

GDC

March 21-25, 2022
San Francisco, CA

1000 Hours of Difficulty

How Destiny Builds Systemic Challenge

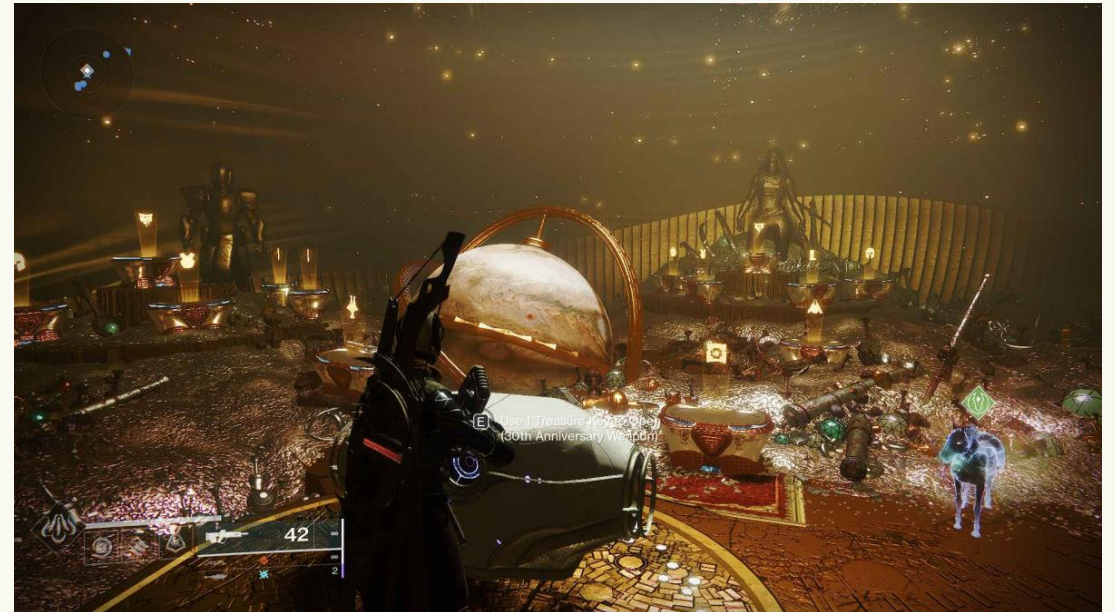
Alan Blaine, Principal Technical Designer @ Bungie

#GDC22



Variety is the Spice of Life

- Live Service Game
- Infinite Loot/Chase
- New High Quality PvE
 - High Time/\$\$\$
- Bespoke Transformation
 - Medium Time/\$\$\$
- Will players play it?



Challenge is the Spice of Life

- Players let you know.
- Players need aspiration
- 95% need achievable content
- Existing PvE
- + Common Transformation
- = Low Time/\$\$\$



Bespoke
Transformation

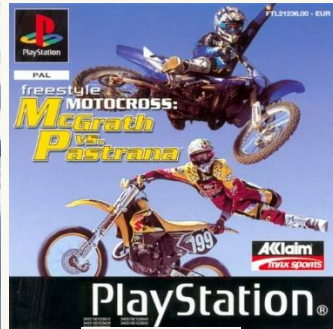


Common
Transformation

Who am I?

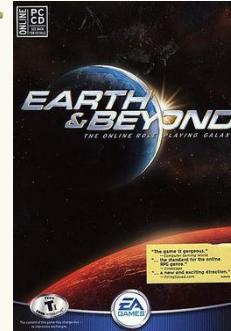


1999

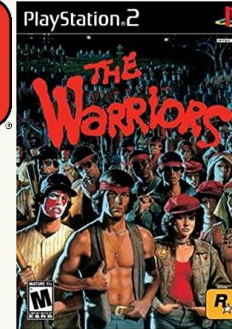


2000

Westwood
STUDIOS



2002



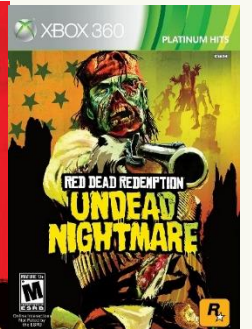
2005



2019



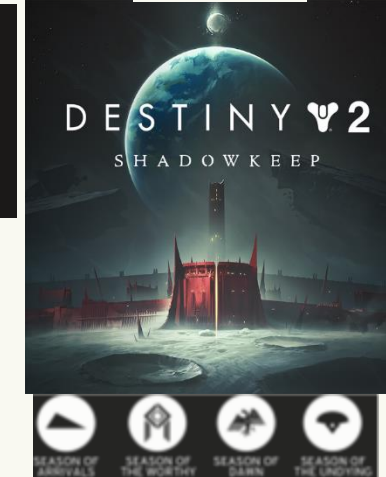
2010



2010

2013

2018



Why am I giving this talk?

- How my work on Destiny brought me here
- Frameworks and Rituals Lead
- Nightfall revamp
- Lost Sectors etc

Overview

- Destiny TL;DR
- 7 Difficulty Axes in Destiny
- Other Areas of interest
- Case Studies in Difficulty Development
- Tuning and Testing Difficult Content effectively

Destiny in 5 Minutes



What is Destiny?

- Shared World Looter Shooter
- Vanguard / Traveler
- Shoot Aliens!
- 3 Classes/4 Subclasses
- Class Abilities
- Optional Mods
- Power level



It's All About the Guns

- 3 slots
- Kinetic or 4 Elements
- Each weapon has:
 - Weapon specific stats
 - 4 randomized perks
 - stat upgrades
 - Mod Slot
- One Exotic Weapon
 - Unique and powerful perks
- Class agnostic
- Infusion



...and the Armor

- 5 slots
- Each piece has:
 - 6 randomized stats
 - 4-5 mod slots
 - Upgraded 10 times
- 1 exotic armor
 - Unique class-specific perk
- Class specific
- Infusion

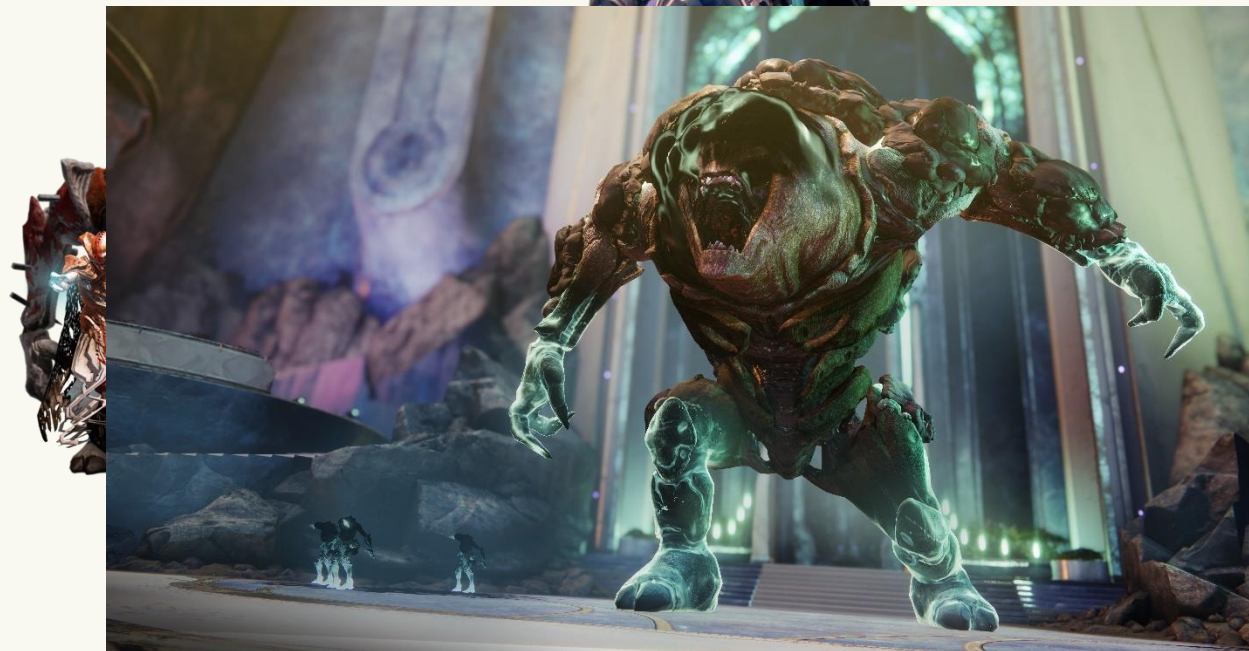




...and the Enemies

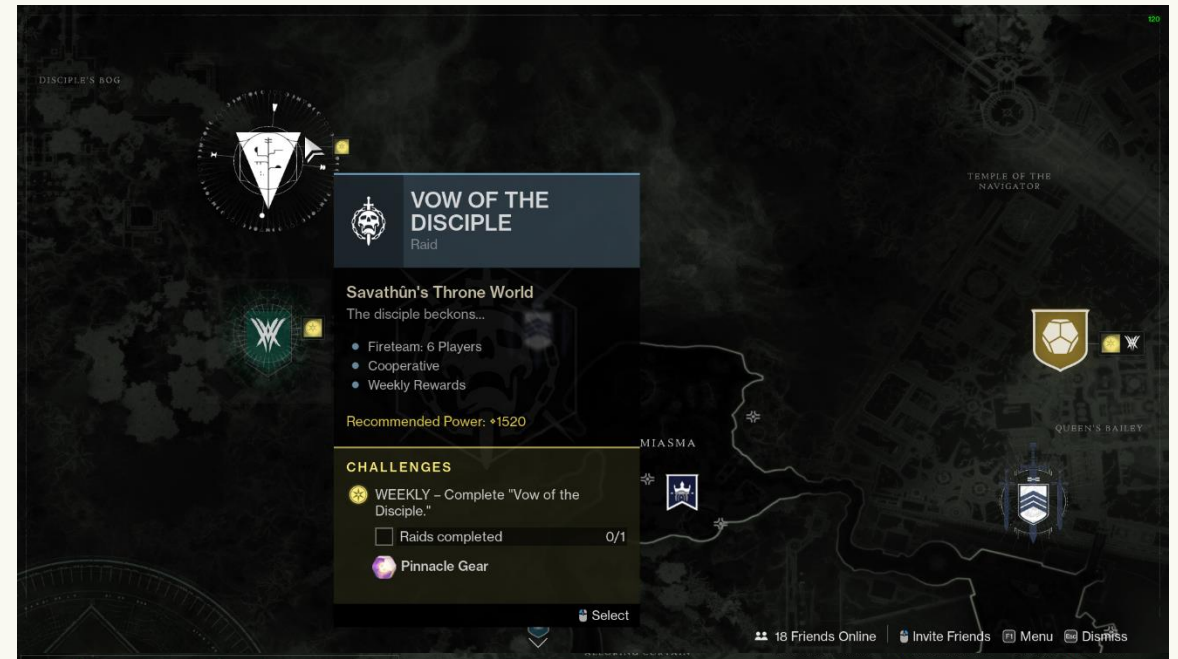


- 6 races with many classes each in 5 categories
- Race-based weapons/abilities
- 4 unit ranks
- Unique bosses!
- Regenerating shields
 - Matching weapon



...and the Activities

- Lost Sectors - Solo
- Strikes – 3p
- Dungeons – 3p
- Offensives – 6p
- Raids – 6p





What is a Difficulty Axis?

- Style of stressor
- Demonstrate mastery or change behavior for a reward
- 7 different styles in Destiny:
 - What are they?
 - Destiny usage
 - Player tools
 - Pitfalls

The 7 Axes of Destiny Difficulty



The Common Axe





Axe 1 – Time = Power

- Common in RPGs
- Easy to understand
- This can be:
 - Hard gate
 - Soft gate





Time = Power in Destiny

- Activity Level Delta = enemy damage in/out
 - We limit over-level
 - Bosses!
 - Max level goes up yearly, seasonally
 - **End-game content is offset**
 - **Contest Mode**



Time = Power Player Tools

- Power growth has 3 Phases and one bonus:
 - Soft Cap
 - Powerful Cap
 - Pinnacle Cap
 - Artifact





Time = Power Pitfalls

- Severe soft gate = tanky non-dangerous combat
- Severe hard gate = too grindy
- Player toxicity and gatekeeping

The 3 Uptime Axes





Axe 2 – Thumbskill

- Aiming, shooting, and movement
- Unique to Destiny and other Looter Shooters
- Core stress in PvP





Thumbskill in Destiny

- Tends to be more organic
- Core to Destiny Experience - Bespoke encounter design
- Options to further increase stress:
 - Aggression
 - Darkness
 - **Extinguish**
 - **Hard Time Limits**
 - Soft Time Limits
 - **Revive Limits**
 - **Timed Revive Limits**



Thumbskill Player Tools

- 'Git gud'?
- Low-thumbskill weapons/exotics
- Low-thumbskill classes





Thumbskill Pitfalls

- Hard to quantify!
- You are worse at your game than your top players
- Accessibility
- Mouse/keyboard != controller
- Above a certain level – just make other challenges easier



Axe 3 – Battlefield Awareness

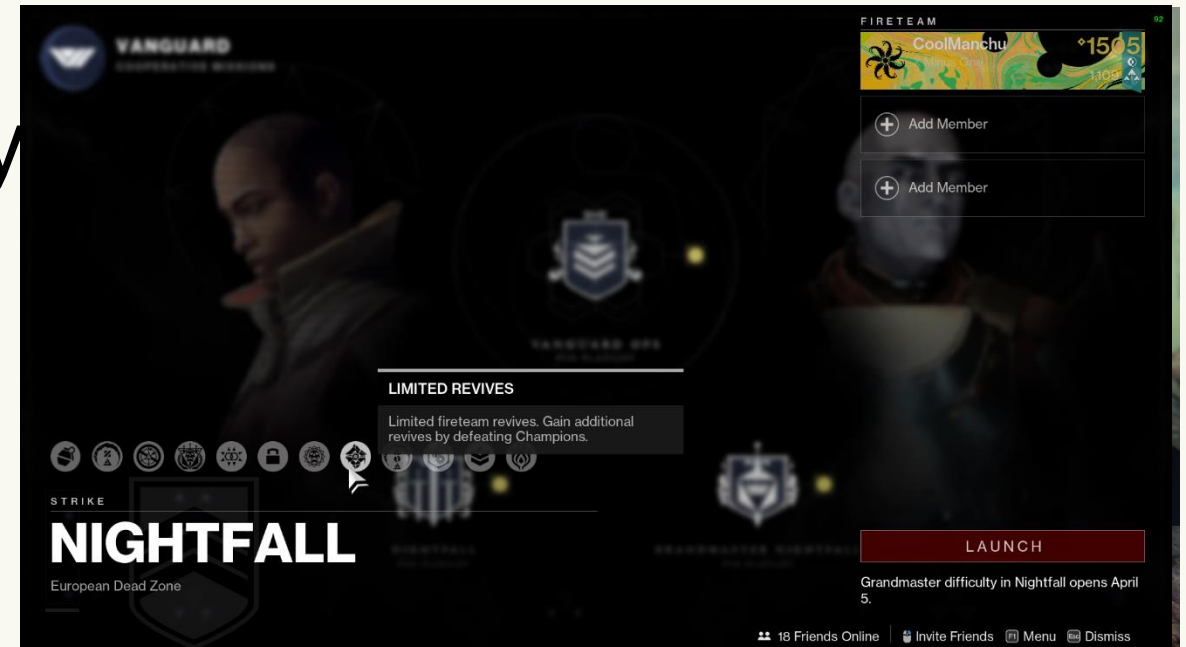
- “Don’t Stand in the Fire”
- Target Prioritization
- Combat + mechanics
- Chaos





Battlefield Awareness in Destiny

- Boss and unit abilities add danger areas
- Unit types push target prioritization
- **Unique mechanics**
- Modifiers change priority





Battlefield Awareness Player Tools

- Larger enemies!
- VFX/audio cues/buff icons/announcements
- Other players!
- Non-linear health meter



Battlefield Awareness Pitfalls

- Hard to teach during high action
- Can overcomplicate things
- Introduce new concepts slowly



Axe 4 –Communication

- Tell/listen to state changes during action
- Tied Battlefield Awareness
- Non-matchmade activities – or competitive PvP!



Communication in Destiny

- **Unique mechanics**
- **Modifiers to stress Communication/Battlefield Awareness**
- **Revive limits / no self-revive**



Communication Player Tools

- Mic preferred
- Innate player tools





Communication Pitfalls

- Non-obvious communication stress in matchmade activities
- Mic-required toxicity
 - Vocal gender presentation
 - Accents
 - Age
- Accessibility

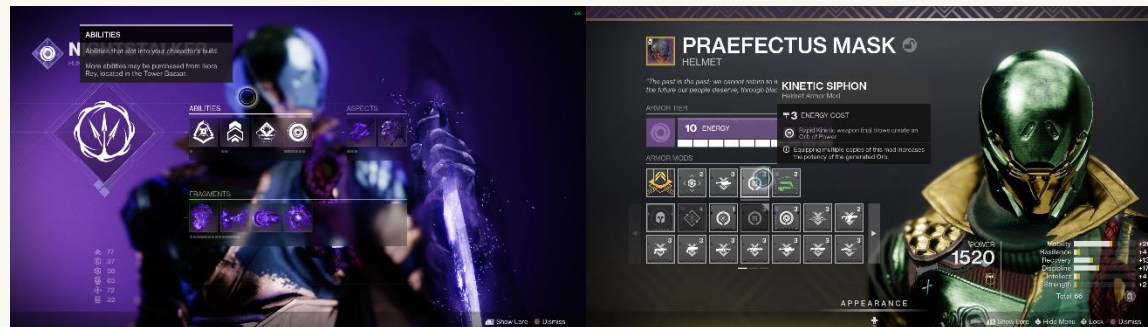
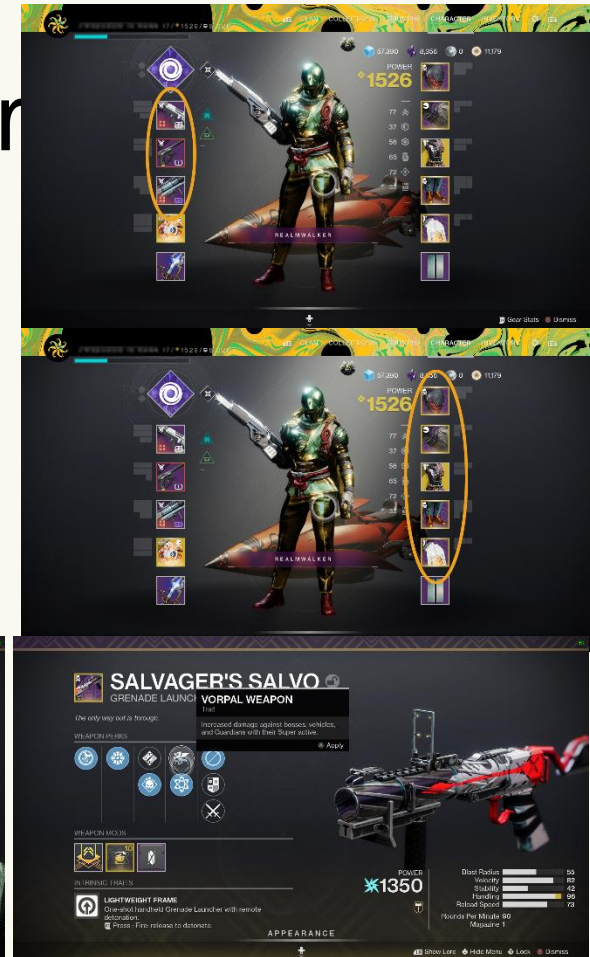
The 3 Downtime Axes





Axe 5 – Buildcrafting

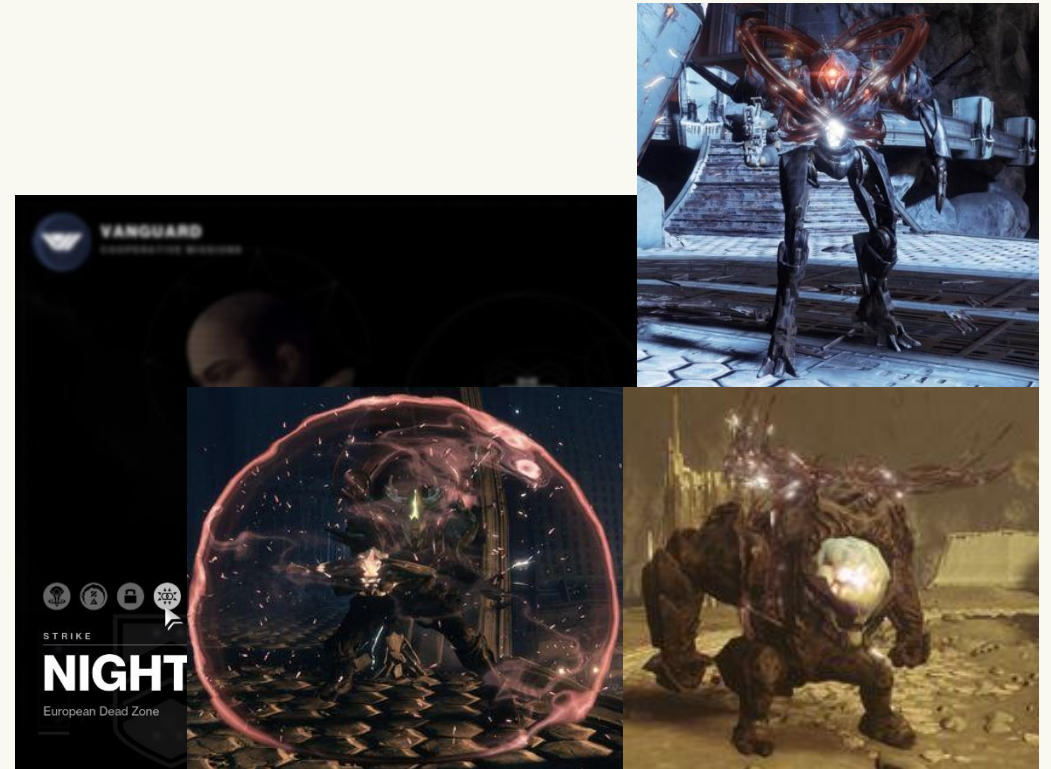
- Guns, armor / stats, abilities, and more
- Play effectively
- Systems, playstyle, and skillset





Buildcrafting in Destiny

- Match Game
- Locked Loadout
- Burns
- Bespoke encounters
- Champions





Buildcrafting

- Armor Mods:
 - Base
 - Seasonal Artifact
 - Combat Styles
- Armor Stats
- New Class/Ability System
- Gun w/ random perks
- 3rd party guides!





Buildcrafting Pitfalls

- Too much "mandatory" downtime
- Know your audience
- Make easy wins that are mostly optimal
- Big power deltas make it harder to tune



Axe 6 – Planning

- Strategic communication, research, and planning
- Group buildcrafting
- How to approach hard encounters
- Can include a little or a lot of out-of-game time
- Can also include significant amounts of in-game exploration



Planning in Destiny

- Bespoke mechanics in Raids and Dungeons
- Group activities with significant buildcrafting or battlefield awareness



Planning Player Tools

- Buildcrafting requirements at activity start
- Rally Banners





Planning Pitfalls

- Some players can't or don't want to spend the time or effort.
- May only be a hard restriction the first time
- Assumes similar levels of gear flexibility



Axe 7 – Social

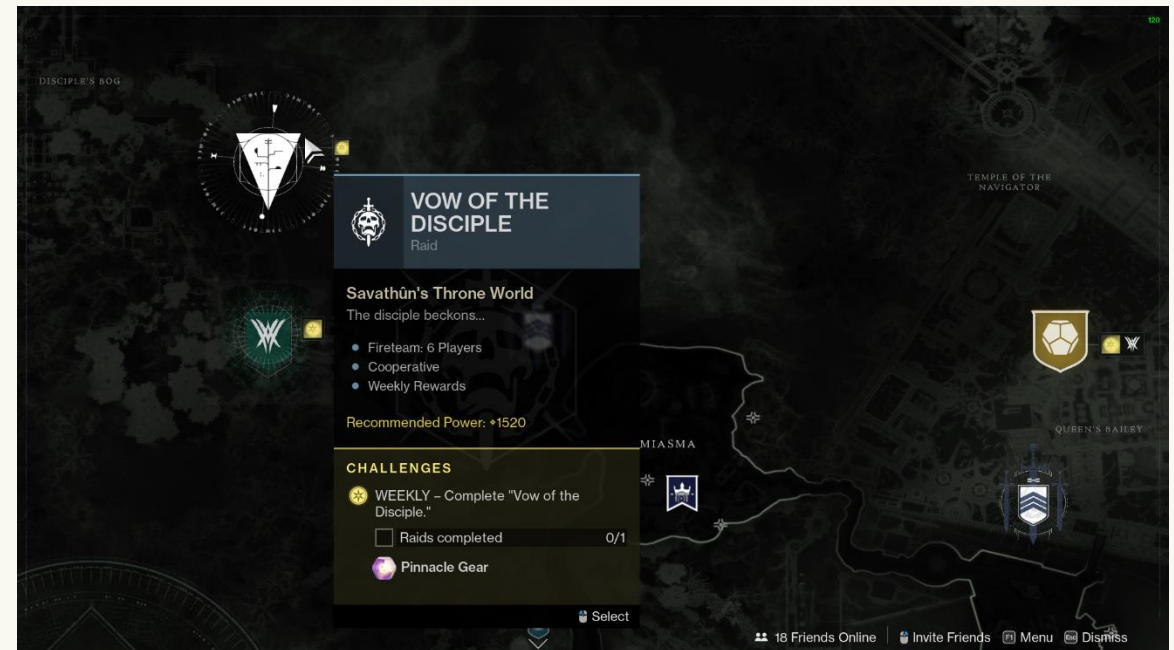
- Regular group or clan
- Good leader or follower
- Ability to find / make friends
- LFG





Social in Destiny






- Number of players allowed/required
- Matchmaking
- Complex fights





Social Player Tools

- Matchmaking
- Clans
- Crossplay
- App-based LFG
- Reddit/Forums/Discord

Server	Members	Platform?	Language	Main focus	Tagline
 Destiny 2 PC LFG	330,389	PC	English	PVE and PVP	Your one stop shop for all things LFG Related for Destiny 2!
 r/DestinyTheGame	96,865	All	English	PVE and PVP	Welcome to the official Destiny server for r/DestinyTheGame!
 Destiny 2 LFG	46,883	All	English	PVE and PVP	The Unofficial Destiny 2 LFG Discord for PC, PS4 and Xbox One players.
 D2 Sanctuary	17,597	PC	English	PVE and PVP	D2Sanctuary is a community designed for people who have disabilities and mental disorders or people who just want to play without any distractions.
 PattyCakes	9,226	PC	English	PVP	The #1 spot for Destiny 2 PvP improvement, game chats, and making new friends. We do weekly private match scrims each weekend open to players of all skill levels and have LFG channels for each platform.



Social Pitfalls

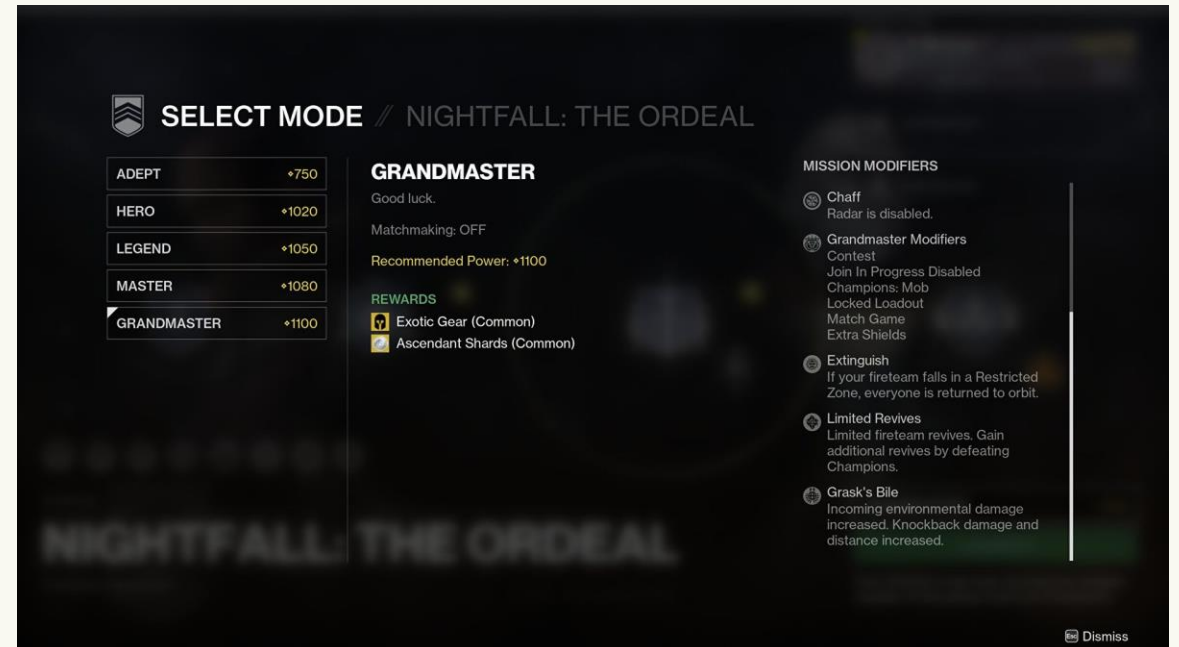
- Hard social restrictions limit size of audience/accessibility
- Size of group and expected leader/followers need to match

Other Areas of Interest



Hard and Soft Gates

- Power = Time progressive until it stops
- Most end-game activities should not have hard gates
- Trade one axis for another
- Let players feel clever
- A few hard gates is fine



Rewards

- Set up a positive feedback loop
- Unique-ish infinitely desirable currencies
- Systemic transform
- More / better drops
- One-time cosmetics



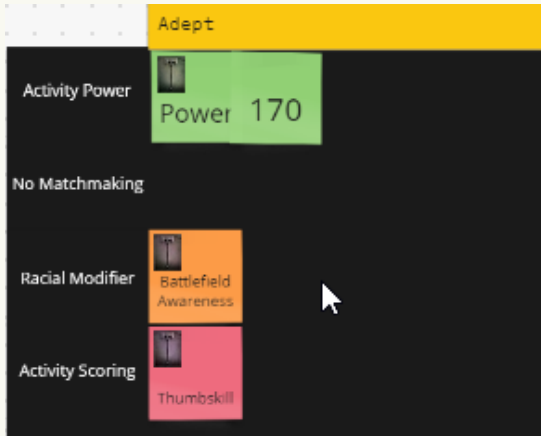
Case Studies








Case Study: Nightfall

- Nightfall Redesign (2019)
 - Scoring
 - Sandbox altering modifiers
 - Power level
 - Champions
 - Armor stats and mods
 - Build the Ladder



Nightfall: Adept



Nightfall: Hero

	Adept	Hero
Activity Power	 Power 170	 Power 220
No Matchmaking		
Racial Modifier	 Battlefield Awareness	 Battlefield Awareness
Activity Scoring	 Thumbskill	 Thumbskill
Burns		 Buildcrafting
Champions		 Buildcrafting Harder
Shields		 Buildcrafting

Nightfall: Legend

	Adept	Hero	Legend
Activity Power	 Power 170	 Power 220	 Power 250
No Matchmaking			 Social
Racial Modifier	 Battlefield Awareness	 Battlefield Awareness	 Battlefield Awareness
Activity Scoring	 Thumbskill	 Thumbskill	 Thumbskill
Burns		 Buildcrafting	 Buildcrafting
Champions		 Buildcrafting Harder	 Buildcrafting  Communication Harder
Shields		 Buildcrafting	 Buildcrafting  Buildcrafting
Locked Loadout			 Planning

Nightfall: Master

	Adept	Hero	Legend	Master
Activity Power	 Power 170	 Power 220	 Power 250	 Power 280
No Matchmaking			 Social	 Social
Racial Modifier	 Battlefield Awareness	 Battlefield Awareness	 Battlefield Awareness	 Battlefield Awareness
Activity Scoring	 Thumbskill	 Thumbskill	 Thumbskill	 Thumbskill
Burns		 Buildcrafting	 Buildcrafting	 Buildcrafting
Champions		 Buildcrafting Harder	 Buildcrafting  Communication Harder	 Buildcrafting  Communication More and Even Harder
Shields		 Buildcrafting	 Buildcrafting  Buildcrafting	 Buildcrafting  Buildcrafting
Locked Loadout			 Planning	 Planning
Communicate Modifier				 Communication  Battlefield Awareness

Nightfall: Rewards

- Target: 1+ hours of engagement each week
- Added Armor upgrade material rewards based on quality of play.
- Eventually added new rare drop weapons each season.

Nightfall: Outcome

- Players enjoyed Nightfalls with matchmaking
- Took a few months to fully incorporate into weekly play
 - New mechanics
 - New upgrade paths
 - New loot

Nightfall: Outcome

- Regular players:
 - Group 1: Always matchmakes – Adept until they can handle Hero
 - Group 2: Never matchmakes - Adept/Hero Week 1, then Legend until they can handle Master. Then only Master

Nightfall: Costs

- Initial costs - 3 months of design/test time from multiple designers and testers
- Dev cost to convert a new strike to Nightfall:
 - 18-30 hours total time – includes playtesting, iteration, and test passes
- Started with 6 strikes in first season, converted 3 more each season until all were done.
- Seasonal Maintenance:
 - Under 5 days (including rewards, new modifiers)

Nightfall: Grandmaster

- Planned an extreme difficulty
 - End-game challenge / mountaintop
 - Only the best players would be able to beat it.
- Time-Limited Reward:
 - New title – only if you could beat all 6 of the GM Nightfalls during the season

Nightfall: Grandmaster

	Adept	Hero	Legend	Master	Grandmaster
Activity Power	Power 170	Power 220	Power 250	Power 280	Power 300 Power Required Entry 275
No Matchmaking			Social	Social	Social
Racial Modifier	Battlefield Awareness	Battlefield Awareness	Battlefield Awareness	Battlefield Awareness	Battlefield Awareness Curated
Activity Scoring	Thumbskill	Thumbskill	Thumbskill	Thumbskill	Thumbskill
Burns		Buildcrafting	Buildcrafting	Buildcrafting	Buildcrafting
Champions		Buildcrafting Harder	Buildcrafting Communication Harder	Buildcrafting Communication More and Even Harder	Buildcrafting Communication More and Even Harder
Shields		Buildcrafting	Buildcrafting Buildcrafting	Buildcrafting Buildcrafting	Buildcrafting Buildcrafting
Locked Loadout			Planning	Planning	Planning
Communicate Modifier				Communication Battlefield Awareness	Communication Battlefield Awareness Curated
Forced Power Delta					Thumbskill Thumbskill
Limited Lives					Thumbskill Battlefield Awareness

Nightfall: Grandmaster

- Initial Costs were low: A couple weeks for 1 designer and 1 tester, alongside about a week of code and UI time.
- Adding a new GM strike – free
- Seasonal costs: Under a day
- We were ok with only a few hundred people beating it each week- it could still function as an aspirational activity.

Nightfall: Grandmaster

- Week 1: 42k players beat it
- Ongoing Plateau – 30-50k weekly.
 - No reason to play it more than once!
 - Not all players motivated by title
 - Lots of complaints – most wanted a reason to beat it more than once

Nightfall: Rewards and Participation

- Added Nightfall specific weapon drops and custom GM version, increased armor materials, and double drop weekends.
- 2017 Nightfall – 50% WAU participate, 250k hours
- 2019 Nightfall – 70% WAU, 1m weekly hours, trending up
- GM S10– 30-50k WAU
- GM S15 – 175k WAU (with spikes up to 300k)

Case Study – Solo PvE Accessibility

- Lots of MM and non-MM content
 - Very little aimed at solo
- Goals:
 - Solo-only for end-game players
 - Stresses buildcrafting hard
 - Cannot eclipse group content
 - Not a new daily or weekly ritual
 - Static challenge per instance
 - Low cost
 - Play breadth of content

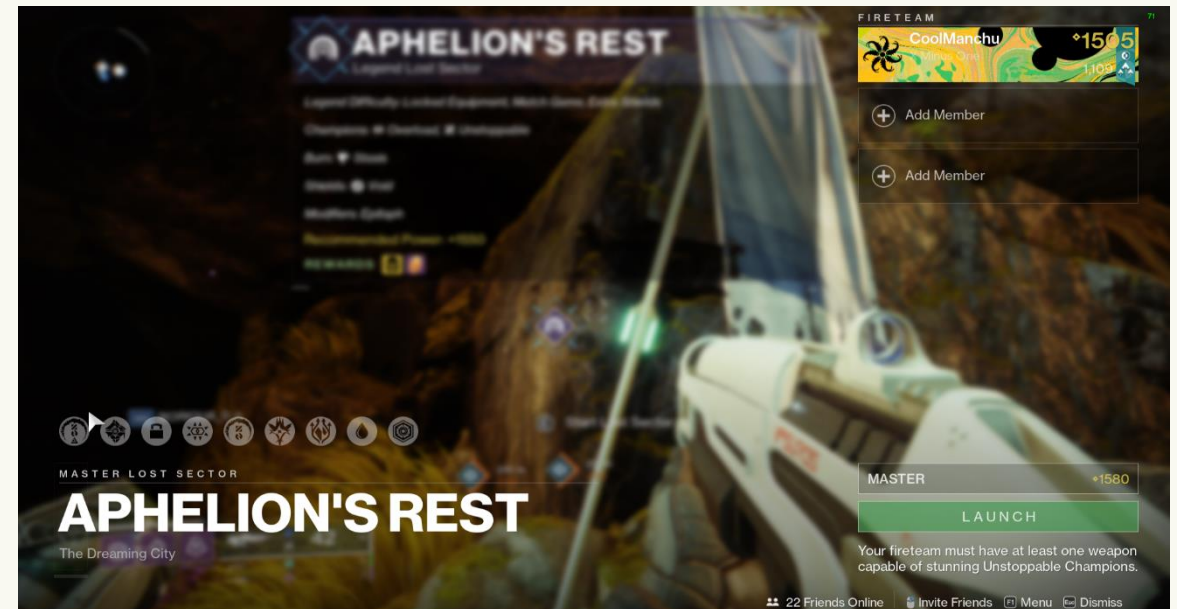
Lost Sectors: Legend and Master

- Initial implementation in Season 10:
 - No fail condition
 - No reason to solo
 - Same rewards
- So, how to fix?



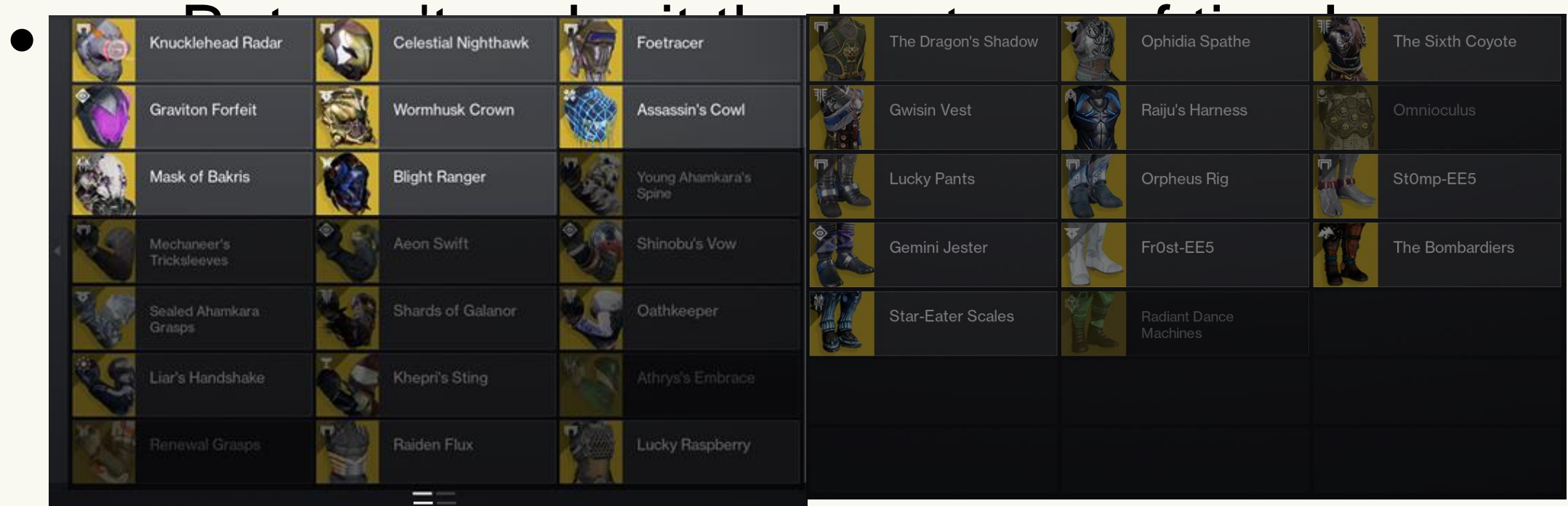
Lost Sectors: Making it a Challenge

- Need to be able to fail!
- Can't add darkness
 - Too hard to add
 - Too hard to play
- Use limited lives!



Lost Sectors: Finding the Rewards

- Need valuable rewards – a reason to play over and over



Lost Sectors: Outcomes

- Organic, low-key introduction
- Players loved them – new loot plus a new challenge
- Weekly WAU engagement is around 25%
- Implementation costs to add Legend/Master Lost Sector:
 - 10-20 hrs
- Seasonal maintenance – rotation + rewards
 - Under a day per season
- Each week ~150k hours played
 - For less than 500 dev hours.

Testing, Tuning, and Launching



Testing, Tuning, and Launching

- Build planning and repeated play into playtesting
 - Try-Fail-Iterate cycles

Testing, Tuning, and Launching

- Listen to your playtester's stories about the stressors and how they overcame them
 - Don't ask "Is it too hard?"

Testing, Tuning, and Launching

- You don't need to develop optimal strats internally!
 - Your players are super good!
 - Playtime the first hour it goes live will eclipse playtest time by multiple orders of magnitude.

Testing, Tuning, and Launching

- Listen to your player's stories about stressors
 - Is it too hard? – again the wrong question
 - No streams or public strat videos yet
 - Many challenges are hardest the first time
 - Stand strong – this is a very difficult time

Testing, Tuning, and Launching

- Err on the side of tuning the challenge too hard!
 - Easier to tune challenge down than up
 - You will get major props for listening to players if you make it easier later!

Testing, Tuning, and Launching

- Err on the side of tuning the rewards too low!
 - Easier to ramp up rewards than nerf
 - Remove rewards, and they will always pine for that first week.

Testing, Tuning, and Launching

- Rotate content, challenges, and rewards for repeated play
 - Players love optimization

Testing, Tuning, and Launching

- Wait a few weeks – or more – before making any tuning changes.
 - Fix bugs if you find them, of course
 - Look to your analytics about completion rate and time, deaths (and where)
 - Anecdotes/anecdotal alone aren't good enough.

Testing, Tuning, and Launching

- Is it too easy?
 - If no one discusses it online, not enough friction to change player behavior.

Q & A



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