



GDC

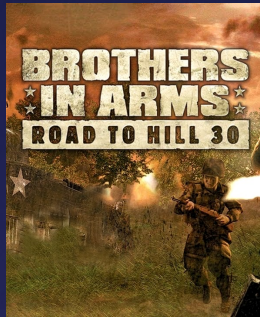
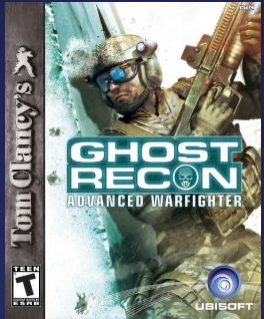
Arena Breakout: *Creating A Next-gen FPS on Mobile*

Yiming Sun

Lead Producer of MoreFun Studio

Who I Am

- Started in game industry in 2004
- Worked at UBI Shanghai, Spicy Horse, CCP, Guerrilla Games
- Working in MoreFun (Tencent Games), senior producer of Arena Breakout



What is Next-Gen for mobile?



< Independent Line >
2016



< Ace Force >
2019



Next-Gen Tactical FPS on Mobile

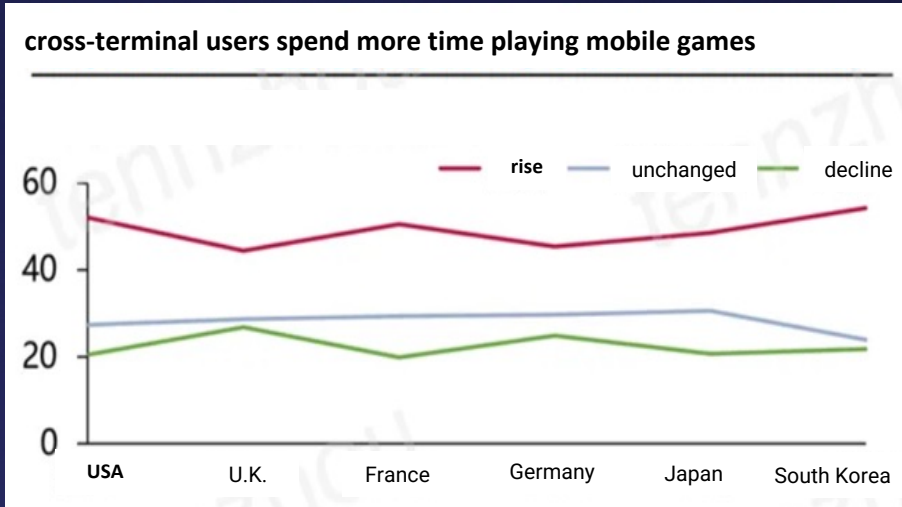
- Focuses on tactical shooter experience
- Made by Unreal 4
- Extraction Looter Shooter
- UE4 engine
- 3+ years, 300+ developers
- On par with PC & console games



**ARENA
BREAKOUT**

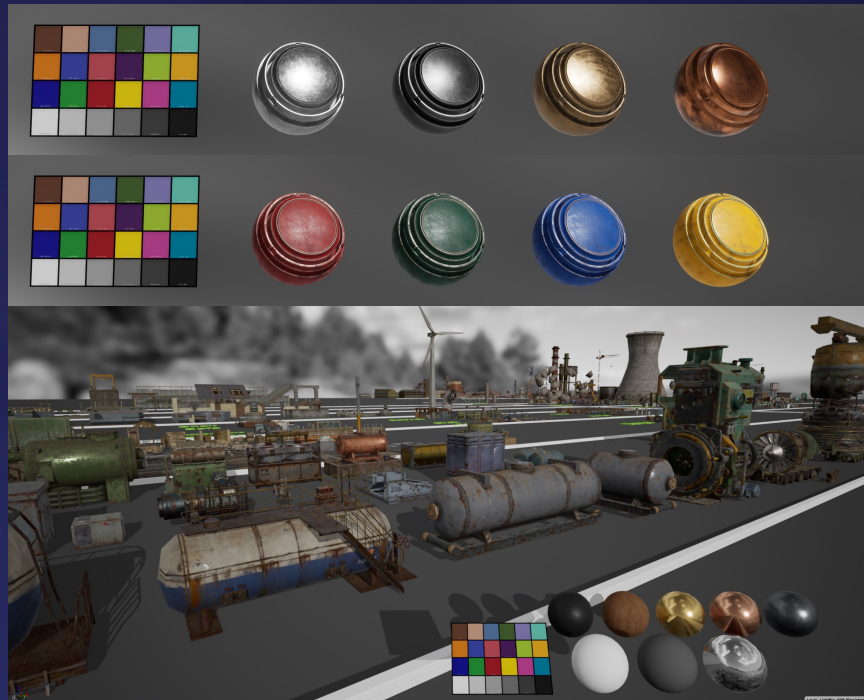
Market Opportunities

- Players are spending more time in mobile games
- Young gamers are native on mobile
- Hardcore next-gen games have more opportunities



Technology Development

- Previously exclusive technologies now available on mobile
- Industry trend of mobile expansion



- Standard PBR materials and workflow



- Mobile Ray Tracing

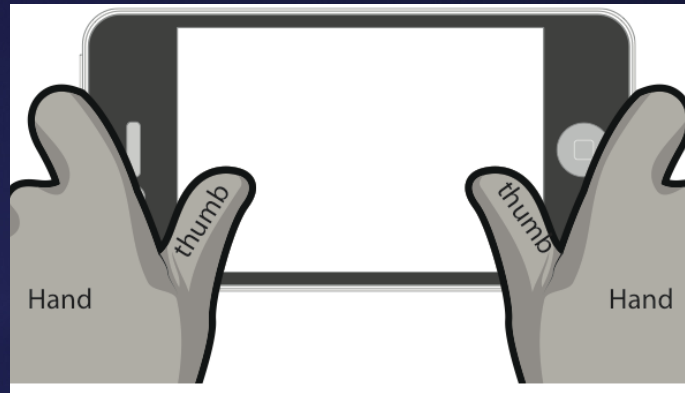
Why Arena Breakout?

- Our Mission: Provide a tactical shooting experience to a wide range of players
- We believe we can...
 - Match a PC-level experience on mobile
 - Meet the growing needs of players
 - Fulfill a tactical shooter player fantasy
 - Achieve commercial success



1st issue: Control

- Control is the first key point to action and shooter
- Touch screen is not very friendly to game control
- Mobile and console gamepad have a lot in common



Basic Control Solutions

- Allow a range of control experiences (like console)
- Use console shooting game tech
- Ensure players can hit their target smoothly

ADS Snapping
Friction
Adhesion
Ballistic correction



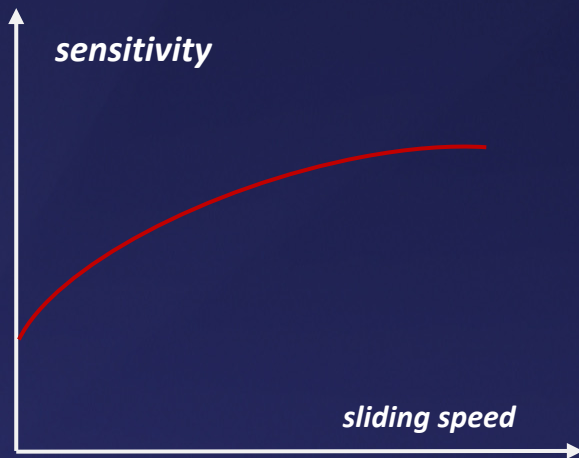
Limitations of touchscreen

- No force feedback
- The touch judgment is blurred.
- Erratic \ drifty and sticky



Advanced Control Solutions

- the touch judgment is blurred.
- Erratic \ drifty and sticky



intensity & Speed

Dynamic sensitivity compensation

Continuous Smoothing

Vertical dynamic compensation

Breakpoint

Input filtering

Inertial Prediction

Compensation after input termination

Assistance System $\neq$ Auto-turret

- If assistance is too strong, it will ruin the combat experience
- SKILL IS THE KEY – we don't want auto turrets



Intelligent Assistance System

Three dimensions for optimization

- Aiming: Judge intention, dynamically adjust assistance
- Firing: Activate adhesion only when firing
- Hitting: Hit detection of moving targets and prioritization

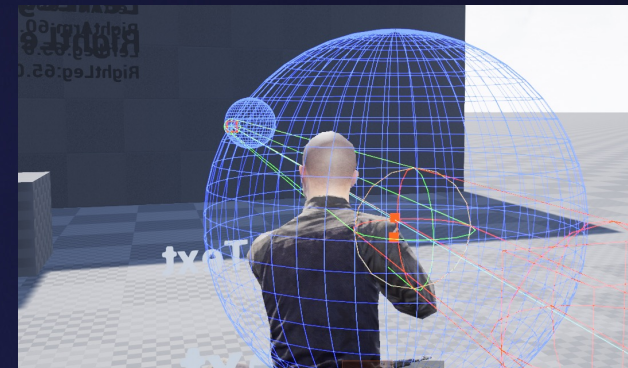
Be sure we are **helping**, not **hindering**



Aiming



Firing



Hitting

Realistic Weapon Performance

- Key component to the player's experience
- Easy to shoot hard to master



Weapon Shooting Performance

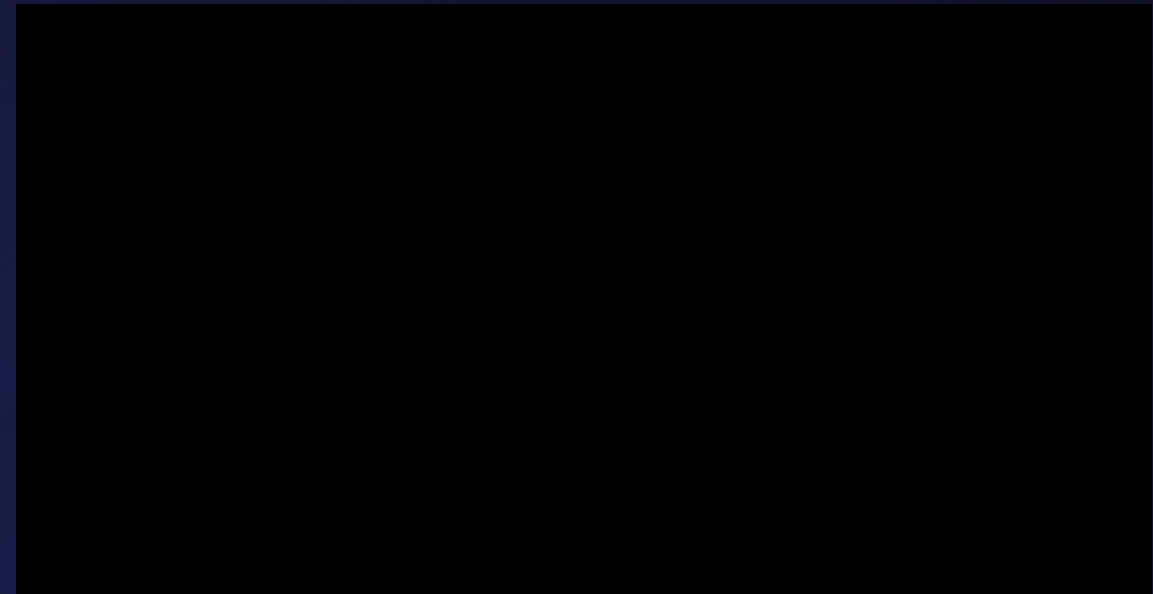
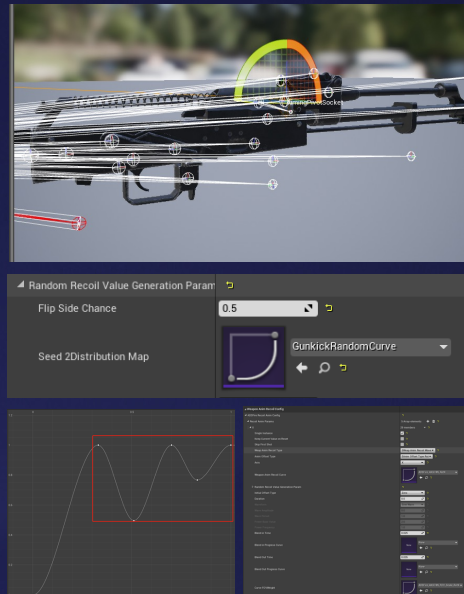
- Split into gunkick, draw back, rotation, and vibration
- Used curve editors to adjust the animations

Gunkick

Draw back

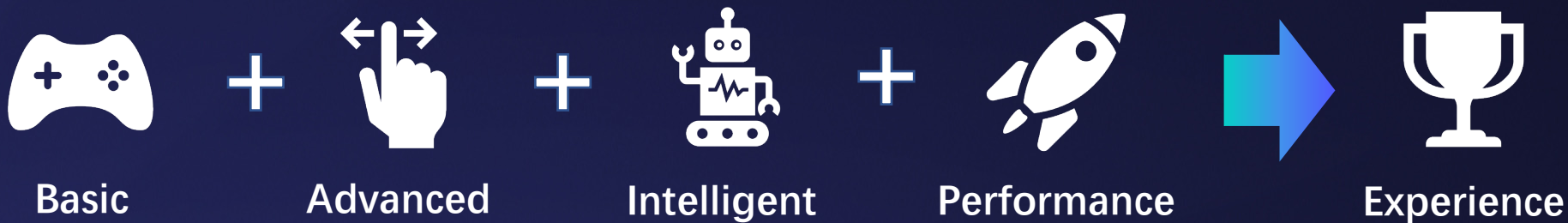
Rotation

Vibration



Weapon design

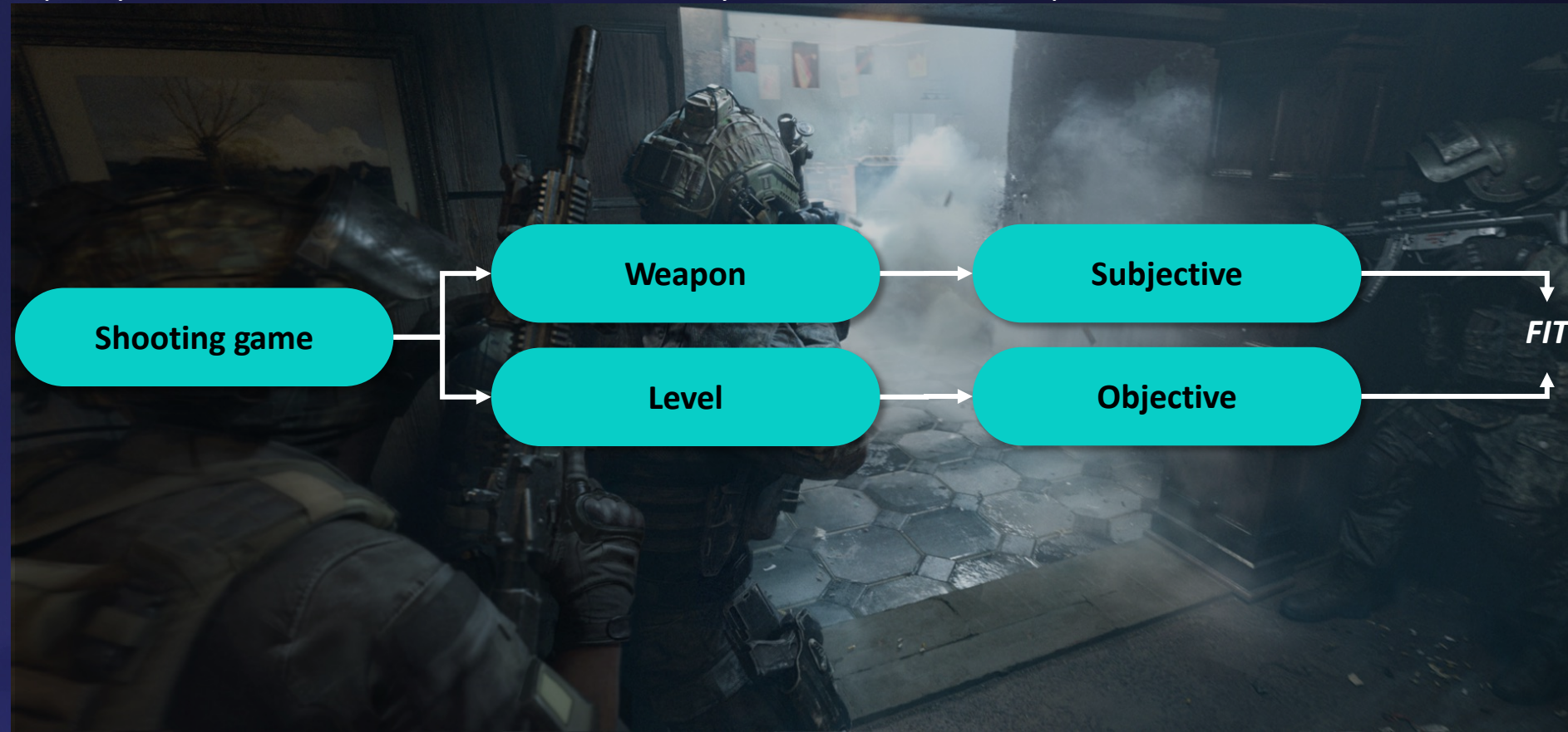
- Console shooting game tech = Basic Control Solutions
- Advanced Control Solutions to neutralize the drift & sticky
- Intelligent Assistance to keep the depth of skill
- Realistic Weapon Performance



Shooting experience that comparable to PC and console.

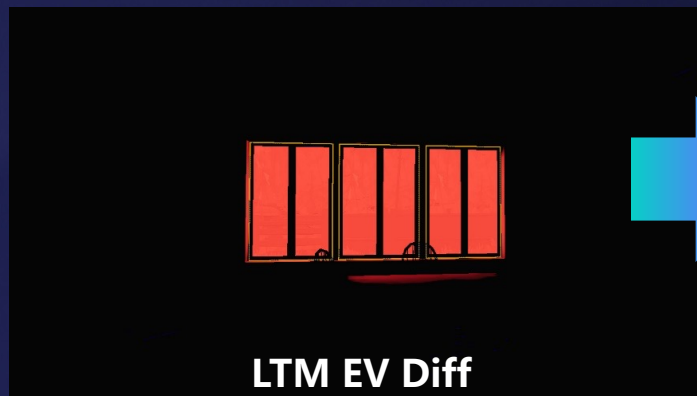
Environment

- 2 pillars for shooting game: the weapon and the level
- level feature like terrain, vegetation, lighting will greatly affect to the player's strategy
- The quality of the environment will decide how many level features we can provide



Physics-Based Lighting

- High dynamic range
- Physics-based lighting and GI Based Local Tonemapping
- Achieve an environment with realistic light sources



Physic-Based Camera

- Exposure compensation
- Auto-exposure (eye adaptation)



Dynamic Weather System & Volumetric Clouds

- Dynamic sky with atmospheric scattering
- Volumetric clouds
- Rain and splashing with dynamic occlusion
- Lightning simulation



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**ARENA
BREAKOUT**

CLOSED BETA LIVE NOW

ANDROID

FEB 17 AUSTRALIA/CANADA/MEXICO/NEW ZEALAND/THE PHILIPPINES/THE UNITED KINGDOM/THE UNITED STATES

MAR 9 BRAZIL/INDONESIA/JAPAN

iOS

MAR iOS SPECIFIC DATE WILL BE ANNOUNCED LATER



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