Arcade Machines and Video Games Exhibition

1. Introduction

This proposal outlines a museum exhibition exploring the history of arcade machines and video games, aiming to unite both enthusiasts and newcomers. Drawing on *Pac-Man* creator Toru Iwatani's aspiration to engage all demographics (Retro Gamer, 2016, p. 48), the exhibition will emphasise the cultural significance of arcade machines and employ interactive digital technology to ensure historical accessibility (cf. Not et al., 2019, pp. 11–12).

The next section identifies the exhibition's target audience and how their needs influence design.
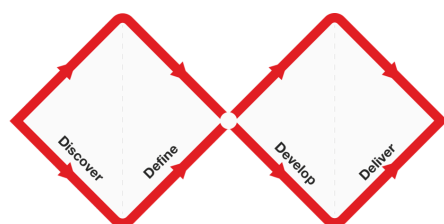
2. Audience

The objective is to bring together people from all backgrounds, as arcade games are 'easy to learn but hard to master' (cf. Therrien, 2017). Seasoned players can revisit familiar classics; casual visitors and newcomers benefit from intuitive, engaging designs that are easy to pick up; nostalgic adults enjoy the return to games from their past; and families find activities suitable for various ages. The design focuses on user experience to ensure that all visitors feel welcome, combining humanistic insights with computer science tools such as AR (Silva et al., 2003, pp. 1-2).

3. Usage of Interactive Technologies

The exhibition adopts interactive technologies to engage visitors from diverse backgrounds and interests:

- Interactive micro-versions of *Pac-Man* or *Space Invaders*, via emulators, let users experience the tactile legacy of arcade gaming. These technologies lower barriers to engagement and provide direct connections to video game history (cf. Sayers et al., 2016, pp. 1–3).
- Tablet- or phone-based AR applications let users explore arcade hardware, offering technical knowledge in a visually rich and accessible manner (cf. Not et al., 2019, pp. 2–4).
- Devices enable visitors to capture audio stories from former players, providing authentic perspectives that deepen historical understanding (Not et al., 2019, pp. 11–12).
- AR elements immerse users in simulated arcade environments, enhancing emotional involvement and offering experiences tailored to individual preferences (Capuano et al., 2016, pp. 968–969; Not & Petrelli, 2019, pp. 68–69).

With interactive technologies defined, this proposal now turns to the methodology guiding project development: the Double Diamond method.

4. Methodology

Figure 1

The Double Diamond method.

Note. Provided by the Design Council.

The project uses the Double Diamond method, emphasising future users. The Double Diamond has four phases: Discover, Define, Develop, and Deliver. Each phase begins broadly, then refines to meet specific needs (Design Council, 2015).

The following sections describe each phase in detail.

Discover

This phase centres on assessing the needs of both the museum and visitors, with curators facilitating decision-making (Capuano et al., 2016, pp. 968–969). Techniques employed include user journey mapping, user diaries, and user shadowing (Design Council, 2015).

Define

In this phase, insights and outputs from the previous phase are developed into actionable steps (Design Council, 2015). For illustration, previous research can inform the creation of Personas, which help stakeholders articulate and understand users' needs (Pruitt & Grudin, 2003, p. 10). For an arcade museum, a persona such as a schoolchild visitor—with specific traits and motivations that shape their interaction with technology—might be developed.

Additional outputs of this phase may include developing design briefs and facilitating brainstorming sessions (Design Council, 2015).

Develop

This phase addresses the initial implementation of the technology, utilising prototypes to evaluate design feasibility (Lim et al., 2008, p. 7). For example, a paper sketch of a phone integrated with AR may be devised to analyse how a schoolchild would interact with the system.

Deliver

In this phase, results from prototype testing are consolidated and finalised through further evaluation (Design Council, 2015). To better align interactive technology with user needs, scenarios—narratives that detail activities and interactions—are used (Carroll, 2000, p. 44). For instance, at the arcade museum, a scenario may describe a schoolchild using an interactive digital device.

AI Policy

Grammarly was used for a sanity check to catch any glaring spelling or grammar mistakes.

5. References

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