

# IT'S RAINING NEW CONTENT: RAPID TEST ITERATIONS

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BEN SEIFERT | RIOT GAMES





# QUICK INTRO

- ▶ QA Lead at Riot Games
- ▶ Work on *League of Legends*
- ▶ Responsible for QA processes and management of Events, Release and Regional teams

— OUR MISSION —

**WE ASPIRE**

TO BE THE MOST

**PLAYER**



**FOCUSED**

GAME COMPANY IN THE

**WORLD**



**11 MIL**  
daily  
players

**5 MIL**  
peak  
concurrent  
players





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**THE GAME = LIVE SERVICE**



- ▶ Delivers new content multiple times a month
- ▶ Rapid internal iterations with daily playtests
- ▶ Multiple player-facing deploys each day to testing environment (PBE)



- ▶ Delivers new content multiple times a month
  - ▼ balance changes
  - ▼ champions
  - ▼ skins
  - ▼ ward skins
  - ▼ esports events
  - ▼ features
  - ▼ micro sites

continuous delivery



continuous delivery

often leads to

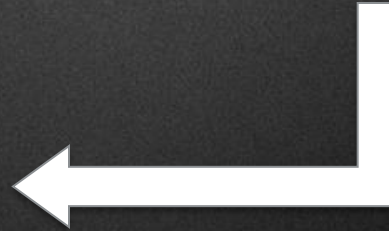
**SIGNIFICANTLY COMPRESSED QA CYCLES**



**DIFFICULT FOR TRADITIONAL  
QA MODELS TO ADAPT**



continuous delivery



often leads to

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**SIGNIFICANTLY COMPRESSED QA CYCLES**

continuous delivery

often leads to



**DROP IN QUALITY**



**THERE'S NO ONE-SIZE-FITS-ALL SOLUTION...**



OUR STRATEGY  
**3** KEY  
BELIEFS

PEOPLE > PROCESS

LEVERAGE TECHNOLOGY

PLAYER-BASED TESTING

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# PEOPLE > PROCESS

## 1 HIRING

- Hire for people, not positions
- Hiring process is extensive – multiple types of evaluations and diverse criteria
- Look for analysts, rather than testers
- Culture and passion fit

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## 2 TRAINING

- Continuous training and investing in our team & its people
- Biweekly 1-on-1s focused on development paths
- Biweekly QA training sessions on different topics
- Multiple growth paths: SME, People Management, Project Management





**QA SUMMIT**

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## 3 EMBEDDED QA

- Our type of embedded QA
  - Part of features & initiative teams
  - Specialized knowledge + broad skill base
- Specialized roles – different sub-groups, depending on where their passions lie

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# LEVERAGING TECH FOR EFFICIENCY AND EFFECTIVENESS

1

## SHARE INFO

- ▶ Various Dashboards
  - ▶ Release Data
  - ▶ Main Lock Status
  - ▶ Bug Charts
- ▶ Custom Automated Reports
  - ▶ For Dev Managers
  - ▶ For Product Owners



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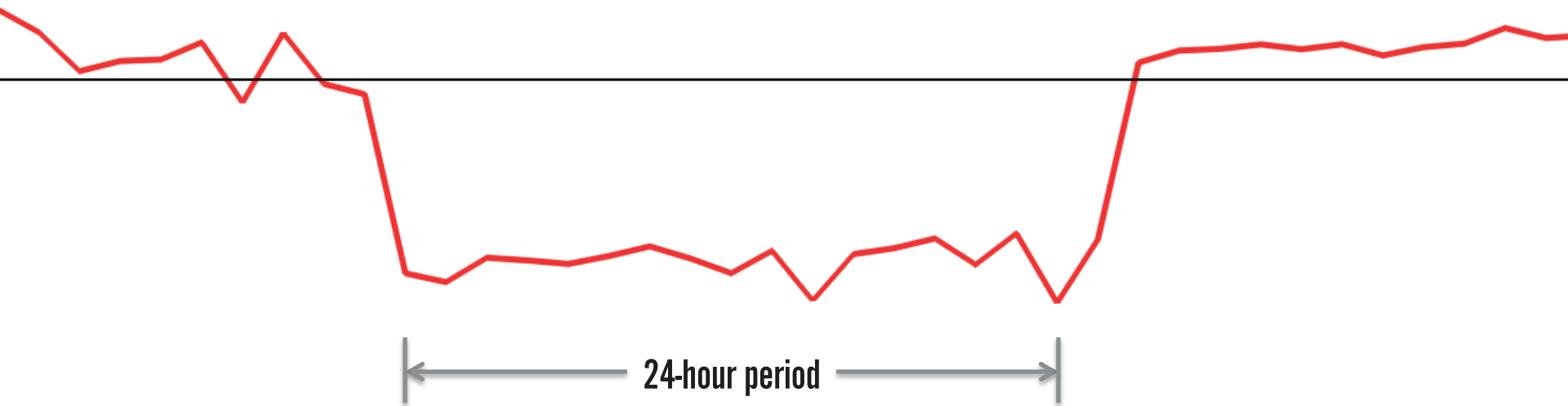
2

## AUTOMATED PERFORMANCE TESTING

- Game Client Performance
- Game Server Performance
- Game Client Compatibility

■ SR Performance Index

## Percival Performance Data (Summoner's Rift)



# AUTOMATED CLIENT PERFORMANCE DATA

Please do  
not  
modify these  
computers'  
settings!

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# COMPATIBILITY LAB





# LEVERAGING TECH FOR EFFICIENCY AND EFFECTIVENESS

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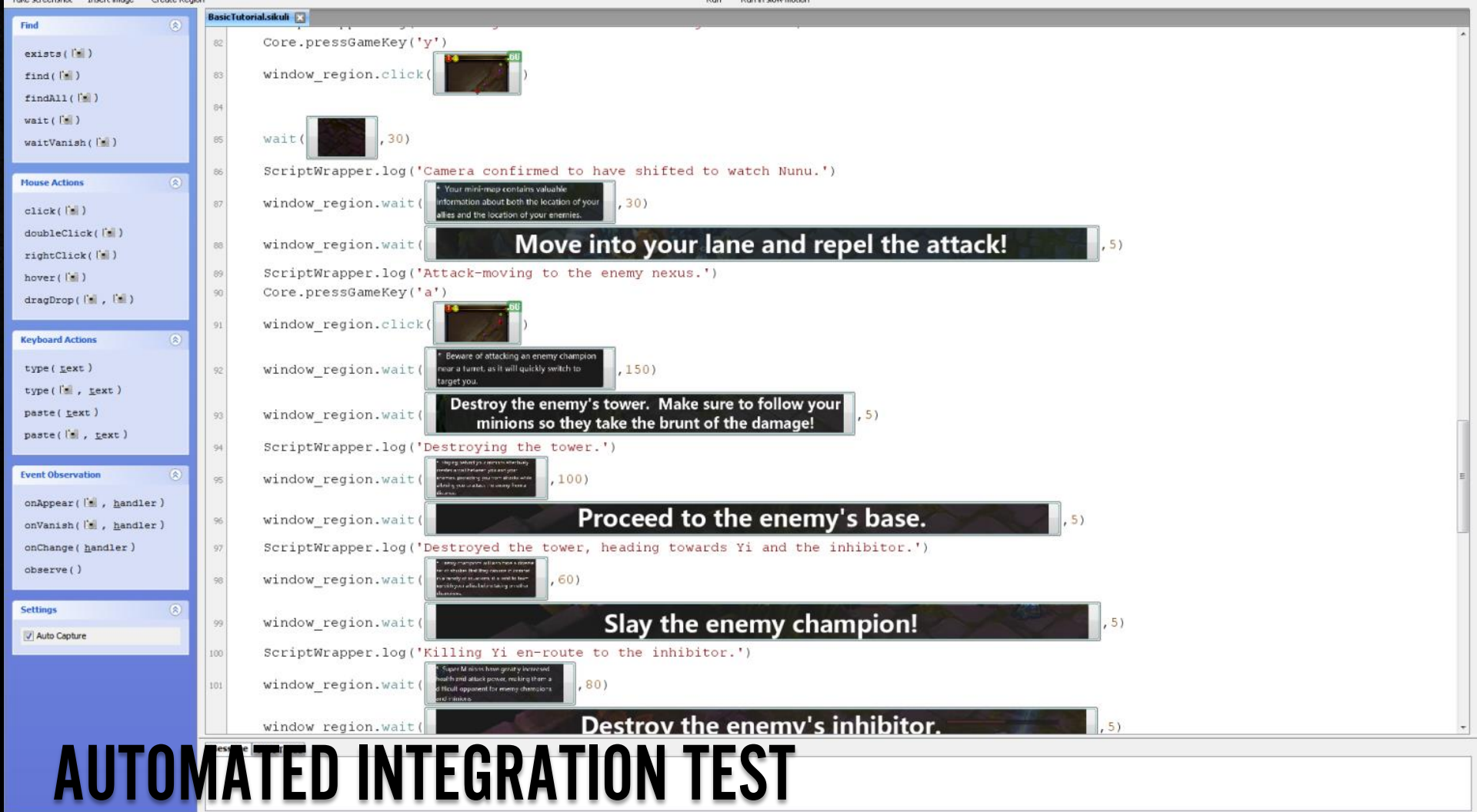
## AUTOMATED PERFORMANCE TESTING



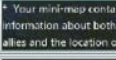
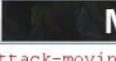
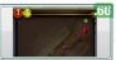


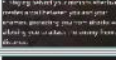


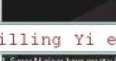
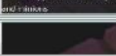

- Game Client Performance
  - ▾ All Maps
  - ▾ Various Graphics Settings
- Game Client Compatibility
- Game Server Performance

3

## AUTOMATED INTEGRATION TESTING

- Game Loop Testing
  - ▾ Basic Game Loop
  - ▾ Dominion Game Loop
  - ▾ Tutorial Game Loop
- Front End Testing
  - ▾ Functional Testing



```
82 Core.pressGameKey('y')
83 window_region.click()
84
85 wait(, 30)
86 ScriptWrapper.log('Camera confirmed to have shifted to watch Nunu.')
87 window_region.wait(, 30)
88 window_region.wait(, 5)
89 ScriptWrapper.log('Attack-moving to the enemy nexus.')
90 Core.pressGameKey('a')
91 window_region.click()
92 window_region.wait(, 150)
93 window_region.wait(, 5)
94 ScriptWrapper.log('Destroying the tower.')
95 window_region.wait(, 100)
96 window_region.wait(, 5)
97 ScriptWrapper.log('Destroyed the tower, heading towards Yi and the inhibitor.')
98 window_region.wait(, 60)
99 window_region.wait(, 5)
100 ScriptWrapper.log('Killing Yi en-route to the inhibitor.')
101 window_region.wait(, 80)
102 window_region.wait(, 5)
```

# AUTOMATED INTEGRATION TEST

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# PLAYER-BASED TESTING

1

## FEEDBACK LOOPS WITHIN DEVELOPMENT

- Company playtest
- Intrateam feedback
- Interteam feedback
- Player research (user research)



**COMPANY PLAYTEST**



# PLAYER RESEARCH



# PLAYER-BASED TESTING

1

## FEEDBACK LOOPS WITHIN DEVELOPMENT

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## INVITING PLAYERS TO TEST (PBE)

- Allows for subjective and objective feedback



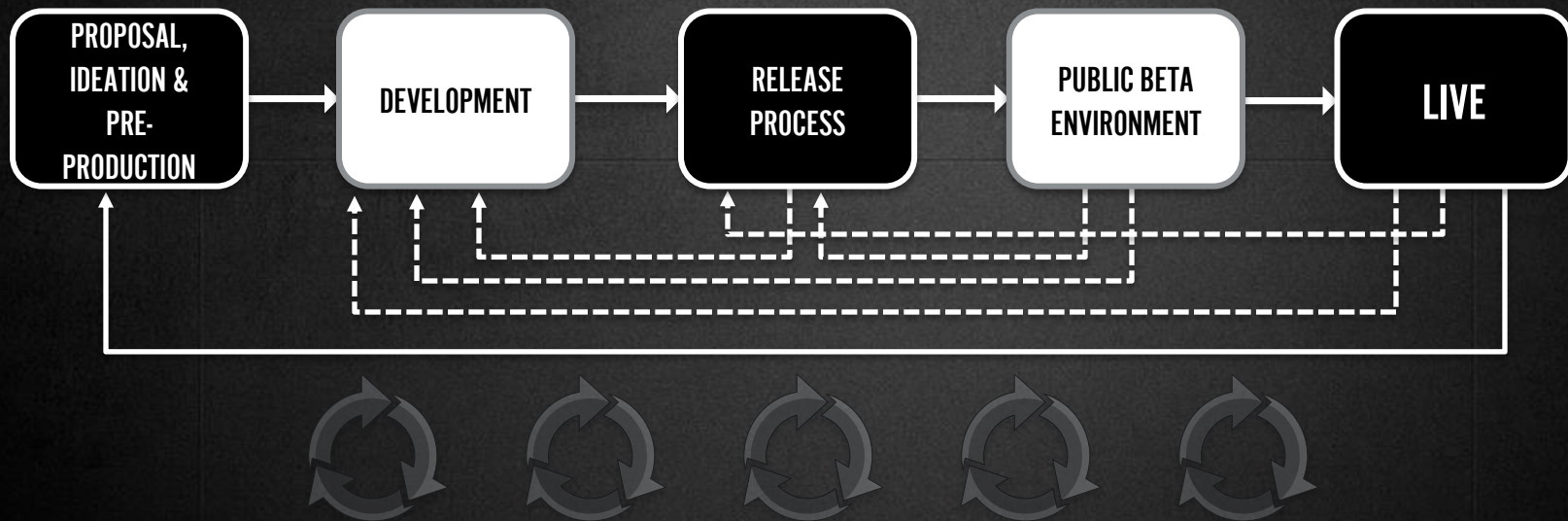
Replays Alpha Test on PBE	( 1 2 3 ... Last Page)		Status Kwoh	by TriGzuH	363	129,614
Replay Bugs Thread (2-19-2013)	( 1 2 3 ... Last Page)		Ponies	by WerewolfTrey	62	5,326
State of Player Behavior on the PBE - Present and Future	( 1 2 3 ... Last Page)		Lyte	by WerewolfTrey	209	65,081
[FAQ] New Volunteer pilot program: The Huntsmen!	( 1 2 3 ... Last Page)		JD 2020	by zoocalu	196	60,009
Scorched Earth Renekton and Headhunter Nidalee			RiotGrayswandir	by RiotGrayswandir	0	2,142
Frequently Asked Questions	( 1 2 3 ... Last Page)		RiotPhageQuit	by blázzzer	77	77,898
Price Adjustments on the PBE	( 1 2 3 ... Last Page)		RiotAmes	by AerialSnack	52	16,747
Korea-specific feature testing: PC Bang rewards	( 1 2 3 ... Last Page)		Awwwww Yeaaaaaahh	by Awwwww Yeaaaaaahh	171	122,461
Login Queue - Explained	( 1 2 3 ... Last Page)		vLemon	by dragargamegulerZ	120	53,574
Daily PBE Maintenance			Filthy Animals	by Filthy Animals	0	11,759
How to Submit Bug Reports and Feedback			vLemon	by vLemon	0	15,416
Everyone left game but me the bots win			nicgarza1986	by OMGWTFROTLBBQ	2	88
Karma Rework?			ReggaeRosto1394	by Hong2957	5	627
Launcher failure			Neowolf24	by LeoJoker	1	204
New Character	( 1 2)		Coolmankimo	by Hong2957	11	1,065
When Z.A.C is released I would like some testers to join me.	( 1 2)		TheDeFecto	by AriesMajor	14	1,085
Singed Nerfs			Fastpaws	by Fastpaws	0	276
The NEXT Champion Re-work	( 1 2)		TheRealAlastar	by Neowolf24	14	532
[Game] [Minor] Zyra's Plants and Baron			UberEpicAwesome	by DeathsFist789	3	173
[game][major] Thresh key binding crash (need more confirms)	( 1 2 3)		Macrofarad	by PsychoPowerJ	22	4,482
Why a replayer might be a bad idea.			slamor	by Wagons	3	154

# STANDARD DEVELOPMENT CYCLE

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# OUR DEVELOPMENT CYCLE



**DELIVER HIGH-QUALITY, FUN CONTENT  
CONSISTENTLY & CONTINUOUSLY TO PLAYERS**



**QA MUST BE  
LIGHTWEIGHT & ADAPTABLE**

# OUR DEVELOPMENT CYCLE

PROPOSAL,  
IDEATION &  
PRE-  
PRODUCTION



EMBEDDED QA:  
CHAMP CONCEPT STAGE

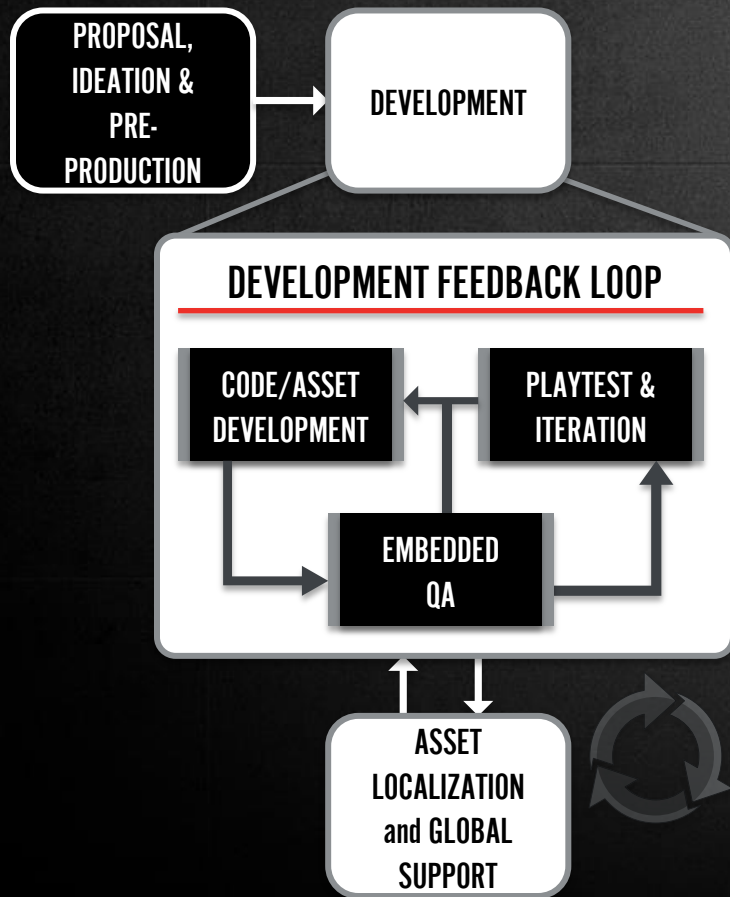
FIT FOR THE UNIVERSE?

COMPELLING & FUN?

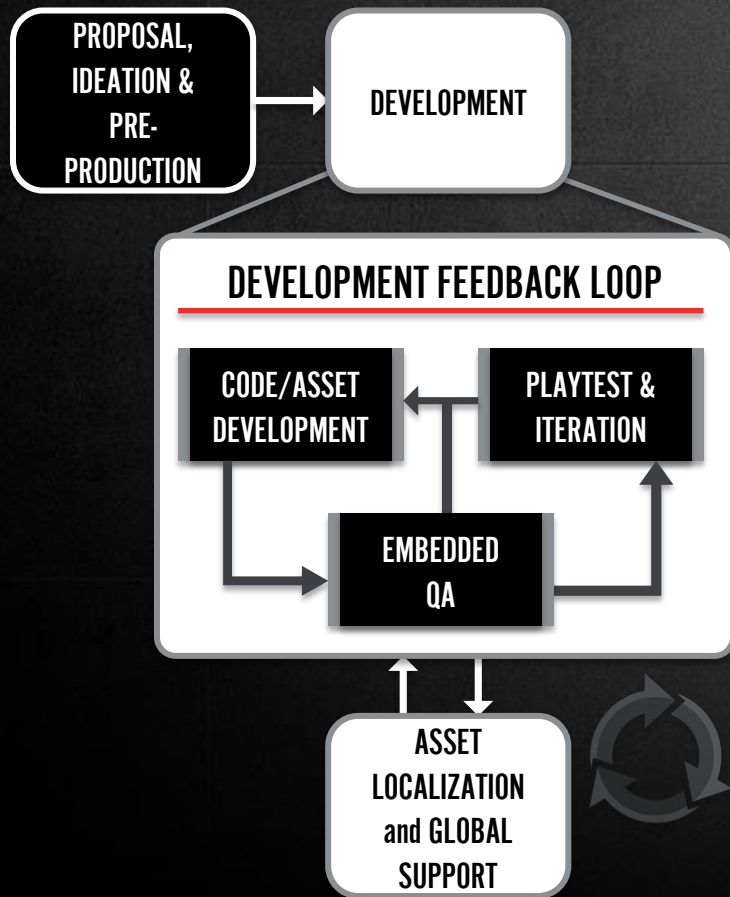
COOL KIT?



# DEVELOPMENT CYCLE



# DEVELOPMENT CYCLE

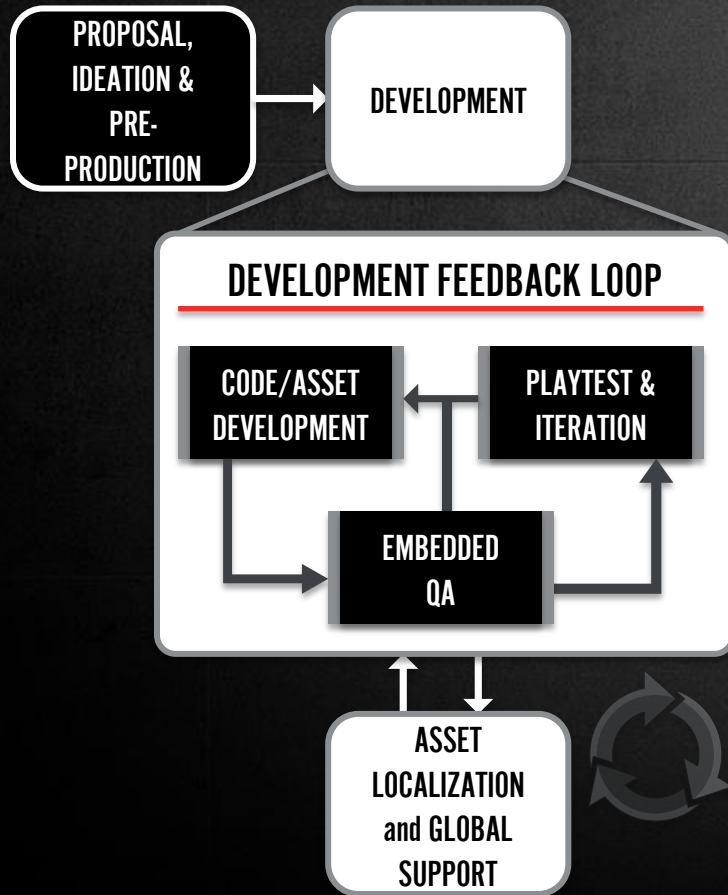


**NEED HIGHLY ADAPTABLE PEOPLE WITH BROAD SKILLSETS**

## CHALLENGES:

- Quality bar makes hiring a challenge
- Continual training & innovation = must-have
- People can “go native”

# DEVELOPMENT CYCLE



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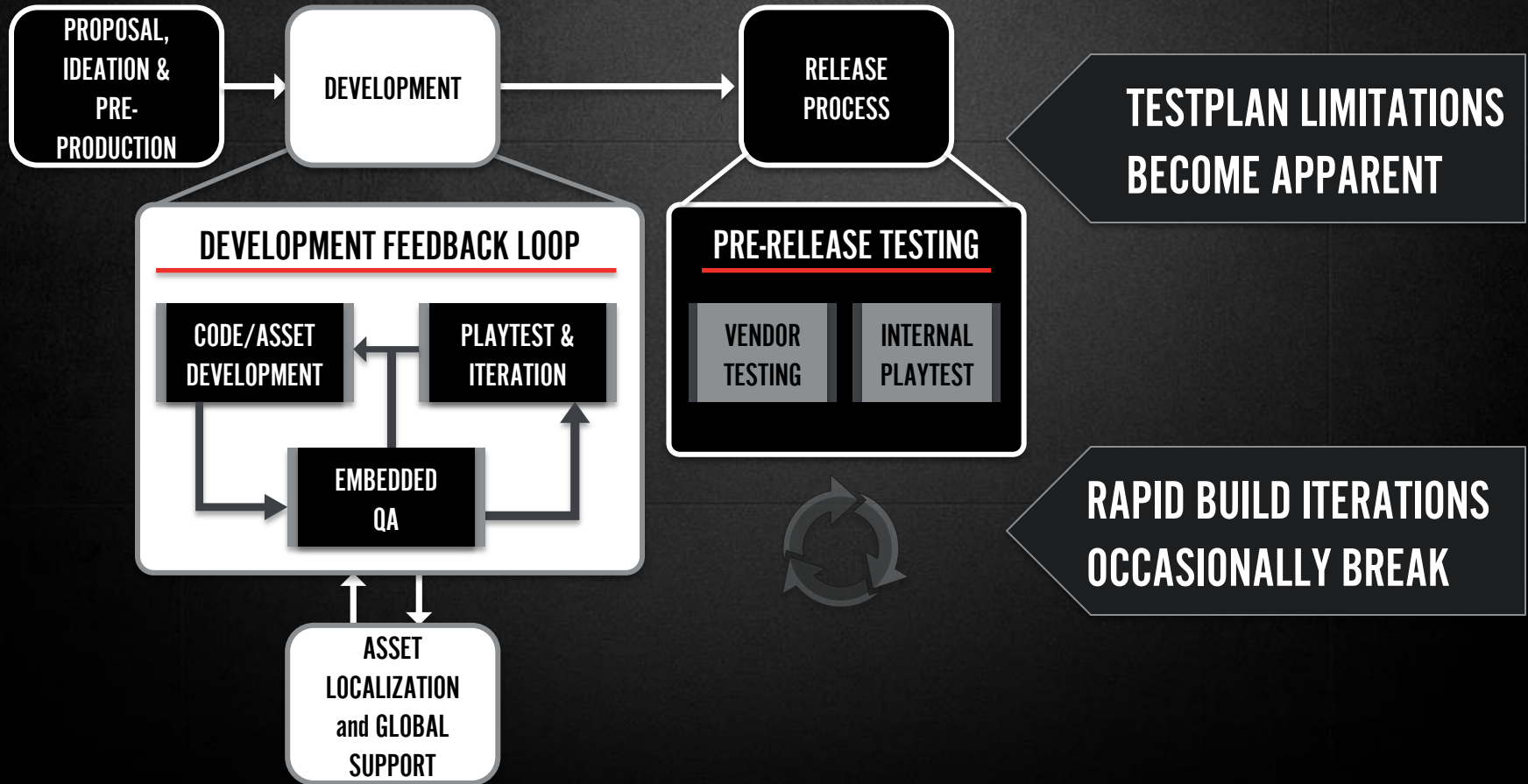
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**FOCUS ON INTELLIGENT TESTING > COMPREHENSIVE TESTPLAN WRITING**

## CHALLENGES:

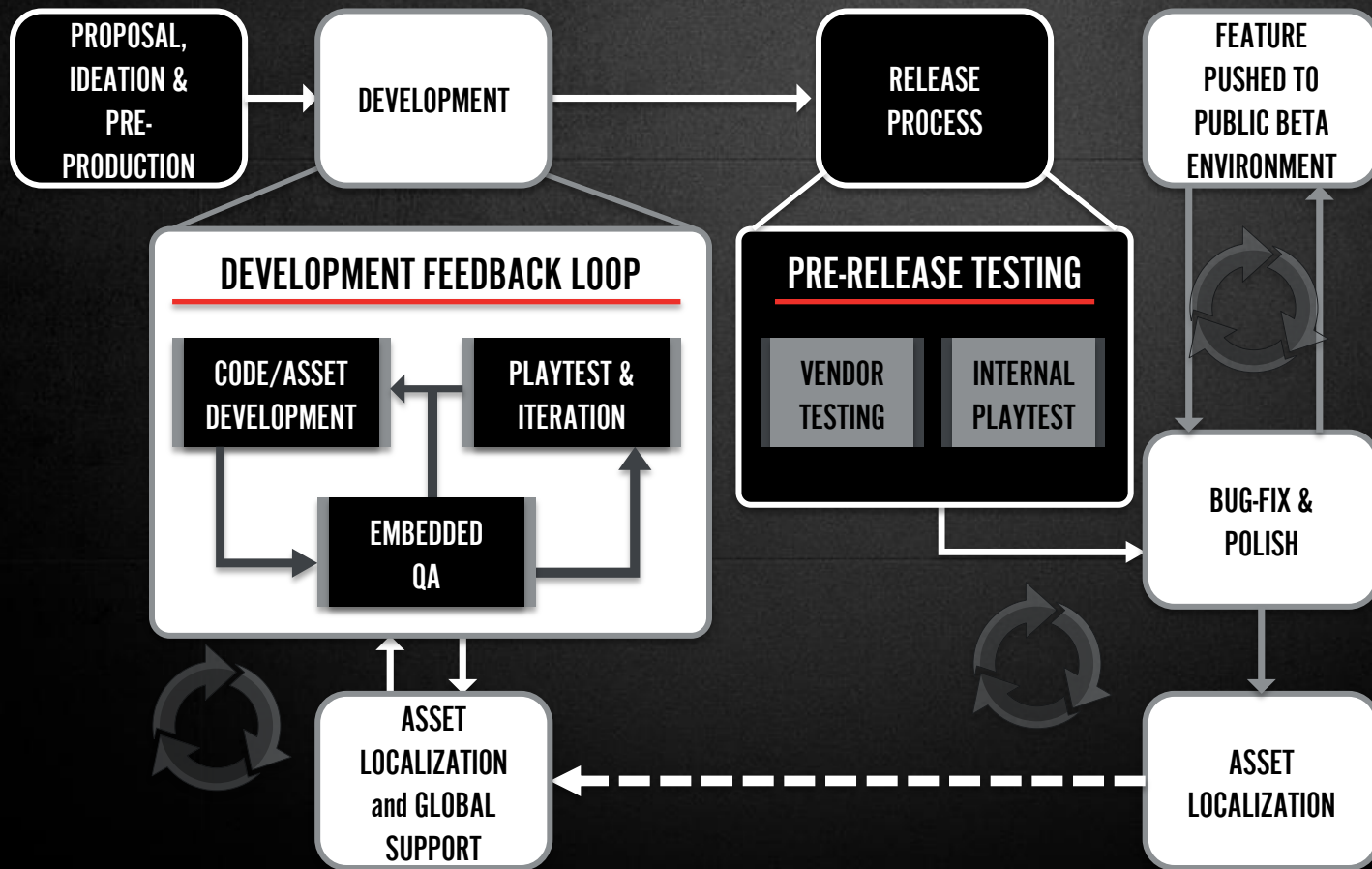
- Pairwise testing, leveraging players for testing
- Leads to lack of documentation

# DEVELOPMENT CYCLE

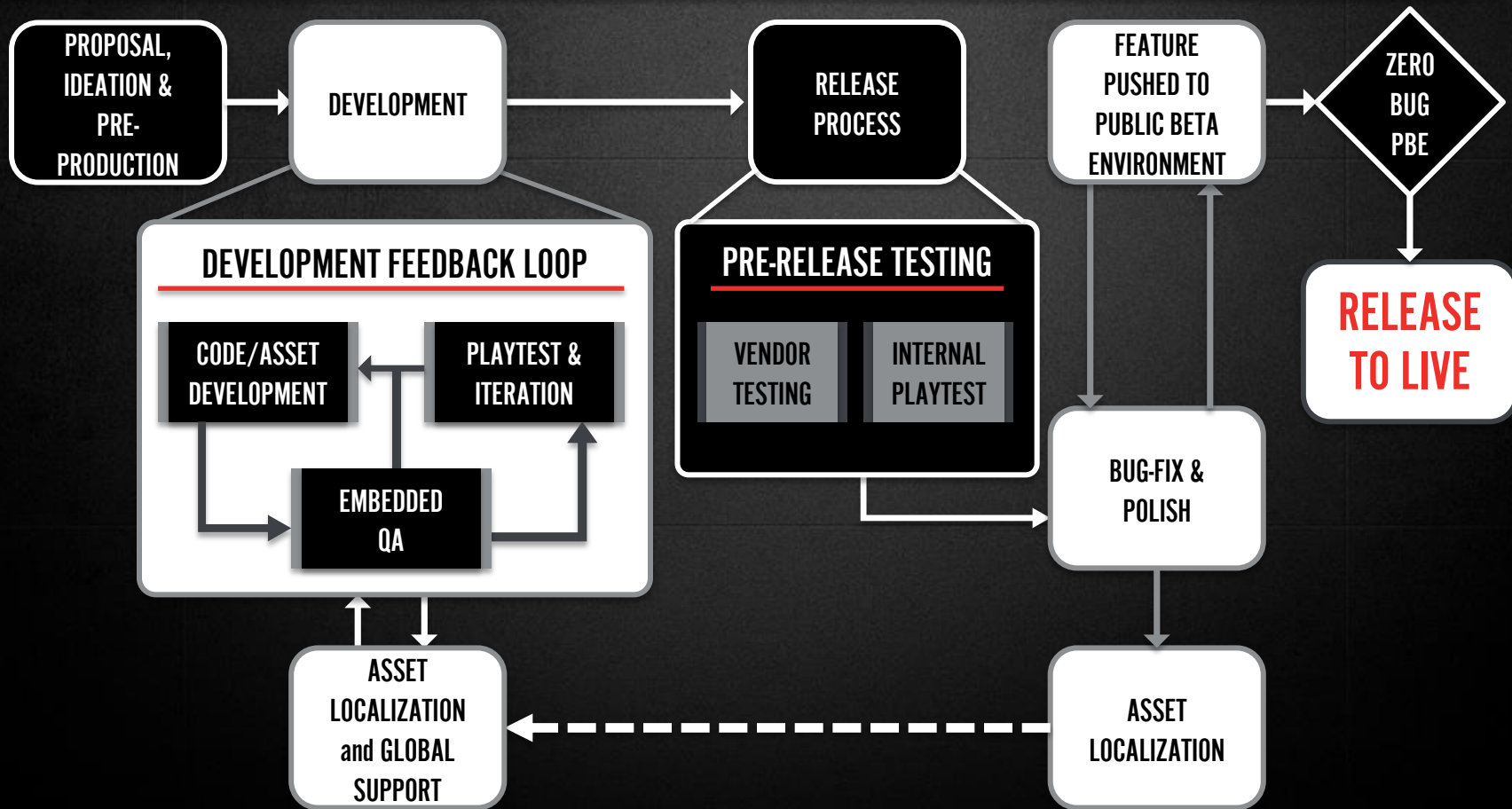




# DEVELOPMENT CYCLE



# DEVELOPMENT CYCLE



# CONTENT IS THE LIFEBLOOD OF OUR GAME

- ▶ Balance changes keep things interesting
  - ▼ Satisfying variety of player wants is a challenge
- ▶ Champions and skins must be released regularly
  - ▼ Planned hotfixes for champions often occur
  - ▼ Champions and skins must be high quality as they are viewed on PBE early



# TAKEAWAYS

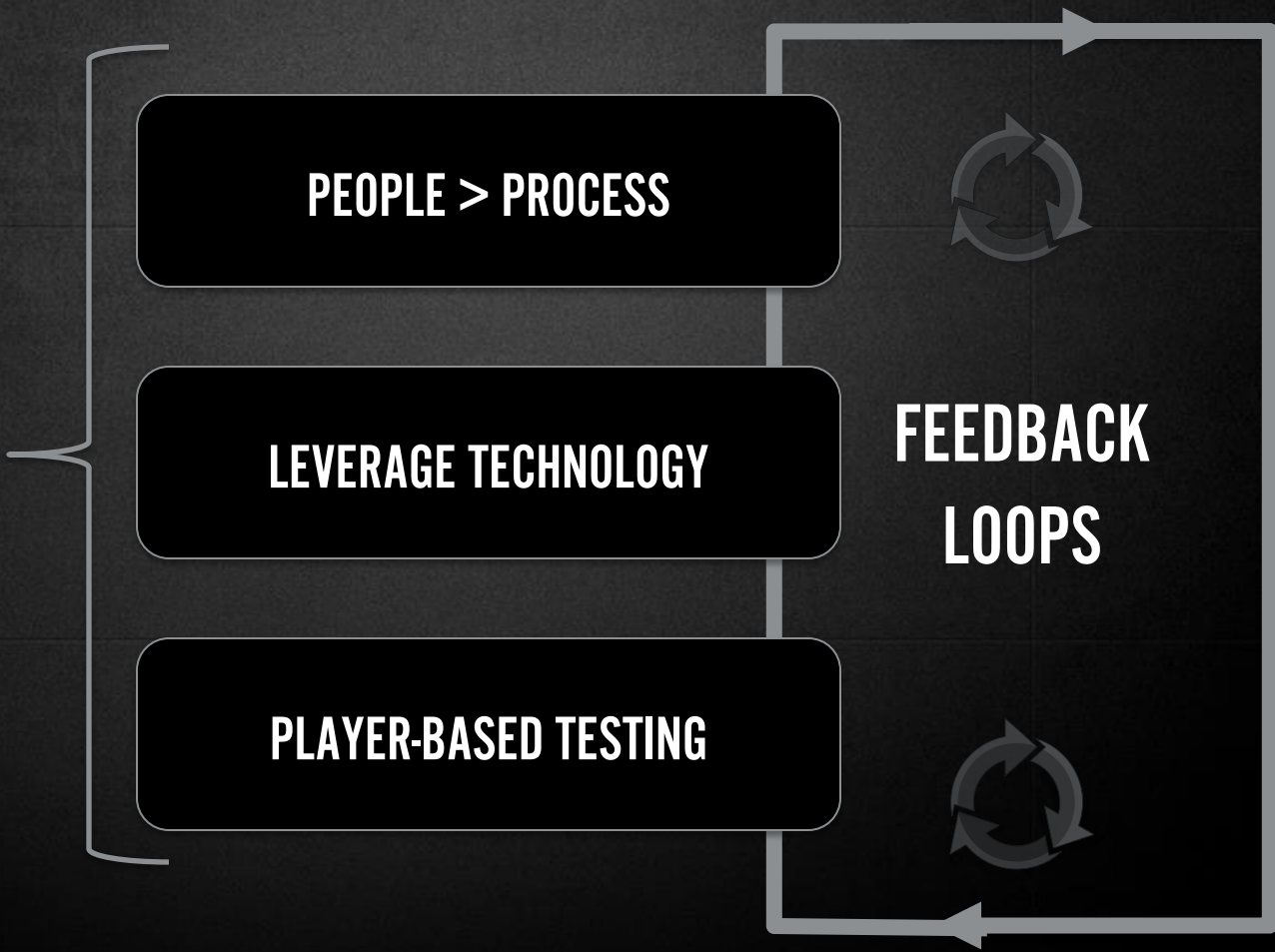
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LEVERAGE TECHNOLOGY

PLAYER-BASED TESTING

FEEDBACK  
LOOPS





# QUESTIONS?

**BEN SEIFERT**

**QA LEAD**

**[bseifert@riotgames.com](mailto:bseifert@riotgames.com)**



**[WWW.RIOTGAMES.COM/CAREERS](http://www.riotgames.com/careers)**