MONASH University

FIT5057

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Assignment 1 - Business Case

Echoes of Seraphis: Harnessing Market Trends and Player Engagement to Drive Growth in the Double-A Gaming Sector

Student Name: Bao Ngoc Truong
Student ID: 34301054
Applied Class: 08

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1.Business Justification

1.1 Background

NexaForge Studios, a leader in the Double-A gaming industry with $120 million in annual revenue, aims for a 17% increase over three years through market expansion and diversified games. The focus is on boosting player retention: Day 1 from 30% to 45%, Day 7 from 12% to 30%, and Three-Month from 8% to 16%.

My project, "Echoes of Seraphis," aligns with these goals by targeting the growing action-adventure and RPG market, which is projected to expand at an 11% CAGR from 2024 to 2030 (Verified Market Report, 2024). Set in a stunning fantasy realm, the game combines exploration, puzzle-solving, and combat. Players control Elyra, a spirit binder using ancient Echoes to restore balance.

Retention strategies include immersive world-building and engaging combat for Day 1, regular content updates and social features for Day 7, and narrative expansions for Day 90 (Park et al., 2017; Gupta, 2024). Revenue will be generated from game sales and in-app purchases (VG Insights, 2022; Statista, 2024). The game's hand-painted art and creative storytelling will enhance NexaForge's mission and drive financial growth.

1.2 Current Situation and Problem/Opportunity Statement

According to Newzoo's Global Games Market Report 2023, adventure games are among the top 5 revenue-generating genres on major gaming platforms, especially consoles (Newzoo, 2024).
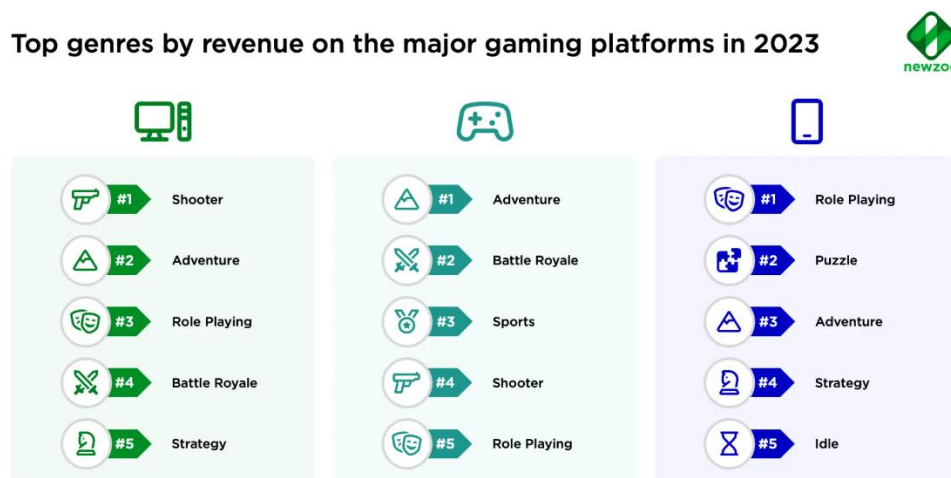
Figure 1: Top genre by revenue on major gaming platforms 2023 (Rocket Brush, 2024)

Adventure games account for 17.1% of console revenues and are projected to grow by 6.9% (Rocket Brush, 2024). This presents an opportunity for NexaForge Studios to capitalize on this trend with "Echoes of Seraphis," enhancing player retention through personalized experiences and community engagement (CacheFly Team, 2024; Lark, 2024). The game will boost

NexaForge's brand with compelling storytelling and innovative gameplay, driving revenue through various channels and reinforcing the studio's commitment to creativity and inclusivity.

1.2.1 Analysis of Options

Option	Problem Fit	Risk	Financial Implications
Option 1: In-house development Utilize internal team to handle all aspects of the game development process	Direct control ensures alignment with strategic objectives. Internal team familiarity allows agile, iterative refinement based on input.	Smaller in-house team might lack specialized skills from external experts.	- Higher fixed costs for salaries and infrastructure. - Lower variable costs compared to outsourcing. - NPV of $556,393 and ROI of 46.8% (See Exhibit A).
Option 2: Outsourcing + Offshore sourcing Hire external studios or freelancers for specific tasks (art, programming, QA).	- Access specialized skills and expertise not available in-house. - Enhance quality and creativity of specific game components (Rocket Brush, 2023).	Sharing sensitive information and code can lead to potential data breaches or IP theft (Collins, 2020; Kovtun, 2023). Risk of incompatible work or quality issues from multiple contractors (Kovtun, 2023).	- Lowers initial costs due to less infrastructure investment (Titov, 2022). - Includes potential costs for managing and integrating external teams. - NPV of $739,885 and ROI of 73.5%.(See Exhibit B).
Option 3: Hybrid approach (In-house + Outsourcing) Combine in-house development with outsourced components	Balances internal control over key aspects with cost-effective external resources.	Lessen the chance of all the risks mentioned above.	Lower overall costs by outsourcing non-core tasks. NPV of $656,254 and ROI of 59.6%. (See Exhibit C).

Criteria	Weight	Option 1	Option 2	Option 3
Align with the company strategic goals	25%	90	75	95
Has a desired ROI	20%	80	100	95
Project feasiblity	15%	80	60	90
Has low risk in meeting, scope, time and cost goals	15%	75	50	95
Address the market demand	10%	85	85	95
Competitive Advantage	10%	80	70	95
Resource Utility Efficiency	5%	70	90	80
Weighted project scopes	100%	**81.75**	**75.25**	**93.5**

Figure 2: Weighted Score by Project

Weighted Score by Project

Option 3: 93.5
Option 2: 75.25
Option 1: 81.75
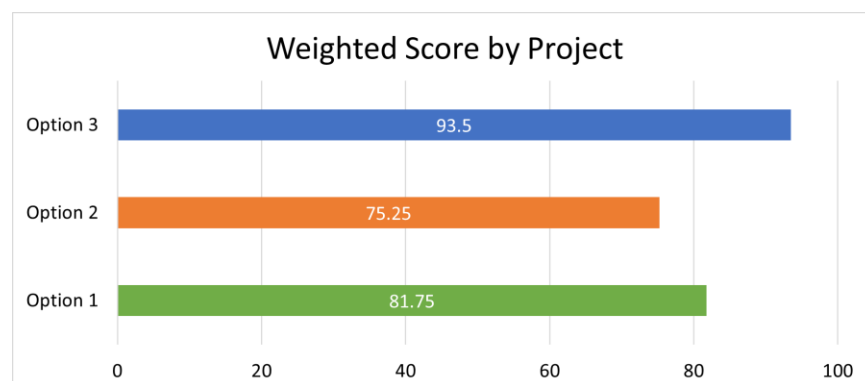
Conclusion and recommendation:
Preferred Option: Hybrid Approach
Justification:
Cost-Effective Balance: Merges outsourcing efficiency with in-house control, optimizing budget and resources.
Enhanced Quality: Uses external expertise for art and animation, improving quality while retaining core internal competencies.
Flexibility: Allows adaptation to changes and scalable resources, aligning with NexaForge's goals and project needs.

1.3 Project and Deliverable Description

Game Design Document: Blueprint detailing gameplay, story, characters, and UI/UX. Highlights the Echo system, where players harness ancient powers in Seraphis, ensuring a cohesive experience with balanced exploration, combat, and cinematic quality.

AI/Behavioral Systems: AI system for dynamic NPC behavior, enhancing combat and exploration. It features adaptive enemy tactics and allied spirits that assist in real-time to bring Seraphis to life, offering varied, challenging encounters.

Final Game Build: A polished, optimized version ready for PC and console. It includes all gameplay elements, optimized performance, and multiple endings to ensure a visually stunning, technically robust experience with fluid combat and rich narrative.

1.4 Ethical considerations and implications

In-Game Purchases and Microtransactions: They can exploit vulnerable players, especially minors, through aggressive monetization strategies (Aesthetics for Birds, 2021; Greer et al., 2022).
Addiction and Mental Health: Games designed to be highly addictive may negatively impact mental health and personal well-being (Alrahili et al., 2023).
Representation and Inclusivity: Games should avoid perpetuating harmful stereotypes and ensure diverse and respectful representation of characters and cultures (Guzzanti & Wilson, 2023).

2. Schedule Estimate, Budget Estimate & Financial Analysis

2.1 Schedule Estimate

The project development is expected to take 12 months from September 30, 2024 to September 30, 2025. It consists of five milestones specified below:
1. Project Concept and Plan Approved – 30 September 2024
Define scope, align team goals, and secure stakeholder buy-in.

2. Pre-production Completed – 31 December 2024
Early development stages completed, including design, planning, and initial prototyping.
3. Alpha Version Ready – 30 April 2025
Core mechanics and features developed and prepared for early testing and feedback.
4. Beta Version Ready – 31 July 2025
Thorough testing and bug fixing conducted to prepare for the final release.
5. Final Release and Project Signed off – 30 November 2025
Final polishing completed, feedback from beta testing addressed, and game launched.

The 12-month timeline is feasible, with justified budget and workload. Well-defined milestones and buffer periods ensure efficient resource use, aligning with industry standards for a successful game release (Kramarzewski & De Nucci, 2018).

2.2 Budget Estimate & Financial Analysis

The development budget for "Echoes of Seraphis" is primarily allocated to staff salaries, outsourcing, hardware, software licenses, and maintenance. Despite higher initial expenses, the long-term benefits are significant, with an NPV/ROI of 59.6% profit projected over three years (see Exhibit C).
The costs are divided as follows:
Staff Salaries: $552,230.88 for 5 employees of core development team estimated by Hays contractor's rate (2024) and hiring site (Talent.com, 2024), representing 49.11% of the total budget (Exhibit C).
Outsourcing: $297,841 for art, animation, audio, and marketing, accounting for 33.96% of the budget (Exhibit C; Sinclair, 2014; Game Marketing Genie, 2023; SuperPixel, 2023).
Hardware: Two options of equipment from Centrecom (2024) and server rental averagely costing $20,210, or 2.51% of the budget (Exhibit D; Downs, 2020).
Software Licenses: Unity Pro and Autodesk 3ds Max cost total $14,580 over three years, or 1.66% of the budget (Exhibit C, E: Unity, 2024: Autodesk, 2024).
Maintenance: Annual technical support, data analytics for further improvements and software licenses cost $123,720 (Exhibit E; Downs, 2020; Indeed, 2024).

3. Development Approach

For "Echoes of Seraphis," we'll adopt a Hybrid approach, combining Waterfall methodology for initial planning with Agile practices for development and testing. This approach blends structured planning with iterative flexibility, crucial for adapting to changes based on player feedback and market trends (Pandey et al., 2018). The iterative Agile process will allow continuous refinement of the game, ensuring it evolves to meet player expectations and reducing the risk of major issues at launch. By developing the game in stages, we focus on delivering a polished, engaging experience that resonates with our target audience, addressing evolving requirements effectively (Mitrofanskiy, 2024).

4. Risk and Quality

4.1 Uncertainty & Risk Analysis

Risk 1: Rapidly changing player preferences may render the game outdated, impacting engagement and ROI (Press Start Leadership, 2023).
Likelihood: High
Impact: Reduced sales and engagement.
Response: Use flexible design principles and gather real-time feedback through forums, surveys, and social media to adapt quickly.

Risk 2: Dependence on external vendors for critical components may lead to delays or quality issues (Bahli & Rivard, 2003).
Likelihood: Moderate
Impact: Potential delays, increased costs, and compromised game quality.
Response: Set clear contracts with performance metrics, maintain regular communication, and have contingency plans. Implement robust quality checks and integration processes.

4.2 Quality Metrics and measurement

KPI 1: Increase in Overall Game Revenue
How Measured: Track total revenue from game sales, in-game purchases, and microtransactions using financial reports and analytics tools.
Rationale: This KPI supports NexaForge's goal of a 17% revenue growth over three years, reflecting financial success and the effectiveness of player retention and monetization strategies.
KPI 2: Improvement in Retention Rates (Day 1, Day 7, Day 90)
How Measured: Analyse players return rates on Day 1, Day 7, and Day 90 with in-game analytics tools.
Rationale: Increasing retention rates (30% to 45% for Day 1, 12% to 30% for Day 7, 8% to 16% for Day 90) measures player engagement, supporting revenue growth through repeat purchases and in-game spending.

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Financial Exhibits

Exhibit A: NPV/ROI Calculations – Option 1 – Full In-house development

Discount rate	7%			
Discount factor	1.00	0.93	0.87	
Year	0	1	2	TOTAL
Project 1				
Costs (cash outflows)	$967,025	$123,720	$123,720	$1,214,465
Benefits (cash inflows)	$0	$1,658,000	$225,524	$1,883,524
Net cash flow	($967,025)	$1,534,280	$101,804	$669,059
Discounted costs	$967,025	$115,626	$108,062	$1,190,713
Discounted benefits	$0	$1,549,533	$196,981	$1,746,514
Discounted cash flow	($967,025)	$1,433,906	$88,919	$555,801
Cumulative disc cash flow	($967,025)	$466,881	$555,801	
NPV	$555,801			
ROI	46.7%			

Exhibit B: NPV/ROI Calculations – Option 2 – Outsourcing

Discount rate	7%			
Discount factor	1.00	0.93	0.87	
Year	0	1	2	TOTAL
Project 2				
Costs (cash outflows)	$788,262	$120,900	$120,900	$1,030,062
Benefits (cash inflows)	$0	$1,658,000	$225,524	$1,883,524
Net cash flow	($788,262)	$1,537,100	$104,624	$853,462
Discounted costs	$788,262	$112,991	$105,599	$1,006,851
Discounted benefits	$0	$1,549,533	$196,981	$1,746,514
Discounted cash flow	($788,262)	$1,436,542	$91,383	$739,663
Cumulative disc cash flow	($788,262)	$648,280	$739,663	
NPV	$739,663			
ROI	73.5%			

Exhibit C: NPV/ROI Calculations – Option 3 – Hybrid Approach

Discount rate	7%			
Discount factor	1.00	0.93	0.87	
Year	0	1	2	TOTAL
Project 3				
Costs (cash outflows)	$876,942	$123,388	$123,388	$1,123,717
Benefits (cash inflows)	$10,000	$1,658,000	$225,524	$1,883,524
Net cash flow	($866,942)	$1,534,612	$102,136	$769,807
Discounted costs	$876,942	$115,315	$107,771	$1,100,029
Discounted benefits	$10,000	$1,549,533	$196,981	$1,756,514
Discounted cash flow	($866,942)	$1,434,217	$89,210	$656,485
Cumulative disc cash flow	($866,942)	$567,275	$656,485	
NPV	$656,485			
ROI	59.7%			

Asssumptions							
Development team	Number of Unit/ Hours	Daily Rate	Cost of Unit/Hour		Weekly cost	monthly cost	Yearly cost
Project Manager	20	$ 900.00	$ 112.50		$ 2,250.00	$ 9,742.50	$ 116,910.00
Game Designer	30		$ 53.85		$ 1,615.50	$ 6,995.12	$ 83,941.38
Software Developer	35	$ 700.00	$ 87.50		$ 3,062.50	$ 13,260.63	$ 159,127.50
UX/UI designer	20	$ 780.00	$ 97.50		$ 1,950.00	$ 8,443.50	$ 101,322.00
QA tester	20	$ 700.00	$ 87.50		$ 1,750.00	$ 7,577.50	$ 90,930.00
Total Salary cost					$ 10,628.00	$ 46,019.24	$ 552,230.88
Outsourcing							
3D animation							$ 40,000.00
Audio Design							$ 28,091.00
Marketing Commission							$ 229,750.00
Total outsoucring cost							$ 297,841.00
Hardware					Fixed cost	Ongoing cost	
PCs	5				$ 4,042.00		$ 20,210.00
Server cost			$ 150.00			$ 150.00	$ 1,800.00
Total hardware cost							$ 22,010.00
Software							
Unity Pro Annual Package	1					$ 2,040.00	$ 2,040.00
3Ds Max Autodesk	1					$ 2,820.00	$ 2,820.00
Total software cost							$ 4,860.00
Total cost							$ 876,941.88

Benefits		
Number of copies sold	$	82,856.00
Game price	$	12.99
Game sales	$	1,076,299.44
Steam cut	$	0.30
Revenue after cut	$	753,409.61
In App Purchases	$	1,130,114.41
Total	**$1,883,524**	

Assumptions:

The discount rate used in all three NPV/ROI calculations is assumed to be 7% as it is generally considered as a leading discount rate for conducting cost-benefit analysis (Moore, 2023).

Number of copies sold: According to the VGI insights market report (2024), 580 million copies were sold, and 14 thousand games were released. Assuming that most of the copies sold are from new games, the average number of copies sold per game is 41,429 copies in 2023.

Game Price: From the price distribution of released games from 2017 to 2021, $12.99 is reasonable as 17.9% of the price on the market is in the price range of $10 - $19.99 (Video Game Insights, 2022).

In app purchases: According to Gartner's Forecast: Video Game Ecosystem, Worldwide, 4Q13, In app purchases (IAP) take up 55% of the PC game revenue in 2013 and was projected to increase to 64% of total revenue in 2017 (Steam, 2017). Therefore, as the trend persists, IAP is assumed to take up around 60% of total revenue.

Steam cut: Steam takes a 30% commission on the revenue earned from game sales on its platform (Stories, 2024).

3D animation: Outsourcing price is assumed to be in the range of $10,000 - $50,000 (Superpixel, 2023). As the project requires high-quality 3D animation, it is assumed that the price will be on the higher end of the spectrum.

Audio Design: the outsourcing price is determined as the average price of audio design for freelancers (Sinclair, 2014).

Marketing: To ensure the successful launch of the game for revenue generation, companies ought to have a marketing budget of 25-50% of the development costs (Game Marketing Genie, 2023). In this case, it is assumed to be 25%.

Server costs: Due to high-speed, low-latency internet connections, 24/7 uptime and availability, and increased scalability aspect, server rental is crucial for the project success in the long run (Lysenko, 2024; Juego Studio, 2023; Red Switches, 2023). The server rental price is currently set at average price of $150 a month (Downs, 2020)

Exhibit D: Options for PC purchase:

Hardware device costs			
Option	Equipment	Feature	Price
Option 1	Intel Core I9 - 12900ks	24 threads, 16 Cores	$ 499.00
	Gigabyte Z790 Eagle AX LGA1700 ATX Desktop Motherboard	LGA1700, Smart Fan 6, Wi-Fi 6E	$ 339.00
	MICROSOFT WINDOWS 11 HOME OEM - DVD 64-bit	Windows 11, 64 bit	$ 179.00
	G.Skill Trident Z5 RGB 48GB (2 x 24GB) DDR5 7200MHz CL36 RAM - Black	RGB 48GB, 7200MHz CL36 RAM	$ 349.00
	Kingston SKC3000D/2048G KC3000 2TB PCIe 4.0 NVMe M.2 SSD	2TB storage space	$ 249.00
	PNY GeForce RTX 4080 Super Verto 16GB OC Edition GDDR6X Triple Fan Graphics Card	RTX 4080 SUPER, 16GB, GDDR6X	$ 1,599.00
	Thermalright Aqua Elite 360 V2 AIO Liquid CPU Cooler - Black	ARGB, 2600RPM, Intel/AMD	$ 139.00
	Deepcool CH560 Black E-ATX Case	Tempered Glass, Pre-Installed Fans	$ 149.00
	Corsair RM850e ATX 3.0 850W 80 PLUS GOLD Fully Modular Power Supply	850 Watt	$ 172.00
	MSI MAG 275QF 27" WQHD Rapid IPS 180Hz 0.5ms Adaptive-Sync Gaming Monitor	180Hz, 27 inch, AI vision technology	$ 269.00
	Fantech GO WK894 Wireless Office Keyboard and Mouse Combo	Wireless, Anti-Splash, Full Size KB	$ 25.00
Total			$ 3,968.00
Option 2	AMD Ryzen 9 7900x 12 Cores 24 Threads 5.6Hz Processor	24 threads, 12 cores	$ 597.00
	Thermalright Frozen Warframe 360 Black Argb AIO Liquid Cooler - Black	360mm, IPS LCD Resolution, AMD/Intel	$ 179.00
	ASRock X670E PG Lightning AM5 DDR5 ATX Motherboard	AM5, 4xDDR5, Realtek 2.5G LAN	$ 369.00
	G.Skill Trident Z5 RGB 64GB (2x32GB) 6000MHz C30 DDR5 Desktop RAM - Black	64GB(2x32GB), DDR5, 6000MHz	$ 359.00
	Kingston KC3000 2TB PCIe 4.0 NVMe M.2 SSD	2TB, 7000MB/s Read, 7000MB/s Write	$ 249.00
	PNY GeForce RTX 4080 Super 16GB VERTO Overclocked Triple Fan DLSS 3 GDDR6X Graphics Card	RTX 4080 SUPER, 16GB, GDDR6X	$ 1,599.00
	MSI MAG Forge 320R AIRFLOW Mid-Tower Case	Tempered Glass, ARGB Fans LED Switch	$ 99.00
	Corsair RM850x SHIFT 850W 80+Gold Full Modular ATX Power Supply	850W, 80+Gold, Full Modular	$ 192.00
	Microsoft Windows 11 Home - OEM DVD 64-bit English (1 Pack)	Windows 11, 1 Pack, 64-bit	$ 179.00
	MSI MAG 275QF 27" WQHD Rapid IPS 180Hz 0.5ms Adaptive-Sync Gaming Monitor	180Hz 0.5ms Adaptive-Sync	$ 269.00
	Fantech GO WK894 Wireless Office Keyboard and Mouse Combo	Wireless, Anti-Splash, Full Size KB	$ 25.00
Total			$ 4,116.00

Exhibit E: Annual maintenance cost after first year of development

Annual Maintenance Cost	# of Unit/hour	Cost per unit/hour	Monthly cost	Yearly cost
Technical support engineer	40	46.78	$ 8,102.30	$ 97,227.55
Server cost		$150	$ 150.00	$ 1,800.00
Data Analyst	20	81.25	$ 1,625.00	$ 19,500.00
Unity Pro Annual Package				$ 2,040.00
3Ds Max Autodesk				$ 2,820.00
Total				$123,387.55

Assumption:

Technical support engineer hourly rate is assumed to be $46.78 according to the average hourly rate on Indeed, a popular hiring site (2024). Their rate might be subject to small changes due to varying salary offer inputs by companies from time to time.