

FROM INCEPTION TO FINAL DELIVERY:
THE MAKING OF

THE
WALKING DEAD
SAINTS & SINNERS

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SKYDANCE
INTERACTIVE





TAKEAWAYS

- The Big Story – Blow by Blow
- Development of Core VR Mechanics
- The Tech challenge of Console and Mobile VR

WHO IS SKYDANCE[®] INTERACTIVE

- Formed in April 2016 from The Workshop and Skydance Media.
- Skydance Media – a next-gen Film and Television Company, expanding to interactive.
- The Workshop – Independent AAA Console Dev. UnrealEngine Pros.
- VR was the Nexus. "The Next Big Thing"

FIVE YEAR MISSION: BUILD THE BEST VR STUDIO IN THE WORLD.



INCEPTION

NOVEMBER 2016:

(Half-way thru our first VR game: Archangel)

"Are you scheduled to be in our 3:00PM with Skybound tomorrow? You should come."

-Sisgold/Akemann email 11/15/2016

JANUARY 2017:

The Pitch - "Live The Walking Dead"

Choice & Consequence Story at the Center

MARCH 2017:

The Deal is Made

MARCH - JULY 2017:

World and Story

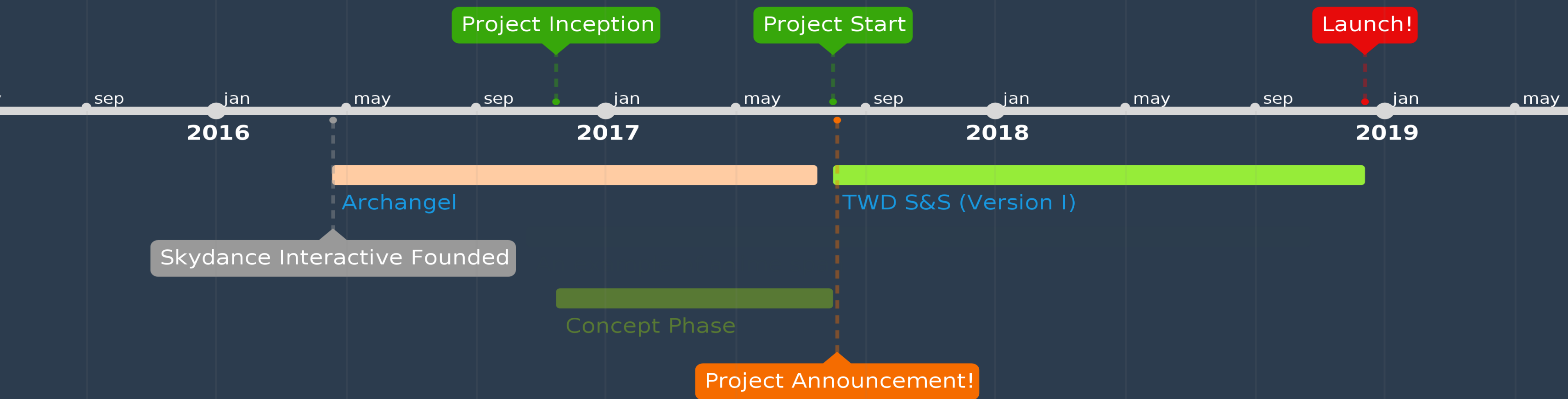
AUGUST 2017:

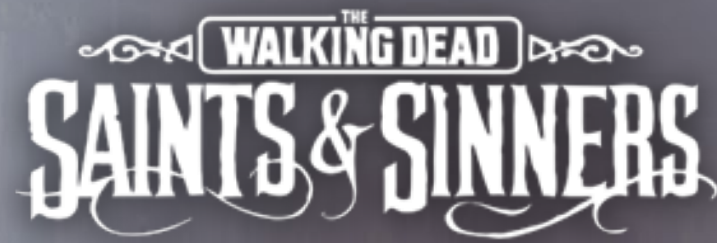
Archangel is done, we begin for real - Target Date December 2018

RETROSPECTIVE

World o' Hurt a Comin'...But the core would hold.


THE ORIGINAL TIMELINE





MAKING A WALKING SIMULATOR

- The original plan was a more narrative focused experience
- Influences: Firewatch, OXENFREE, Telltale TWD series
- The game would rely heavily on branching dialogue with NPCs
- The story of the game would branch heavily, leading to different endings

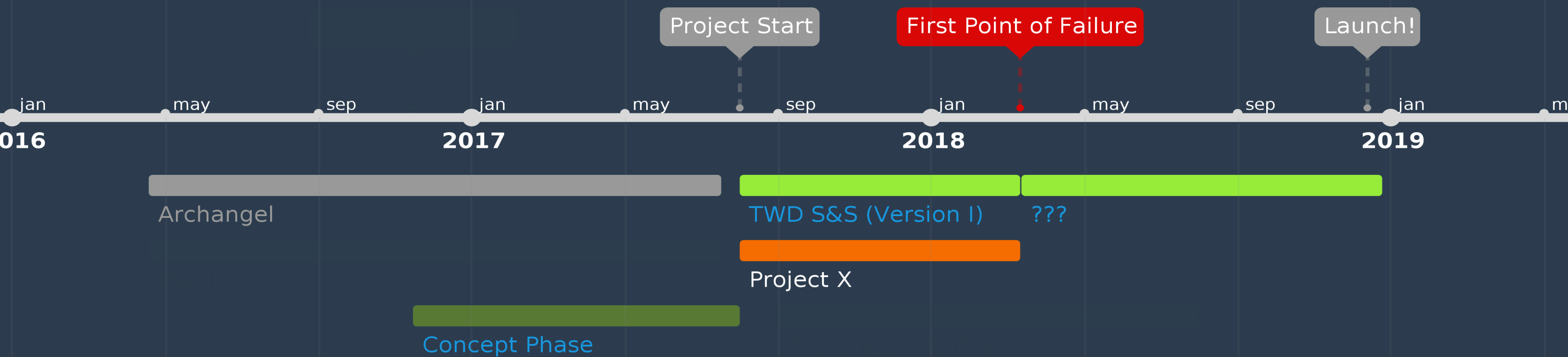


THE WALKING DEAD SAINTS & SINNERS

OOPS, NVM

- After about 9 months, our POC was just not good.
- It didn't lean into our core strengths as a studio – gameplay
- It was something we had never done as a studio
- We felt it wasn't that interesting in VR

THE FIRST INFLECTION POINT





PROJECT X

- While Saints & Sinners was in development, we were also prototyping another VR game
- This was more gameplay focused, with a heavier reliance on physical mechanics
- This project had not been announced



REDESIGNING THE GAME WITH A 50-PERSON TEAM

- We decided to combine both teams, using Project X codebase as the foundation for what would become Saints & Sinners
- We had a 50-person team, no plan, and we were supposed to ship in five months
- Also, we were given a mandate to add multiplayer
- We made the decision to make a “good game” instead of one that would fit in that timeline
- We took 2-3 months to redesign the game to be more gameplay focused
- Takeaway – When you're in an impossible situation, change the conversation

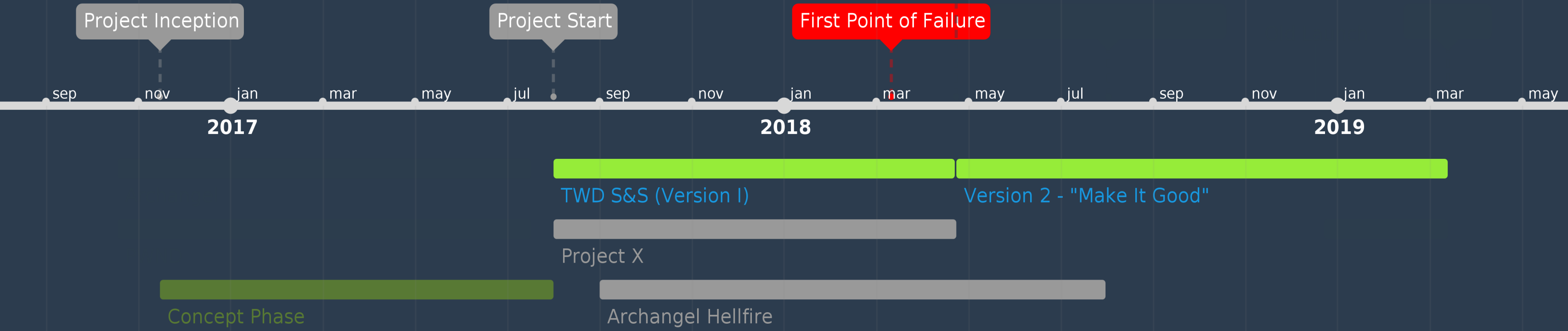


PULLING IT TOGETHER

- Narrowing our focus put more studio strength behind the effort
- July 2018 – Archangel Hellfire wraps, team folds in – adding manpower and buys a bit more time
- Over the next 6 months a new game would emerge



THE GREAT REBOOT



VR MECHANICS



SIMULATING WEIGHT AND RESISTANCE IN VR

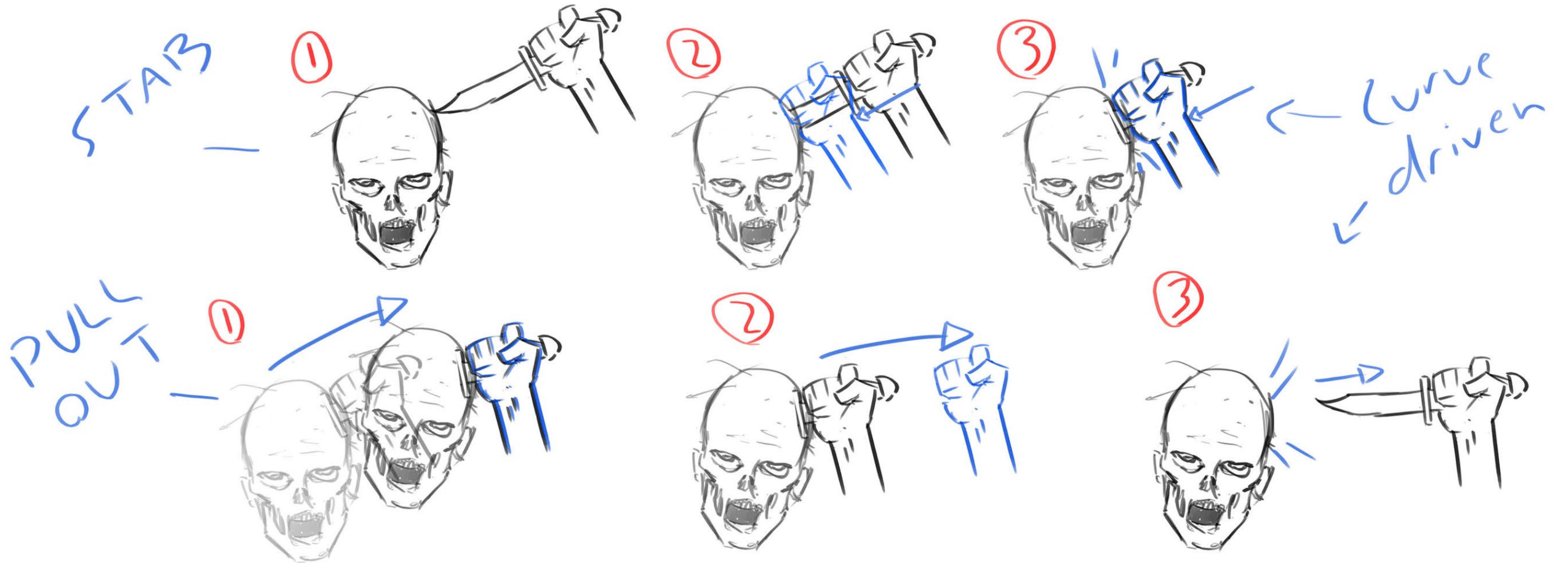
- The key limitation of the hardware we needed to overcome – no physical resistance or weight of virtual objects
- VR best practice at the time was to maintain the 1 to 1 relationship with hero character as much as possible



OUR SOLUTION

- Break the 1 to 1 connection with the VR hands
- Use the visual distance between the VR hands and player hands to simulate weight and physical resistance
- "Visual Haptics"
- Recognize and work with the limitations of the hardware.
- VR literalness is a siren song - still an abstraction between player and game.

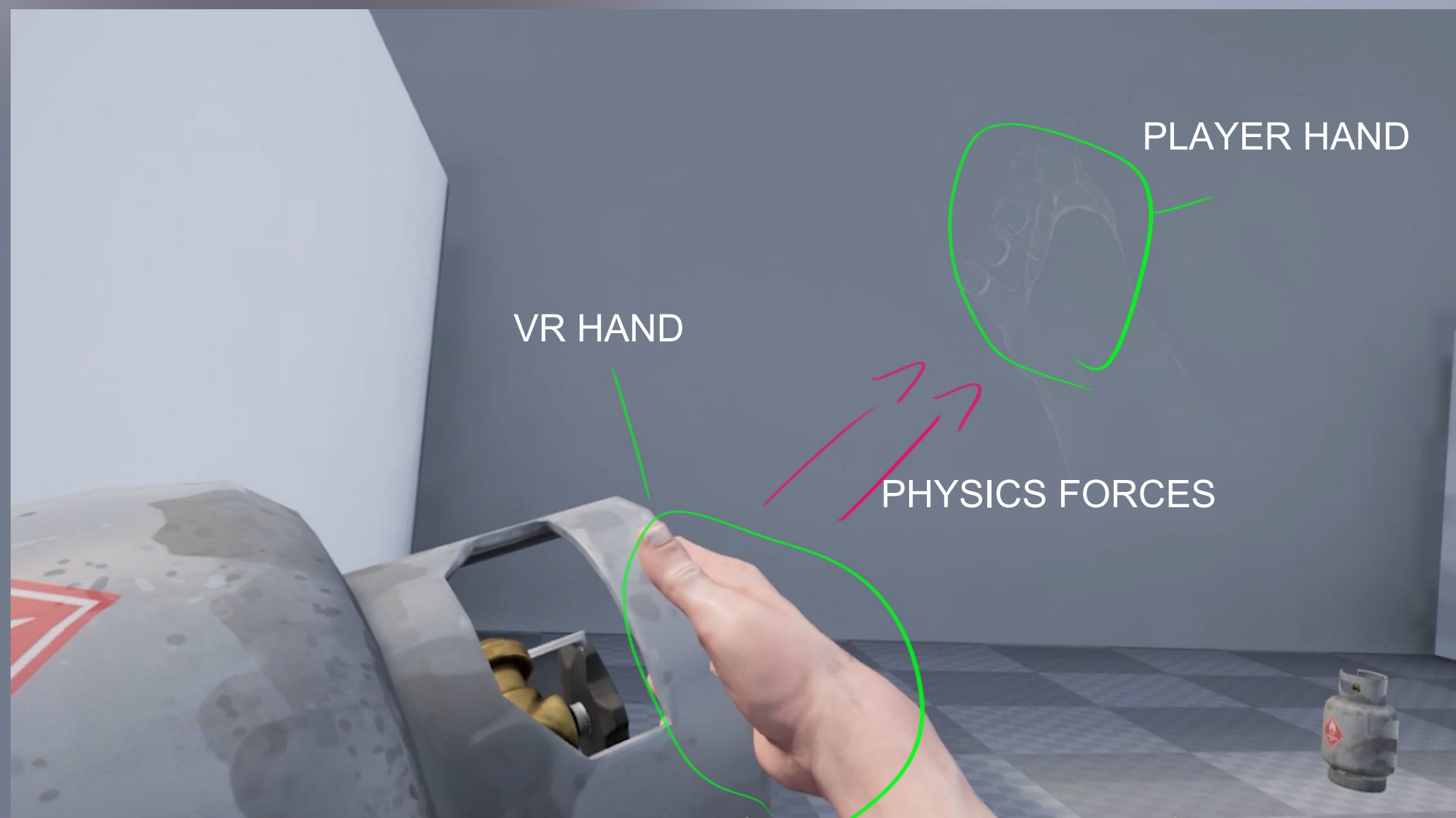
GSS (GLOBAL STABBING SYSTEM)





“PHYSICS”

- We use a variety of methods to simulate weight and resistance, but certainly physics play a major role
- Physical forces are always trying to get to the position of the player's hands
- Held objects fight the physical forces trying to get to the player's hands, causing the hero arms to lag behind





"MAKE IT GOOD, MAKE IT MULTIPLAYER"

- An added complexity in redesigning the game is that we were asked to add a multiplayer component
- This forced us to design the game in a more systematic way, rather than rely on hand scripted moments
- Committed to radical player freedom, while retaining out narrative core. Leading to...

A STORY WHERE YOU CAN KILL ANYONE

THE WALKING DEAD
SAINTS & SINNERS

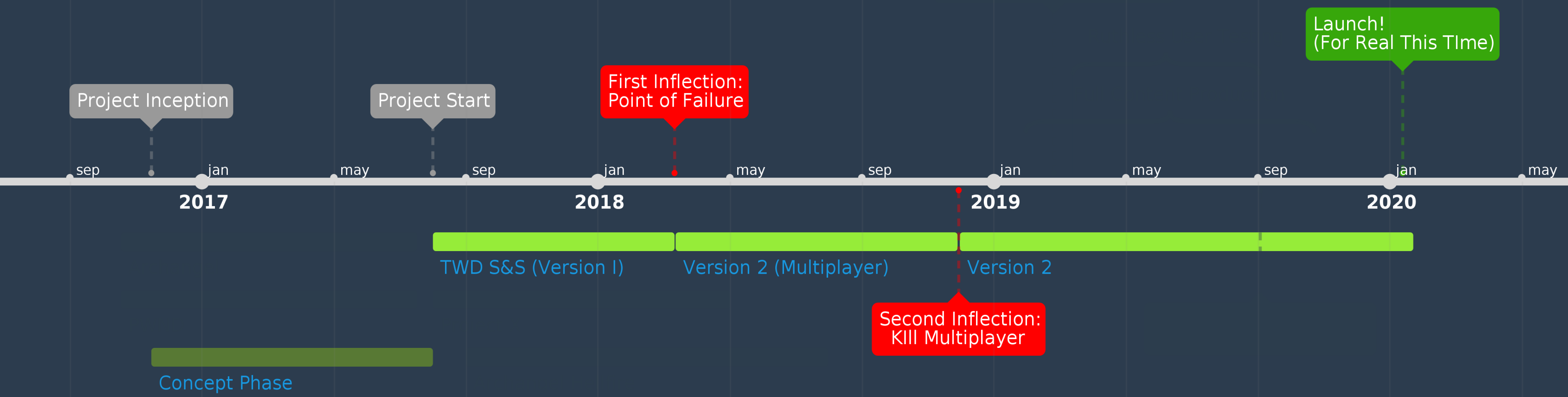
- Maintain player agency
- Radio as a plot device – you can't kill the radio
- Derive genesis of this concept from multiplayer
- Non – modal conversations
- Systematic AI – General perception/stealth model. Non player centric. Human v Player, Human v Human, Walkers v Everybody. Staged encounters give way to systematic behavior.
- Game structure – local hub, loading into a multiplayer session



OR NOT...

- Despite working with no firm deadline, we knew 2019 was do or die for us.
- After 8 months or so, realized Multiplayer was too much
- We didn't have time for the feature and needed to focus our efforts
- But hey, it's good now!

THE ROAD TO LAUNCH



A promotional image for the video game 'The Walking Dead: Saints & Sinners'. The background is a faded, blue-tinted screenshot of the game, showing several zombies in a city street. In the center, there is a large white semi-truck. The game's title, 'THE WALKING DEAD SAINTS & SINNERS', is displayed in a stylized font. Overlaid on the image is the text 'AND WE SAW THAT IT WAS GOOD...' in a large, white, sans-serif font, with a horizontal line underneath it.

THE WALKING DEAD
SAINTS & SINNERS

AND WE SAW THAT IT WAS GOOD...



GOING WIDE

FALL 2019

- Game is solid. Time to take it everywhere. PSVR then Quest.

PSVR

- Wanted Sim Ship
- No way to do it simultaneously, brought on outside team.

QUEST

- No mobile experience at the studio
- Hired another outside team for eval, "It can be done!"
 - But didn't start the project - too much at once
 - * *Lock in deal with Oculus for Quest 2 launch*

PRODUCT LAUNCH = NO SLIPS POSSIBLE

THE NUMBERS:



PLATFORMS:	Oculus Rift Rec Spec PC	Playstation VR	Quest	Quest 2
DISPLAY RESOLUTION (PER EYE)	1080x1200	960 x 1080	1440 x 1600	???
TARGET FPS	90fps 11ms	60fps 16.66ms	72fps 13.8ms	???
GPU	GTX970 (4 TFL)	~Radeon 7850 (1.8 TFL)	Adreno 540 (567 GFL)	???
AVAILABLE CPUs	4x3.3GHz	6 * 1.6Ghz	Kryo 280 3*2.45GHz	???
AVAILABLE MEMORY	∞ (6GB)	4.5GB	2.3GB	???

THE NUMBERS, SUMMARIZED:

PLATFORMS:	Oculus Min Spec PC	Playstation VR	Quest	Quest 2
GPU OUTPUT	100%	66% (Actually Better)	12%	Better
CPU OUTPUT	100%	70% (Actually Worse)	55%	Better
MEMORY	100%	75%	40%	Better



BACK OF THE NAPKIN: WHY IT WAS GOING TO WORK.

PC STARTING POINT

1000 Draw Calls, 2M
Prims per scene

Limited View Distances

Only needs 8-10
active characters at a time

Single Player

PSVR

PSVR Gfx throughput
about 2/3 PC

Target 700 Draw
Calls, 1.5M Prims per
Scene

CPUs are weak, but
there are more

RAM solves itself

QUEST

Target of 200
Draw Calls, 200K
Prims per scene

Huge challenge, but
clean core design
made it possible

CPUs had plenty of
power

RAM solves itself





THE PSVR CRUNCH

DECEMBER 2019

External team since October
– not gonna make it

Plan to throw the whole team
at it in February Post Launch

Target: April 2021

2 ½ Months to ship

WHAT IT TOOK

GPU Assumptions were right

RAM was a challenge, but
made it on elbow grease

CPU was brutal –
redistributing computation
across cores

6+ Engineers, 2 ½ Months

THE PANDEMIC

6 Weeks from Ship

Immediately pivot to
remote ops

Missed ship date by only
5 days, shipped to a wide
open field



THE RACE FOR QUEST

Get the BIGGEST game in VR onto the SMALLEST platform in VR in 5 MONTHS

MARSHALLED THE ART TEAM FOR A MASSIVE DATA CRUSH

Brute force solution, but we knew it was going to work

Separate Quest Master levels, replace nearly all enviro asserts to lower Quest Versions

Reduce cosmetic detail

Double the Enviro team size with outsource partners at the end

Preserved a good level of detail in characters and weapons

BUT NEAR PERFECT PRESERVATION OF THE GAMEPLAY

Cut our biggest level in half

10 active character limit lowered to 8 characters max

Compensated with a sophisticated Dynamic AI Manager



NEAR DEATH EXPERIENCES



SOLUTION: GNARLY ENGINEERING



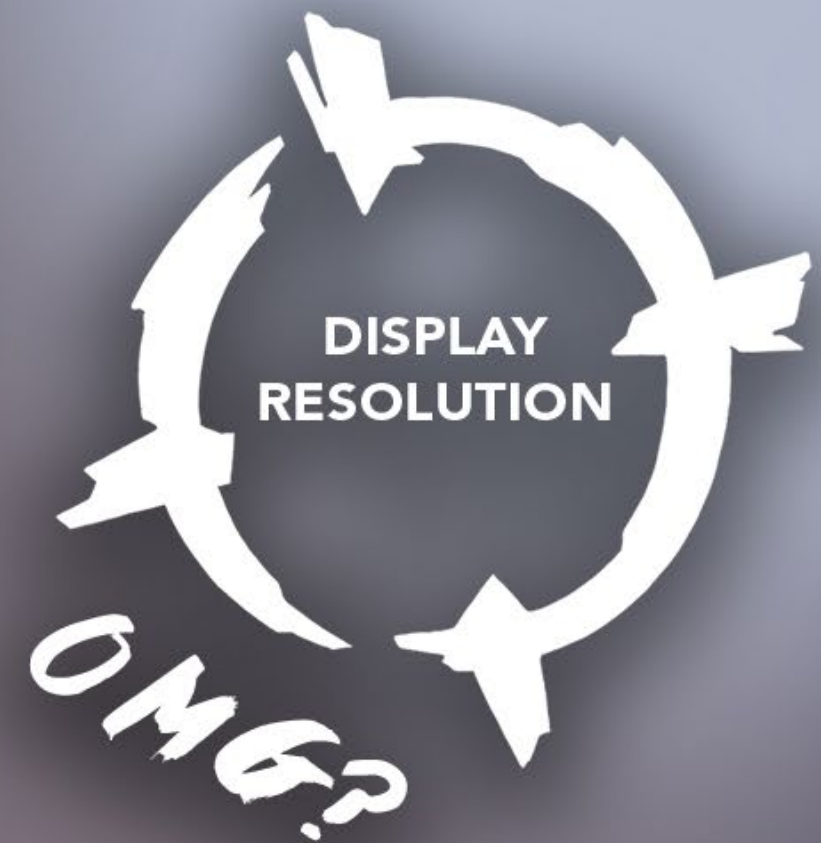
NEAR DEATH EXPERIENCES



SOLUTION: SOFTWARE OCCLUSION CULLING



NEAR DEATH EXPERIENCES



SOLUTION: MULTILAYER RENDERING



THE FINISH: QUEST 2 LAUNCH

- Quest 2 Plus up plan: Bring in set dressing from higher platforms.
- The Easy Wins: Better Resolution and More guys on screen
 - Final Hardware showed up about 6 weeks before launch
 - Only 20% of the extra RAM available, but it was enough

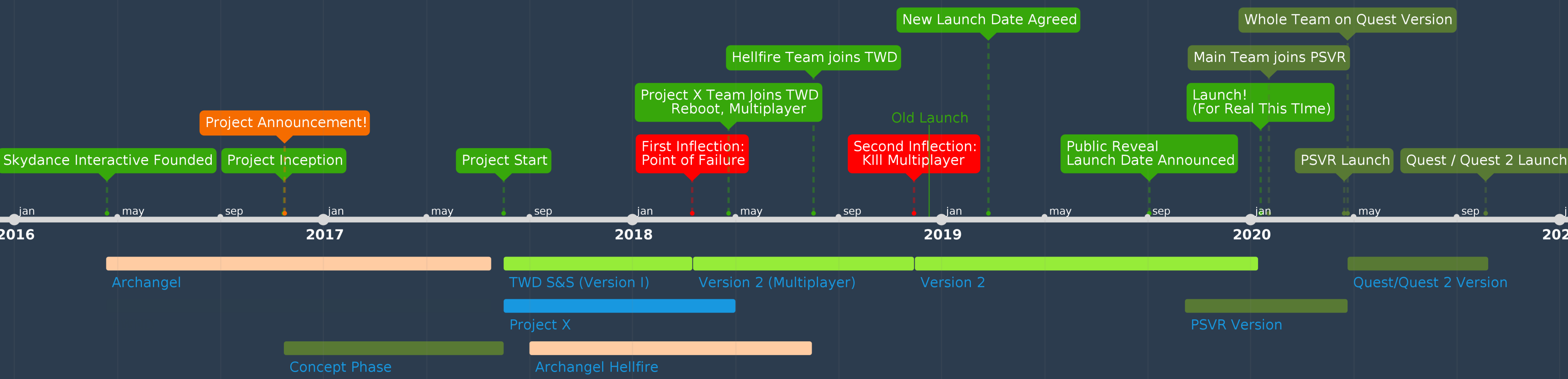


WE MADE IT!



VIRTUAL REALITY DEVELOPERS CONFERENCE | July 19-20, 2021 | #GDC21

THE FINAL TIMELINE





THANK YOU.