Analytics in Action

Data in a Creative Culture

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GDC 'Eu

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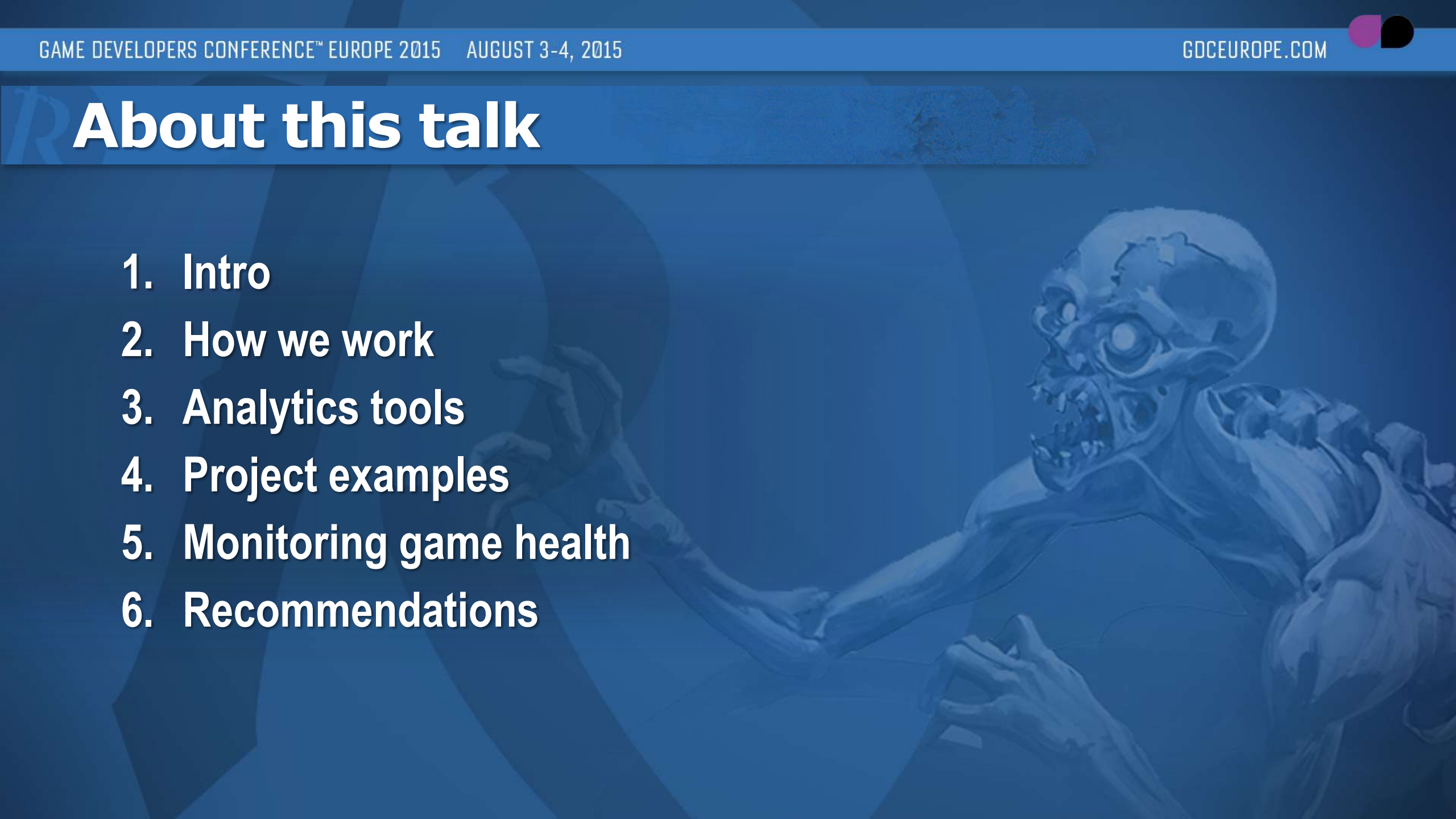
About this talk

1. Intro
2. How we work
3. Analytics tools
4. Project examples
5. Monitoring game health
6. Recommendations



Intro - About me

- RuneScape studio head @ Jagex
- Worked in game design for 17 years
  - 1998 - Bullfrog / Electronic Arts
  - 2001 – Sony
  - 2006 – Climax
  - 2011 – Jagex

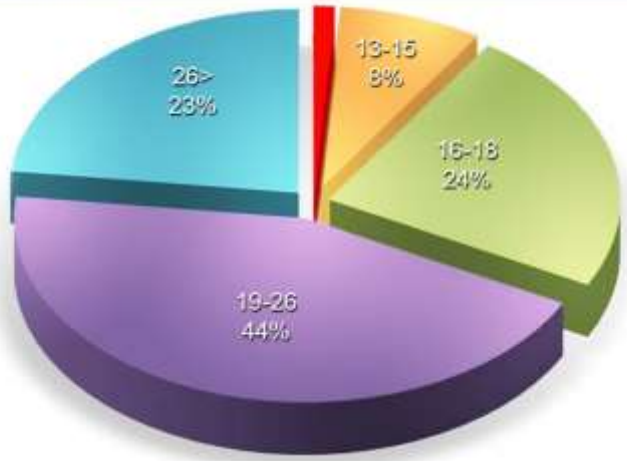
Intro - About RuneScape

- Traditional fantasy MMORPG
- Launched 2001 - updated weekly
- F2P Hybrid: Free access, optional subscription and MTX
- 160 development and publishing staff
- Franchise: Old School, Chronicle, new MMO and more to come

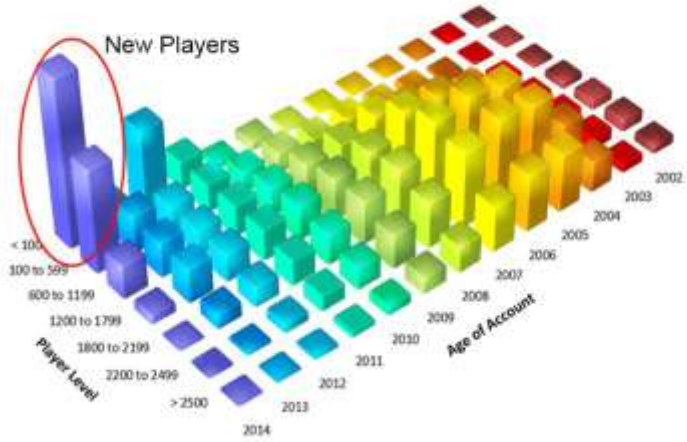
Intro - About Our Players

- Mostly English speaking males 16-26
- Over half have played 6+ years
- 90 minute average session
- Active video & streaming community

Runescape Players - Age Breakdown



Runescape - Account Age/ Level Breakdown



Intro - RuneScape Key Stats

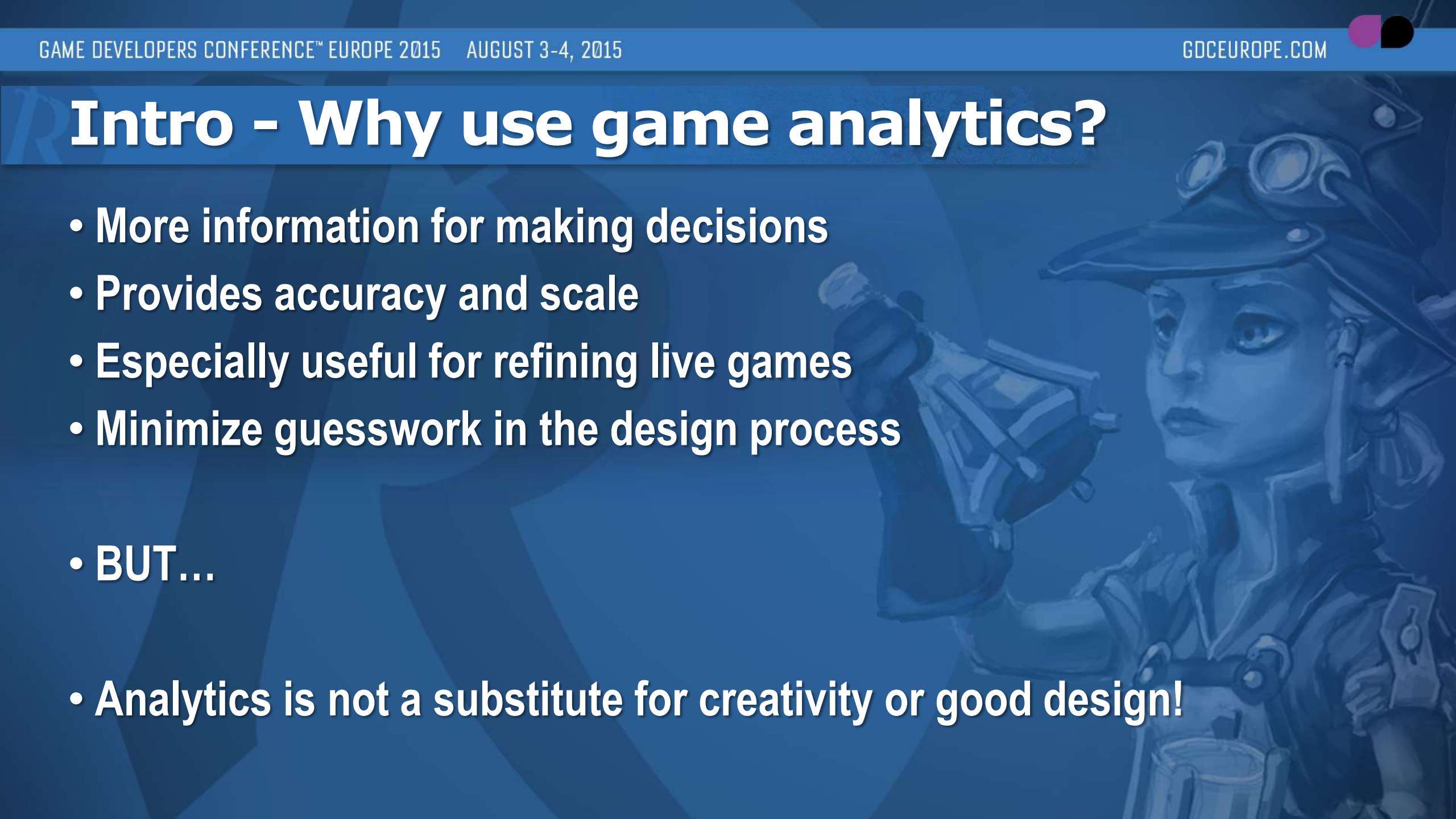
- Revenue to date: $750M~
- Annual revenue: $75M+
- New users: 20k/day
- Daily actives: 500-600k
- Monthly actives: 2M
- Subscribers: 600k+
- Concurrent users: 70k av, 100k peak

Intro - Why use game analytics?

- More information for making decisions
- Provides accuracy and scale
- Especially useful for refining live games
- Minimize guesswork in the design process

- BUT…

- Analytics is not a substitute for creativity or good design!



Intro - RuneScape as a case study

RuneScape has demanding requirements:

- Large game with 10,000 hours content
- Non-linear, open world and player-driven economy
- Weekly content additions & changes
- Game analytics started 10 years after launch

How We Work - Data services at Jagex

1. Business Intelligence - Data Warehousing, Reporting, Data Science
2. Insight - Customer & market research
3. Embedded Analytics – RuneScape, Block N Load, Digital Marketing

- 18 people total
- Several years of strategic investment

How We Work - RS Game Analytics

- Jason - Game analyst – game content, economy, balancing
  - Level 2595 (max level) – 358 days play time

- Matt - Commercial analyst – monetisation, funnel, game health
  - Level 2444 – 160 days play time

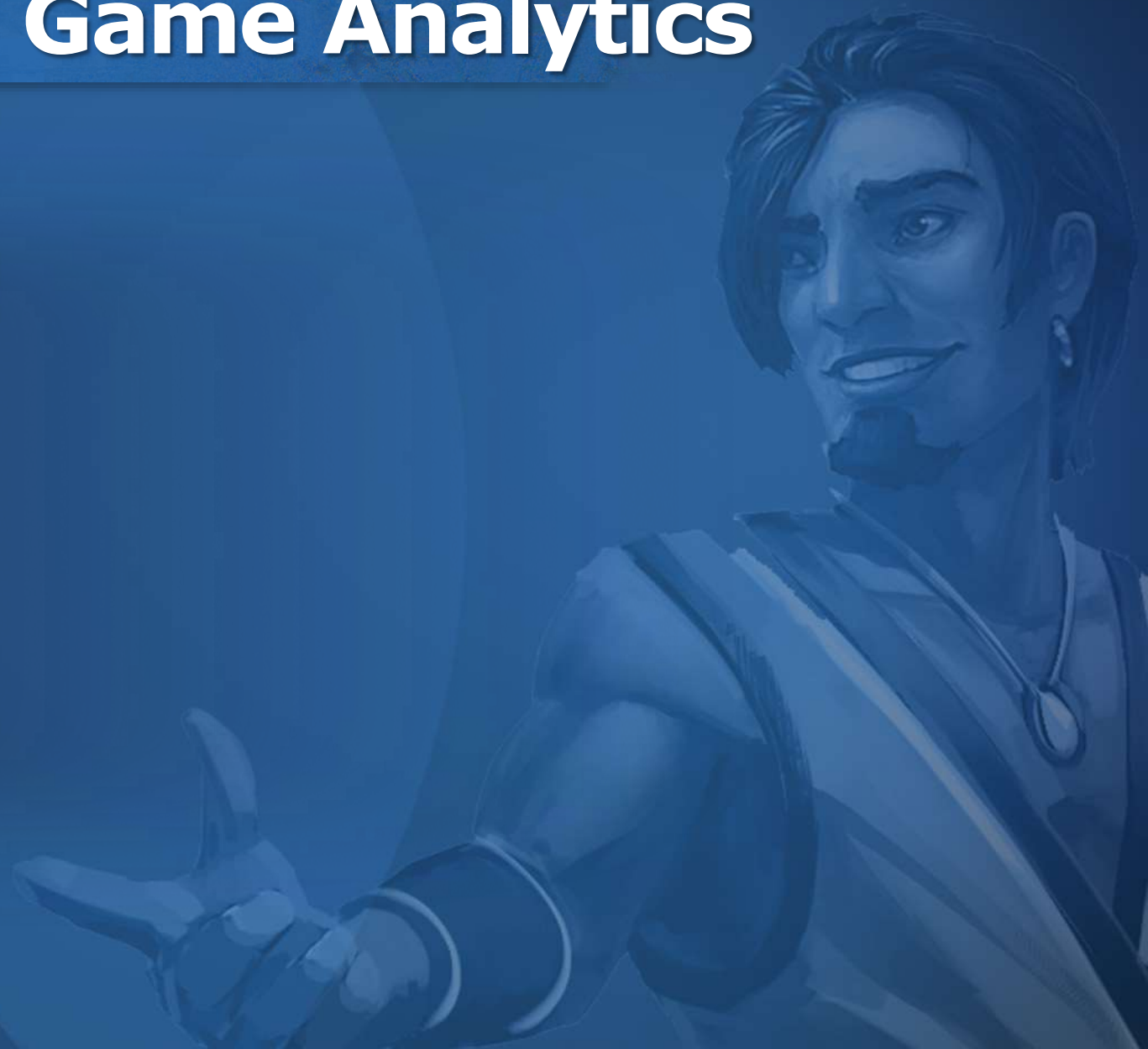
- Simon – Commercial analyst – KPIs, forecasts, payments, risk
  - Level 3 – Noob!

- Joel – Analytics Lead
  - Level 2560 – 190 days play time

How We Work - RS Game Analytics

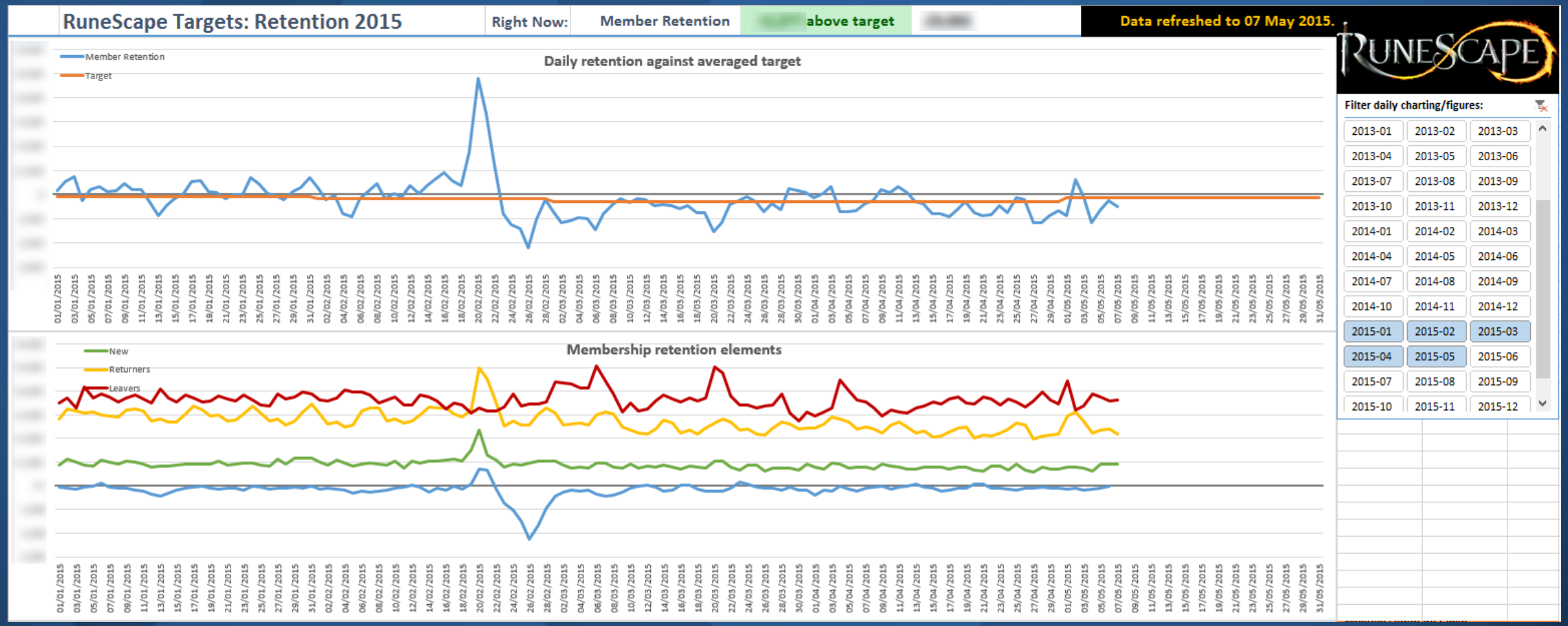
Ways of working:

- Automated reports
- Self-service tools
- Post project analysis
- Ad-hoc data requests
- Pro-active reports
- Monthly reports
- Player facing data



How We Work - RS Game Analytics

- Automated reporting e.g. Product KPIs, item sales

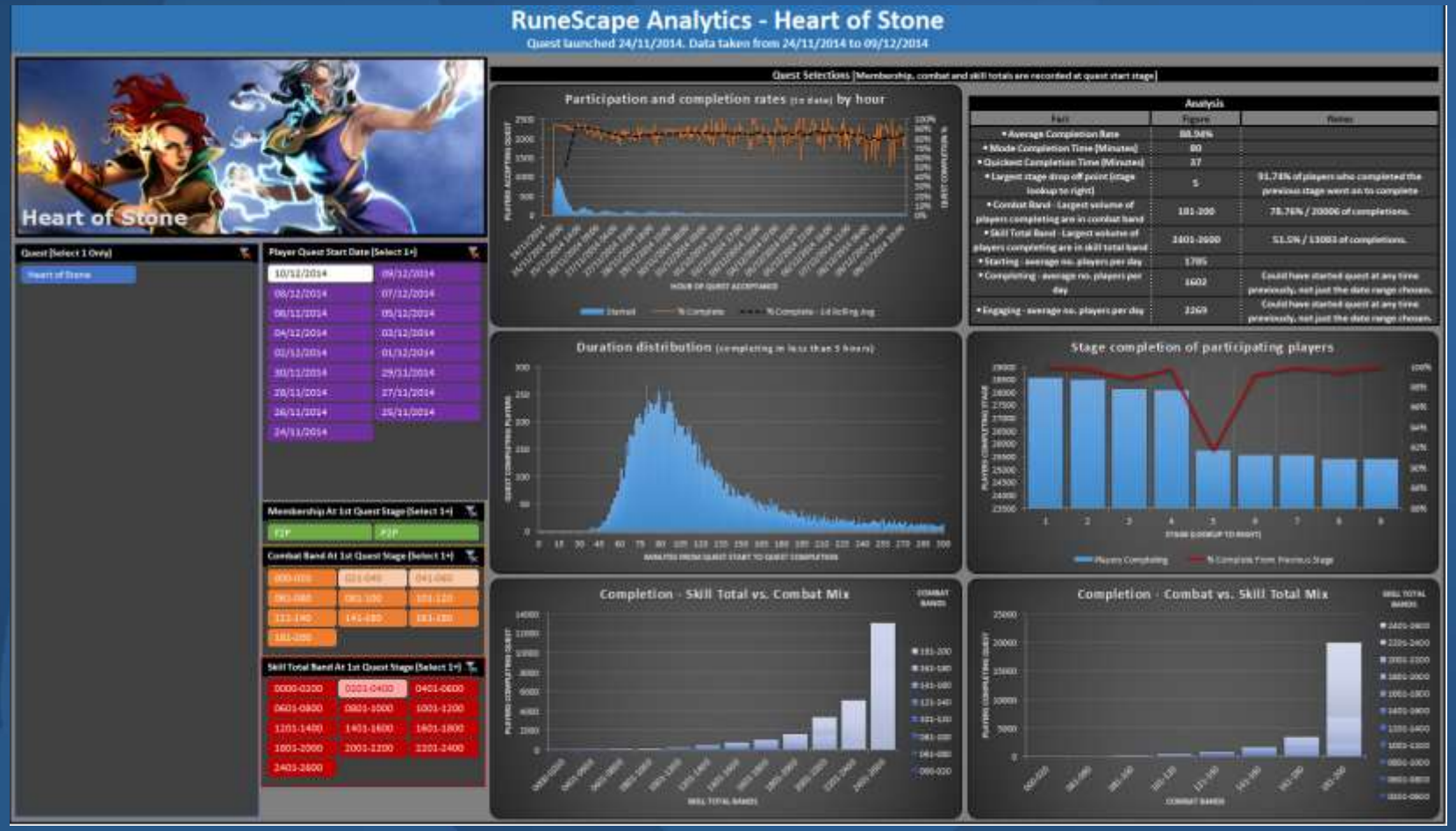


How We Work - RS Game Analytics

- Self Service Tools e.g. Player Profile Suite

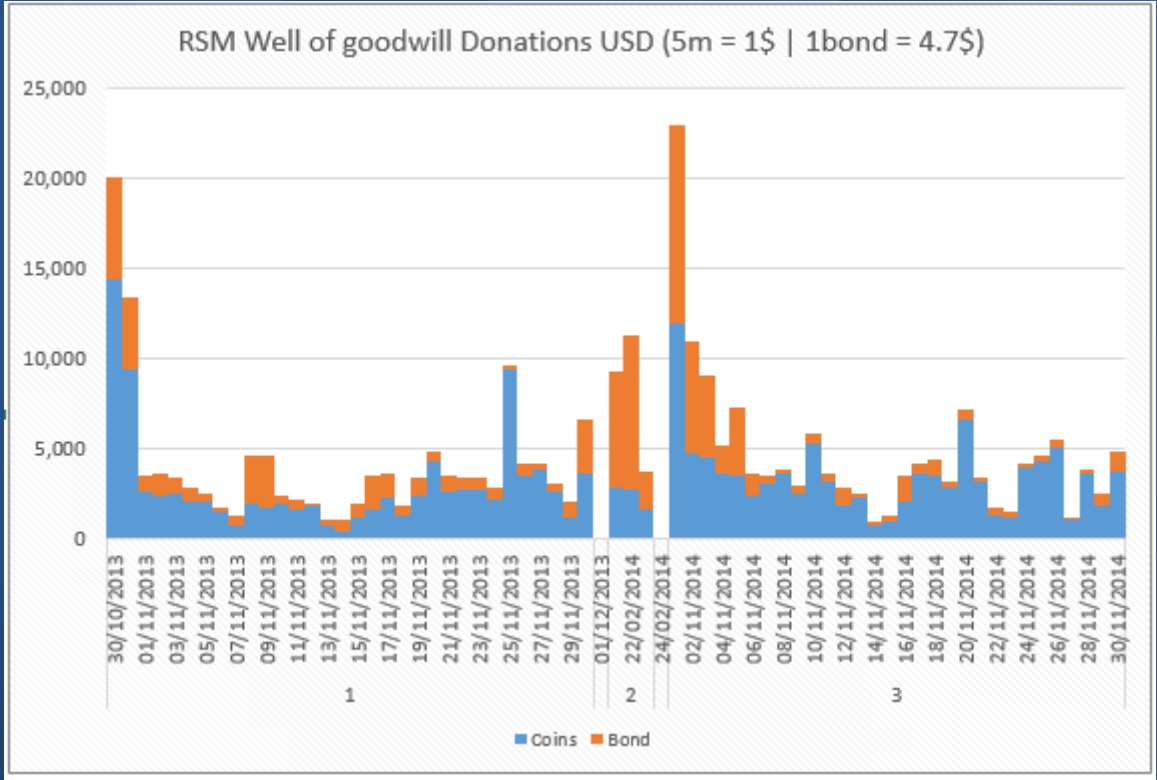
How We Work - RS Game Analytics

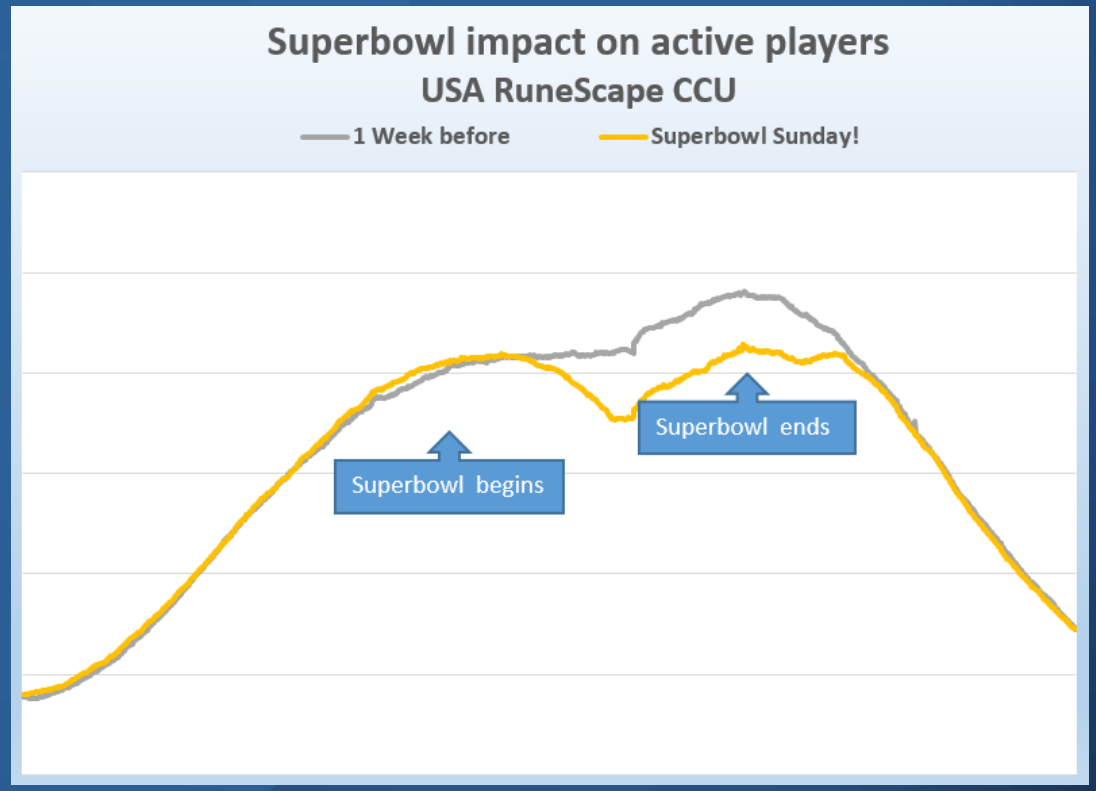
- Post project analysis e.g. weekly content releases



How We Work - RS Game Analytics

- Ad-hoc data requests e.g. bespoke research or review



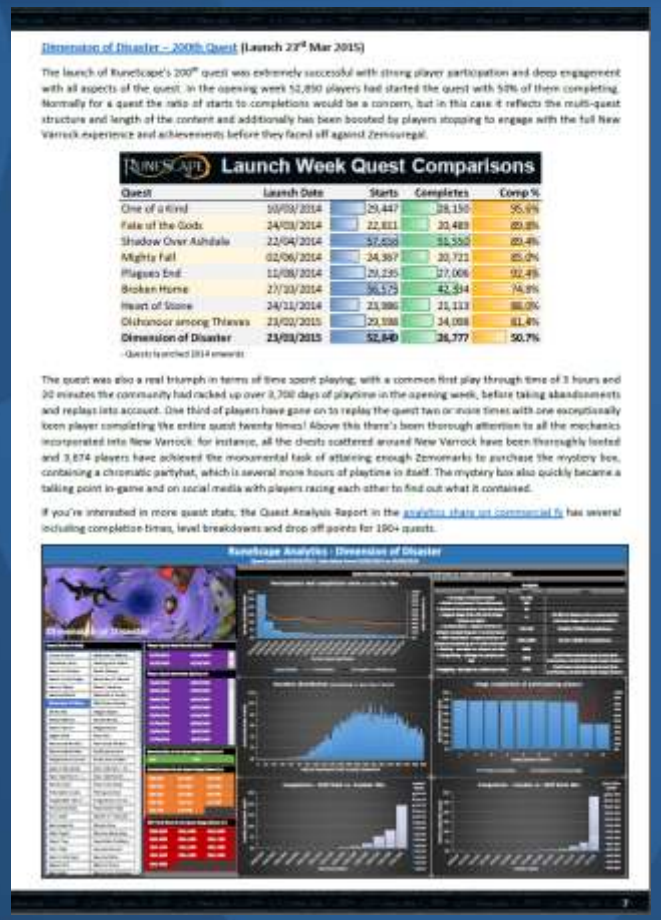


How We Work - RS Game Analytics

- Player facing data e.g. infographics and tweets

How We Work - RS Game Analytics

- Monthly Reports



Tools – Analytics in the design process

- Pre-production
  - What game feature should we work on next?
- Production
  - How can my designs be as successful as possible?
- Post-launch
  - Did it work as I wanted and how can I make it better?

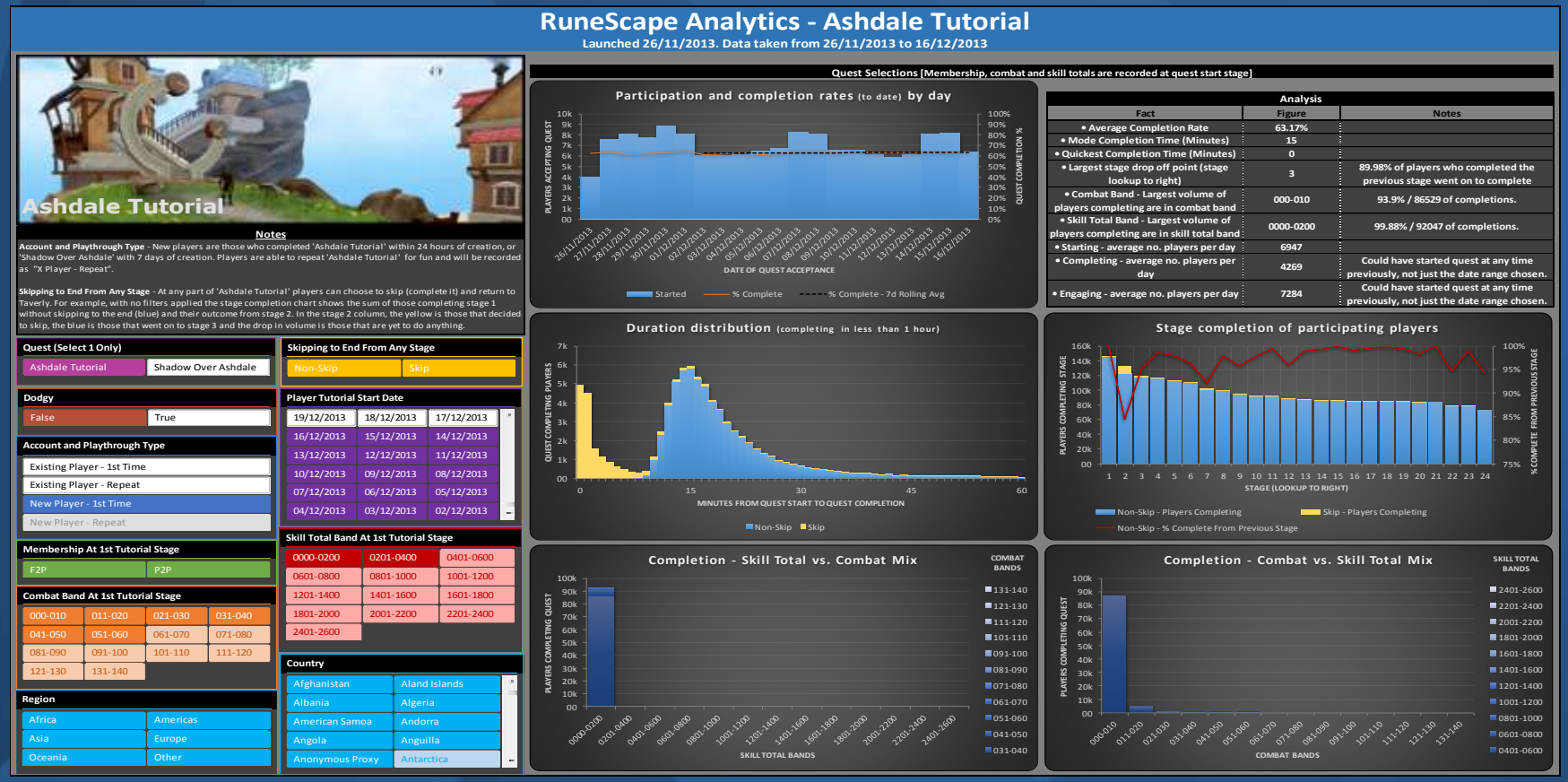
Tools – Pre-production Analytics

"What game feature should we work on next?"

- What problems need to be fixed?
  - Funnel analysis – Locate where player progress is stalling
  - Churn analysis – Identify what leavers have in common

Tools – Pre-production Analytics

- **Funnel analysis** – tutorial drop off points



RuneScape Analytics - Ashdale Tutorial

Launched 26/11/2013. Data taken from 26/11/2013 to 16/12/2013

Notes

Account and Playthrough Type - New players are those who completed 'Ashdale Tutorial' within 24 hours of creation, or 'Shadow Over Ashdale' with 7 days of creation. Players are able to repeat 'Ashdale Tutorial' for fun and will be recorded as "X Player - Repeat".

Skipping to End From Any Stage - At any part of 'Ashdale Tutorial' players can choose to skip (complete it) and return to Taverly. For example, with no filters applied the stage completion chart shows the sum of those completing stage 1 without skipping to the end (blue) and their outcome from stage 2. In the stage 2 column, the yellow is those that decided to skip, the blue is those that went on to stage 3 and the drop in volume is those that are yet to do anything.

Quest (Select 1 Only)

Ashdale Tutorial	Shadow Over Ashdale

Skipping to End From Any Stage

Non-Skip	Skip

Dodgy

False	True

Player Tutorial Start Date

19/12/2013	18/12/2013	17/12/2013
16/12/2013	15/12/2013	14/12/2013
13/12/2013	12/12/2013	11/12/2013
10/12/2013	09/12/2013	08/12/2013
07/12/2013	06/12/2013	05/12/2013
04/12/2013	03/12/2013	02/12/2013

Account and Playthrough Type

- Existing Player - 1st Time
- Existing Player - Repeat
- New Player - 1st Time
- New Player - Repeat

Skill Total Band At 1st Tutorial Stage

0000-0200	0201-0400	0401-0600
0601-0800	0801-1000	1001-1200
1201-1400	1401-1600	1601-1800
1801-2000	2001-2200	2201-2400
2401-2600		

Membership At 1st Tutorial Stage

F2P	P2P

Combat Band At 1st Tutorial Stage

000-010	011-020	021-030	031-040
041-050	051-060	061-070	071-080
081-090	091-100	101-110	111-120
121-130	131-140		

Country

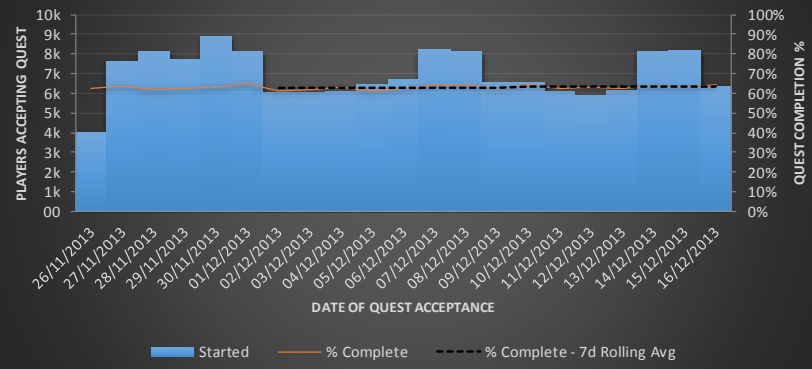
Afghanistan	Aland Islands
Albania	Algeria
American Samoa	Andorra
Angola	Anguilla
Anonymous Proxy	Antarctica

Region

Africa	Americas
Asia	Europe
Oceania	Other

Quest Selections [Membership, combat and skill totals are recorded at quest start stage]

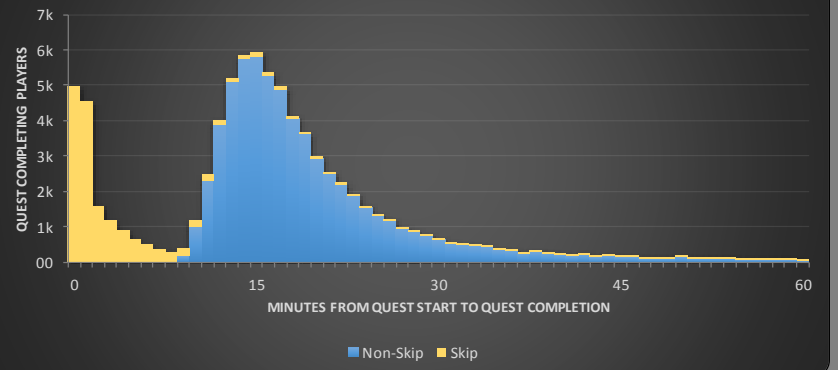
Participation and completion rates (to date) by day



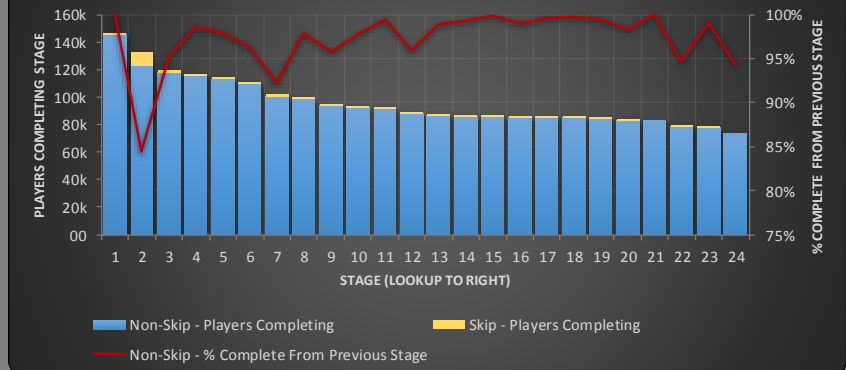
Analysis

Fact	Figure	Notes
• Average Completion Rate	63.17%	
• Mode Completion Time (Minutes)	15	
• Quickest Completion Time (Minutes)	0	
• Largest stage drop off point (stage lookup to right)	3	89.98% of players who completed the previous stage went on to complete
• Combat Band - Largest volume of players completing are in combat band	000-010	93.9% / 86529 of completions.
• Skill Total Band - Largest volume of players completing are in skill total band	0000-0200	99.88% / 92047 of completions.
• Starting - average no. players per day	6947	
• Completing - average no. players per day	4269	Could have started quest at any time previously, not just the date range chosen.
• Engaging - average no. players per day	7284	Could have started quest at any time previously, not just the date range chosen.

Duration distribution (completing in less than 1 hour)

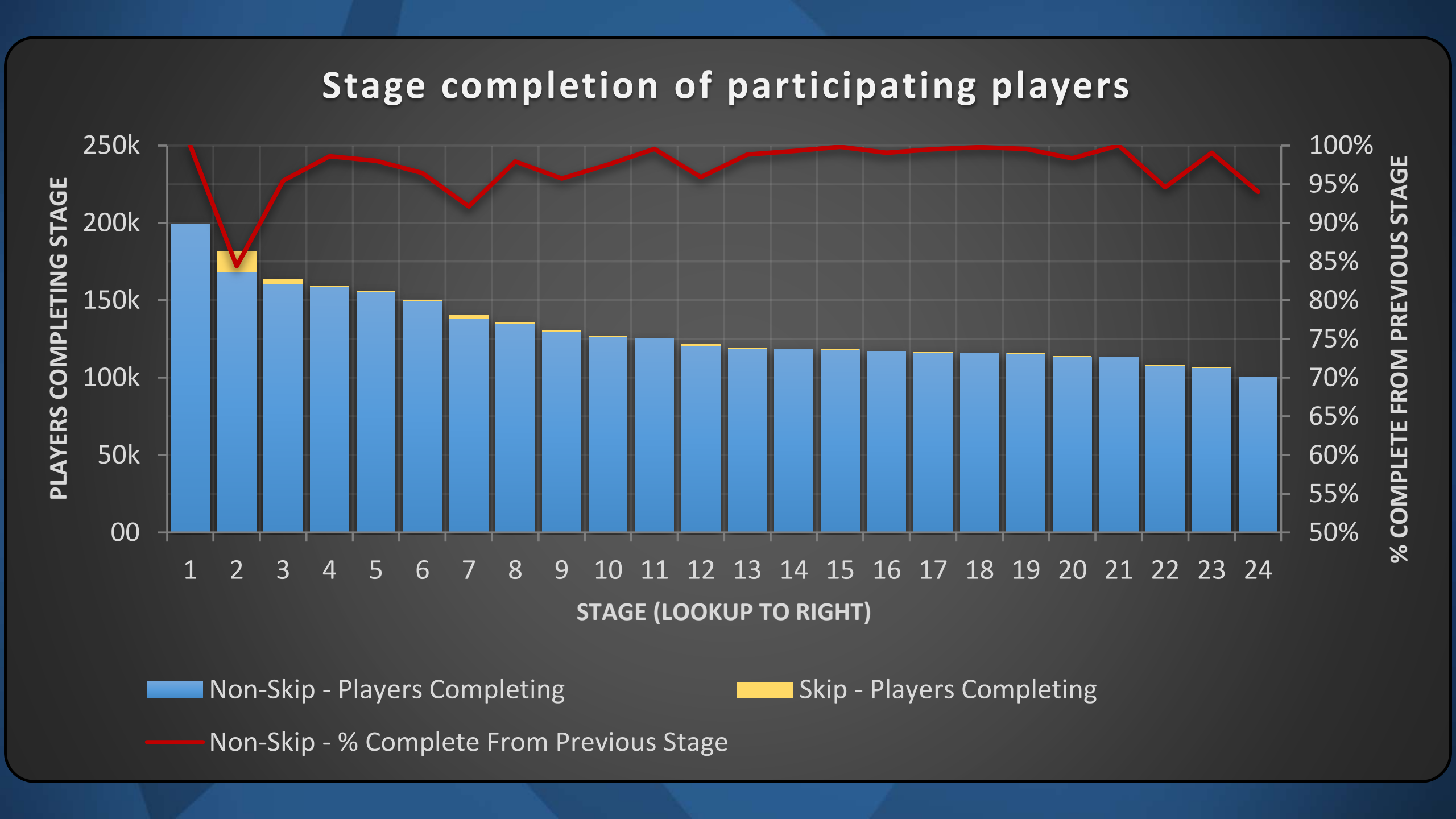


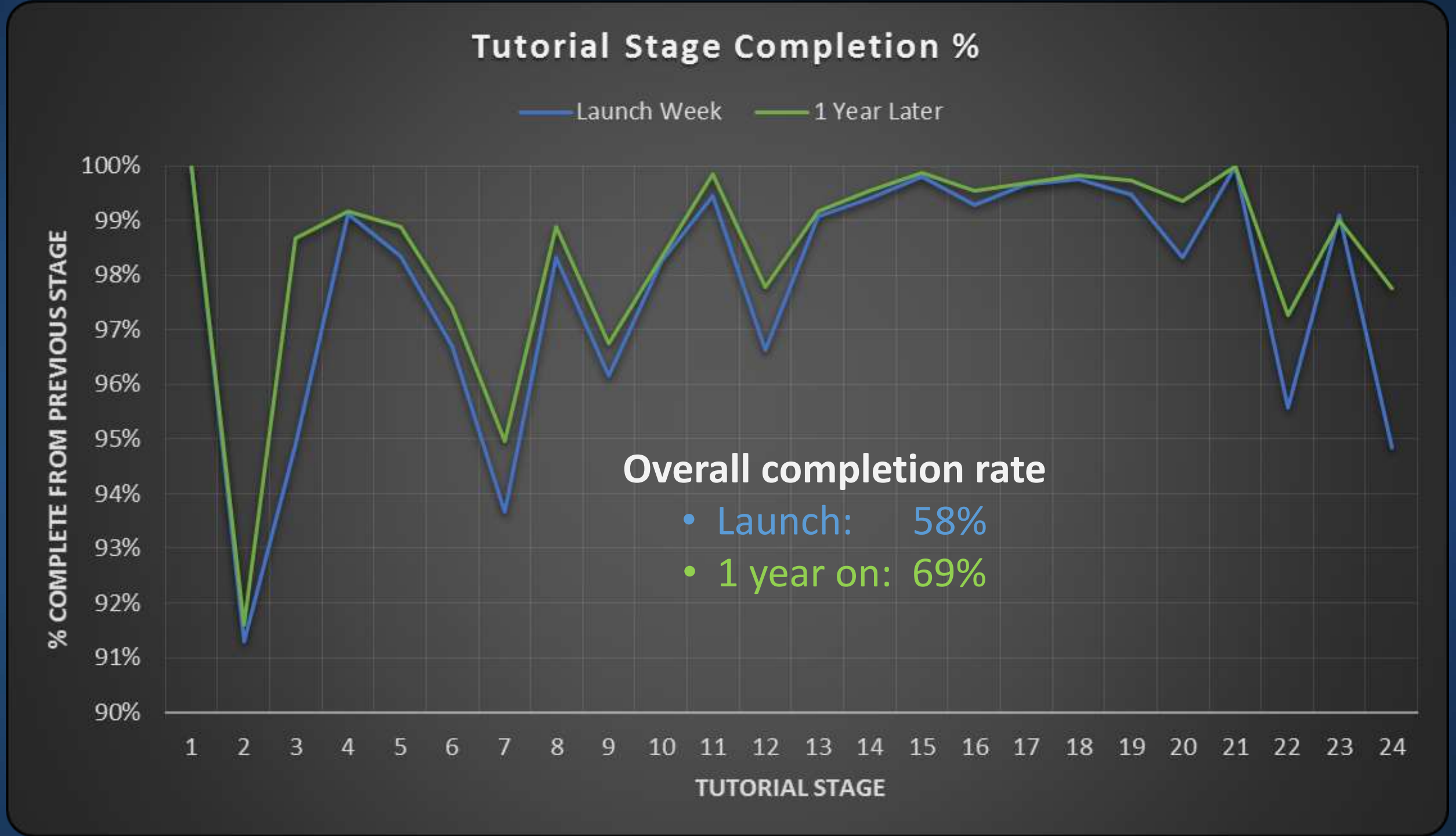
Stage completion of participating players



Completion - Skill Total vs. Combat Mix

Completion - Combat vs. Skill Total Mix

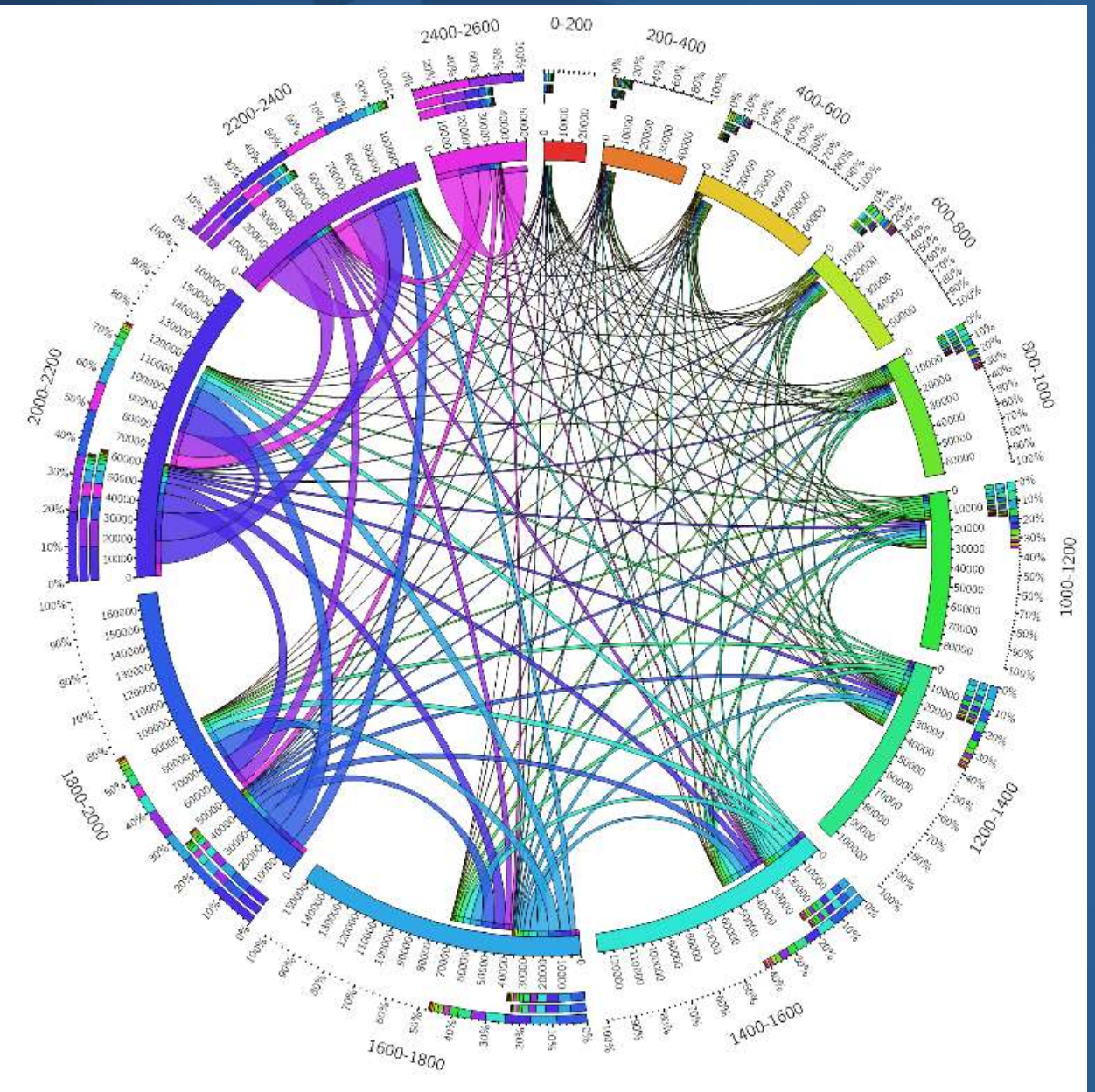

Stage completion of participating players
250k
200k
150k
100k
50k
00
PLAYERS COMPLETING STAGE
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
% COMPLETE FROM PREVIOUS STAGE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
STAGE (LOOKUP TO RIGHT)
Non-Skip - Players Completing
Skip - Players Completing
Non-Skip - % Complete From Previous Stage


Tutorial Stage Completion %
Launch Week
1 Year Later
100%
99%
98%
97%
96%
95%
94%
93%
92%
91%
90%
% COMPLETE FROM PREVIOUS STAGE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
TUTORIAL STAGE
Overall completion rate
• Launch: 58%
• 1 year on: 69%

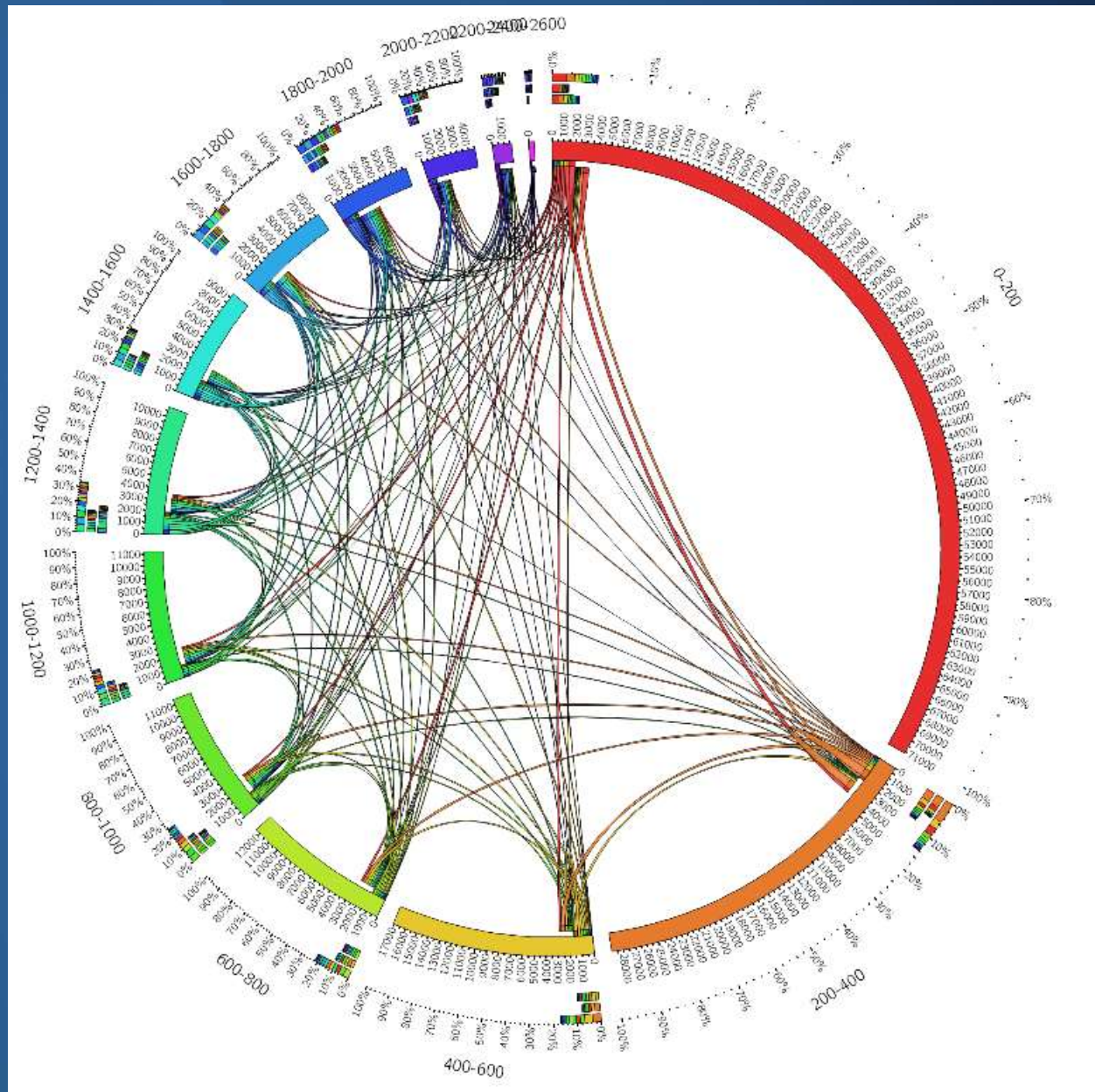
Tools – Pre-production Analytics

- Churn – Leaver profiling – social connection analysis

Chat connections from engaged players



Chat connections from pre-churn players



Tools – Pre-production Analytics

- Churn – Leaver gameplay & chat analysis

[opheld2,ring_of_recoil]
[opnpc1,macro_combilock_pirate]
[oploc2,astral_altar]
[opnpc1,macro_beekeeper]
[oploc1,omge_heroism_troll_cave_exit]
[opnpc1,macro_frog_crier]
[oploc1,_pinball_post_active]
[opnpc1,macro_digger_hanz]
[oploc1,barrows_stone_chest]
[opnpc1,macro_evil_bob_island]
[opnpc1,macro_forester_m]
[opnpc1,omge_heroism_ranged_ozan_chat]
[oploc2,seed_stall]
[oploc1,macro_maze_complete]
[oploc2,_rand_prayer_altar]

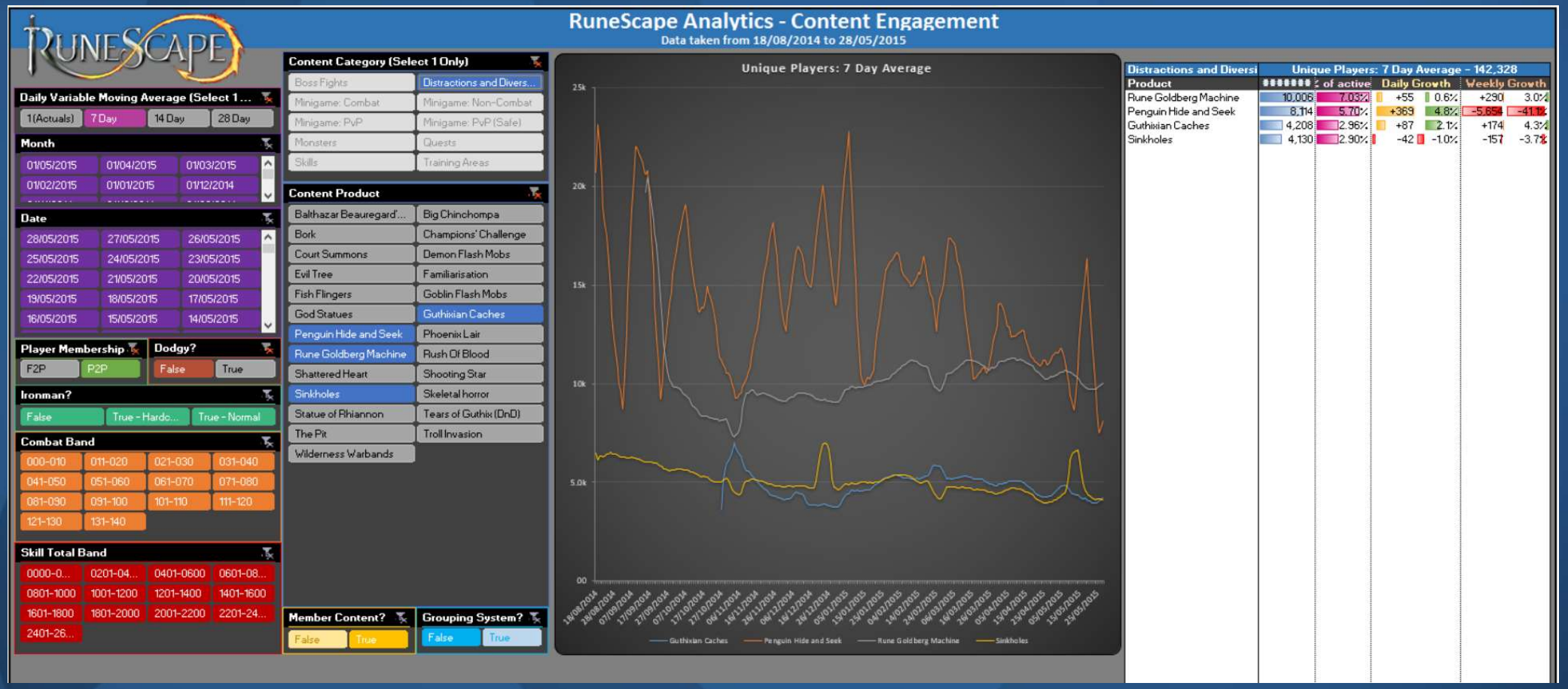
Tools – Pre-production Analytics

"What game feature should we work on next?"

- What problems need to be fixed?
  - Funnel analysis – Locate where player progress is stalling
  - Churn analysis – Identify what leavers have in common
- What opportunities are open?
  - Content analysis – Identify popular game activities (for a revamp)
  - Player profiling – Find what the most engaged players have in common

Tools – Pre-production Analytics

- Content engagement analysis



RuneScape Analytics - Content Engagement

Data taken from 18/08/2014 to 28/05/2015

Daily Variable Moving Average (Select 1...
1 (Actuals) | 7 Day | 14 Day | 28 Day

Month
01/05/2015 | 01/04/2015 | 01/03/2015
01/02/2015 | 01/01/2015 | 01/12/2014

Date
28/05/2015 | 27/05/2015 | 26/05/2015
25/05/2015 | 24/05/2015 | 23/05/2015
22/05/2015 | 21/05/2015 | 20/05/2015
19/05/2015 | 18/05/2015 | 17/05/2015
16/05/2015 | 15/05/2015 | 14/05/2015

Player Membership
F2P | P2P

Dodgy?
False | True

Ironman?
False | True - Hardo... | True - Normal

Combat Band
000-010 | 011-020 | 021-030 | 031-040
041-050 | 051-060 | 061-070 | 071-080
081-090 | 091-100 | 101-110 | 111-120
121-130 | 131-140

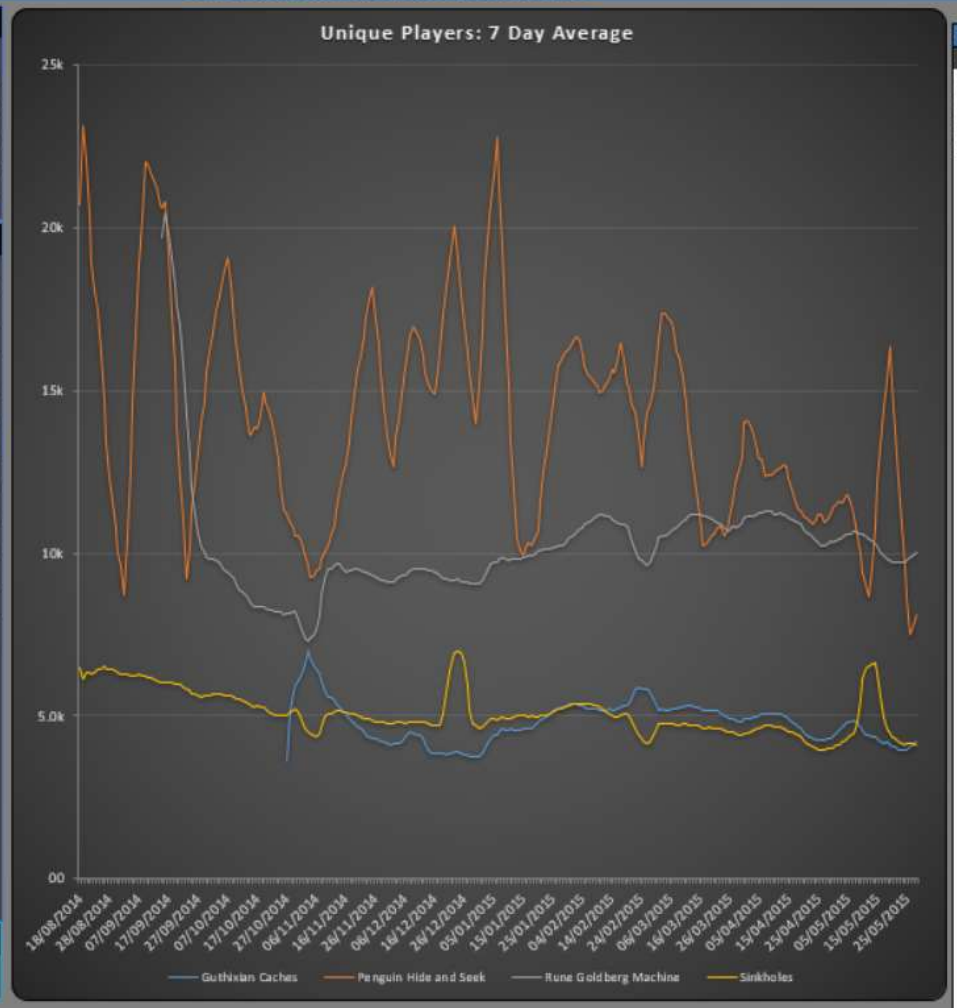
Skill Total Band
0000-0... | 0201-04... | 0401-0600 | 0601-08...
0801-1000 | 1001-1200 | 1201-1400 | 1401-1600
1601-1800 | 1801-2000 | 2001-2200 | 2201-24...
2401-26...

Content Category (Select 1 Only)
Boss Fights | Distractions and Divers...
Minigame: Combat | Minigame: Non-Combat
Minigame: PvP | Minigame: PvP (Safe)
Monsters | Quests
Skills | Training Areas

Content Product
Balthazar Beauregard'... | Big Chinchompa
Bork | Champions' Challenge
Court Summons | Demon Flash Mobs
Evil Tree | Familiarisation
Fish Flingers | Goblin Flash Mobs
God Statues | Guthixian Caches
Penguin Hide and Seek | Phoenix Lair
Rune Goldberg Machine | Rush Of Blood
Shattered Heart | Shooting Star
Sinkholes | Skeletal horror
Statue of Rhiannon | Tears of Guthix (DnD)
The Pit | Troll Invasion
Wilderness Warbands

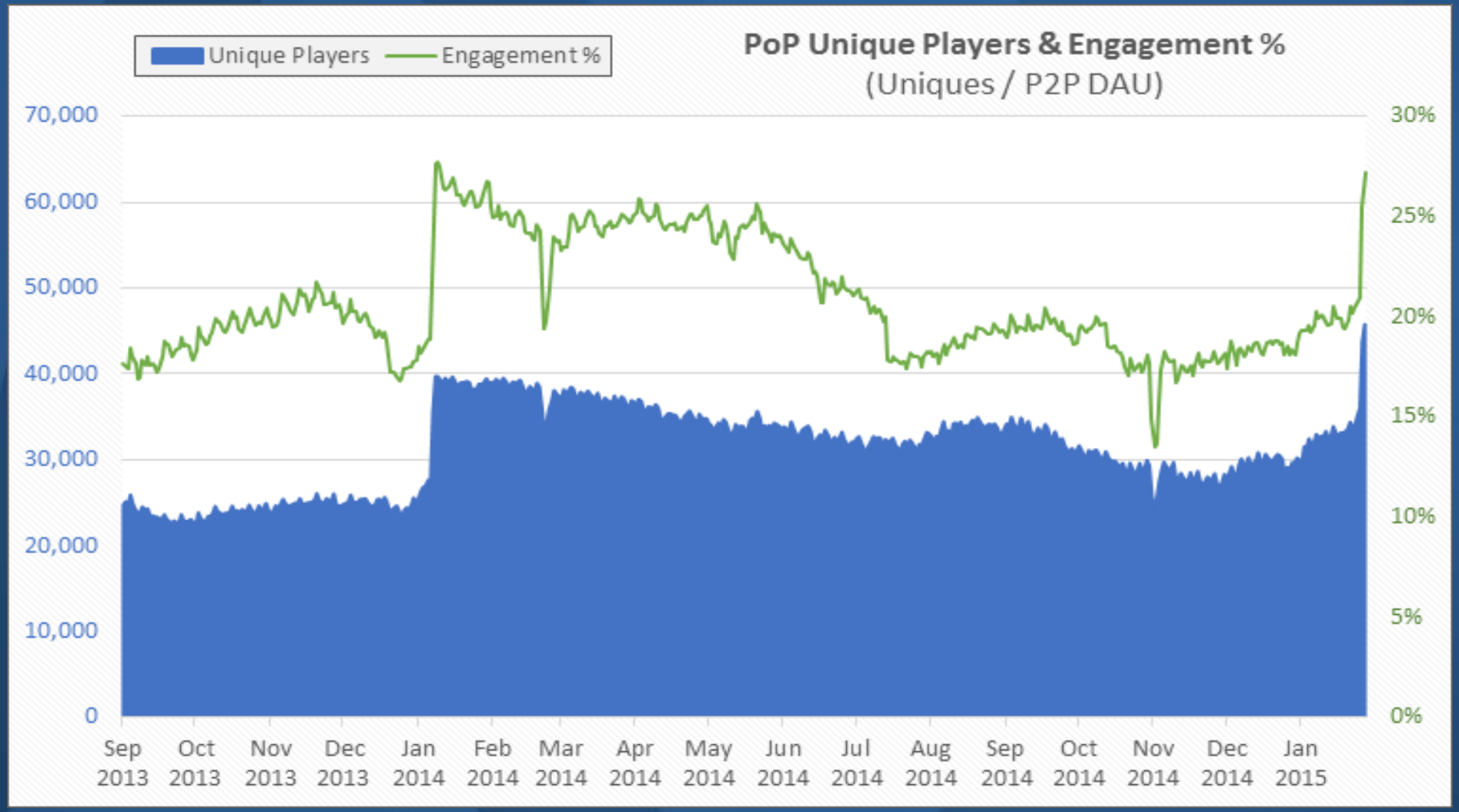
Member Content?
False | True

Grouping System?
False | True



Distractions and Diversi	Unique Players: 7 Day Average - 142,328					
Product		% of active	Daily Growth		Weekly Growth	
Rune Goldberg Machine	10,006	7.03%	+55	0.6%	+290	3.0%
Penguin Hide and Seek	8,114	5.70%	+369	4.8%	-5,654	-41.1%
Guthixian Caches	4,208	2.96%	+87	2.1%	+174	4.3%
Sinkholes	4,130	2.90%	-42	-1.0%	-157	-3.7%

Tools – Pre-production Analytics



Tools – Pre-production Analytics

"What game feature should we work on next?"

- What problems need to be fixed?
  - Funnel analysis – Locate where player progress is stalling
  - Churn analysis – Identify what leavers have in common
- What opportunities are open?
  - Content analysis – Identify popular game activities (for a revamp)
  - Player profiling – Find what the most engaged players have in common
- Is this idea viable?
  - Player profiling – Estimate the addressable audience size for a specific feature
  - Content analysis – Examine how similar ideas have performed in the past

Tools – Production Analytics

"How can my designs be as successful as possible?"

- How should I shape the content?
  - Player profiles – What are the characteristics of the target player?
  - Content analysis – How should I balance this feature?
  - Content analysis - Are the rewards going to be appealing?

Tools – Production Analytics

- Player profiling example

Data as of Thu 28 May 2015.

Player profile of accounts active in the last 14 days with skill total >= 40. Currently viewing 260370 accounts with applied filters.

Scroll to right for skills mixer and level filters >>>>>>>>>

PLAYERS	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k	260k
MODE	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	1	99	99	99	99	99	99	99
MEAN	78	79	78	74	77	82	70	61	61	61	63	68	76	59	69	71	56	51	61	69	74	60	68	73	67	64
LVL 1-98	176.7k	170.9k	170.2k	179.k	167.2k	164.k	197.5k	203.k	224.1k	217.9k	206.k	204.k	186.9k	226.1k	209.1k	206.6k	230.9k	227.3k	220.2k	192.9k	181.1k	222.5k	216.k	176.7k	215.2k	198.7k
LVL 1-98 RATIO	68%	66%	65%	69%	64%	63%	76%	78%	86%	84%	79%	78%	72%	86%	80%	79%	89%	87%	85%	74%	70%	85%	83%	68%	83%	76%
LVL 99	28.06k	27.29k	31.16k	21.56k	29.15k	7.39k	36.55k	38.55k	17.38k	13.73k	5.65k	16.99k	31.89k	16.62k	21.19k	21.74k	12.81k	19.51k	22.15k	45.07k	43.7k	16.26k	22.12k	41.58k	18.82k	32.53k
LVL 99 RATIO	11%	10%	12%	8%	11%	3%	14%	15%	7%	5%	2%	7%	12%	6%	8%	8%	5%	7%	9%	17%	17%	6%	8%	16%	7%	12%
LVL 100+	55.65k	62.15k	59.04k	59.82k	64.06k	89.02k	26.31k	18.85k	18.88k	28.69k	48.72k	39.39k	41.61k	18.83k	30.12k	32.03k	26.71k	13.51k	17.96k	22.4k	35.61k	21.64k	22.26k	42.32k	26.3k	29.16k
LVL 100+ RATIO	21%	24%	23%	23%	25%	34%	10%	7%	7%	11%	19%	15%	16%	7%	12%	12%	10%	5%	7%	9%	14%	8%	9%	16%	10%	11%

Groups of 10 ->

Theoretical Level	Attack	Defence	Strength	Ranged	Magic	Hitpoints	Prayer	Summoning	Agility	Thieving	Dungeoneering	Slayer	Woodcutting	Hunter	Mining	Fishing	Farming	Divination	Runecraft	Fletching	Firemaking	Construction	Smithing	Cooking	Crafting	Herblore
01-10	10.81k	10.87k	11.19k	21.2k	17.25k	03.89k	16.21k	46.31k	22.65k	26.37k	37.73k	27.94k	13.62k	41.98k	16.99k	20.16k	46.98k	65.45k	30.97k	27.31k	16.59k	40.71k	20.k	17.47k	20.02k	33.95k
11-20	02.99k	03.3k	03.49k	04.58k	04.11k	05.64k	05.63k	10.01k	06.62k	08.31k	08.63k	05.83k	03.03k	10.45k	04.71k	04.65k	11.23k	09.76k	07.35k	04.95k	03.78k	07.96k	03.3k	04.88k	05.43k	08.98k
21-30	03.86k	03.95k	03.8k	05.86k	04.58k	04.44k	07.13k	08.76k	11.4k	12.21k	10.59k	08.44k	03.13k	08.68k	05.12k	05.05k	12.54k	11.24k	10.02k	07.17k	03.64k	11.35k	04.99k	04.76k	03.97k	10.66k
31-40	05.87k	05.87k	06.67k	07.62k	06.3k	05.79k	09.19k	08.33k	17.65k	14.05k	13.51k	10.77k	06.72k	09.83k	08.78k	05.8k	12.45k	13.4k	12.3k	09.34k	07.26k	11.25k	11.05k	06.68k	11.27k	11.9k
41-50	08.62k	08.66k	08.61k	11.66k	08.77k	07.68k	21.26k	11.2k	19.89k	15.3k	15.9k	13.96k	10.38k	13.35k	15.01k	10.8k	16.68k	16.12k	17.52k	11.82k	11.74k	16.91k	18.37k	11.44k	18.42k	16.58k
51-60	12.28k	14.16k	13.51k	14.87k	12.78k	11.83k	26.44k	17.76k	23.89k	36.24k	18.01k	18.07k	15.11k	22.68k	24.06k	22.88k	21.3k	22.4k	32.31k	15.13k	19.08k	19.75k	26.9k	20.9k	27.48k	21.37k
61-70	18.1k	23.06k	19.66k	19.46k	21.01k	18.38k	25.66k	24.9k	33.17k	40.26k	19.99k	22.81k	21.71k	37.83k	39.6k	34.98k	30.k	22.16k	34.88k	23.4k	28.49k	22.73k	34.85k	27.84k	38.85k	21.8k
71-80	43.95k	37.3k	33.47k	30.81k	27.06k	29.8k	31.6k	32.09k	44.56k	36.69k	25.84k	28.34k	41.13k	38.41k	44.78k	40.95k	31.25k	31.11k	34.4k	37.34k	39.26k	48.28k	43.88k	36.94k	42.15k	26.k
81-90	46.01k	41.k	43.76k	37.16k	37.82k	38.81k	17.6k	25.68k	31.k	20.21k	34.61k	39.87k	49.18k	28.73k	35.41k	38.36k	25.34k	25.02k	25.49k	37.01k	33.63k	30.63k	33.74k	30.5k	32.21k	24.91k
91-100	61.74k	60.69k	67.94k	56.65k	68.75k	51.94k	86.4k	64.24k	37.8k	27.68k	30.59k	53.02k	68.75k	36.55k	43.74k	54.27k	32.6k	35.22k	44.29k	74.64k	72.72k	36.02k	49.05k	71.47k	45.48k	65.46k
101-110	38.62k	40.71k	39.24k	39.95k	42.02k	60.92k	12.23k	08.56k	10.82k	16.49k	20.05k	26.31k	25.34k	11.16k	18.86k	20.51k	17.91k	07.62k	10.06k	10.86k	20.44k	14.04k	13.19k	24.18k	16.15k	16.98k
111-120	06.8k	09.53k	08.2k	09.08k	08.26k	18.63k	0.84k	01.85k	0.75k	04.89k	13.8k	04.22k	01.9k	0.58k	02.68k	01.61k	01.66k	0.69k	0.65k	01.08k	02.81k	0.6k	0.87k	02.27k	0.77k	01.42k
121-126	0.74k	01.29k	0.83k	01.47k	01.67k	02.62k	0.18k	0.68k	0.17k	01.65k	11.11k	0.79k	0.38k	0.14k	0.65k	0.35k	0.45k	0.17k	0.16k	0.32k	0.94k	0.15k	0.18k	01.05k	0.18k	0.56k

Spend History - MEAN VALUES

Total LTV	£227.76
Membership Days Purchased Vol.	1168
Membership Days Purchased LTV	£157.75
Keys Purchased Vol.	458
Keys Purchased LTV	£70.25
RuneCoins Purchased Vol.	1096
RuneCoins Purchased LTV	£14.64
Bonds Purchased Vol.	10.3
Bonds Purchased LTV	£82.99

Account Age - MEAN VALUE: 6 years

Membership Status: Current Member | Ex Member | Ex Trialist | Never Member

Account Age (Years): 0 1 2 3 4 5 6 7

Skill Total Band: 0000-0200 | 0201-0400 | 0401-0600 | 0601-0800 | 0801-1000 | 1001-1200 | 1201-1400 | 1401-1600 | 1601-1800 | 1801-2000 | 2001-2200 | 2201-2400 | 2401-2600

Combat Level Band: 000-010 | 011-020 | 021-030 | 031-040 | 041-050 | 051-060 | 061-070 | 071-080 | 081-090 | 091-100 | 101-110 | 111-120 | 121-130 | 131-140

Membership Status Count by Number of 99s

	Current Member	Ex Member	Ex Trialist	Never Member	Grand Total
0	103.27k				103.27k
1	24.1k				24.1k
2	15.31k				15.31k
3	10.8k				10.8k
4	9.87k				9.87k
5	8.5k				8.5k
6	7.27k				7.27k
7	6.69k				6.69k
8	5.98k				5.98k
9	5.51k				5.51k
10	4.93k				4.93k
11	4.52k				4.52k
12	3.92k				3.92k
13	3.45k				3.45k
14	2.93k				2.93k
15	2.61k				2.61k
16	2.39k				2.39k
17	2.14k				2.14k
18	1.9k				1.9k
19	1.7k				1.7k
20	1.51k				1.51k
21	1.36k				1.36k
22	1.11k				1.11k
23	1.09k				1.09k
24	0.92k				0.92k
25	1.23k				1.23k
26	25.4k				25.4k
	260k				260k

Account Age	
0	36.64k
1	10.08k
2	9.93k
3	10.29k
4	14.0k
5	15.47k
6	19.78k
7	31.6k
8	17.68k
9	15.31k
10	27.65k
11	6.16k
12	3.16k
	258k

Any - Days since last payment

(b...	0	1	2	3	4	5	6
7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30

Subscription - Days since last payment

(b...	0	1	2	3	4	5	6
7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30

Keys - Days since last payment

(b...	0	1	2	3	4	5	6
7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30

RuneCoins - Days since last payment

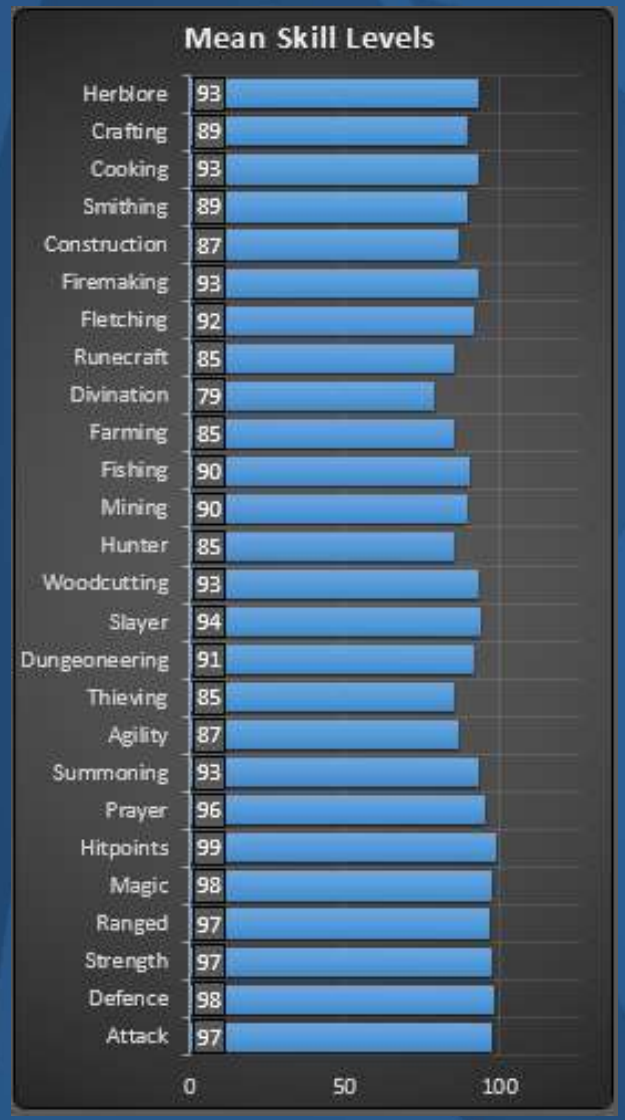
(b...	0	1	2	3	4	5	6
7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30

Bonds - Days since last payment

(b...	0	1	2	3	4	5	6
7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30

Mean Skill Levels

Combat Level Band	
000-010	011-020
021-030	031-040
041-050	051-060
061-070	071-080
081-090	091-100
101-110	111-120
121-130	131-140



Theoretical Level	Attack	Defence	Strength	Ranged	Magic	Agility	Thieving
01-10	0.k	0.k	0.k	0.k	0.k	0.k	0.k
11-20	0.k	0.k	0.k	0.k	0.k	0.k	0.k
21-30	0.k	0.k	0.k	0.k	0.k	0.01k	0.02k
31-40	0.k	0.k	0.k	0.k	0.k	0.04k	0.1k
41-50	0.01k	0.k	0.01k	0.01k	0.01k	0.25k	0.27k
51-60	0.04k	0.k	0.02k	0.04k	0.01k	01.11k	02.53k
61-70	0.08k	0.02k	0.12k	0.17k	0.11k	07.66k	16.6k
71-80	0.94k	0.16k	01.03k	01.39k	0.68k	24.16k	21.98k
81-90	08.74k	03.43k	07.07k	08.69k	06.01k	23.84k	15.04k
91-100	48.46k	49.09k	48.43k	43.98k	46.22k	35.12k	24.7k
101-110	38.06k	40.36k	38.15k	38.99k	40.95k	10.68k	16.08k
111-120	06.72k	09.45k	08.11k	09.02k	08.13k	0.73k	04.81k
121-126	0.72k	01.26k	0.82k	01.47k	01.64k	0.17k	01.64k

Tools – Production Analytics

"How can my designs be as successful as possible?"

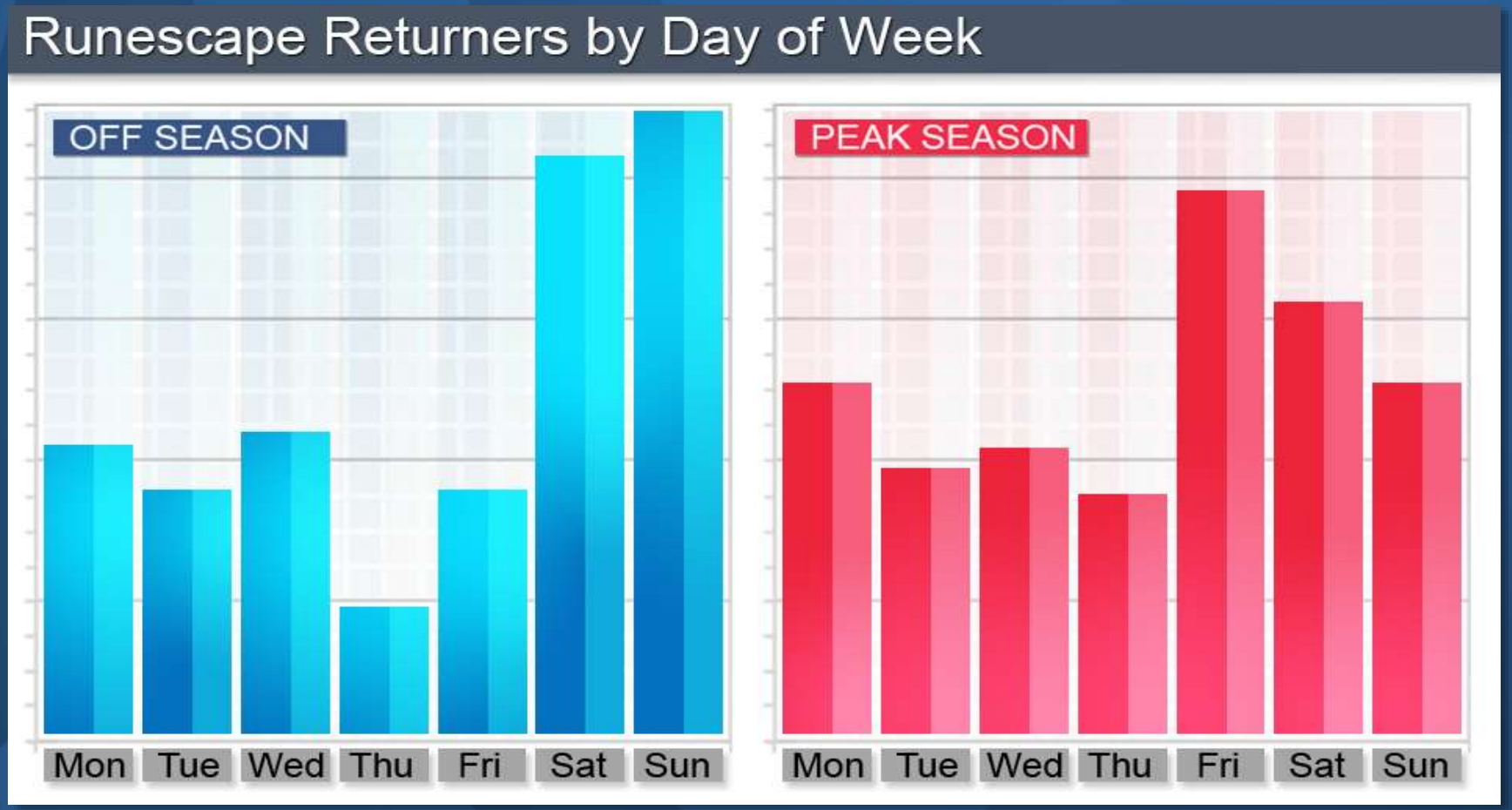
- How should I shape the content?
  - Player profiles – how many active players would qualify?
  - Content analysis – How should I balance this feature?
  - Content analysis - Are the rewards going to be appealing?
- When should we release it?
  - Seasonality analysis – when are the target audience most engaged?
  - Activity analysis – how long should this event run for?

Tools – Production Analytics

- **Seasonality analysis** – returner rate

Tools – Production Analytics

- **Seasonality analysis** – daily activity



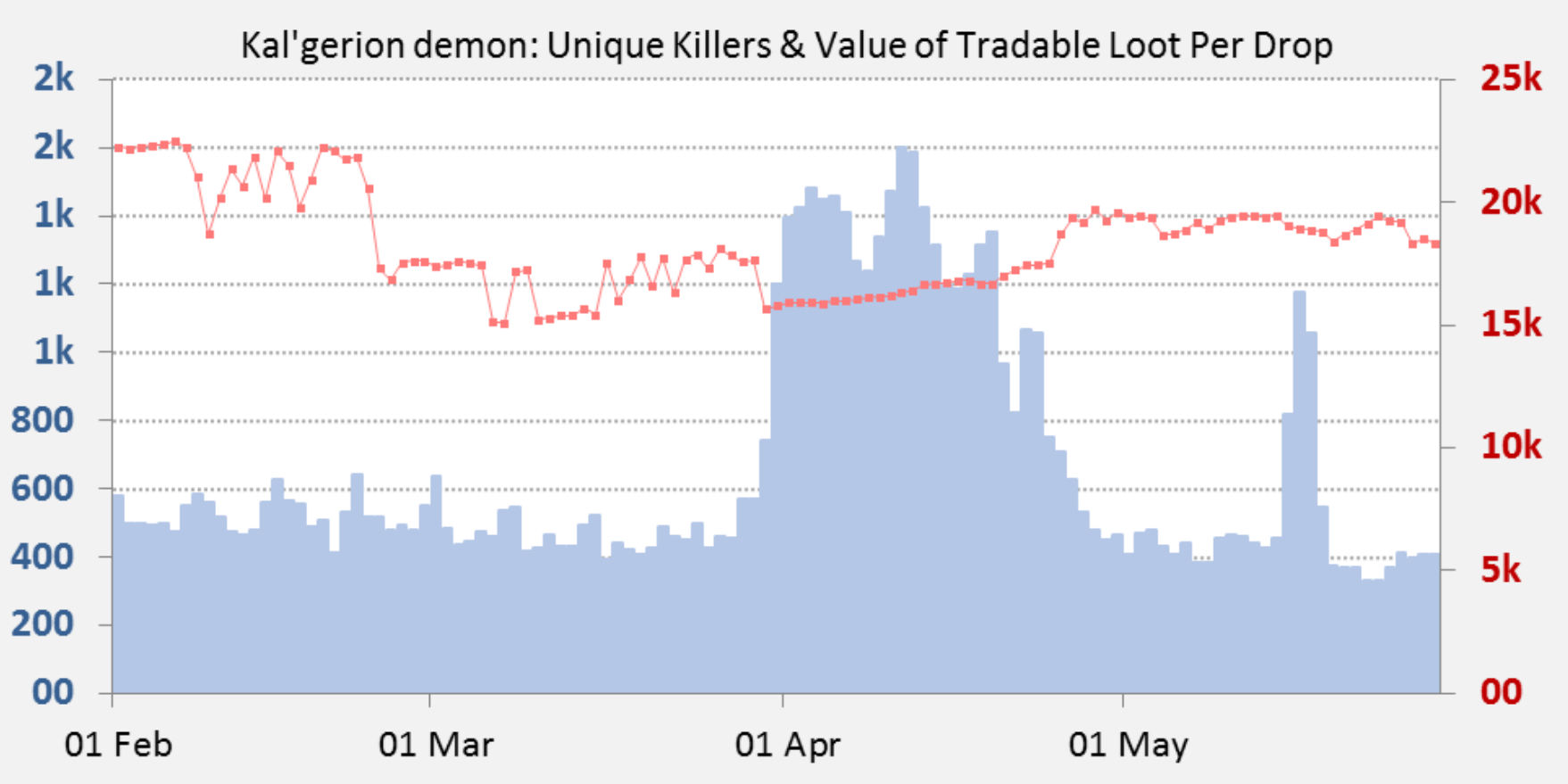
Tools – Post-launch Analytics

"Did it work as I wanted and how can I make it better?"

- How is it performing?
  - Content analysis – what is the engagement trend?
- Does the feature have any defects?
  - Economy analysis – Are the changes in currency/wealth as expected?
  - Quest analysis – Are there places where progression is stalling?
- How is this feature helping overall?
  - Engagement analysis – Is feature impacting wider player behaviour?

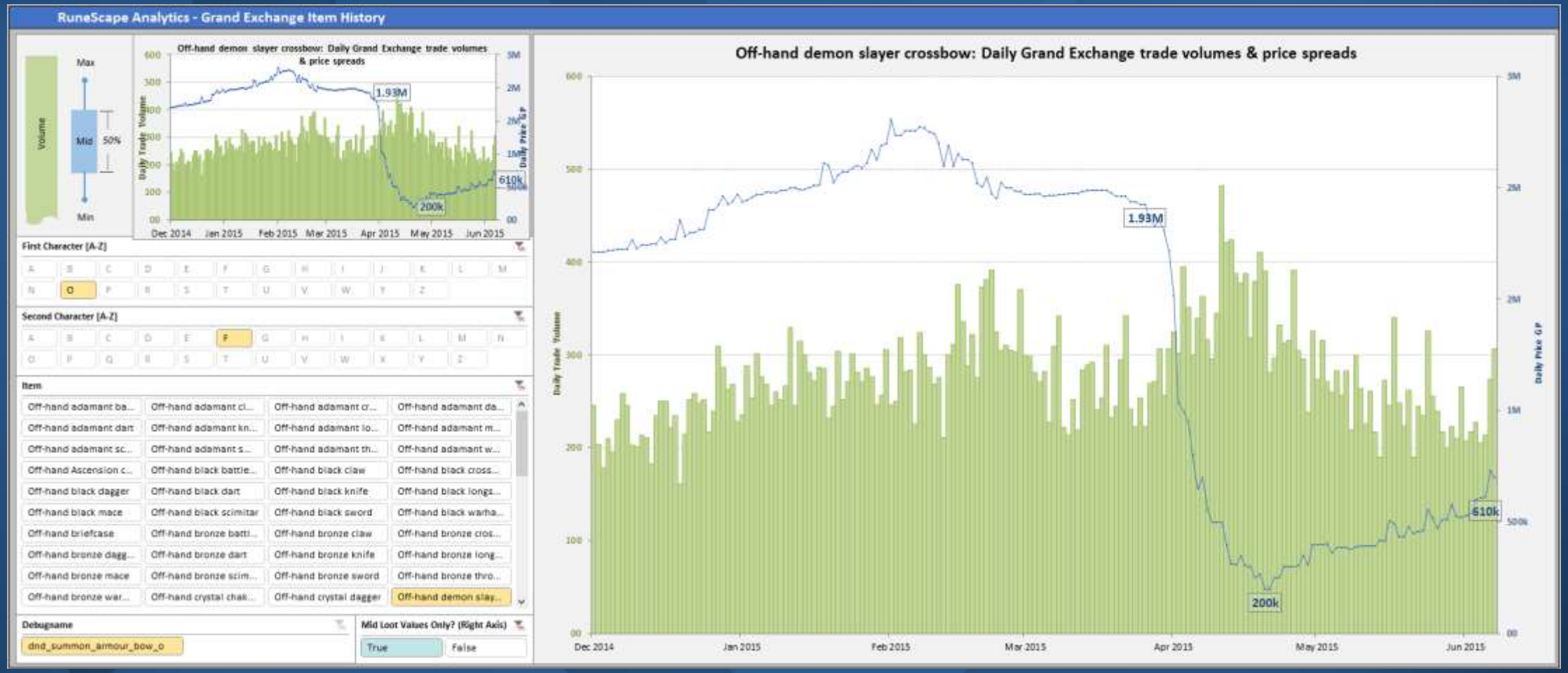
Tools – Post-launch Analytics

- **Economy analysis** – Loot value



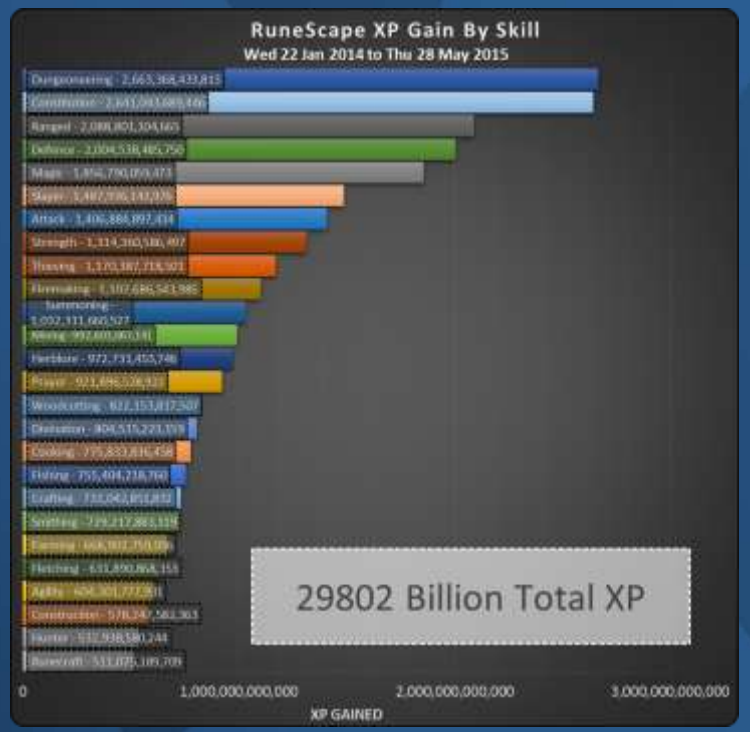
Tools – Post-launch Analytics

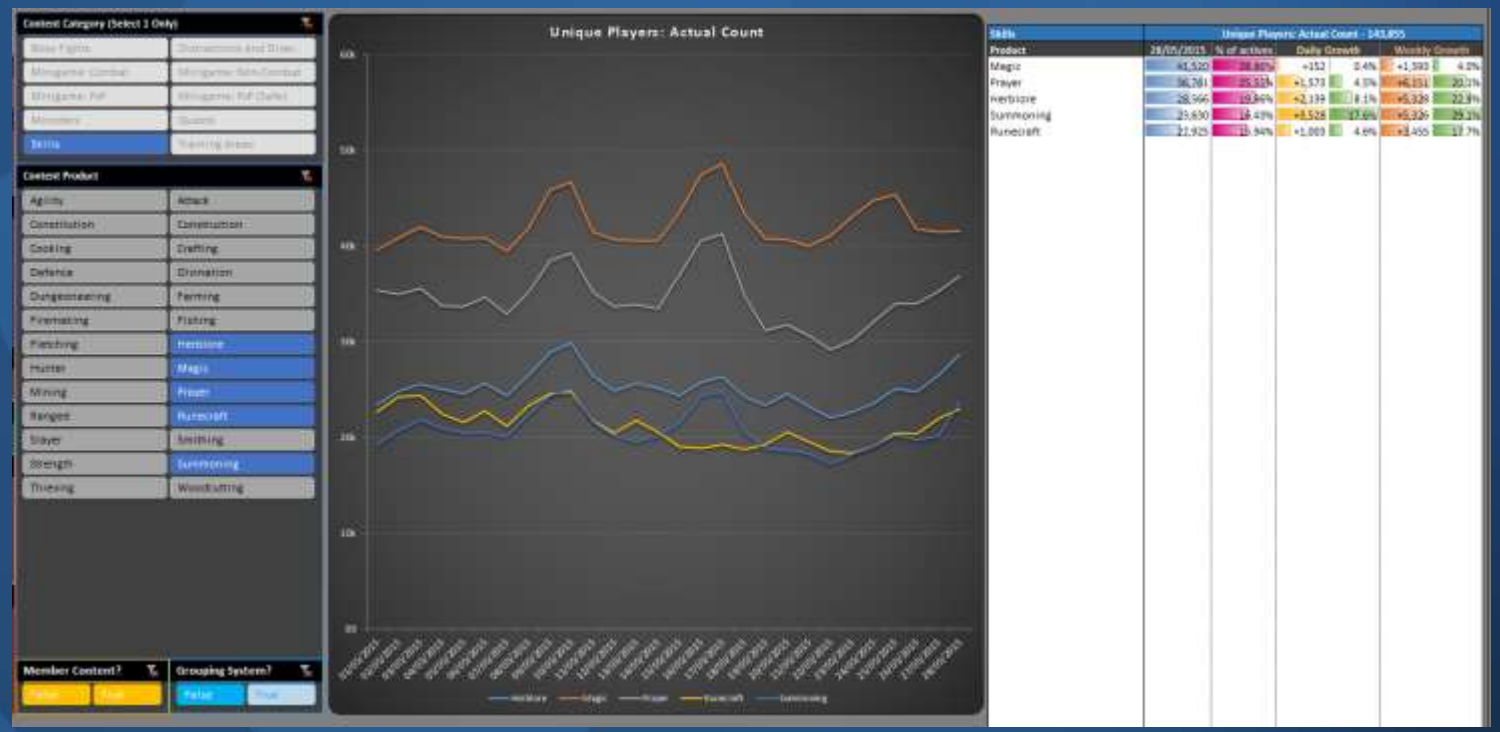
- **Economy analysis** – item trade price and volume



Example – Rune Goldberg Machine

- **Pre-production** – project research
  - Runecrafting lowest ranking skill
  - Rune prices low; little motivation to craft them





Example – Rune Goldberg Machine

- **Production** – design feature to boost rune values
  - Analytics provide balancing data on rune supply and consumption

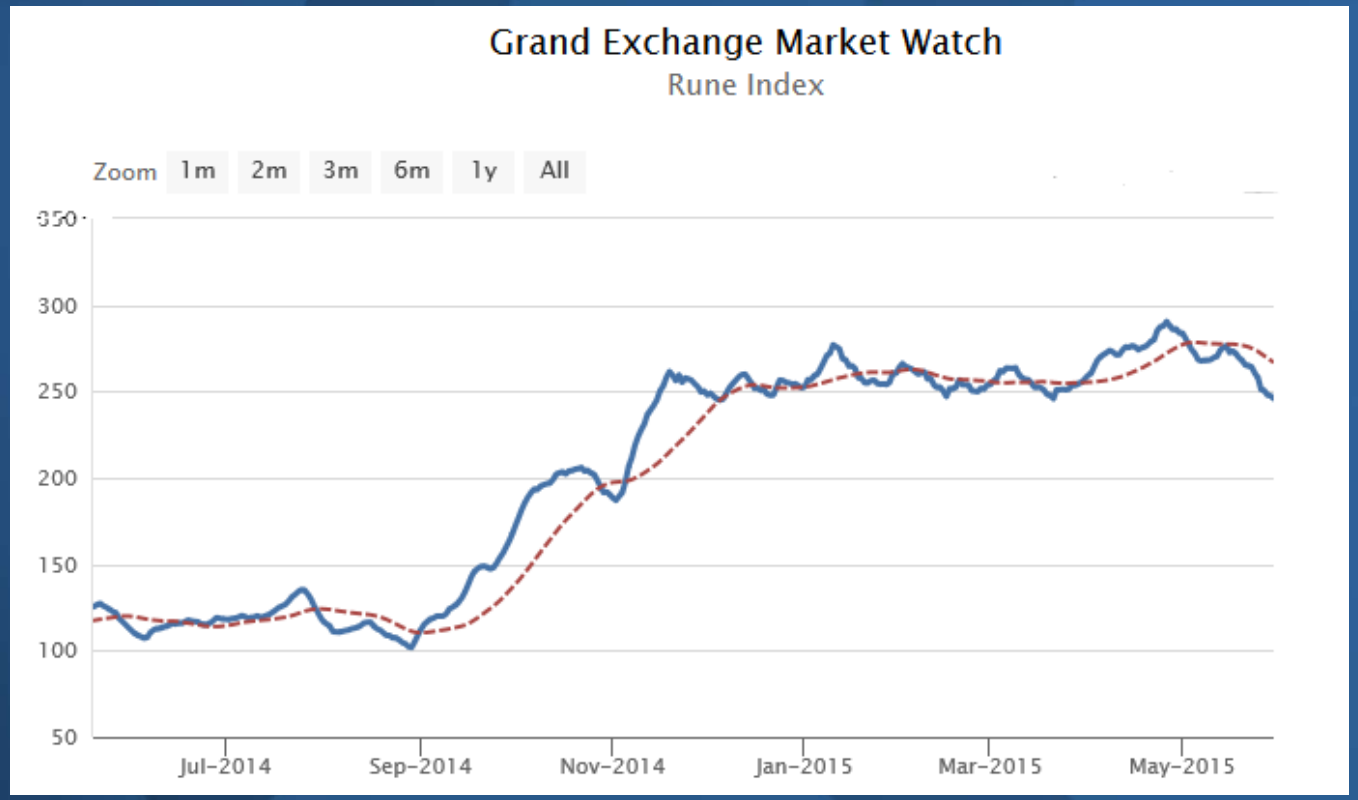
rune	volume_traded	coins_traded	median_price
airrune	58.2M	1.3B	23
astralrune	4.2M	1.1B	264
bloodrune	16.4M	4.3B	260
bodyrune	3.8M	25.9M	7
chaosrune	4.9M	203.8M	41
cosmicrune	2.9M	695.6M	244
deathrune	14.1M	2.1B	147
earthrune	18.2M	227.3M	12
firerune	69.4M	2.4B	35
lawrune	5.1M	1.4B	266
mindrune	8.3M	47.0M	6
naturerune	15.1M	4.4B	295
soulrune	0.7M	111.1M	150
waterrune	26.2M	588.0M	23

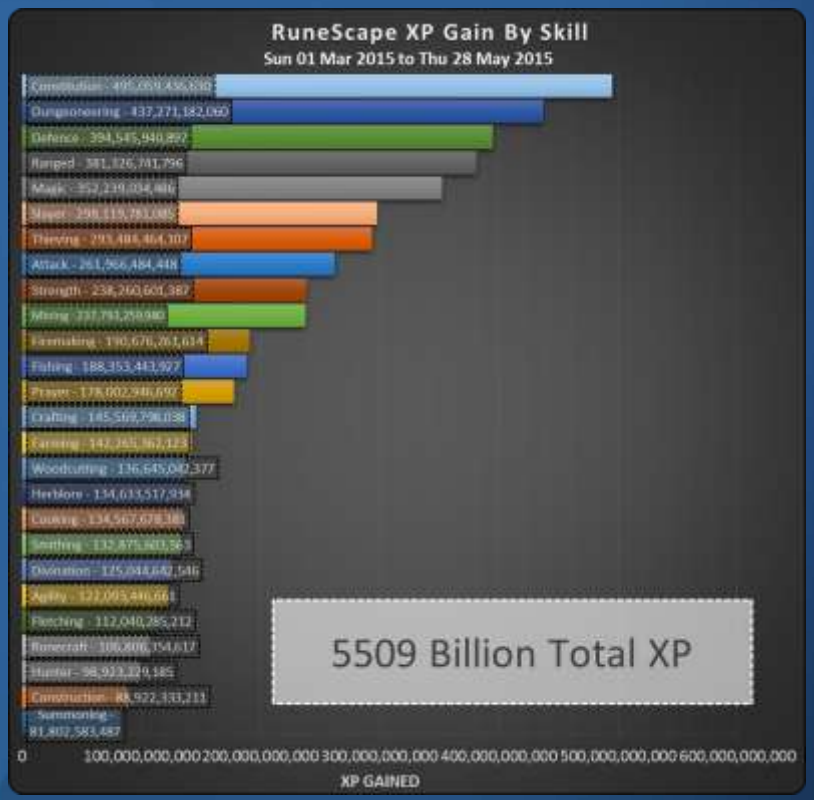
rune	total_in_game	total_value	unique_players
airrune	18.4B	423.6B	45.4M
astralrune	3.0B	787.7B	0.8M
bloodrune	7.2B	1882.4B	2.1M
bodyrune	4.2B	29.7B	43.7M
chaosrune	2.9B	119.3B	10.7M
cosmicrune	1.1B	268.3B	5.3M
deathrune	4.4B	640.7B	4.6M
earthrune	11.7B	140.8B	44.3M
firerune	27.8B	973.6B	16.2M
lawrune	1.7B	452.2B	8.2M
mindrune	10.1B	60.3B	44.6M
naturerune	5.5B	1612.4B	7.9M
soulrune	384.9M	57.7B	0.7M
waterrune	15.2B	350.5B	44.7M

	dropped	picked up	%pickup
Air	3253361	50301	2
Water	1923681	155243	8
Earth	145869	48693	33
Fire	1066212	702212	66
Mind	97671	17415	18
Body	285302	22247	8
Cosmic	79573	28305	36
Chaos	427792	98512	23
Nature	387911	206011	53
Law	422132	210174	50
Death	461351	203151	44
Astral	22879	18966	83
Blood	458286	279705	61
Soul	41114	16771	41

Example – Rune Goldberg Machine

- **Post launch** – assess impact to target metrics
  - Rune prices rise & runecrafting (slightly) increases popularity



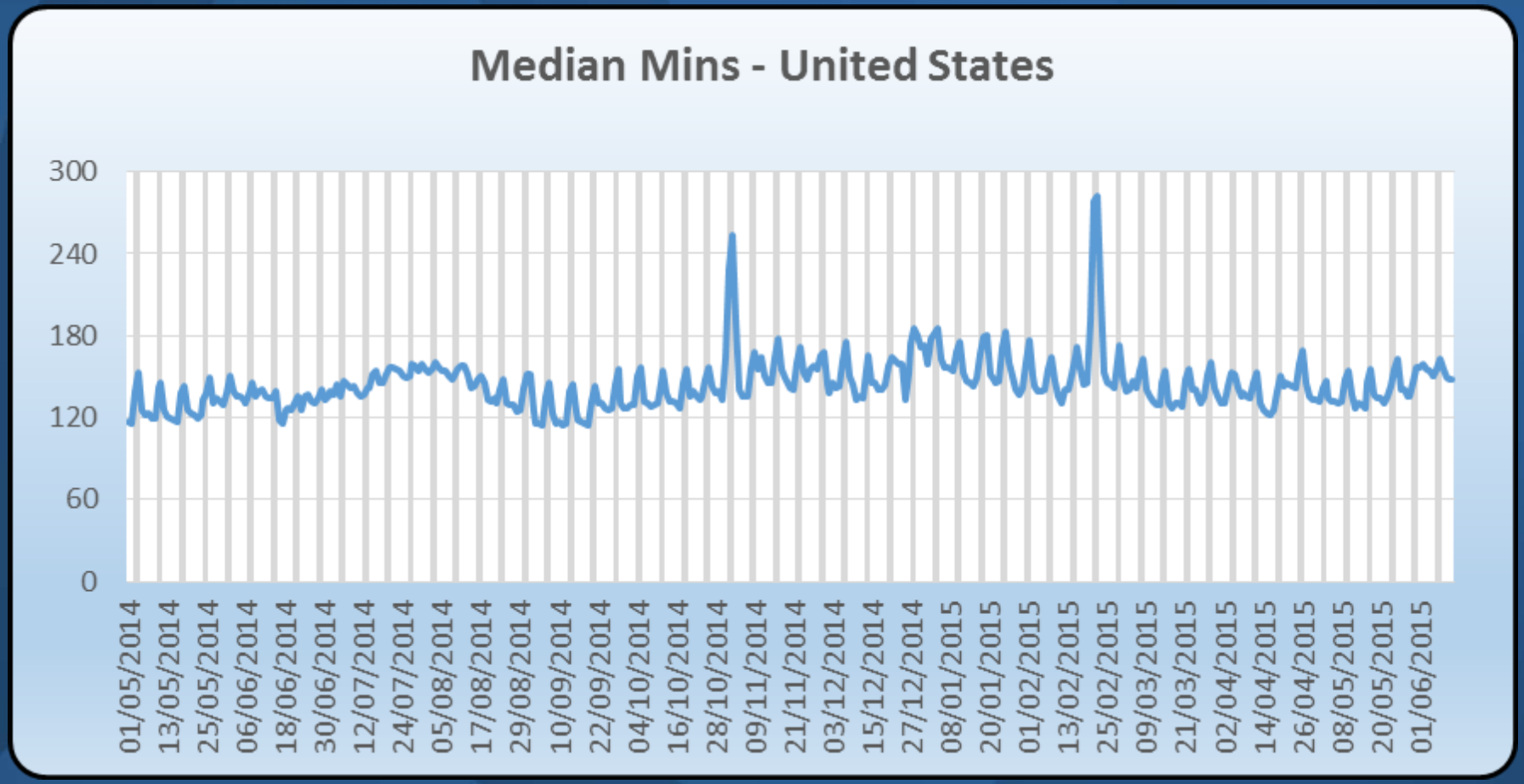


Game health

- Metrics for underlying game health
  - Play intensity, play density

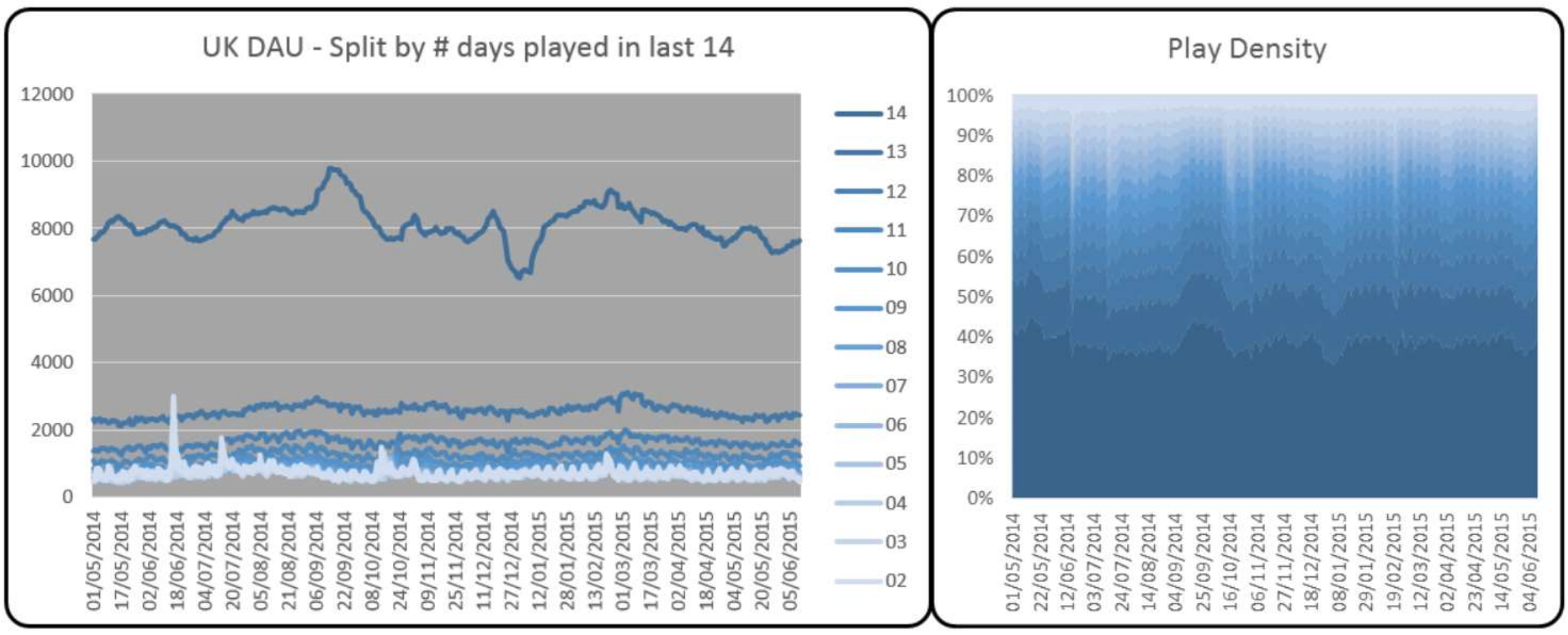
Game health

- **Play Intensity** – average daily play time



Game health

- **Play Density** – days active within a 14 day period

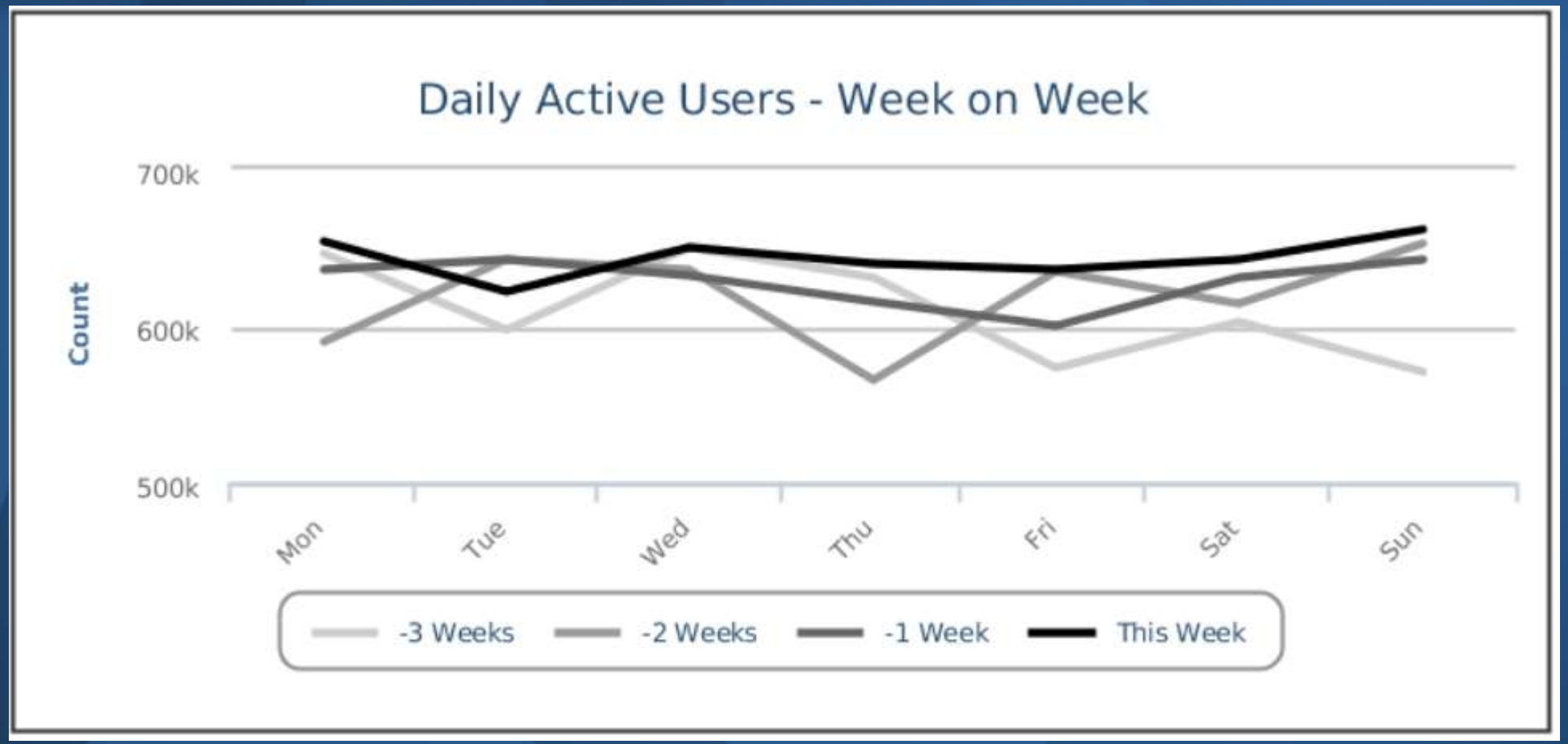


Game health

- Metrics for underlying game health
  - Play intensity, play density
- Historical benchmarks
  - Divergence from similar period in the past

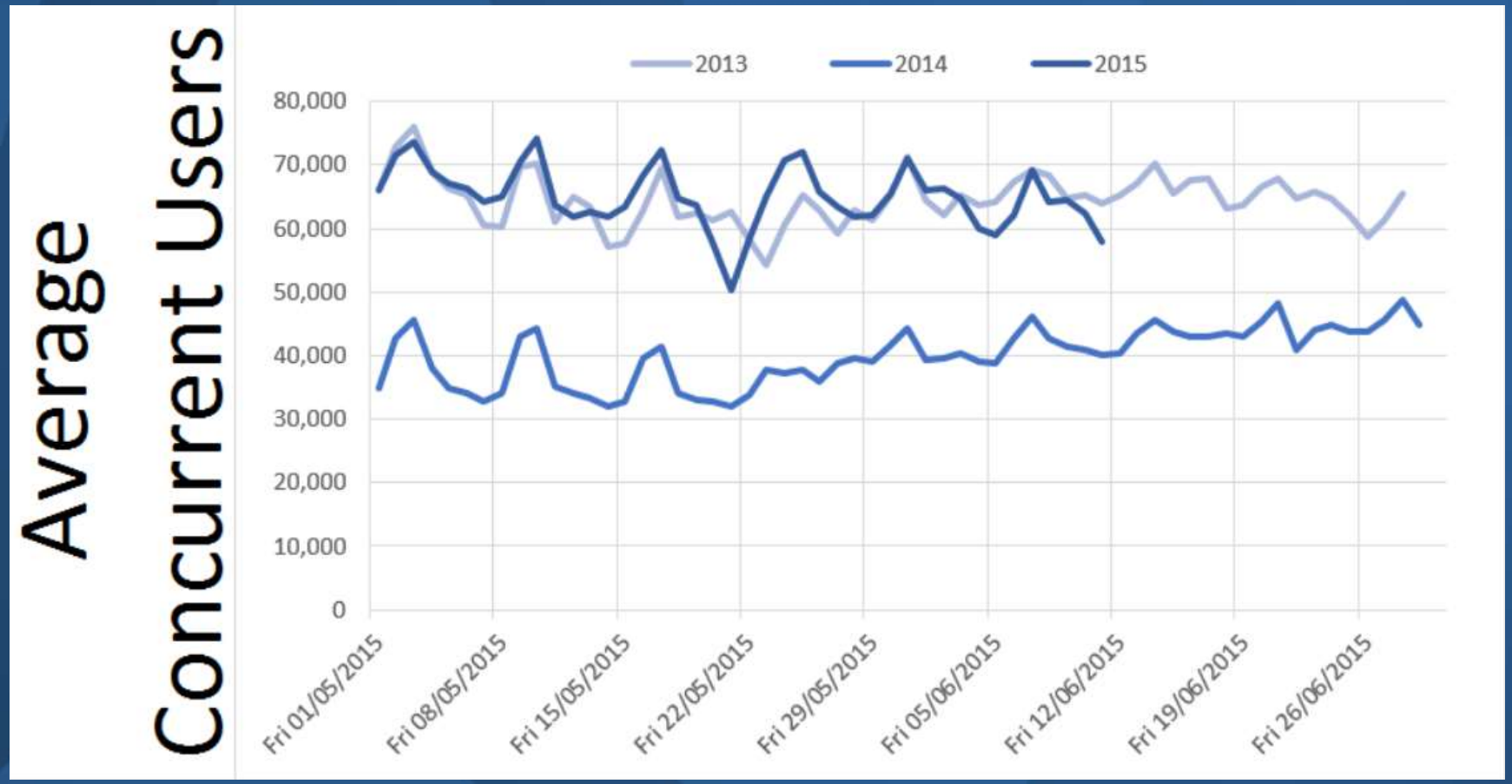
Game health

- **Benchmarking** – compare against equivalent historical period



Game health

- **Benchmarking** – compare against equivalent historical period



Game health

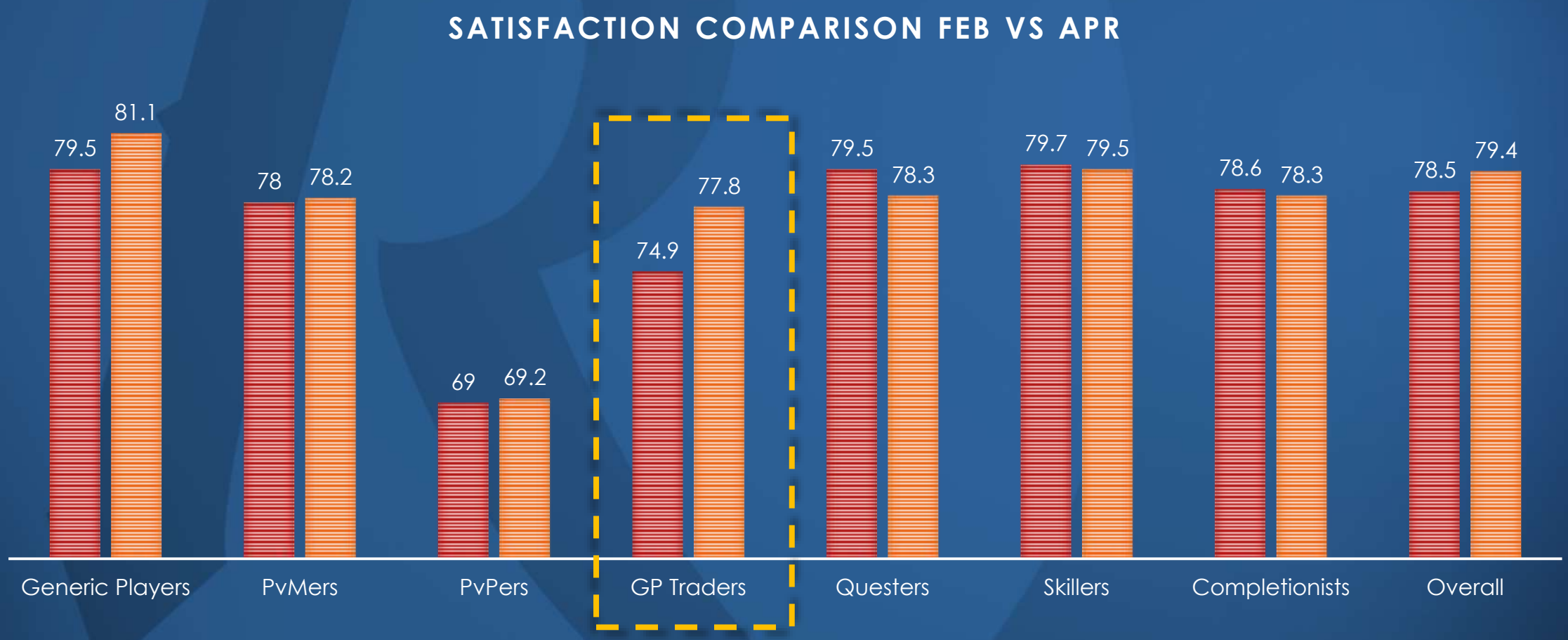
- Metrics for underlying game health
  - Play intensity, play density
- Historical benchmarks
  - Divergence from similar period in the past
- Customer Satisfaction Surveys
  - Net Promoter Score or Customer Satisfaction Index

Game health

- **Customer Satisfaction** – Trends over time

Game health

- **Customer Satisfaction** – Split by player cohort



Game health

- **Customer Satisfaction** – Feature score & importance

Feature Survey Q2 2014	Importance	Satisfaction
Look and Feel	1.1	74
New Content Appeal	0.9	72
Combat	0.9	73
Member Attitudes	0.9	84
Interaction	0.7	80
Game Information	0.5	82
Challenges	0.4	71
PVP	0.4	55
Treasure Hunter – Value	0.4	61
Member Sign up Process	0.4	87
Skills	0.3	72
Treasure Hunter – Access	0.3	83
Quests	0.2	79
Member Sign Up Product Range	0.2	75
Player Polls	0.2	74
Communications	0.2	77
Customer Satisfaction Index		**72**

Other Recommendations

- Have a goal for each project – success criteria
  - Be delicate - don't make data the enemy!
- Share data insights across studio
  - Make it data-curiosity part of development culture
- Balance re-active and pro-active analysis
  - Quick turnaround can be critical
- Embed analysts and get them involved in creative process
  - Need to fit smoothly into development pipeline

Thank you

any questions?

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GAME DEVELOPERS CONFERENCE™ EUROPE
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