time.<br>● Users must have a “Learn more” action button to allow user to go the Store’s game details page where they can add-to-cart, bookmark, watch trailers, etc.<br>● A back button is available to return to the home screen of the game.<br>● The UI is consistent with the overall PlayStation branding. |

# Memo

TO: Tabatha Dominguez
RE: Assignment #2 Part A – Final Report
Date: December 1, 2024


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|---|---|
| Names and Student ID#'s | Amrit Kaur Klair, Student ID 21106395 (Project Manager)<br>Karen Sue Ann Yao, Student ID 20860523 (Scrum Master) |
| Development Team | Rachel Han, Student ID 21083374<br>Karla Renic, Student ID 21100174 |


Presentation Link: View presentation online at Canva.com

*Presentation Status: In progress as of Sunday, December 1, 2024*

Link not working? Try entering https://shorturl.at/jbfRg on your browser.

## Context and Executive Summary

Sony Interactive Entertainment's PlayStation platform is a global leader in gaming that currently has a gap in its recommendation system, lacking the ability to effectively leverage gameplay data, resulting in missed conversion opportunities and a decline in player momentum. Research highlights that personalized game recommendations can increase user engagement by 40% and boost sales significantly (Source: GameDaily).

Our project aimed to address this gap by improving the recommendation experience for players after they complete a game. This was achieved by delivering a system that provides simple recommendations based on patterns such as genre, price, gameplay, and reviews—enhancing game discoverability while mitigating frustration and churn. The work was completed in two sprints, each spanning two weeks, with the second week in each sprint dedicated to refinements.

Key user stories included implementing a post-game UI, developing a basic recommendation algorithm, and basic tracking of user engagement, such as add-to-cart actions or exits.

**How might we improve the game discovery experience for PlayStation users after completing a game?**

## 1. Team Charter

### What Worked

Our team charter served as a valuable guide throughout the sprint, fostering a **collaborative and productive environment**. Several aspects of the charter directly contributed to our success. Our shared values of quality, collaboration, and academic integrity fostered a strong sense of purpose and accountability. This ensured we **maintained high standards** in our work and upheld ethical practices throughout the sprint. **Clearly defined roles** for the Product Owner, Scrum Master, and Development Team members eliminated ambiguity and promoted efficient task execution. Each member understood their responsibilities and contributed effectively to the project. Establishing communication channels and protocols (using Teams for quick messaging and weekly check-ins) facilitated seamless information flow and ensured everyone stayed informed about progress and any potential challenges.

The pre-defined conflict resolution strategies, with scenario-based examples, **provided a framework for addressing disagreements** constructively. Having these strategies in place fostered a sense of preparedness and confidence.

### What Can Be Improved

One significant challenge was navigating **time zone differences**, as team members were based in different regions. This occasionally caused delays in updates and feedback on shared tasks, hindering the iterative nature of sprint work. Additionally, the initial decision to assign one backend developer and one frontend developer for efficiency l**ed to an imbalance in workload distribution**. The backend developer was tasked with two user stories totaling 11 points, while the frontend developer had 8 points and finished their work earlier.

### Opportunities of Improvement

Some aspects of the charter could be refined for future sprints. While the charter acknowledged individual weaknesses, it could **benefit from more concrete action plans to mitigate these challenges**. For example, instead of simply stating that a team member will "prioritize tasks," specific time management techniques or tools could be identified and implemented.

To improve future project workflows, **improved time zone coordination** is essential. Leveraging a shared calendar to align overlapping availability for asynchronous tasks can help maintain momentum despite geographic differences. **Adopting skill-based task allocation** through a pre-sprint skill-mapping exercise would ensure tasks are distributed based on expertise, promoting a balanced workload and leveraging individual strengths. Finally, while asynchronous work was necessary given the online nature of the program, it posed challenges for real-time problem-solving and collaborative decision-making. **Exploring tools or strategies to enhance real-time interaction** within an asynchronous framework could further improve overall efficiency.

Overall, the team charter played a crucial role in establishing a strong foundation for our sprint. By building upon its strengths and addressing areas for improvement, we can further enhance our teamwork and project execution in future sprints.

## 2. Estimation

### Our Estimation Process

Our team's estimation process involved a combination of factors. We considered the **complexity of the tasks**, particularly for the algorithm development, which required careful data organization and efficient retrieval mechanisms. We also factored in the estimated effort needed to complete each story within our two-week sprint, **keeping in mind our team's capacity**. **Acknowledging some uncertainty**, especially with the algorithm's development, allowed us to adjust our expectations and focus on achieving a functional MVP.

We also **compared the gravity of tasks by breaking down user stories** to assess their level of effort. For instance, tracking user actions was generally assigned a higher point value due to its simpler nature of just capturing actions, as opposed to developing a full-fledged algorithm, which requires multiple layers of feedback and real-time data analysis.

While our estimation proved reasonably effective, allowing us to achieve a velocity of 17 points and complete the majority of our sprint goals, there's room for improvement. Assigning 8 points to the algorithm story might have been an overestimation, as it was only 75% complete. This suggests a potential misjudgment of the effort required within the sprint timeframe.

### Opportunities for Improvement

Moving forward, we can refine our estimation process by implementing several strategies. First, we can **review our story point scale** to ensure a shared understanding across the team. Using a **Fibonacci sequence** might better reflect the increasing uncertainty associated with larger stories. Secondly, **decomposing larger stories into smaller**, more manageable tasks will enable more accurate estimations and help identify potential roadblocks early on and will provide a more accurate estimation and facilitated better progress tracking.

Furthermore, **tracking our actual velocity and utilizing this historical data** will inform future estimations, giving us a clearer sense of our team's capacity. **Dedicated estimation sessions** involving the entire team will foster a shared understanding and encourage diverse perspectives. Exploring different estimation techniques, such as **Planning Poker or Affinity Mapping**, can further engage the team and improve accuracy. Finally, embracing continuous improvement by regularly reviewing our process, soliciting feedback, and adapting our approach will be crucial for ongoing success. By implementing these improvements, we can enhance our estimation accuracy, leading to better sprint planning, increased predictability, and ultimately, more successful project outcomes.

## 3. Scrum Meetings

**Our daily scrum meetings were vital for maintaining momentum** and alignment throughout the sprint. They allowed us to share progress, discuss roadblocks, and plan our daily activities, ensuring everyone understood their tasks and the overall sprint goals. However, reflecting on the sprint, we identified a few key areas for improvement.

Additionally, because we had worked together in prior courses, there was a **high level of transparency and ease of communication**. Our comfort with each other allowed for more efficient and open discussions, which directly contributed to the smooth flow of work. This highlights the **importance of building rapport and trust within a team**, as it can significantly impact the velocity of work and overall sprint success.

### Opportunities for Improvement

Firstly, **we need to dedicate more time to upfront planning**, especially for complex features. The sprint felt rushed, particularly at the beginning when we were tackling new and unfamiliar tasks. More detailed task breakdowns and a deeper understanding of requirements and dependencies would help us estimate more accurately and avoid feeling overwhelmed.

Secondly, we need to improve our **time management** to allow for thorough testing. We acknowledged that we lacked sufficient time to identify and address all potential issues, which could impact the quality of our deliverables.

To address these issues, we'll **focus on refining our sprint goals**, allocating more time for planning and testing, and potentially incorporating visual aids like Kanban boards to enhance transparency. We'll also **continue to hold retrospectives** to gather feedback and identify areas for ongoing improvement in our process. By refining our approach to sprint planning, communication, and testing, we can create a more efficient and collaborative environment that fosters continuous improvement and delivers high-quality results.

## 4. Acceptance Criteria and Definition of Done

Our Definition of Done and Acceptance Criteria were instrumental in guiding our work and ensuring we delivered a functional product that met stakeholder expectations. They provided **a clear framework for defining "completion" and helped us prioritize development efforts** while considering critical aspects like testing, documentation, and stakeholder approval.

One key improvement is **incorporating user feedback earlier** in the process and potentially include usability testing as part of our Definition of Done. This would ensure we're not just building the right thing, but also building the thing right, and address the user desire for more detailed game previews.

### Opportunities for Improvement

Another adjustment as we iterate and enhance the feature is **adopting a more flexible approach to our Acceptance Criteria**. This could involve defining criteria for each iteration or incorporating feedback loops to allow for adjustments based on user testing and evolving requirements.

We also need to start **prioritizing and allocating more time for testing activities** in future sprints. We could explore automating some of our tests to improve efficiency and coverage.

While documentation was included in our Definition of Done, we could **explore ways to streamline this process**, potentially through automation or a more concise documentation style.

By incorporating these adjustments, we can refine our Definition of Done and Acceptance Criteria to better guide our work, incorporate user feedback, and ultimately deliver a product that truly meets both stakeholder expectations and user needs.

## 5. Sprint Review

Our sprint review will follow a structured format to ensure we make the most of our time with stakeholders. We'll aim to keep it concise and focused, reflecting the shorter duration of our sprint. The Product Owner will guide the review, **starting with a clear overview of what we accomplished and what remains unfinished**. We'll then briefly touch on what went well and any challenges we encountered.

The core of the review will be a demonstration of the user stories. We'll **begin by showcasing "Gaby the Gamer" experiencing the post-game recommendation feature**, highlighting its seamless integration and user-friendly design. We'll then **shift to the "Sony" perspective**, demonstrating the algorithm's ability to generate personalized recommendations and the user action tracker's data logging capabilities. Recognizing “Sony” as a user highlights the importance of giving a face to business needs and decisions, ensuring the solution aligns with the company’s strategic goals and provides valuable insights to enhance the user experience.

In addition, we also understand the **importance of tailoring presentations to the audienc**e. For example, backend developers typically don't present code directly to stakeholders unless they are highly technical. Instead, we asked our backend developer to present a diagram that explains the logic behind the system in simpler and more efficient terms, ensuring clarity for all stakeholders regardless of their technical background.

After the demonstration, we'll **gather feedback and discuss any necessary adjustments** to the product backlog, ensuring alignment with stakeholder expectations and user needs. This feedback will be crucial for shaping our next sprint. We'll then outline our next steps, **focusing on high-value features** that address user needs and market demands. This includes refining the recommendation algorithm, enhancing the user interface, and potentially expanding the feature to other areas of the PlayStation platform.

The last step of the review is **to revise the product backlog based on the feedback received**, setting clear expectations for the next sprint and ensuring a smooth transition into the planning process. Throughout the review, the emphasis will be on showcasing working features within the context of the user stories. We'll avoid formal presentations and instead focus on interactive demonstrations that allow stakeholders to experience the increment firsthand. This approach ensures we stay focused on user needs and gather valuable feedback to guide our ongoing development.

## 6. Sprint Retrospective

Based on our reflections and the retrospective feedback, here are the top two things that worked well for our Scrum team:

i. **Effective Communication and Collaboration:** We maintained open and consistent communication throughout the sprint. Our daily scrum meetings fostered a collaborative environment where we could share progress, discuss challenges, and quickly address any integration issues. This proactive communication helped us stay aligned and avoid potential roadblocks.

ii. **Clear Definition of Done and Acceptance Criteria:** Having a well-defined Definition of Done and clear Acceptance Criteria provided a strong framework for our work. These guidelines ensured we focused on all critical aspects of development, including testing, documentation, and stakeholder approval, while also meeting the specific requirements for each user story.

The top two things that need to be addressed moving forward:

i. **Time Management for Planning and Testing:** We felt the sprint was rushed, particularly in the initial stages, and we lacked sufficient time for thorough testing. Moving forward, we need to allocate more time for upfront planning, including detailed task breakdowns and a deeper understanding of requirements. We also need to dedicate more time for testing activities to ensure the quality of our deliverables.

ii. **Early Incorporation of User Feedback:** While we met the initial Acceptance Criteria, the feedback we received highlighted the need for more detailed game previews. In future sprints, we need to incorporate user feedback earlier in the process and potentially include

usability testing as part of our Definition of Done. This will help us ensure we're building the right features and meeting user needs effectively.

## 7. Metrics

Our plan for gathering data on this sprint will focus on **key Agile metrics** to help us understand the impact of our work and guide future improvements. To measure the current value delivered to players, we'll use **a combination of in-game surveys, usage tracking, and A/B testing**. Short surveys will give us immediate feedback on player satisfaction, while usage tracking will show us how many players actively engage with the recommendations. A/B testing will provide a more quantitative measure of the feature's impact on engagement and store visits, helping us understand if it truly drives player interest.

To assess our time to market, we'll **track our sprint cycle time and feature lead time**. This will help us identify bottlenecks in our process and improve our speed and efficiency in responding to player needs and market demands. A faster development cycle means we can deliver new features and improvements more quickly, keeping players engaged and satisfied.

We also want to **measure our ability to innovate**. We'll track the number of new features and improvements we deliver in each sprint, as well as our team velocity. This will show our progress and ability to continuously add value to the PlayStation platform, ensuring we stay ahead of the competition and provide a dynamic experience for players.

Finally, we'll focus on **identifying unrealized value**. We'll review our feature backlog to prioritize high-value items and actively gather user feedback to understand unmet needs and potential areas for improvement. This will help us uncover hidden opportunities to enhance the player experience and drive further growth for PlayStation.

This comprehensive approach to data gathering will provide valuable insights into the success of our sprint and guide our future development efforts. By focusing on these Agile metrics, we can ensure we're delivering real value to players, improving our development process, and contributing to the overall success of the PlayStation platform.

## 8. Overall

Reflecting on the project outcome, we're pleased with our ability to deliver a functional Minimum Viable Product (MVP) for the post-game recommendation feature within our two-week sprint. **Our team of two developers focused on core features, achieving a velocity of 17 points.** This demonstrates our commitment to efficient development and rapid delivery of value.

We **built the algorithm for generating post-game recommendations**, implemented a user action tracker, and integrated the recommendation feature into the game's credits screen. While the algorithm still needs further refinement, the core functionality is in place and provides a solid foundation for future iterations.

Our **accomplishment highlights our ability to effectively prioritize tasks, collaborate effectively, and deliver tangible results** within a short timeframe. We're confident that this MVP will provide valuable insights into user behavior and preferences, allowing us to further enhance the feature and maximize its impact on player engagement and business growth.

That said, we acknowledge some limitations. For example, there's a risk that the recommendation system may show redundant suggestions, particularly for players who have already explored a broad range of games. Additionally, handling games with low ratings or niche appeal require refined fallback mechanisms. We will need to continuously polish the algorithm to ensure it remains adaptive, learning, and pulling relevant and useful data for all players. These are important points to address during our review and as we prioritize tasks for the next sprint.

## 9. Key Learnings

The top three takeaways that we learned from managing this project were:

1. **The Importance of Clear Communication and Collaboration:** Even with a small team, clear and consistent communication was crucial. Our daily scrum meetings, quick chats, and collaborative problem-solving were essential for staying aligned and addressing challenges quickly. This project underscored how effective communication fosters a shared understanding and drives efficient progress.

2. **The Value of a Well-Defined Definition of Done:** Having a comprehensive Definition of Done helped us maintain a high level of quality and avoid overlooking critical aspects of development. It ensured we considered not just the code, but also testing, documentation, and stakeholder approval. Moving forward, we'll continue to emphasize the importance of a clear Definition of Done in all my projects.

3. **The Need for Flexibility and Adaptation:** While planning is essential, this project reminded us of the need to remain flexible and adapt to unexpected challenges or feedback. Our initial estimations required adjustments, and user feedback highlighted areas we hadn't initially considered. This experience reinforced the value of iterative development and the importance of incorporating feedback loops to ensure we're meeting user needs effectively.

## 10. Reflective

Throughout this project, we realized the i**mportance of maintaining flexibility with our team members**. It became clear that understanding individual needs, offering support when necessary, and knowing when to step in without being overbearing were essential for keeping workflows

smooth. By leading with empathy and adaptability, we created a more cohesive and productive environment, which encouraged everyone to perform at their best.

We also recognized the **value of dedicated sprint retrospectives and scrum meetings**. These sessions allowed us to reflect on our processes, discuss what went well, and identify areas for improvement. Incorporating these lessons into future sprints helped us optimize not just our workflows but also our team dynamics. Moving forward, we see retrospectives as a vital part of continuous improvement.

Another realization was the need for **greater agility in both our thinking and execution**. Challenges and feedback often required us to pivot quickly and iterate efficiently. This experience reinforced the idea that adaptability is crucial for responding to change while staying focused on delivering value.

We **learned how critical consistent tracking of metrics**, like sprint velocity, is to improving accuracy in planning. By regularly monitoring these metrics, we began to establish benchmarks that helped us estimate and align our efforts better. This gave us clearer insights into our performance and areas where we could improve.

When working on the product backlog, we found that keeping the "How Might We" (HMW) statement and user needs in mind made a significant difference. By **focusing on delivering the most impactful and efficient solutions**, we were able to balance user expectations with strategic objectives. This approach helped us ensure that every item in the backlog contributed meaningfully to our goals.

Lastly, our **reviews highlight how crucial feedback is**. We realized that involving stakeholders and understanding the perspective of target audiences, like paying customers, added invaluable insights. This feedback validates direction and helps refine the product to better align with user needs and broader business objectives.