

# Capstone

The effect of forced video ads in videogames

# Introduction

## Research Questions

- How often can forced video ads be shown in a video game before this becomes interruptive to the player?
  - Which do players prefer: longer ads spaced further apart, or shorter ads with shorter intervals?
  - And how does forced video ads affect the overall gameplay experience?
- 
- Initially: Wave-based & Level-based prototypes
  - Chosen Ads:
    - Old norwegian ads
    - Superbowl ads
      - Why?
      - Between 30-80s
      - Funny



So our research questions are:

- How often can forced video ads be shown in a video game before this becomes interruptive to the player?
- Which do players prefer: longer ads spaced further apart, or shorter ads with shorter intervals?
- And how does forced video ads affect the overall gameplay experience?

Initially we wanted a wave based and a level based prototype, but we disregarded the latter, because we wanted to see the effects of interruptive ads between waves instead.

For the ads, we chose to get some old commercials, both norwegian and superbowl ads. The reason that we chose these ads, is because they're between 30-80 seconds long, meaning that we had enough time for the skip function, and so that it wouldn't make the game file too large. We also chose funny commercials, as we wanted to see if that could make the participants watch them longer.

## Related Work

Lewis and Porter, 2013.

Markus Hirsimäki, master's thesis, 2021 - Ad frequency and intrusiveness.

"After two weeks an average mobile game has lost approximately 80 percent of its users from the cohort day" (Sorvari, 2018, p.21.).

No studies on interruptive forced video ads.

How would this impact a pc game if it had the same type of ads?



Lewis & Porter did a study where they checked the effects of ads that didn't fit within the game world. The results were that the players that saw these incongruent ads, reported the in-game ads as annoying or obtrusive. - We were curious to see if our study would yield a similar response since we have the same type of ads.

Markus Hirsimäki wrote a master's thesis in 2021 about ad frequency and intrusiveness. The results showed that the ads didn't have a significant effect on player engagement, and that the amount of ads could be increased if they were rewarded. In addition, if the ads were positioned between content, the participants felt an increased intrusiveness of the ads. In his study he used interstitial and banner ads. Interstitial mean that the ads are positioned in natural transition points in a game. Since we're using forced video ads that are positioned within the gameplay, we believed our results would be different.

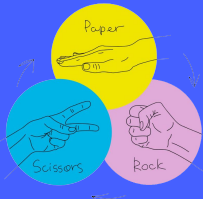
Mobile games are usually the games that contain ads, and Sorvari said that "After two weeks an average mobile game has lost approximately 80% of its user from the cohort day".

We couldn't find any studies that looked into interruptive forced video ads - A lot of games on mobile have these forced ads, and they appear to frequently. This might be the reason why mobile games lose most of their players within the first two weeks. - How would this impact a pc game if it had the same type of ads.

## Description of the Project

Genre: - Tower Defense

MVP:



- 5x enemies & towers

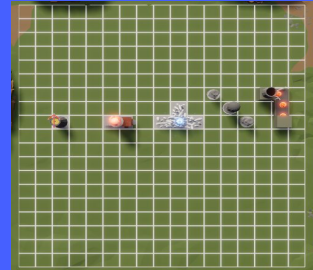
- Rock, Paper, Scissor

- Ad system

- Tetris shapes

- Grid based placement

- Money System

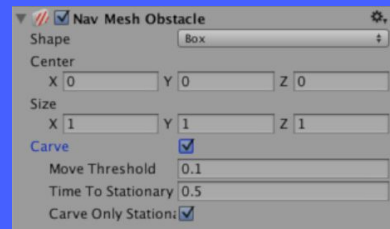


AI movement - Nav-Mesh:

- Quick, Easy, Free

- Nav-Mesh Obstacle

- Rebaked during runtime



With our research questions in mind, we decided that a tower defense game would be the best fit. So we set out to make one.

Our Minimal viable product consisted of having: five different enemies, and five different towers.

These have a “Rock, Paper, Scissor” system where some enemies can only be damaged from the correct corresponding tower.

We needed an Ad system, that forces the player to watch an ad, at set points during the gameplay.

The towers would have different “Tetris” shapes to make the gameplay more challenging and fun.

They would also use a Grid based placement system that helps the player position the towers, so that they can create the longest possible path for the enemies.

And lastly, a Money system so that players can buy new towers to defend their base. The player gets money from damaging enemies. Standard tower defense stuff.

For the Ai’s movement, we decided to use unitys Nav-Mesh System. At the start of production this seemed like a good choice since its Quick, Easy and Free to set-up.

A nav-mesh obstacle, is a component that you can attach to a gameobject. together with the “Carve” function, this will cut a hole in the Nav-mesh and re-bake it during runtime. This stops the enemies to avoid colliding with the towers, but it’s also very

performance heavy on the PC when placing a tower.

In the earlier part of the game, the player won't notice anything. But when the amount of towers and enemies gradually increases. This causes a noticeable "Freeze" on the enemies movement. It isn't gamebraking, since the towers still can attack the enemies in their frozen state. But it somewhat ruins the gameplay experience.

## Description of the Project

### Art style:

- Cartoony
- Magical Medieval
- Low Poly

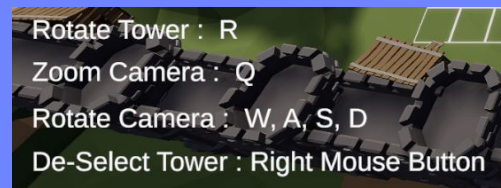
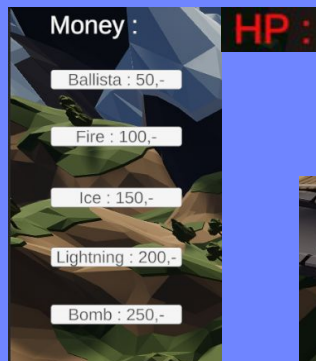


### UI:

- Not important

### Audio:

- Not important



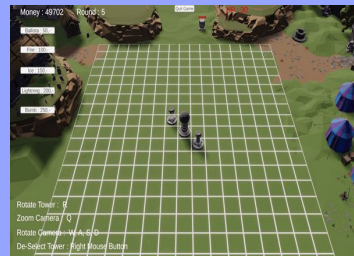
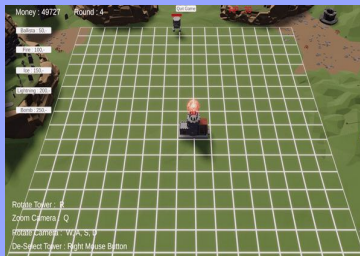
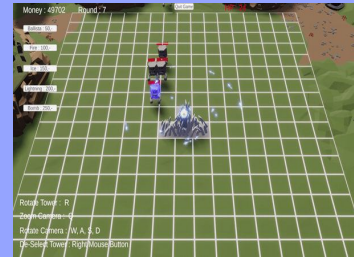
We decided that the artstyle would have a cartoony look set in a magical medieval time. and all the models would be lowpoly.

The UI was not vital for our research, so we didn't spend much time on it. We made it as simple as possible, just enough so the players got the visual information that they needed.

This was the same case for the Audio. The only thing we implemented was a simple music track that would play, and loop during runtime.

## The Finished Product

Managed all requirements from MVP



To make the game more fun, we implemented different mechanics, attacks, and visual effects for all towers.

We don't need to go in-dept of their mechanic, but as you see on the different videos, they have their own attack patterns and effects.

by making the game more "fun". We believed it would increase the feeling of intrusiveness of the ads, that gets show during gameplay.

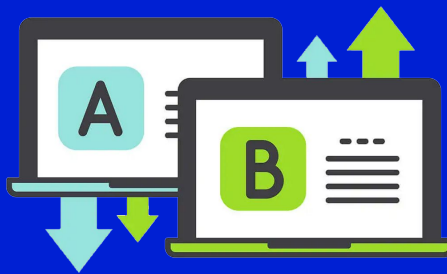
An example could be: when u were watching TV as a kid, and your mom or dad told you it's bedtime. You get taken away your sense of fun, and have to do something you don't want to. grrrr

And speak of the devil: Have you hear about our sponsor RAID SHADOW LEGENDS?!

no i'm kidding, but that feeling of "Wtf why is there ads here?!" is what we're trying to measure

## Ad frequency - What's preferred

- Difference between A-B test:
  - A-Test: Ad after every 2nd wave, skippable after 5 seconds
  - B-Test: Ad after every 10th wave, skippable after 25 seconds
    - Total required watchtime is the same



We created two different prototypes, they have the same gameplay, but one would show an ad after every 2nd wave, but the player could press the skip button after 5 seconds;

The other one showed an ad after every 10th wave, where it was skippable after 25 seconds.

This would make it so that after 10 waves, they would have watched a minimum of 25 seconds of ads, no matter what prototype they were playing.

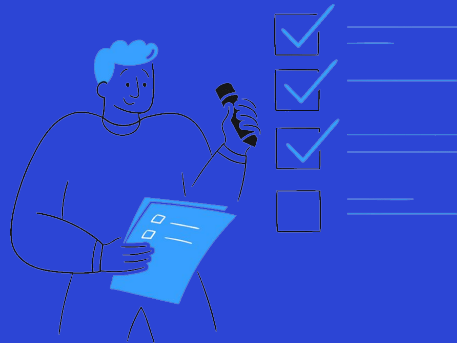


## Survey

### Reddit & LinkedIn

### Local Study

- Some questions from the survey:
  - How did the ads affect your overall gameplay experience?
  - How would they pace out the ads?
  - Preferred gaming system, and version (A-B Test)
- Removal of two responses (trolls)
  - They hadn't played the game.
  - Validation question:
    - "What did you think of the boss-fight?"



We started finding reddit forums that allowed us to post our survey, and we found about 5-6 different ones. After a couple of days, we also posted it on our LinkedIn profiles. But it wasn't getting the traction that we wanted, so we ended up doing a local study as well; as we did have this as a backup plan from the beginning. The local study yielded 19 participants while we only managed to get 10 participants from the online study.

Some of the questions from the survey was:

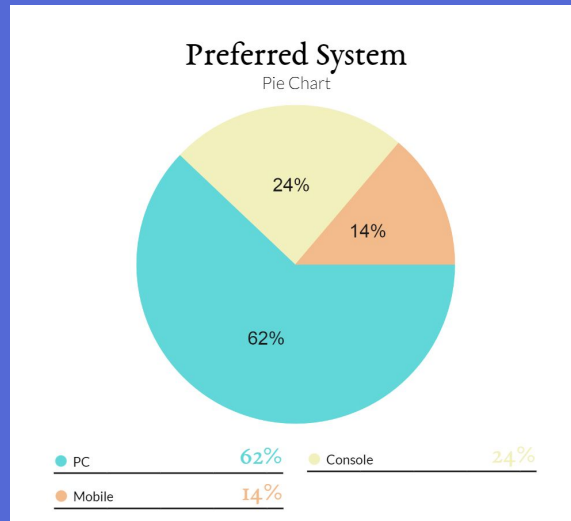
- How did the ads affect your overall gameplay experience?
- If they were a game developer depending on ad revenue, how would they pace out the ads? This was because we wanted to get some diverse insight into how people would prefer it.
- We also asked about what their main gaming system was, and which of the two tests they preferred.

After the two first survey responses from the online forums, we noticed from the analytics on the itch.io webpage, that they hadn't downloaded and played the game, so we decided to remove these two responses.

Because of this we added a validation question on the survey asking "What did you think about the boss-fight?" - We didn't have a boss-fight in our game, and we could use this question to root out any survey responses that hadn't played

the game.

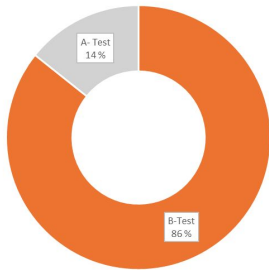
## Findings



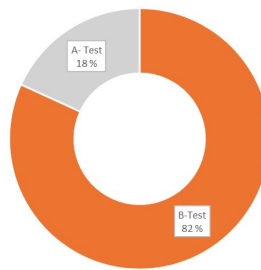
As you can see here, the majority of players played mainly on PC. This was predicted as we released this prototype on PC. Had we released it on mobile, we would most likely had mostly mobile players.

## Findings

B-Test accounts for the majority of 'Which version did you prefer?' for Females.

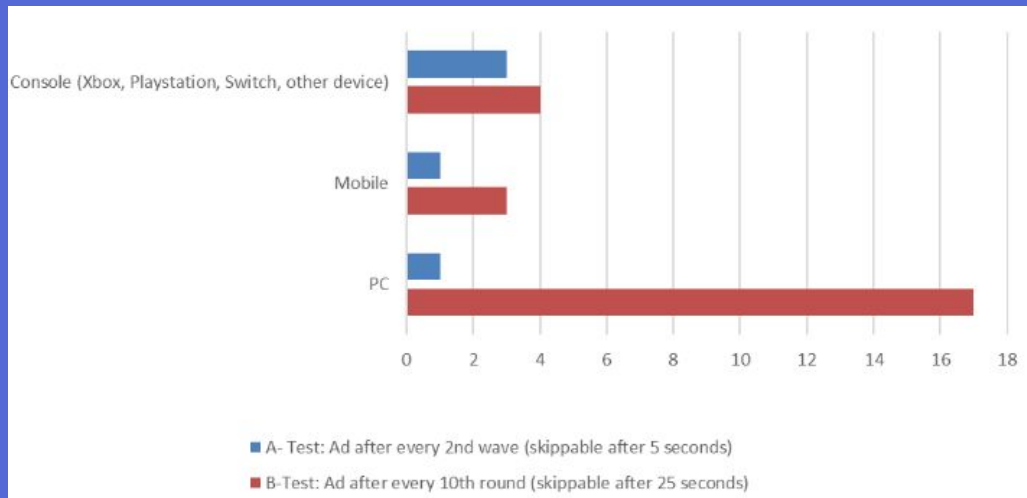


B-Test accounts for the majority of 'Which version did you prefer?' for Males.



When it came to which test they preferred, the B-Test, with long ads, was the majorities favourite of the two. This was also the case between male and female participants....and on the different systems.

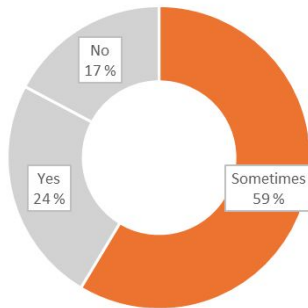
## Findings



We predicted that mobile players would be more accepting towards frequent ads, but no matter the system of choice; they all had the same negativity towards ads.

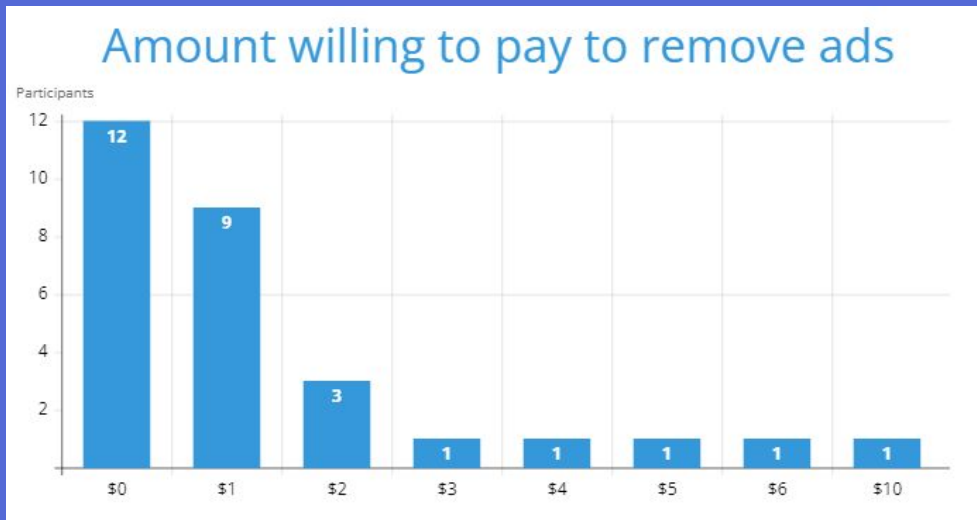
## Findings

**Sometimes** accounts for the majority of 'If you got rewarded ingame currency from watching the full ad, would you still press the skip button?'.



Although, when asked if they would still skip the ad, if watching it till the end meant they got in-game rewards, the majority actually said that they would sometimes watch the full ad.

## Findings



We also asked them if they would pay to remove ads from a game they liked, and most of them were, even though most of them said only 1-2 american dollars.

## Future Research

### Forced vs Optional Ads

- A game that keeps people engaged
- Track engagement over a longer period of time
- A-B test:
  - One with forced Ads, no rewards
  - One with optional ads, with rewards
    - Check the amount of ads watched on both.

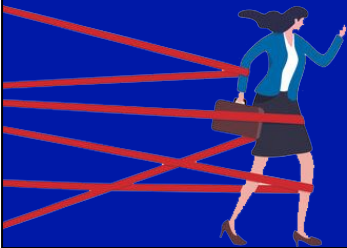


We'd recommend future research into the different impact of Forced vs Optional Ads. If you had a game that can keep people engaged over a longer period of time; you could create an A-B test: one with forced ads, and no rewards; and one with optional ads, with rewards. You could then check to see how big of a difference there was with the total amount of ads watched.



## Limitations

- Small sample group
- Optional ad with reward system
- Used A\* algorithm instead of Nav-Mesh for better performance
- Better interval system in our prototype
- Be careful when using Nav-Mesh carving



The main limitations of our research was that our sample group was very small, we should've had a optional ad with reward system, and used the A\* algorithm instead of Nav-Mesh for better performance.

We should also have had a better interval system for our ads. For the A-Test, we had ads between every 2nd wave, but in the early game the waves are a lot shorter than later on, making it very inconsistent throughout the play session.

And be careful when using Nav-Mesh carving.

## Conclusion

- How often can forced video ads be shown in a video game before this becomes interruptive for the player?
- Which do players prefer: Longer ads spaced further apart, or shorter ads with shorter intervals?
- And how does forced video ads affect the overall gameplay experience?
- A better solution could be:
  - Optional ads, with rewards
  - Premium currency system
  - Keep ads outside of the gameplay to not interrupt the players



So to answer our two first research questions, what we found was that most participants preferred longer ads with a bigger interval between them. And for our last question, the overall effect ads had on gameplay experience was negative.

From our limiting findings, what we believe might be a better solution is to have: Optional ads, with rewards; a premium currency system, and keep the ads outside of the gameplay to not interrupt the players.

*Thanks for listening*

