DATA-INFORMED GAME DESIGN

"Intelligence Game Design"

Geoffroy Mouret
Data Scientist

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Game Director

PLAN

Through the

Operators Balancing Lense

- 1 - Philosophy
- 2 - Methodology
- 3 - Conclusion

- 1 -

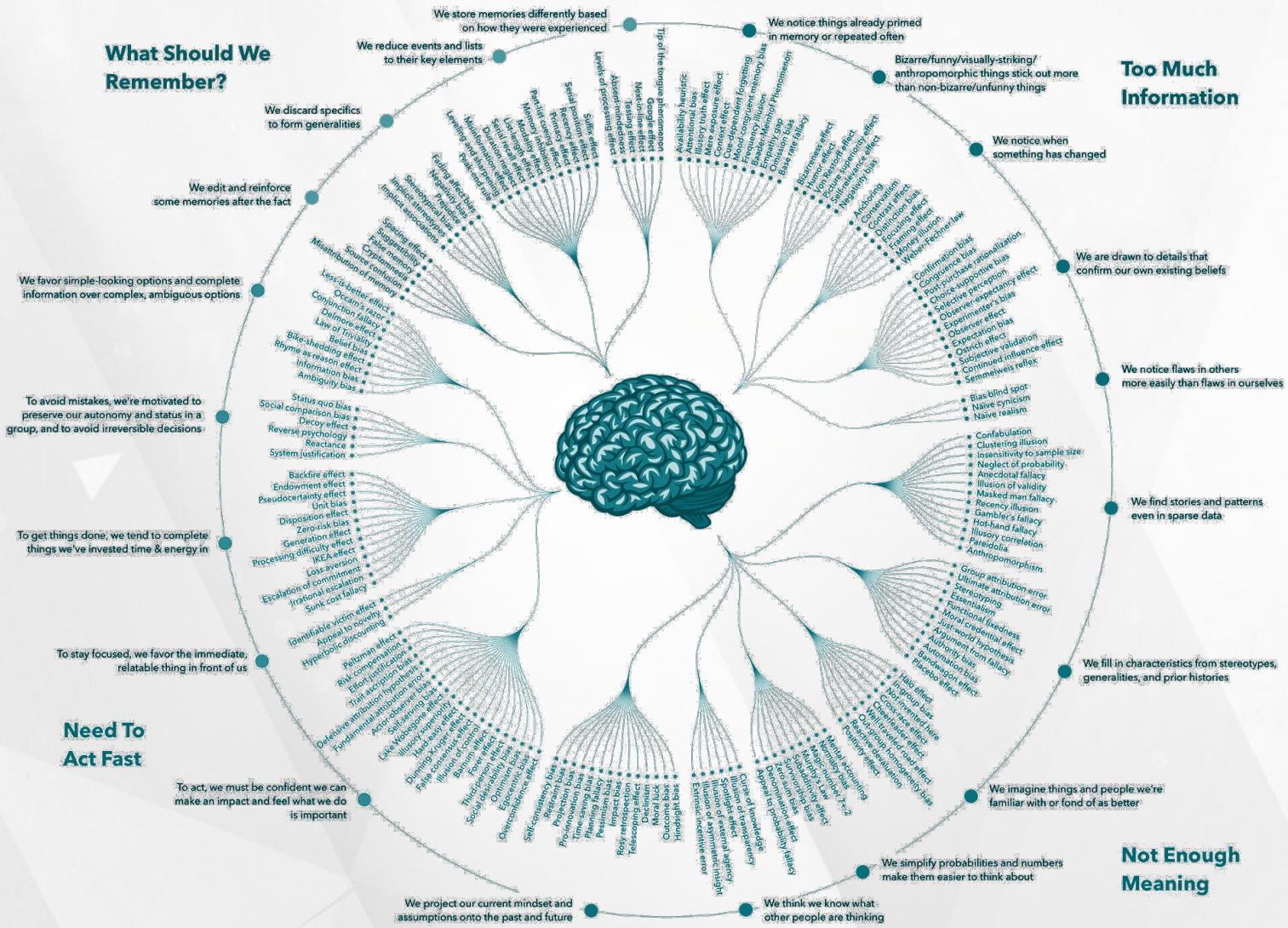
PHILOSOPHY

INTELLIGENCE DESIGN NEEDS DATA

WHY DATA?

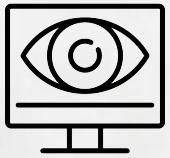
BEST TOOL
TO HELP INTUITION

THE COGNITIVE BIAS CODEX



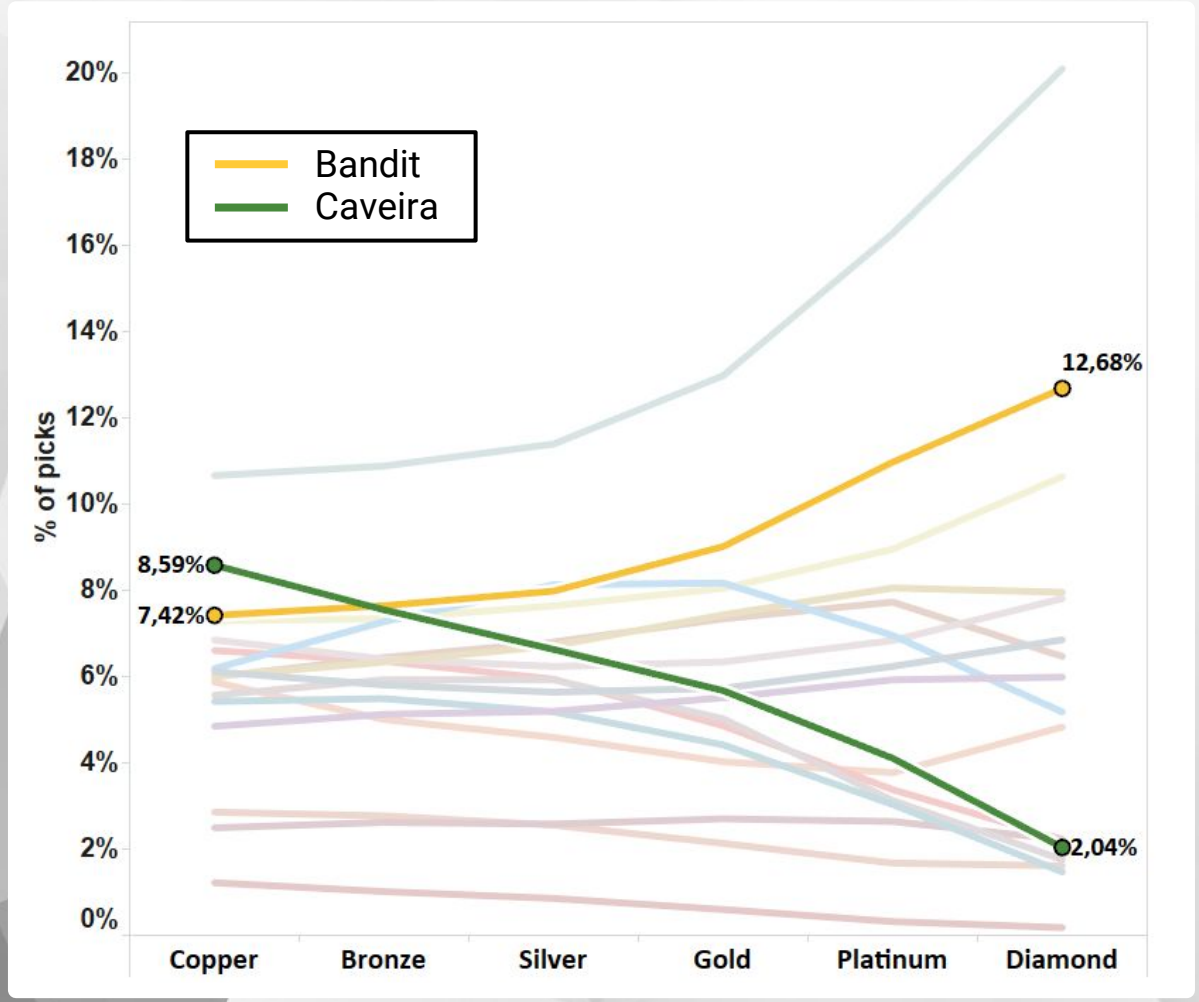
“This always happens to me…”

– No, it doesn’t.



YOU CAN’T
SEE EVERYTHING

DIFFERENT SKILLS / DIFFERENT GAMES



Operators pick rates per Skill Rank – Ranked PC – Patch Y2S3

Data is important, fine...

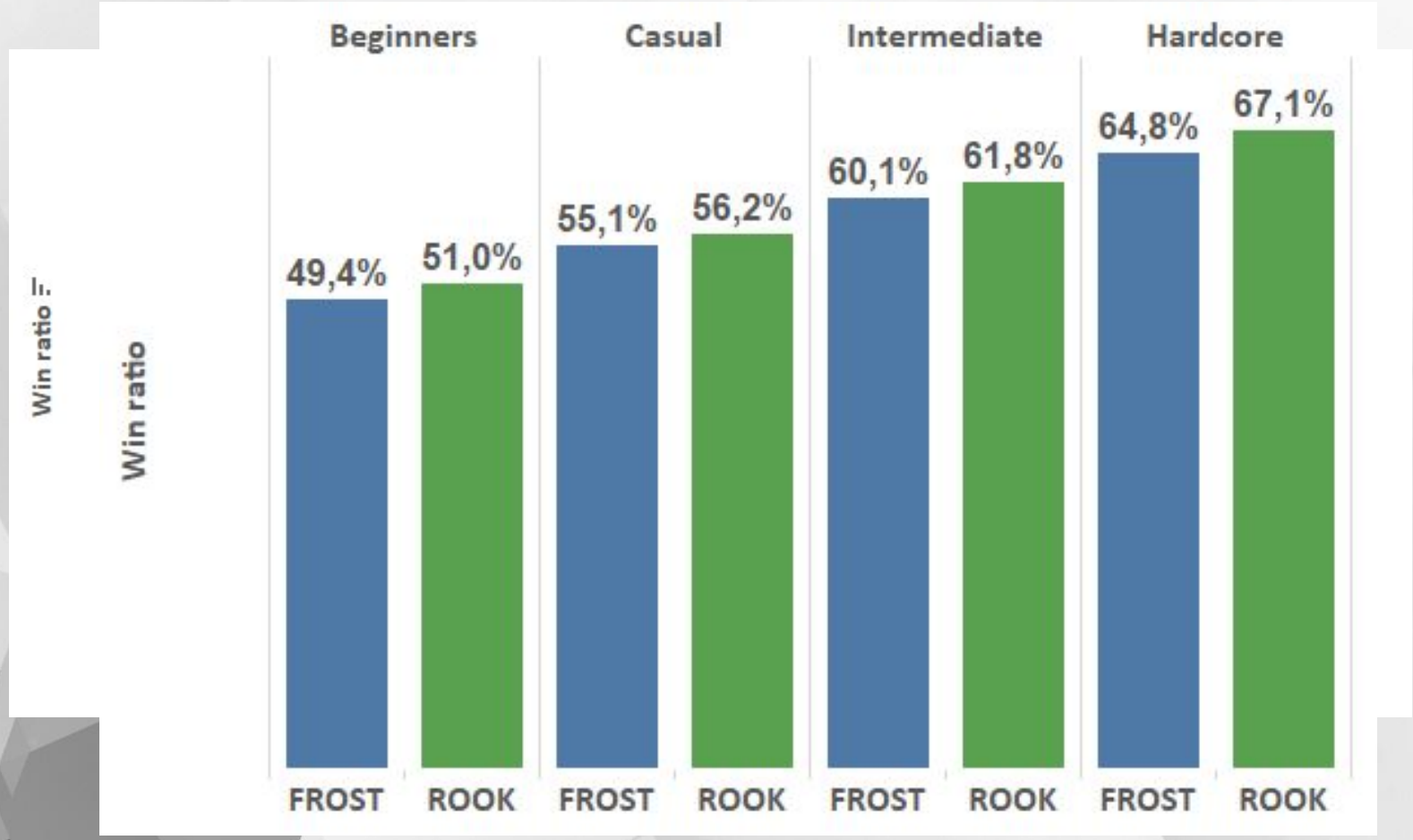
But why do you need an **Analyst** when you can get a **report**?

DATA IS TRICKY!

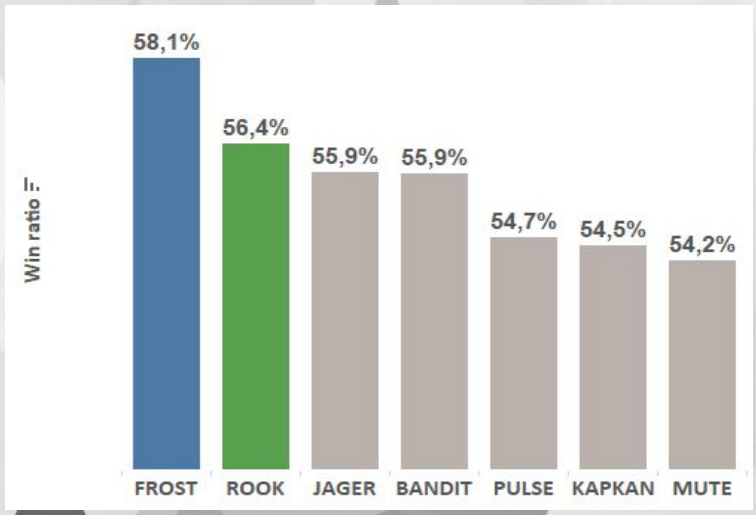
And so you ask
for the wrong reporting

MEET
FROST

Frost Example – Win ratio



Frost Example – Win ratio



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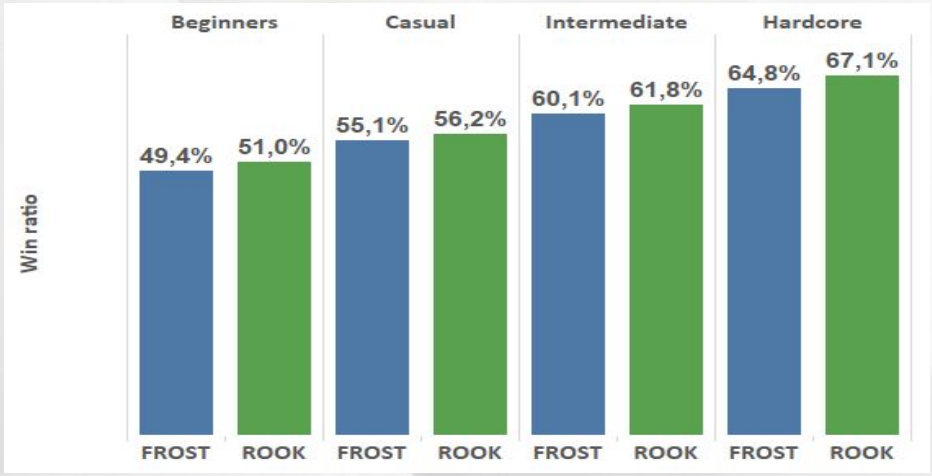
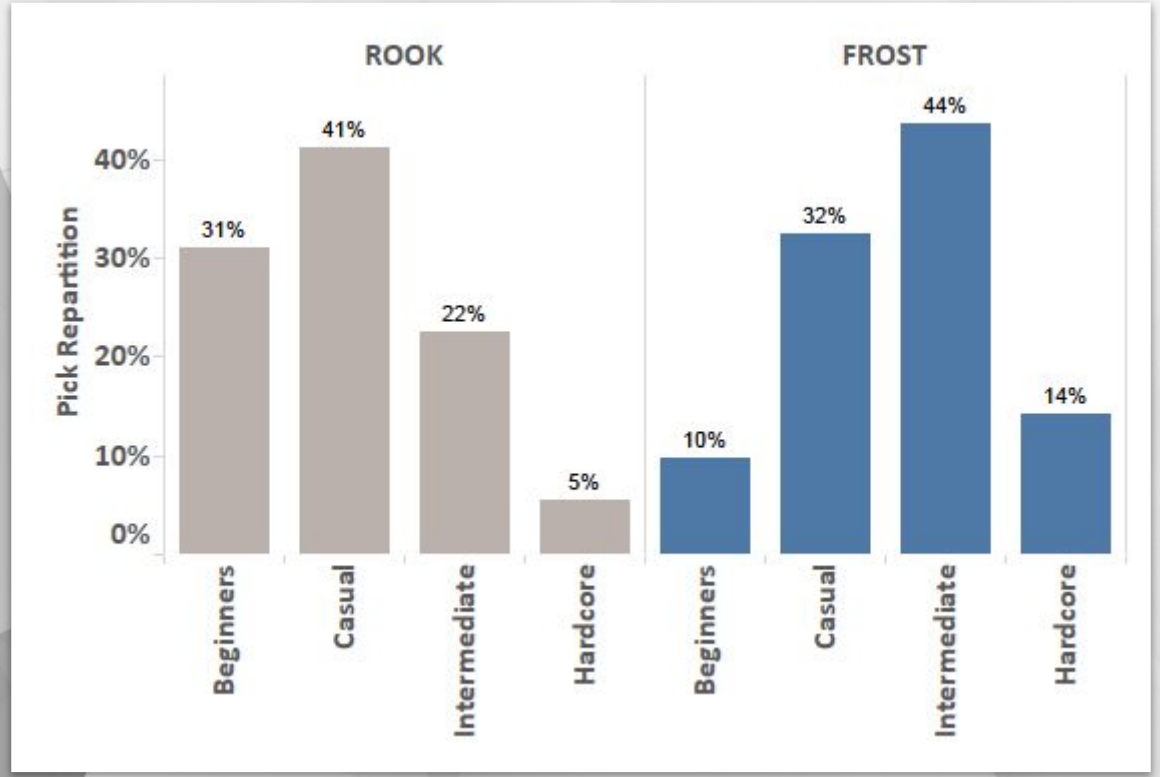


Frost Example – Win ratio



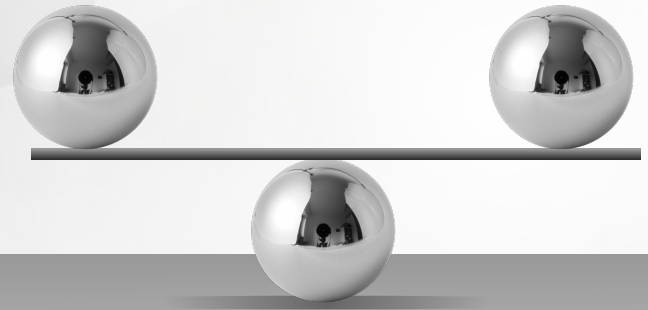
Should we let Analysts drive decision when it comes to Balance?

WELL…

DATA DRIVEN

VERSUS

DATA INFORMED



3 MIN ROUND

54,8%
54,5%
51,8%
51,8%
50%
48,2%
48,0%
SHOTGUN NERF
45,3%
45,5%
Win ratio (Att vs Def)
1 déc. 15
1 févr. 16
1 avr. 16
1 juin 16
1 août 16
1 oct. 16
1 déc. 16
1 févr. 17
Date

WRAP-UP

GDs mostly focus on **Diversity**

Analysts are the best to ensure **Fairness**

BOTH MAKE GREAT FEATURES

GOALS :

INCREASING DIVERSITY WHILE KEEPING BALANCE

- 2 -

METHODOLOGY

BALANCING PROCESS

1 CHOOSE CONTEXT

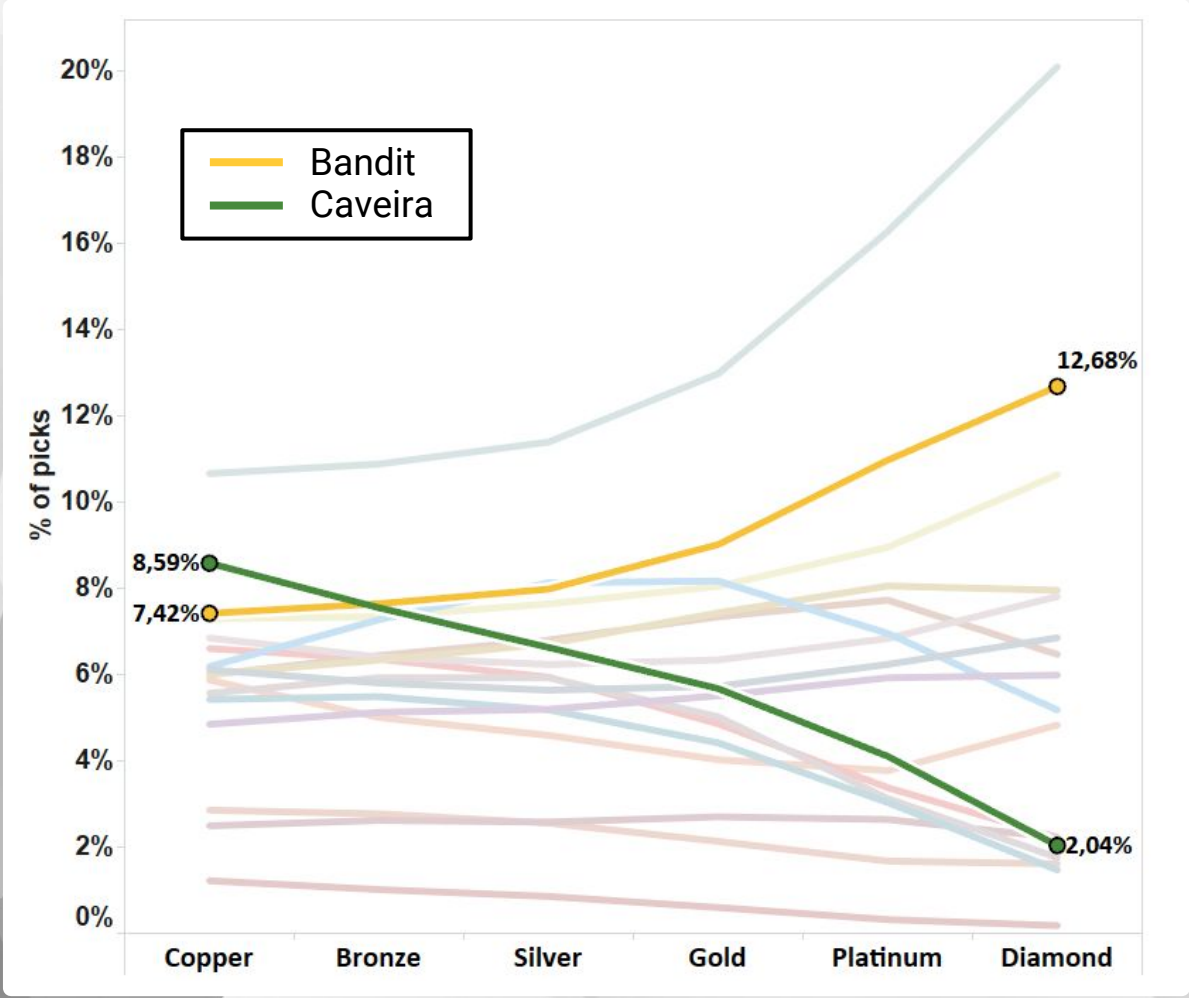
2 FIND METRICS

3 SET PRIORITY

DEFINE PROBLEMS

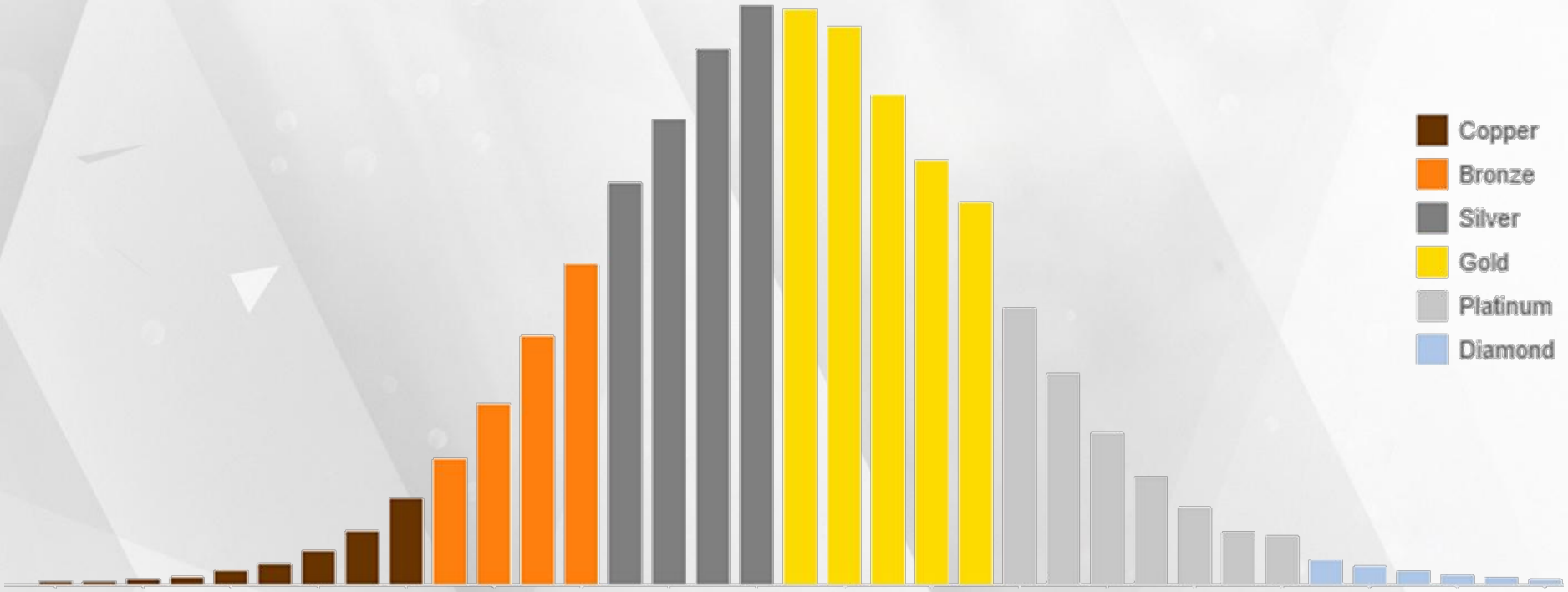
CHOOSE CONTEXT

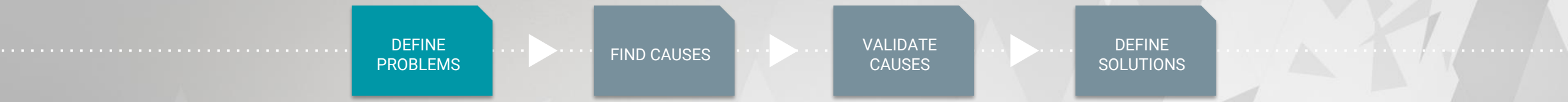
REMEMBER...



Operators pick rates per Skill Rank – Ranked PC – Patch Y2S3

SET A CONTEXT



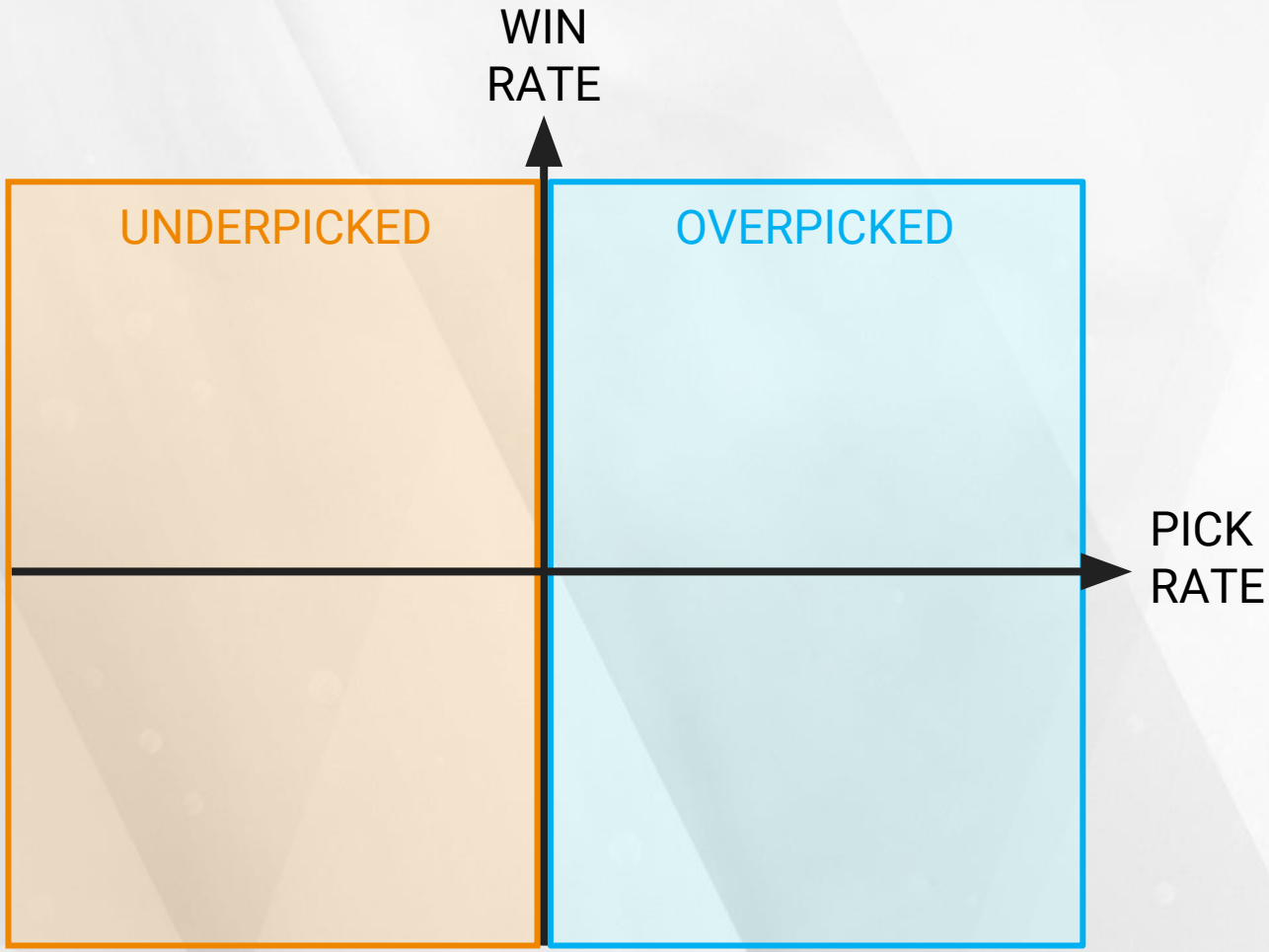


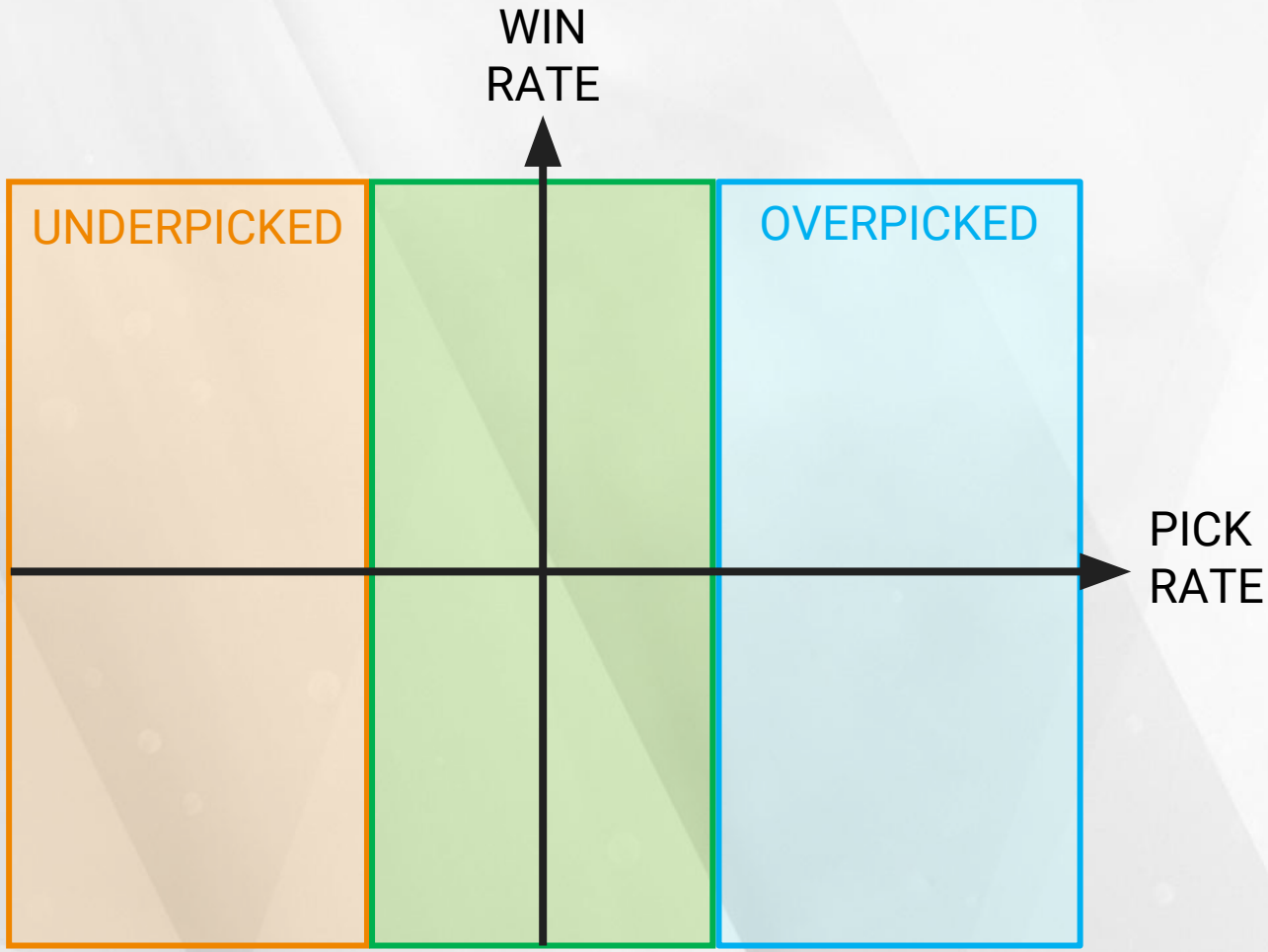
DEFINE PROBLEMS

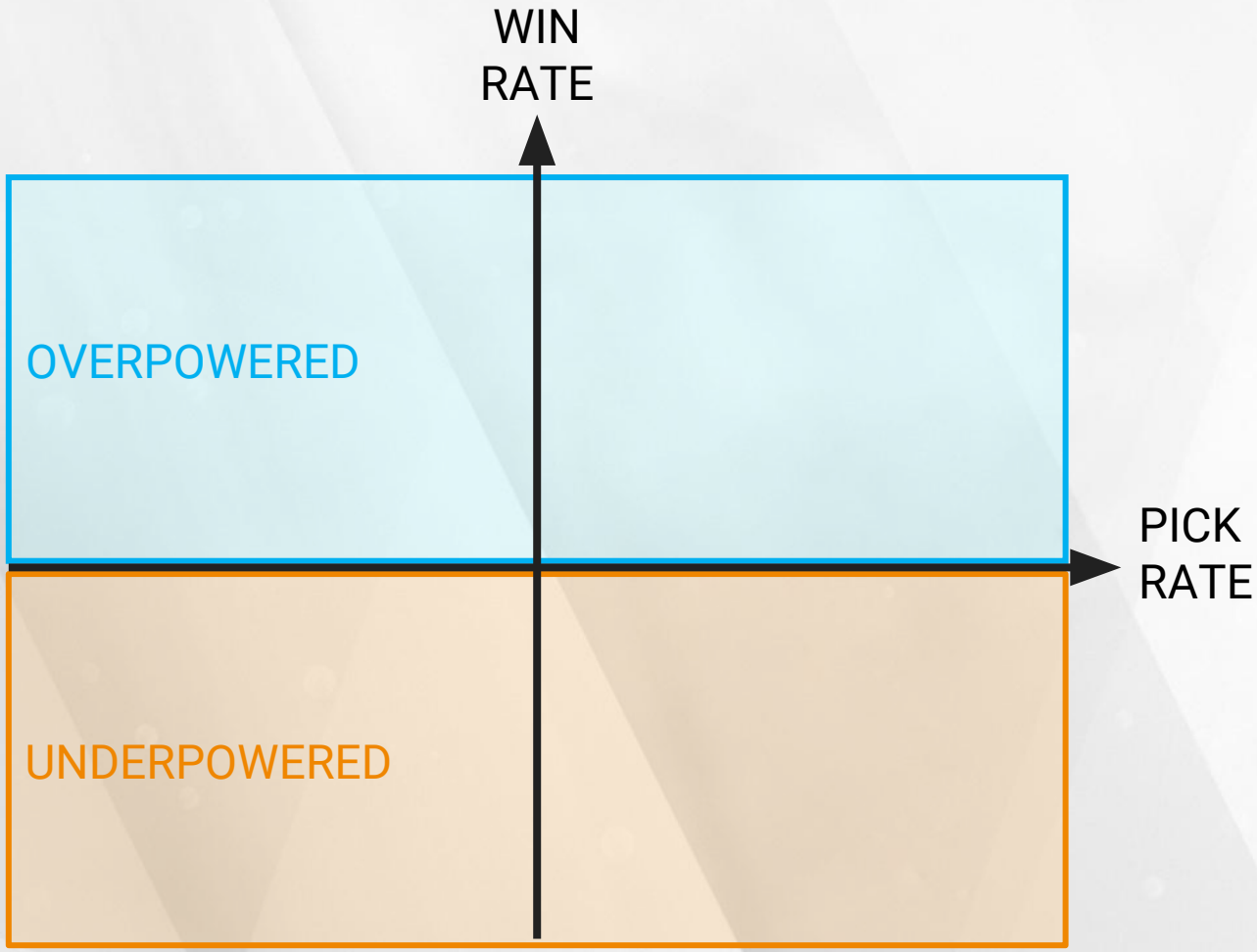
FIND METRICS

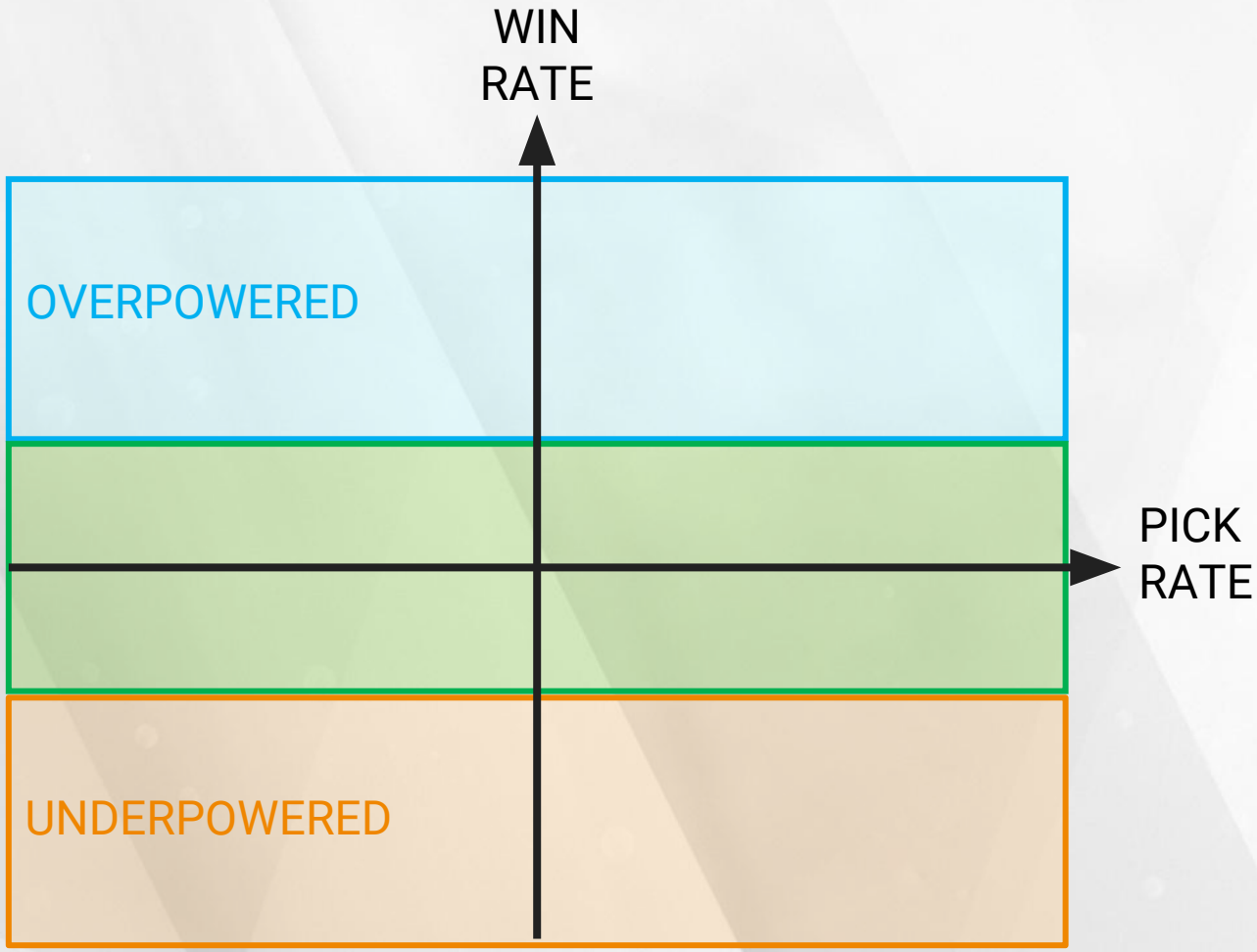
2

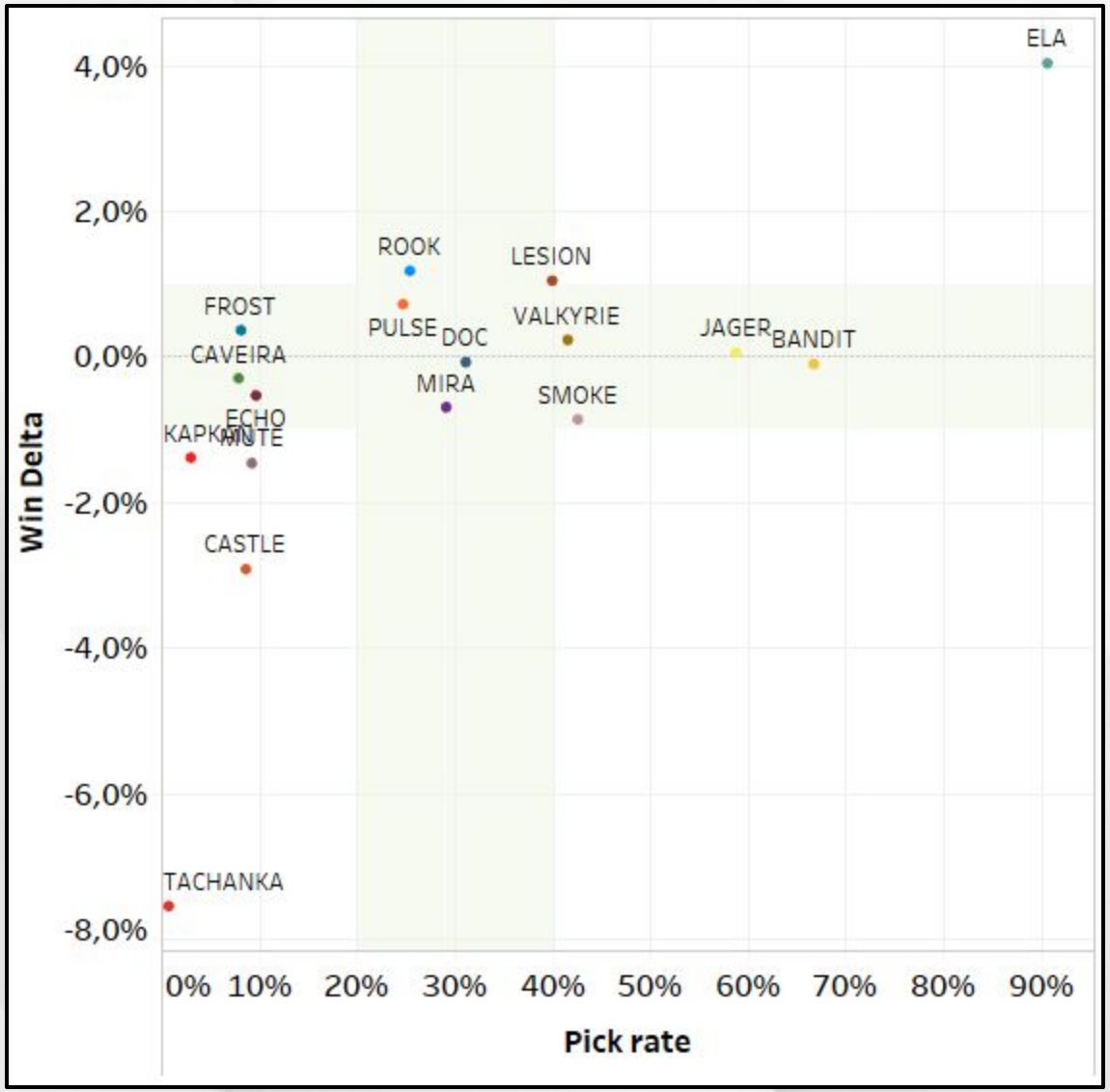
WIN
RATE
PICK
RATE


WIN
RATE
UNDERPICKED
OVERPICKED
PICK
RATE


WIN
RATE
UNDERPICKED
OVERPICKED
PICK
RATE


WIN
RATE
OVERPOWERED
UNDERPOWERED
PICK
RATE

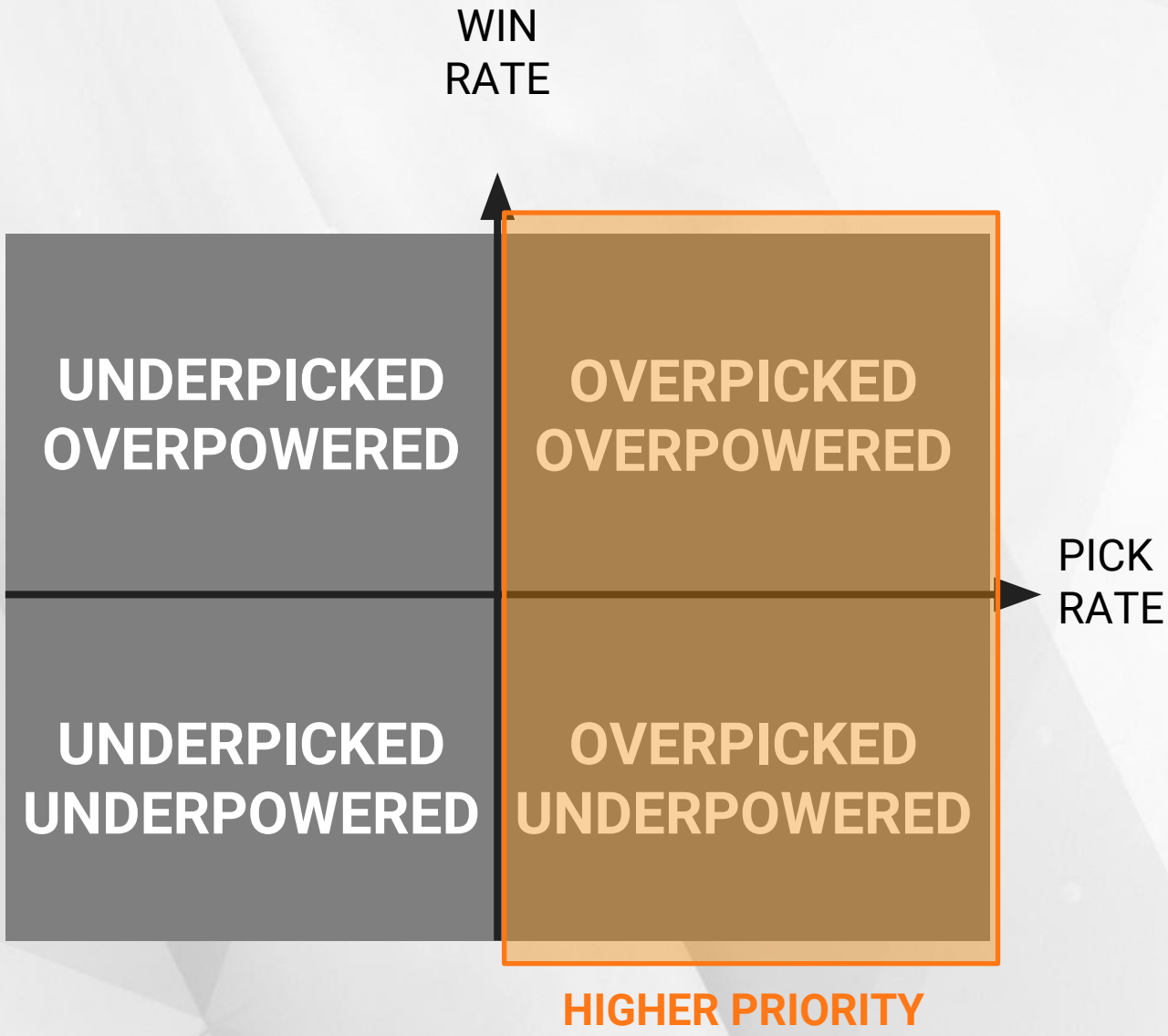

WIN
RATE
OVERPOWERED
PICK
RATE
UNDERPOWERED

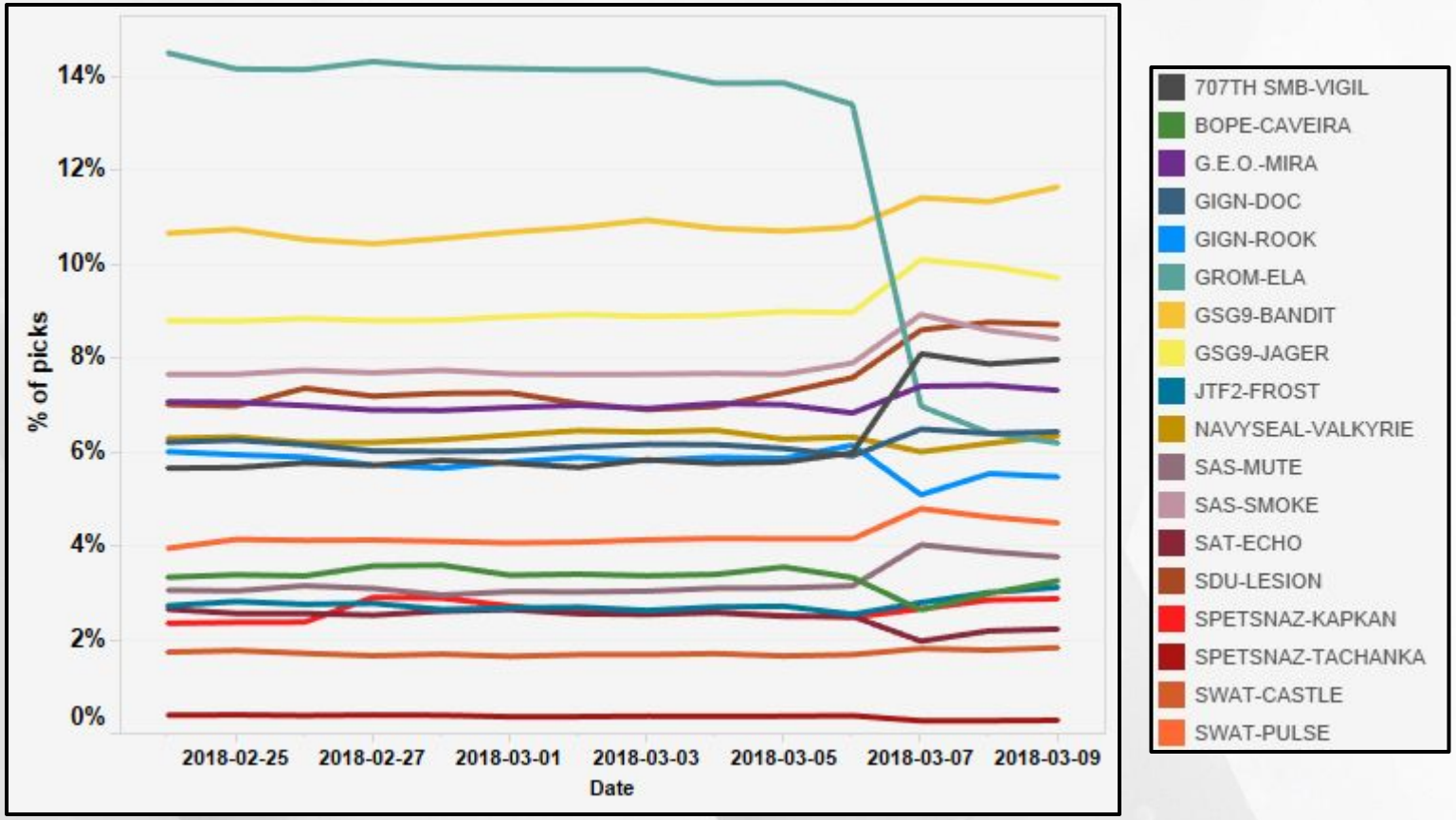


Defenders pick rates vs win delta – Plat+ Ranked PC – Patch Y2S3

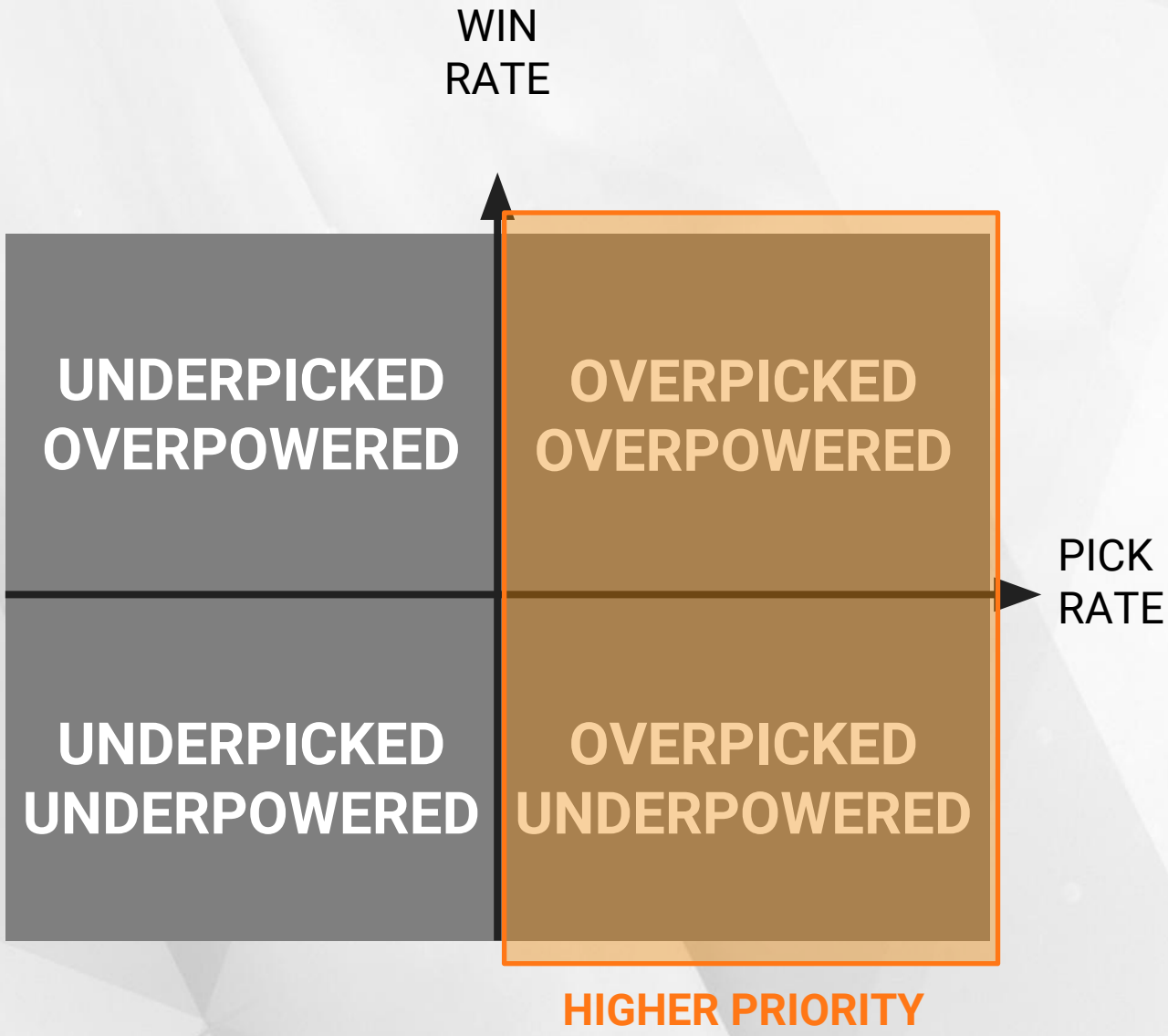
DEFINE PROBLEMS

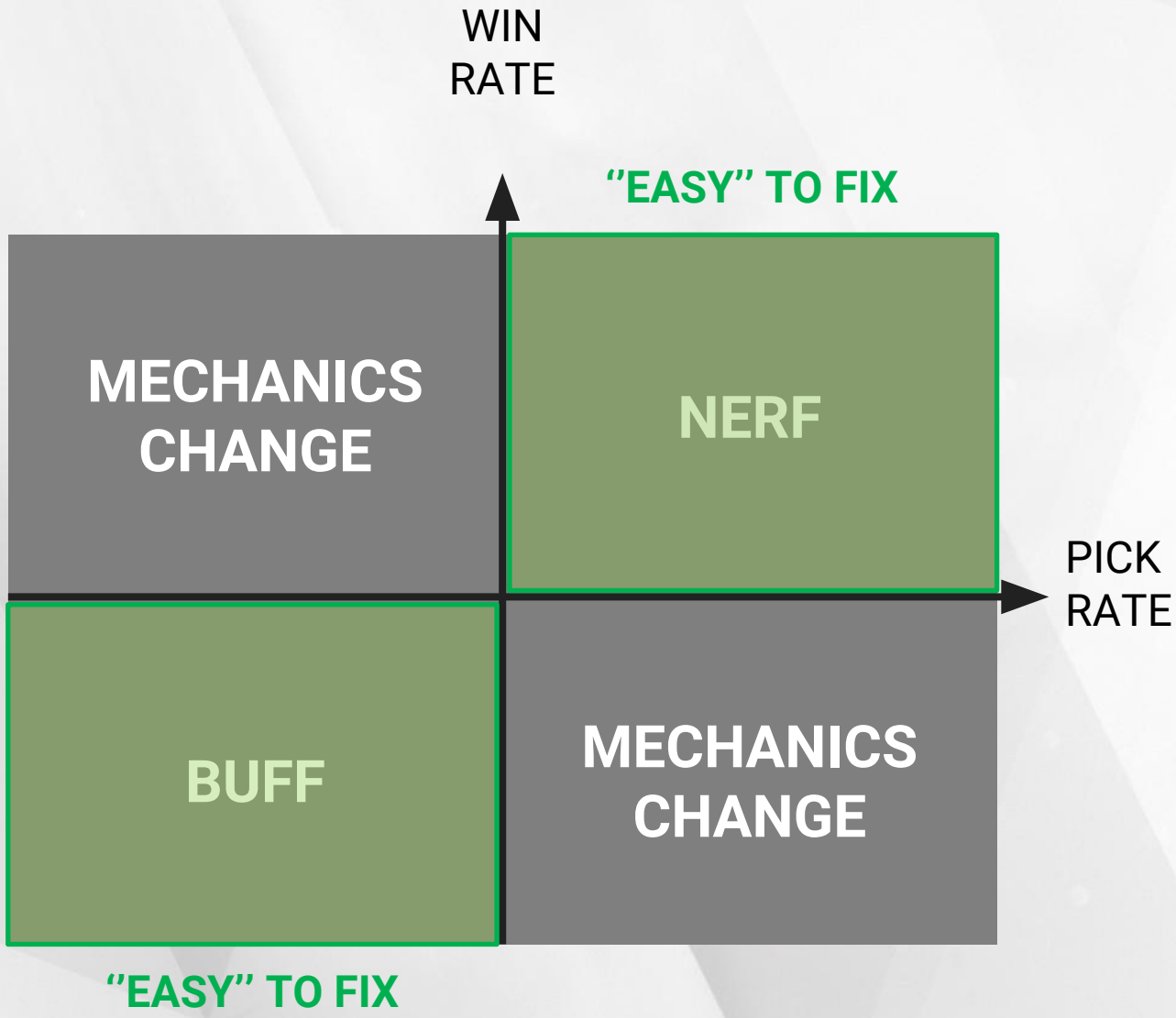
3 SET PRIORITY

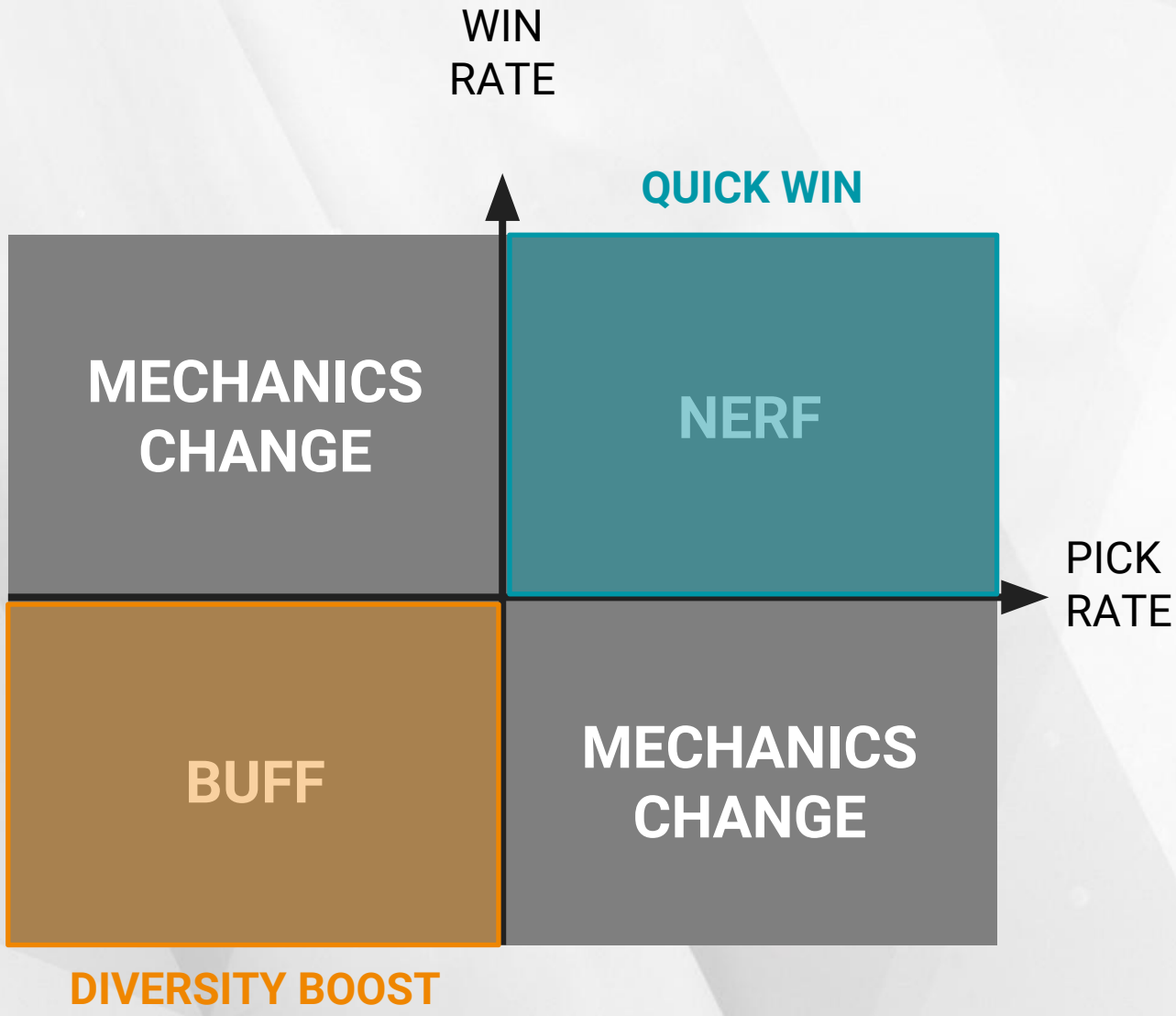

WIN
RATE
UNDERPICKED
OVERPOWERED
OVERPICKED
OVERPOWERED
PICK
RATE
UNDERPICKED
UNDERPOWERED
OVERPICKED
UNDERPOWERED
HIGHER PRIORITY



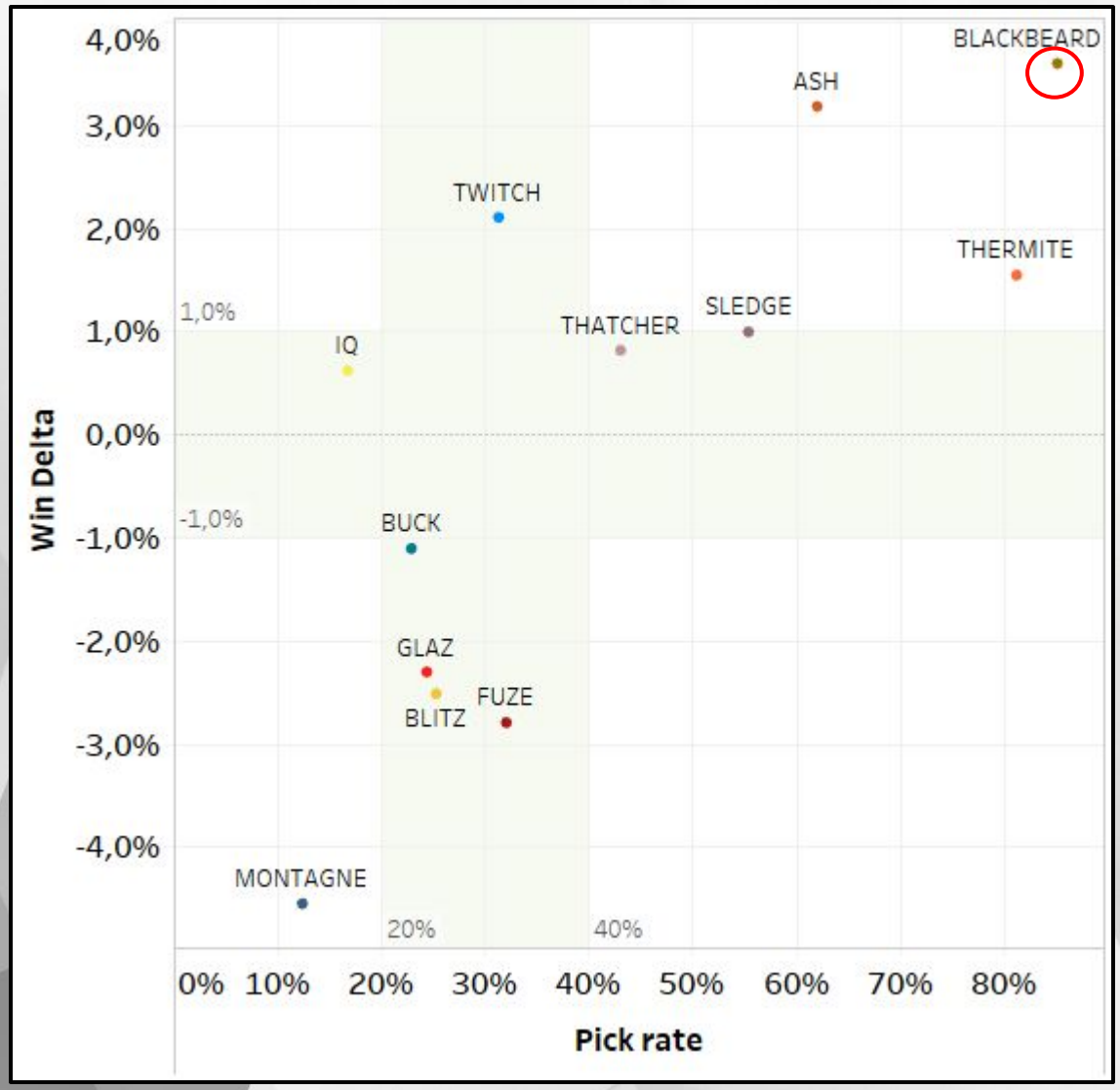
Defenders daily pick rates – Plat+ Ranked PC – Patches Y2S4-Y3S1


WIN
RATE
UNDERPICKED
OVERPOWERED
OVERPICKED
OVERPOWERED
PICK
RATE
UNDERPICKED
UNDERPOWERED
OVERPICKED
UNDERPOWERED
HIGHER PRIORITY

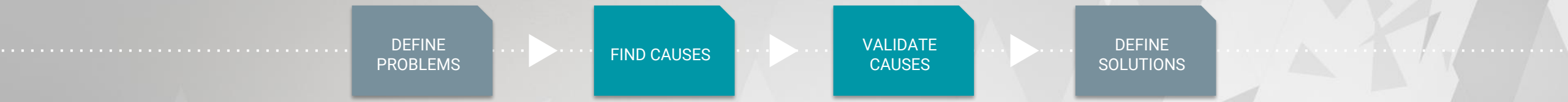

WIN
RATE
''EASY'' TO FIX
MECHANICS
CHANGE
NERF
PICK
RATE
BUFF
MECHANICS
CHANGE
''EASY'' TO FIX


WIN
RATE
QUICK WIN
MECHANICS
CHANGE
NERF
PICK
RATE
BUFF
MECHANICS
CHANGE
DIVERSITY BOOST

MEET
BLACKBEARD



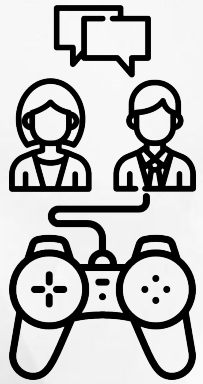
Attackers pick rates vs win delta – Plat+ Ranked PC – Patch Y1S2



FIND CAUSES & VALIDATE CAUSES

QUALITATIVE FEEDBACK

+



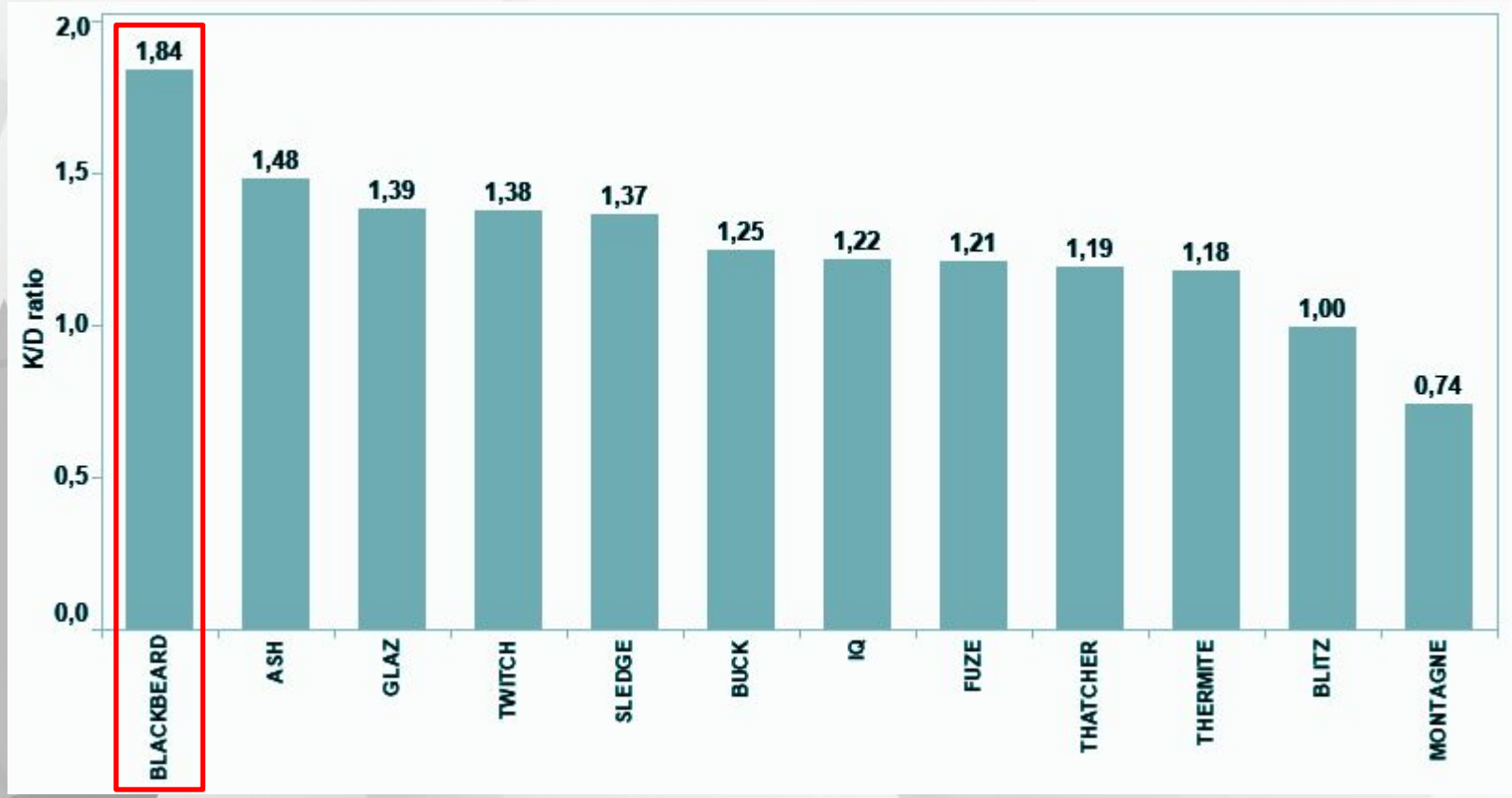
DESIGN PLAYSESSION

HYPOTHESIS

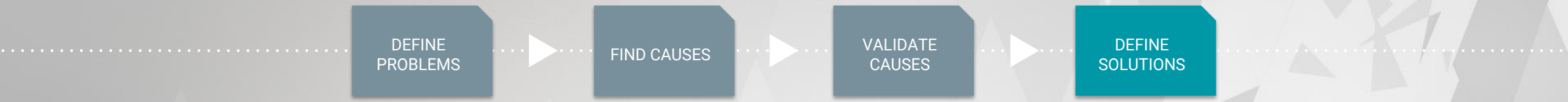
MEET

THE OFFENDER:

THE SHIELD

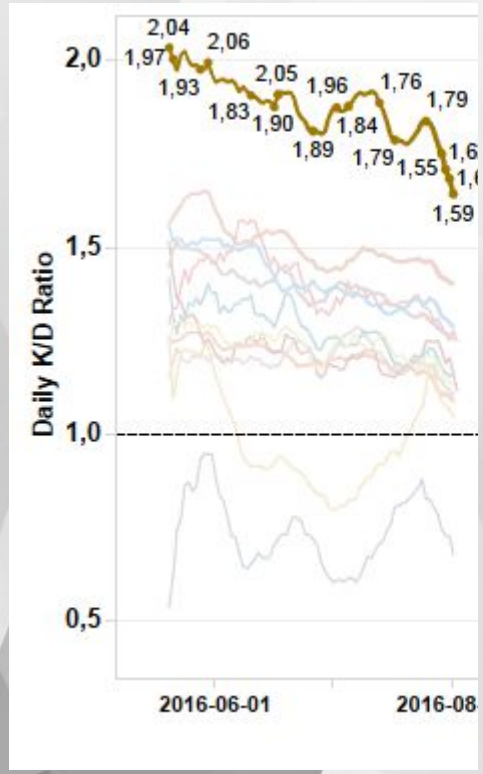


Attackers Kill/Death ratio – Plat+ Ranked PC – Patch Y1S2

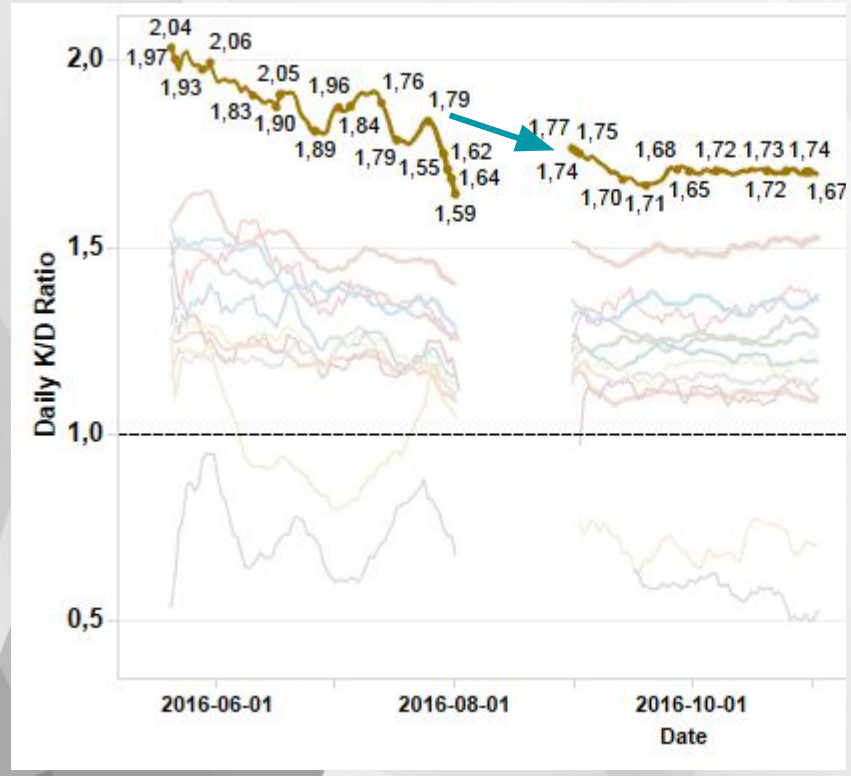


DEFINE SOLUTIONS

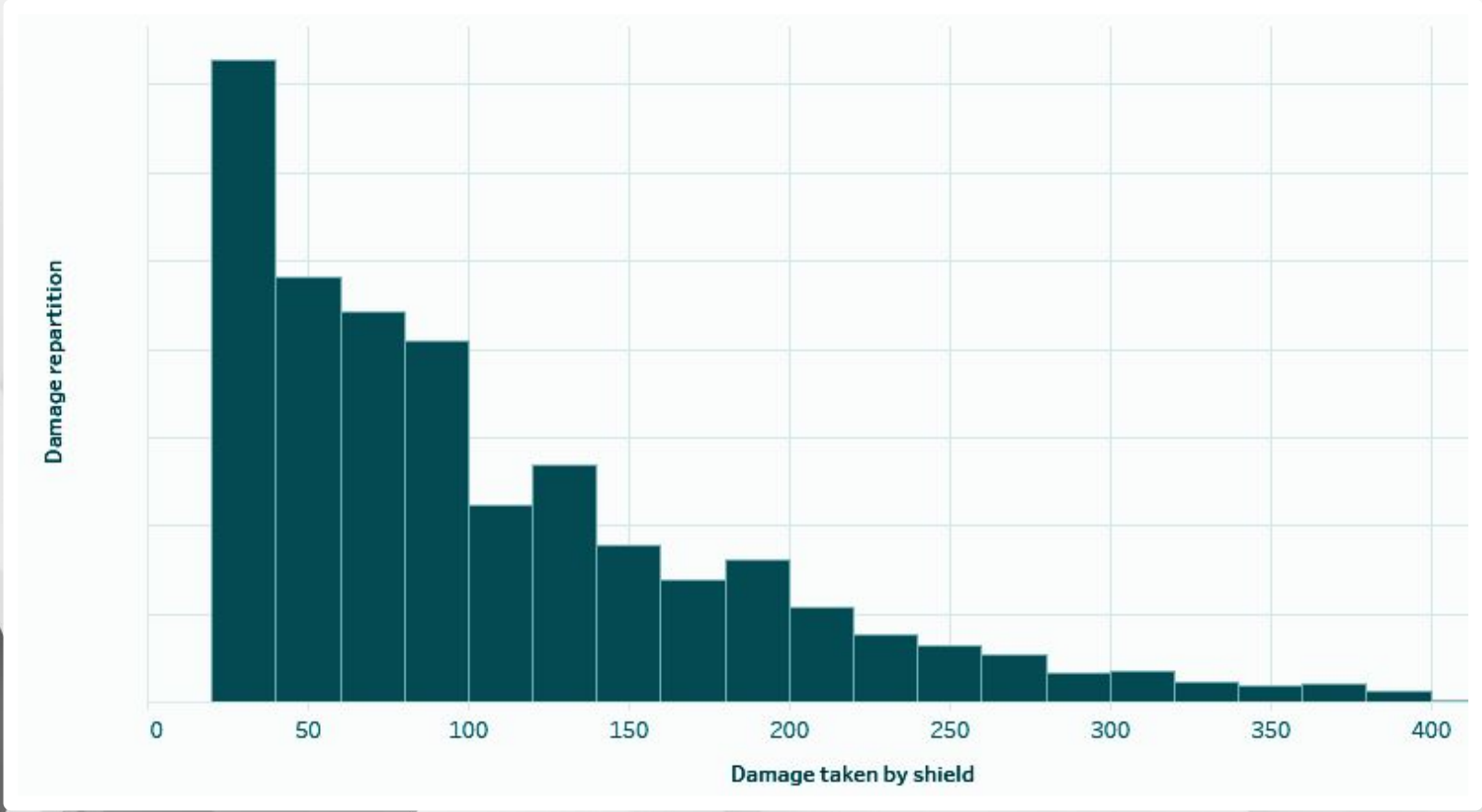
PROBLEM...


2,04
1,97
2,06
1,93
2,05
1,96
1,76
1,79
1,83
1,90
1,84
1,89
1,79
1,55
1,59
2,0
1,5
1,0
0,5
Daily K/D Ratio
2016-06-01
2016-08

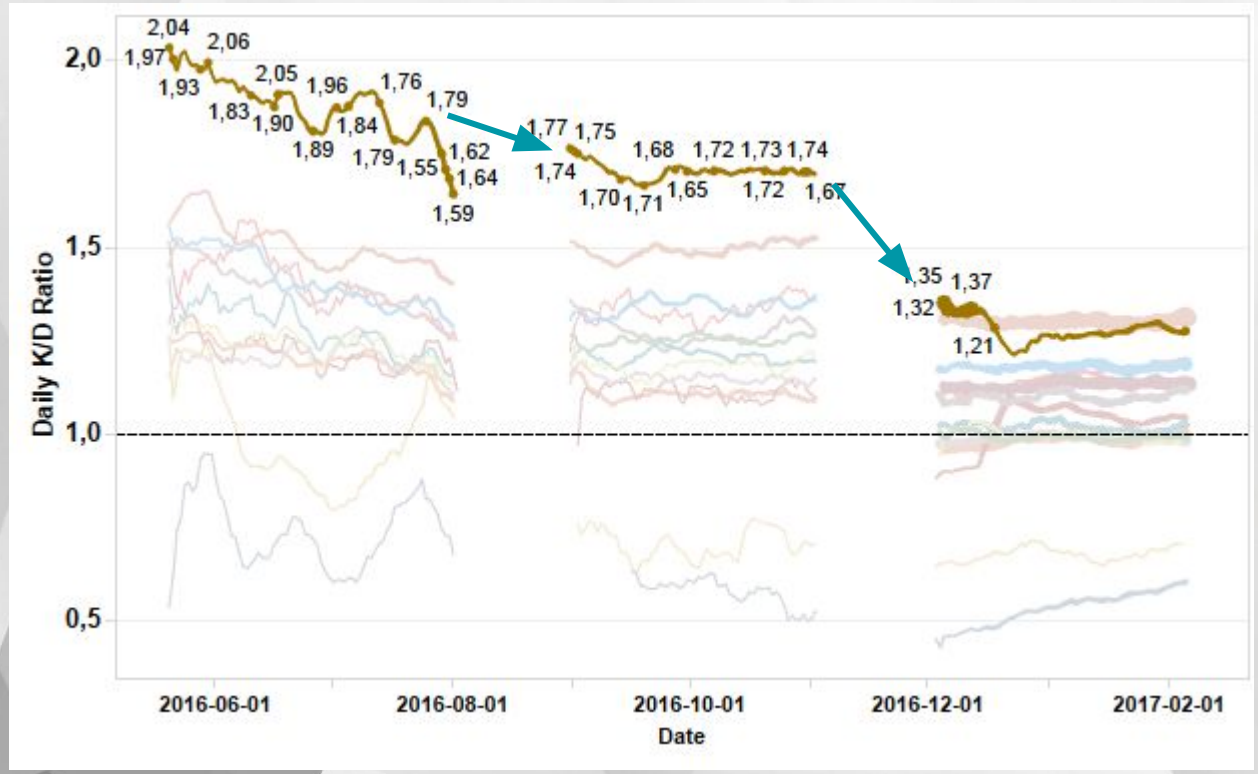
SOLUTION: DESIGNER ONLY...



SOLUTION: ANALYST + DESIGNER...



SOLUTION: ANALYST + DESIGNER...



MEET
CAPITAO
SOUZA

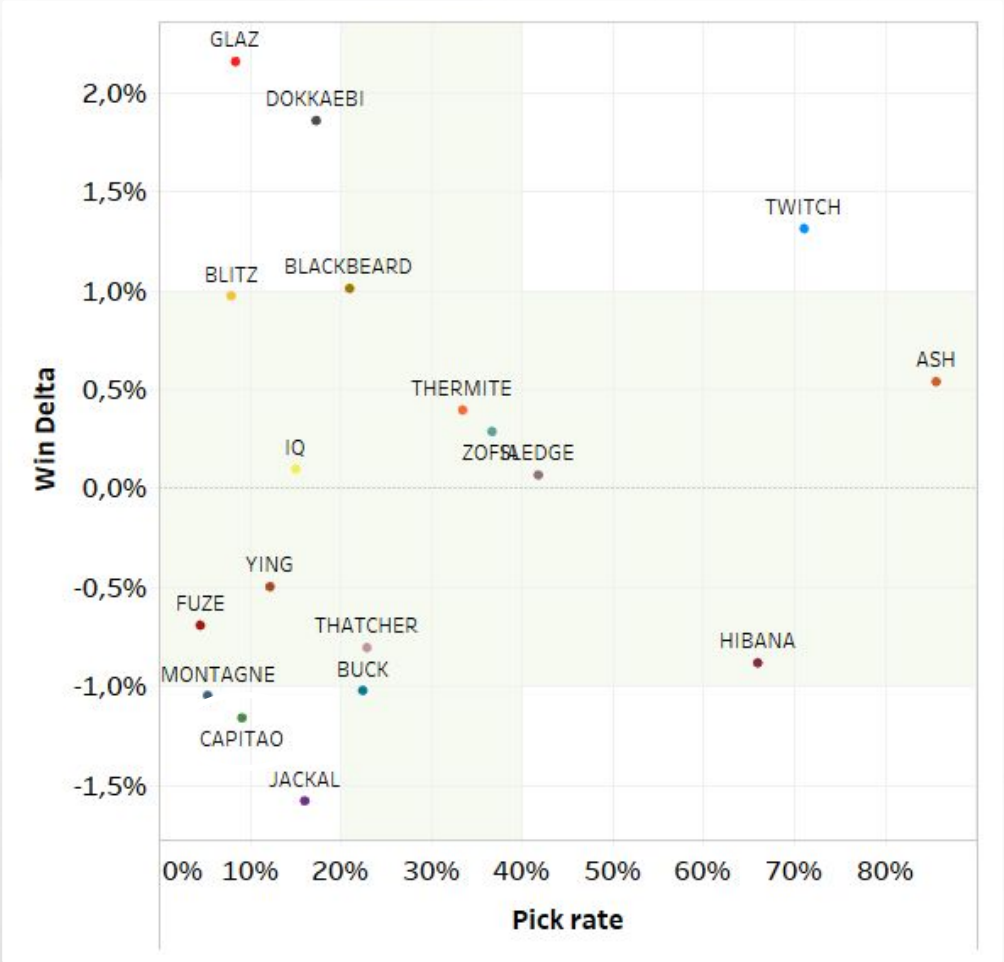
EXEMPLE CAPITAO

DEFINE PROBLEMS

DATA

QUALI

DESIGN

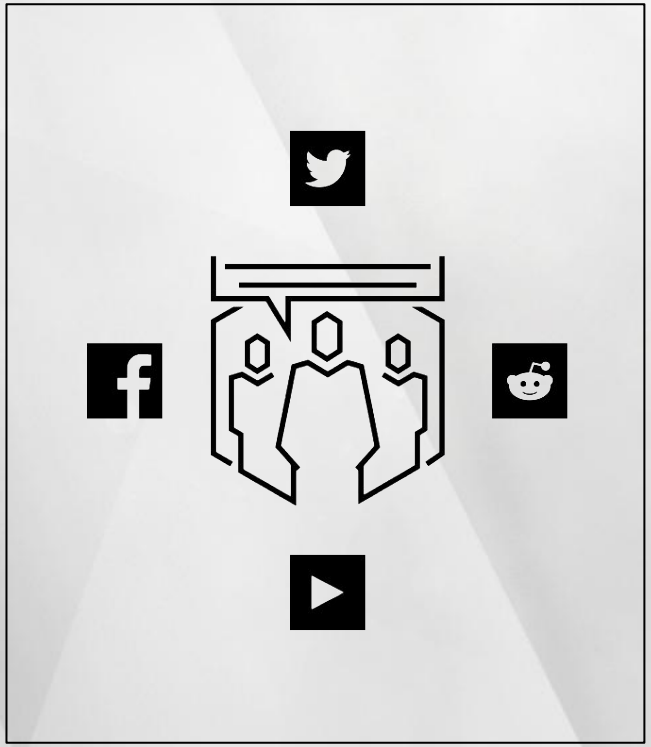


Attackers pick rates vs win delta – Plat+ Ranked PC – Patch Y2S3

EXEMPLE CAPITAO

FIND CAUSES

DATA
QUALI
DESIGN



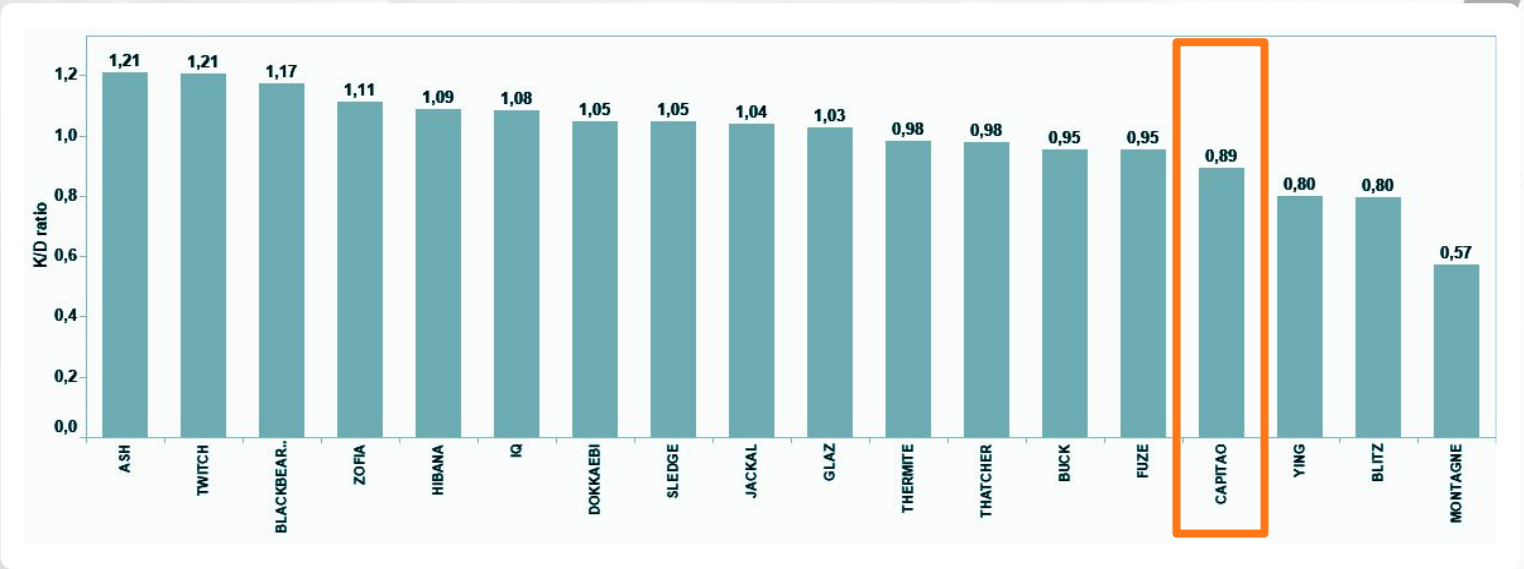
EXEMPLE CAPITAO

VALIDATE CAUSES

DATA

QUALI

DESIGN



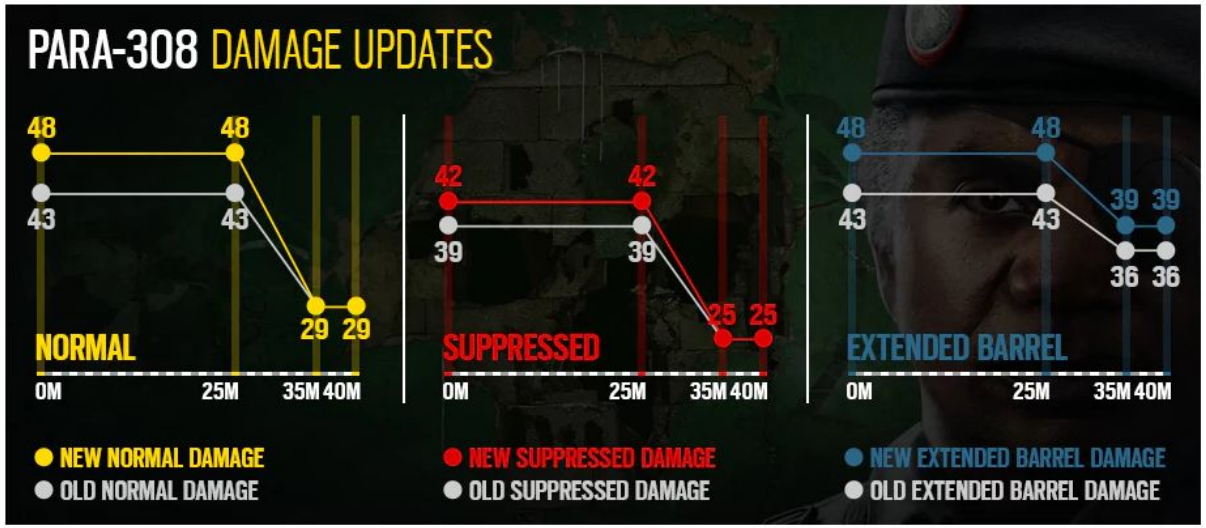
EXEMPLE CAPITAO

DEFINE SOLUTION

DATA
QUALI
DESIGN

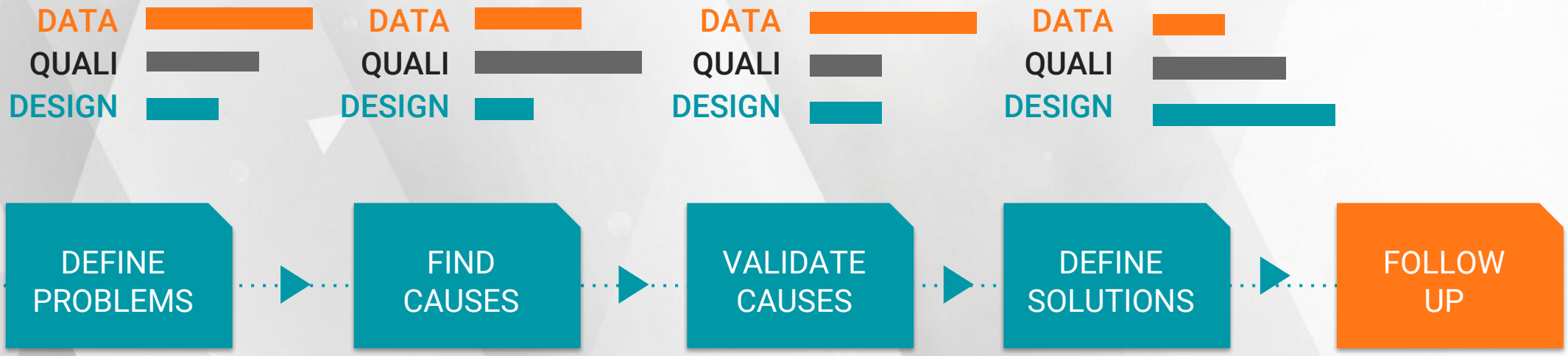
Capitao's Para-308 buff

We increased the Para-308's raw damage is to 48 (from 43). We also slightly reduced the intensity of the random components of its recoil.



Game Designer notes: Capitao right now is not attractive enough. His gadget suffers from a few issues that will need long-term solutions, but in the meantime, it's clear that his main assault rifle is too weak.

RECAP


DATA
QUALI
DESIGN
DATA
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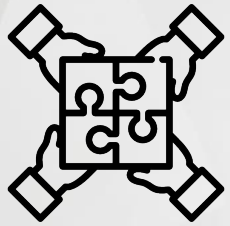
DESIGN
DEFINE PROBLEMS
FIND CAUSES
VALIDATE CAUSES
DEFINE SOLUTIONS
FOLLOW UP

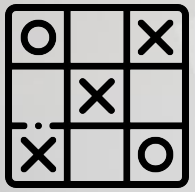
- 4 -

CONCLUSION



Features are **OWNED by both**

GAME DESIGNERS and **ANALYSTS**



FUN

≠

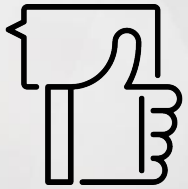
BALANCED

COMMUNICATION

IS THE KEY

- 5 -

QUESTIONS?



Thank you!

TOM CLANCY'S RAINBOW SIX | SIEGE

INTELLIGENCE GAME DESIGN

Geoffroy Mouret
Data Scientist

Leroy Athanassoff
Game Director