FIT2002 Project Management
Assignment Two: Team Assignment

Chrono Nexus

Sep 2024

Student ID and full name: 33458766, Collin Han
Team number: 1215
Applied class: 12

DELIVERABLE 1: Project Integration Management

Task 1: Project Charter

Project Title: Chrono Nexus

Project Start date: 2 Sep 2024 **Projected Finish Date:** 29 Jan 2025

Budget Information:
$240,000 has been allocated for this project.

Project Manager: Collin Han, 0424 999 888, qhan0012@student.monash.edu

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Project Objectives:
Create a DLC engaging players through historical settings and time-travel mechanics.

Main Project Success Criteria:
Chrono Nexus should result in increases of Week 1 (W1) Retention by 30%, Month 1 (M1) Retention by 25% and Three-Month (M3) Retention by 10%.
The project should remain within the allocated budget of $240,000.

Project development approach:
The project will follow an agile methodology with iterative development cycles. This approach allows for ongoing adjustments to gameplay and design based on continuous playtesting feedback, ensuring the final product meets player expectations.

Roles and responsibilities

Role in the project	Name	Position in the organisation/contract	Contact Information
Project Manager	Collin Han	Project Manager	qhan0012@student.monash.edu
Game Developer	Kevin Rand	QA Lead	KevinR@student.monash.edu
Sponsor	Hannah Smith	Head of Product Development at PixelForge	hsmith@pixelforge.com
Lead Game Developer	Peter Kim	Lead Developer	peter.kim@student.monash.edu
Historical Consultant	Il Ohnam	Contractor	il.ohnam@historyexperts.com
Players	DLC player base	End users	NIL

Sign-off:

Collin Han Kevin Rand

Hannah Smith Il Ohnam Peter Kim

Comments: NIL

DELIVERABLE 2: Project Scope Management

Task 2.1: Requirements Traceability Matrix

REQUIREMENTS TRACEABILITY MATRIX					
Project Name:	Chrono Nexus				
Project Manager's Name:	Collin Han				
Project Description:	DLC with time-travel mechanics and historical settings				
ID	***Requirements (Functional or Non-Functional)***	***Assumption(s) and/or Customer Need(s)***	***Category***	***Source***	**Status**
Time-travel mechanics (Critical to project success)	Functional	An assumption is that this is the main gameplay mechanic players have the most anticipation for	Functional requirement	Game Design Document	Ongoing
Branching storylines (Critical to project success)	Functional	Players feel greater ownership of their experience with the DLC when they can influence the game story	Functional requirement	Technical Design Document	Ongoing
Player log-in	Functional	Assume that the majority of players would rather play signed into their account than play while signed out	Functional requirement	Lead Systems Engineer	In planning stage
Offline playability	Non-functional	Gameplay can take place even without Internet	Performance requirement	User Experience Department	In planning stage
Server Reliability	Non-functional	An assumption is that an uptime of at least 99% during peak traffic times is the benchmark to ensuring players have a continuous play experience	Performance requirement	Network Operations Department	In planning stage
Historical accuracy in settings and events	Non-functional	Players expect a blend of historical accuracy and fantasy elements.	Quality Requirement	Historical Consultants	Ongoing

Enhanced narrative with branching storylines	Functional	Engages players through choices impacting the story, increasing replayability.	Functional Requirement	Scriptwriters	Ongoing
In-game analytics tools	Functional	Track retention through in-game hours, DLC completion rates, and engagement with story branches.	Service Requirement	Analytics Team	Development
Player satisfaction surveys	Functional	Collate suggestions surrounding gameplay and narrative, so as to measure satisfaction and areas for improvement.	Service Requirement	User Experience Department	Planned
Data privacy compliance	Non-Functional	No breach of any data privacy regulations, and, not to mention, maintenance of player trust.	Non-Functional Requirement	Legal Department	Ongoing

Task 2.2: Project Scope Statement

PROJECT	DATE
Chrono Nexus	1 Sep 2024

PROJECT BACKGROUND, OBJECTIVES, AND OUTCOMES

Background:
PixelForge endeavours to create a DLC to add on to existing game offerings, thereby boosting player retention and revenue. Low retention rates signal a need for player re-engagement.

Objectives:
Develop Chrono Nexus, complete with its historical settings/ time-travel mechanics.
Increase W1 Retention by 30%, M1 Retention by 25%, and M3 Retention by 10%.
Achieve a $1 million revenue increase over the next 18 months.

Outcomes:
Deliver a DLC aligning with PixelForge's mission of player immersion and creativity.
Enhance player engagement and encourage repeat gameplay.
Strengthen market position in the console gaming industry.

HIGH-LEVEL PROJECT REQUIREMENTS, FUNCTIONAL & NON-FUNCTIONAL

Functional Requirements:
The glitch-free functionality of time-travel mechanics.
Storylines that can branch out in many ways according to player choices.
Integration, in the narrative, of fantastical and historical elements (for the market capture of a broad range of gamers).
In-game analytics of choices made, along with other forms of player engagement.

Non-Functional Requirements:
99% uptime of servers in peak hours.
Offline play option.
Comply with data privacy and security regulations.
Optimise game performance.

DELIVERABLES

1. **Fully Developed DLC Content:**
   Complete narrative, mechanics, settings, and interaction options.
   Quality Requirements: Gameplay free from glitches, and a balance in the story between fantasy and historical elements.

2. **Narrative Composed of Branching Storylines:**
   Multiple story paths influenced by player decisions.
   Quality Requirements: Coherent narratives, impactful choices, high replayability.

3. **In-game Analytics Tools:**
   Tools to track player retention and engagement.
   Quality Requirements: Intuitive player UI (the player inputs from which are used for data collection), breach of no privacy laws (as per legal team's evaluation).

4. **Testing/ QA:**
   Alpha and Beta testing phases.
   Quality Requirements: Thorough testing, timely bug fixes, performance optimisation.

5. **Player Feedback Mechanisms:**
   (Post-release) forums and surveys soliciting players' feedback.
   Quality Requirements: Effective feedback collection, actionable insights.

ASSUMPTIONS

Strong demand from gamers for time-travel mechanics and historical settings.
Development team possesses necessary skills and resources.
There is a gap in the gaming market as far as DLC offerings marrying history and fantasy.
Budget is sufficient to cover project costs without overruns.
Historical consultants are available for accurate content creation.

DELIVERABLE 3: Project WBS and Schedule

Task 3.1: Work Breakdown Structure (WBS)

0.0 Chrono Nexus

- 1.0 Research Phase
  - 1.1 Historical Research
  - 1.2 Market Research
    - 1.2.1 Player Retention Study
- 2.0 Concept Development
  - 2.1 Historical Design
  - 2.2 Scriptwriting
    - 2.2.2 Script Vetting in Consultation with Historians
  - 2.3 Visual Design
  - 2.4 Character Design
  - 2.5 Gameplay Design
- 3.0 Game Development
  - 3.1 Coding
    - 3.1.1 Time-travelling Mechanic Coding
      - 3.1.1.1 Time-travel Mechanic Troubleshooting *(preliminary round)*
- 4.0 Alpha Testing
  - 4.1 Code Troubleshooting
    - 4.1.1 Time-travel Mechanic Troubleshooting *(2nd round)*
  - 4.2 Code Optimisation
- 5.0 Beta Testing
  - 5.1 Playtesting Feedback Collection
  - 5.2 Post Beta Adjustments Based on Player Feedback
    - 5.2.1 Time-travel Mechanic Tweaking *(3rd round)*
    - 5.2.2 Story Branching Mechanic Tweaking
- 6.0 Buffer

Task 3.2 Team collaboration and short reflection

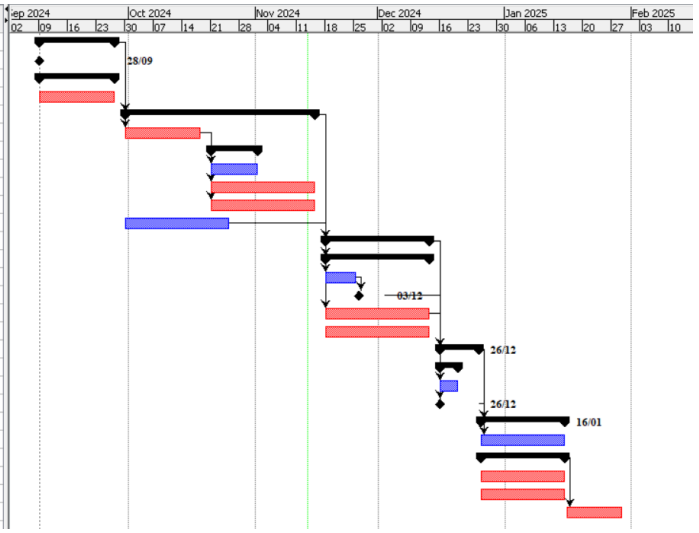
Reflection:

In starting on the WBS, I did not create the work packages in chronological order. I instead listed the most important packages first, *then* made them Level 2 or 3 by nesting them within their relevant packages.

In the demonstrations with my team members, our feedback was that almost all of our WBS needed much more detail. For the improved iteration of our WBS, we took inspiration from the detailed WBS from the (very publicly accessible) game development of Call of Duty Black Ops 6, as far as the number and granularity of work packages/ sub-packages.

Task 3.3: Gantt Chart

	Name	Duration	Start	Finish	Predecessors
1	**1.0 Research Phase**	15 days	**09/09/24 08:00**	**27/09/24 17:00**	
2	1.1 Historical Research	15 days	09/09/24 08:00	27/09/24 17:00	
3	**1.2 Market Research**	15 days	**09/09/24 08:00**	**27/09/24 17:00**	
4	1.2.1 Player Retention Study	15 days	09/09/24 08:00	27/09/24 17:00	
5	**2.0 Concept Development**	35 days	**30/09/24 08:00**	**15/11/24 17:00**	**1**
6	2.1 Historical Design	15 days	30/09/24 08:00	18/10/24 17:00	1
7	**2.2 Scriptwriting**	10 days	**21/10/24 08:00**	**01/11/24 17:00**	
8	2.2.2 Script Vetting in Consultation with Historians	10 days	21/10/24 08:00	01/11/24 17:00	6
9	2.3 Visual Design	20 days	21/10/24 08:00	15/11/24 17:00	6
10	2.4 Character Design	20 days	21/10/24 08:00	15/11/24 17:00	6
11	2.5 Gameplay Design	20 days	30/09/24 08:00	25/10/24 17:00	
12	**3.0 Game Development**	20 days	**18/11/24 08:00**	**13/12/24 17:00**	**5**
13	**3.1 Coding**	20 days	**18/11/24 08:00**	**13/12/24 17:00**	**5**
14	3.1.1 Time-travelling Mechanic Coding	6 days	18/11/24 08:00	25/11/24 17:00	11
15	3.1.2 Time-travel Mechanic Troubleshooting (preliminary roun	5 days	26/11/24 08:00	02/12/24 17:00	14
16	3.1.3 Non-time-travel coding	20 days	18/11/24 08:00	13/12/24 17:00	11
17	3.2 Animations	20 days	18/11/24 08:00	13/12/24 17:00	
18	**4.0 Alpha Testing**	8 days	**16/12/24 08:00**	**25/12/24 17:00**	**12**
19	**4.1 Code Troubleshooting**	5 days	**16/12/24 08:00**	**20/12/24 17:00**	
20	4.1.1 Time-travel Mechanic Troubleshooting (2nd round)	5 days	16/12/24 08:00	20/12/24 17:00	15
21	4.2 Code Optimisation	8 days	16/12/24 08:00	25/12/24 17:00	16
22	**5.0 Beta Testing**	15 days	**26/12/24 08:00**	**15/01/25 17:00**	**18**
23	5.1 Playtesting Feedback Collection	15 days	26/12/24 08:00	15/01/25 17:00	21
24	**5.2 Code Adjustments Based on Player Feedback**	15 days	**26/12/24 08:00**	**15/01/25 17:00**	
25	5.2.1 Time-travel Mechanic Tweaking (3rd round)	15 days	26/12/24 08:00	15/01/25 17:00	
26	5.2.2 Story Branching Mechanic Tweaking	15 days	26/12/24 08:00	15/01/25 17:00	
27	6.0 Buffer	10 days	16/01/25 08:00	29/01/25 17:00	24



Milestones:

1. **Time-travel Mechanic Troubleshooting**
    - **Measurable:** Work toward **0** compiler errors (meaning, the code can be run in the game engine).

    - **Achievable:** implementing time-travel mechanics is achievable given **current software capabilities**, thanks to an industry that has adapted to the recent proliferation of games with time-travel as their core game mechanic. (Ludo.ai, 2024)

2. **Code Optimisation**
    - **Relevant:** The final DLC size should be below 10 GB of storage space. This end limit of 10 GB storage space provides **actionable insight** into exactly how much file size to reduce the DLC by, at any stage in development.

3. **Historical Research**
    - **Timely:** The research material must be published in recent years, as **new findings can disprove old ones**. Therefore, using **outdated research** literature could add historical inaccuracy to the game.
      Eg: Recent Egyptology findings showed that the stone blocks of the Pyramid of Giza weren't transported exclusively over land (as had been previously thought), but instead through a long-lost branch of the Nile River. (ScienceBlog.com, 2024)

Rationale:

As far as parallel tasks, Visual Design (2.3) and Character Design (2.4) run concurrently to expedite the development process, as they involve different teams.

The Time-travel Mechanic Troubleshooting (3.1.2) is a milestone because if it's delayed, it pushes back its dependent Alpha Testing, Beta Testing and future rounds of troubleshooting. This highlights the importance of allocating sufficient time and resources to critical tasks.

DELIVERABLE 4: Project Cost Management

Task 4.1: Cost Model

Category	Cost
2 Game Coders	$187,200
1 Playtester	$15,600
Licences and Software	$10,000
Historical Research and Consultancy	$7,200
Risk Management Budget (10%)	$20,000
Total Project Cost:	$240,000

Justification:

- Game Coders: 2 coders at $90/hour for 6 months (26 weeks), 40 hours/week.
- Playtesters: 1 tester at $60/hour for 3 months (13 weeks), 20 hours/week.
- Historical Research: Costs for engaging historians and research materials.
- Risk Management: 10% contingency for unforeseen expenses.

Task 4.2: Cost Baseline

Sep 2024
Licenses: $10,000
Historical Research: $2,400
Risk Management: $2,000
Total: $14,400

Oct 2024
Historical Research: $2,400
Risk Management: $2,000
Total: $4,400

Nov 2024
Historical Research: $2,400
Game Coders: $31,200
Risk Management: $2,000
Total: $35,600

Dec 2024
Game Coders: $31,200
Risk Management: $2,000
Total: $33,200

Jan 2025
Game Coders: $31,200
Risk Management: $2,000
Total: $33,200

Feb 2025
Game Coders: $31,200
Risk Management: $2,000
Total: $33,200

Mar 2025
Game Coders: $31,200
Playtesters: $5,200
Risk Management: $2,000
Total: $38,400

Apr 2025
Game Coders: $31,200
Playtesters: $5,200
Risk Management: $2,000
Total: $38,400

May 2025
Playtesters: $5,200
Risk Management: $2,000
Total: $7,200

Jun - Aug 2025
Risk Management: $6,000
Total: $6,000

Task 4.3: Assumptions

Stable Labour Rates:

- **Assumption:** Hourly rates for coders and testers remain constant.
- **Justification:** Based on Hays IT Contractor Rates Guide (Hays, n.d., p10).

Resource Sufficiency:

- **Assumption:** No additional staffing beyond what is budgeted.
- **Justification:** Any ad-hoc staff onboarding needed will be made up for with contingency budget and the development time buffer.

Fixed Licence Costs:

- **Assumption:** Software licence costs will not exceed $10,000.
- **Justification:** Current pricing information from vendors.

Contingency Budget Adequacy:

- **Assumption:** 10% contingency fund is sufficient for unforeseen expenses.
- **Justification:** Aligns with industry best practices for similar projects.

Technology Stability:

- **Assumption:** No major technological changes that would outdate game modelling software and game engine.
- **Justification:** Project timeline is relatively short (5 months), minimising risk of tech shifts.

DELIVERABLE 5: Project Risk Management

Task 5: Risk Register

RISK ID	RANK	RISK DESCRIPTION	IMPACT DESCRIPTION	IMPACT LEVEL	PROBABILITY LEVEL	PRIORITY LEVEL	RISK RESPONSE	Risk OWNER
R1	1	Buggy time-travel mechanics causing delays	Delays in schedule, increased costs, potential failure to meet deadlines	5 (Very High)	4 (High)	20	**Mitigate:** Additional time set aside for testing. Employ developers with years of prior working experience. Frequent code troubleshooting.	Development Team Lead
R2	2	Historical inaccuracies leading to player backlash	Damage to reputation, negative reviews, reduced player retention	4 (High)	3 (Medium)	12	**Avoid:** Historians' rigorous content review, and game design guidelines on historical accuracy. Development must address player feedback.	Content Development Manager
R3	3	Data privacy breaches compromising player information	Legal penalties, loss of trust, financial losses due to fines	5 (Very High)	2 (Low)	10	**Mitigate:** Ensure robust cybersecurity, regular auditing, and compliance with GDPR/ other privacy regulations.	IT Security Officer
R4	4	Server downtime during peak launch period	Players unable to access game, negative experience, loss of engagement	4 (High)	3 (Medium)	12	**Mitigate:** Improve capacity of servers, then stress-test them. Design cloud service contingency plans to handle unexpected loads.	Network Operations Manager
R5	5	Budget overruns due to underestimation	Insufficient funds, need for additional funding, project delays	5 (Very High)	2 (Low)	10	**Mitigate:** Daily expense checks against budget. Contingency funds cannot be used for the same deliverable (eg: animations) multiple times.	Project Manager

DELIVERABLE 6: Project Quality Management

Task 6.1: Quality Standards/Requirements

Gameplay Mechanics Quality Standard:

- **Requirement:** Time-travel mechanics must function seamlessly with no critical bugs.
- **Acceptance Criteria:** Achieve a 99% success rate in all test cases during QA testing.
- **Justification:** Essential for a smooth playthrough experience, or else players will be frustrated after months of anticipation of this DLC launch, and stop playing the game, hurting player retention.

Historical Accuracy Standard:

- **Requirement:** Historical content must be accurate enough to pass 95% of player surveys (regarding cultural sensitivity) in Alpha and Beta testing.
- **Acceptance Criteria:** All game art must be reviewed and approved by professional historians.
- **Justification:** Prevents cultural insensitivity, especially toward players from the countries depicted in-game. This earns player trust and respect, essential for player retention.

Server Uptime Standard:

- **Requirement:** Achieve 99% server uptime during peak hours (5 PM - 11 PM). Implement a rapid response protocol for addressing any downtime, following ITIL (Information Technology Infrastructure Library) best practices.
- **Acceptance Criteria:** Server logs confirm uptime meets or exceeds 99%. The response protocol must resolve downtime within 5 minutes.
- **Justification:** If players suddenly get disconnected in the middle of play, their in-game progress may not be saved, and they may have to redo parts of the game they have already completed, frustrating players instead of earning their respect and fandom, hurting player retention.

Task 6.2: Metrics and Measurement

Gameplay Mechanics Quality Metric:

- Measurement: Unit and integration testing results.
- Process: QA team executes predefined test cases; bugs are documented and fixed.
- Threshold: 99% success rate before release.

Historical Accuracy Metric:

- Measurement: Content review reports from historians.
- Process: Historians review content; feedback is implemented; approval is obtained.
- Threshold: No critical inaccuracies remaining post-review.

Server Uptime Metric:

- Measurement: Server performance monitoring.
- Process: IT team uses monitoring tools; downtimes are logged and addressed immediately.
- Threshold: Maintain 99% uptime during peak hours.

DELIVERABLE 7: Project Stakeholder and Communication Management

Task 7.1: Building Your Stakeholder Register

NAME	TITLE	ROLE IN PROJECT	CATEGORY	POWER LEVEL	INTEREST LEVEL	COMMS REQUIREMENTS	COMMS FREQUENCY	CONTACT
Kevin Rand	QA Lead	QA Lead	Internal	Medium	High	Team meetings, Emails	Daily updates	KevinR@student.monash.edu
Peter Kim	Lead Game Developer	Lead Developer	Internal	High	High	Team meetings, Emails	Daily updates	peter.kim@student.monash.edu
Players	NIL	End Users	External	Low	High	Surveys, Forums, Social Media	Bi-weekly	NIL
Historical Consultants	Various	Historical Advisors	External	Medium	Medium	Meetings, Emails	Bi-weekly updates	Various
Legal Department	Legal Advisors	Compliance Oversight	Internal	High	Medium	Reports, Meetings	Monthly updates	Various
Hannah Smith	Head of Product Development	Project Sponsor	External	High	High	Email updates, Monthly meetings	Weekly updates, Monthly meetings	hsmith@pixelforge.com
Collin Han	Project Manager	Project Manager	Internal	High	High	Email updates, Monthly meetings	Weekly updates, Monthly meetings	qhan0012@student.monash.edu

Task 7.2: Engagement Strategy

1. **For Project Sponsor Hannah Smith**
    - Communication: Weekly email updates, Monthly progress meetings.
    - Involvement: Include in key decision-making processes.
    - Expectations Management: Ensure project aligns with business objectives.
    - Feedback Solicitation: Regularly seek input to align with strategic goals.

2. **For Legal Department - Compliance Oversight**
    - Communication: Monthly compliance reports
    - Involvement: Stay abreast of legal compliance/ data privacy measures.
    - Risk Management: Hold ad-hoc meetings to address any potential legal issues.
    - Documentation: Provide all the legal documentation needed for management's approval.

References

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