

Business Case – Project Alpha

Executive Summary

Project Alpha is an open-world zombie survival video game developed in **Unreal Engine 5.6**. The project aims to deliver an immersive experience featuring realistic simulated towns, intelligent zombie NPC, and a visually rich world.

Project Description

The proposed game will deliver an open-world survival experience characterized by:

- Fully explorable towns with enterable buildings, houses, and shops.
- Simulated life systems, including day/night cycles, resource scarcity.
- Advanced zombie NPC capable of navigation, sensing, and reacting to players.
- Immersive survival mechanics: health, stamina, hunger, combat, and crafting.
- Large, explorable environments with emergent gameplay opportunities.

Advantages

- High-impact portfolio project.
- Proof of mastery over **UE5 systems** such as world generation, and optimization.
- Evidence of collaborative project planning under complex conditions.
- Potential for expansion into a respected independent title.
- Strong academic, technical, and professional learning outcomes.

Costs

- High time and energy investment required.
- Demands efficient asset management and performance optimization.
- Risk of project scope growth or team burnout.
- **Estimated Cost:** High effort, low financial expense.

Risk Assessment

- Scope may exceed available time and team capacity.
- Optimization for large worlds is technically challenging.

- Asset streaming and world management in UE5 may present risks.
- Team motivation and alignment must be maintained.

Mitigation Strategies:

- Focus initial effort on a completed town.
- Restrict scope to essential mechanics.

Alternatives Analysis

- **Do Nothing:** Results in a small-scale, templated project with limited technical or visual merit.
- **Scale Down to Basic Shooter:** Easier to complete but with minimal educational or creative value.
- **Proceed with Scoped Full Development:** Higher risk but provides maximum learning and professional benefits.

Implementation Plan

Alpha Phase (\leq 3 Months):

- Introduce core survival mechanics.
- Implement basic zombie.
- Develop a small forest zone for exploration.
- Establish player movement, minimal UI, and world foundation.
- Phase in advanced gameplay mechanics (combat, stamina, hunger, inventory).

Prototype (2-3 Years Roadmap):

- Add better animations, sound, and AI sophistication.
- Build the first fully realized town as a vertical slice.
- Target release with basic world simulation.

Continuous Development (Post-Prototype):

- Expand with additional towns, forests, and regions.
- Enhance gameplay mechanics (crafting, factions, procedural events).
- Incorporate player feedback into ongoing development.

Recommendation

It is recommended to proceed with *Project Alpha* under a **conservatively scoped**, followed by phased development. With incremental milestones, controlled scope, and consistent risk

management, the project can deliver both strong academic outcomes and the foundation for future expansion into a complete, potentially market-ready game.