

Analytics in Action

Data in a Creative Culture



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GDC 'Eu

GAME DEVELOPERS CONFERENCE™ EUROPE
CONGRESS-CENTRUM OST KOELNMESSE · COLOGNE, GERMANY

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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

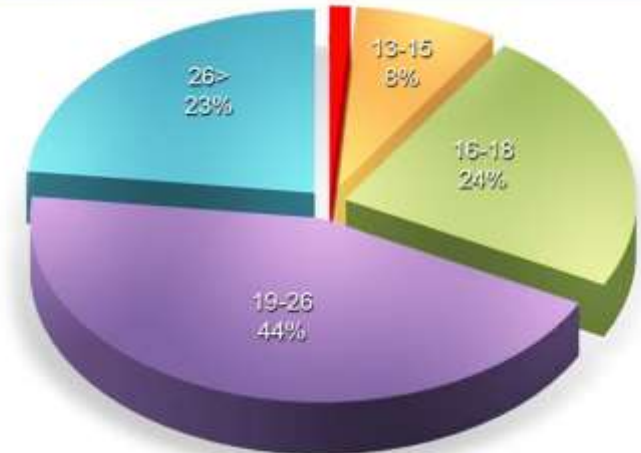
- Traditional fantasy MMORPG
- Launched 2001 - updated weekly
- F2P Hybrid: Free access, optional subscription and MTX
- 160 development and publishing staff
- Franchise: Old School, Chronicle, new MMO and more to come



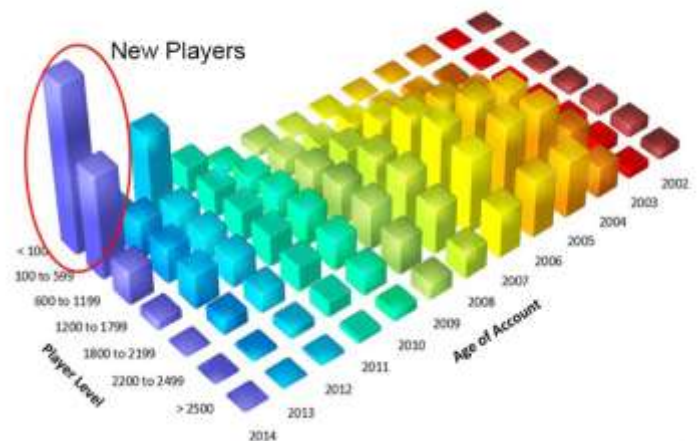
Intro - About Our Players

- 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



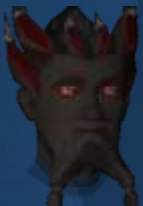
- **Jason - Game analyst** – game content, economy, balancing
 - Level 2595 (max level) – 358 days play time



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



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



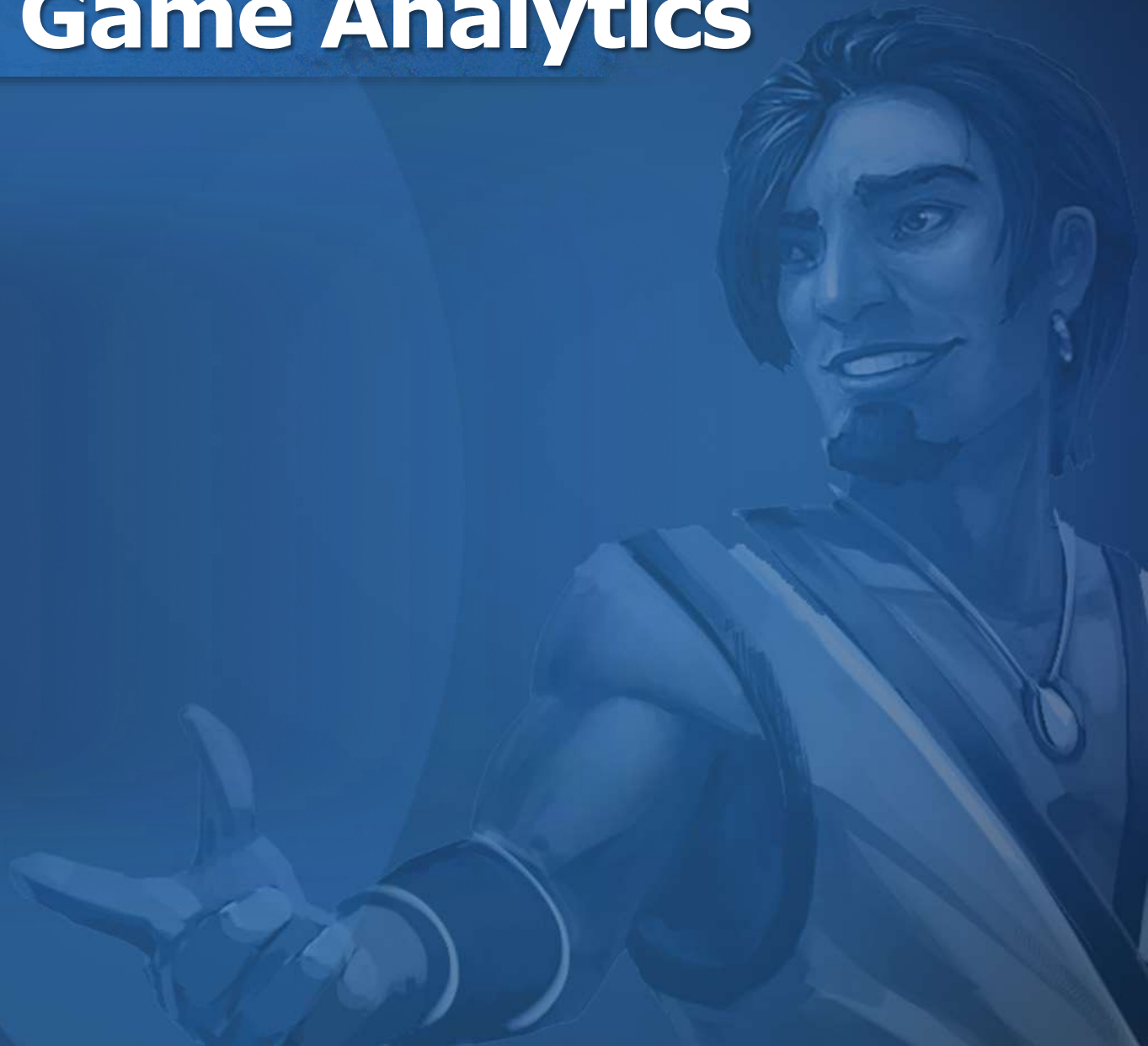
- **Joel – Analytics Lead**
 - Level 2560 – 190 days play time



How We Work - RS Game Analytics

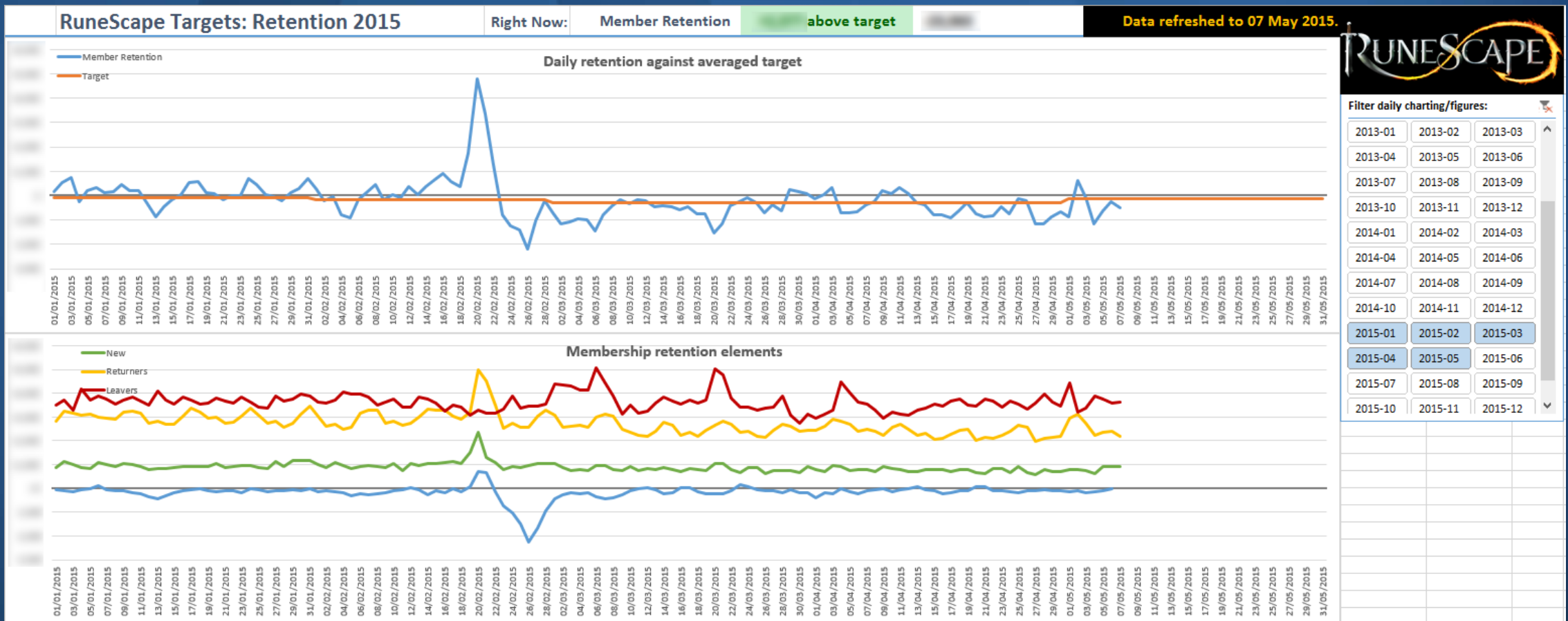
Ways of working:

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



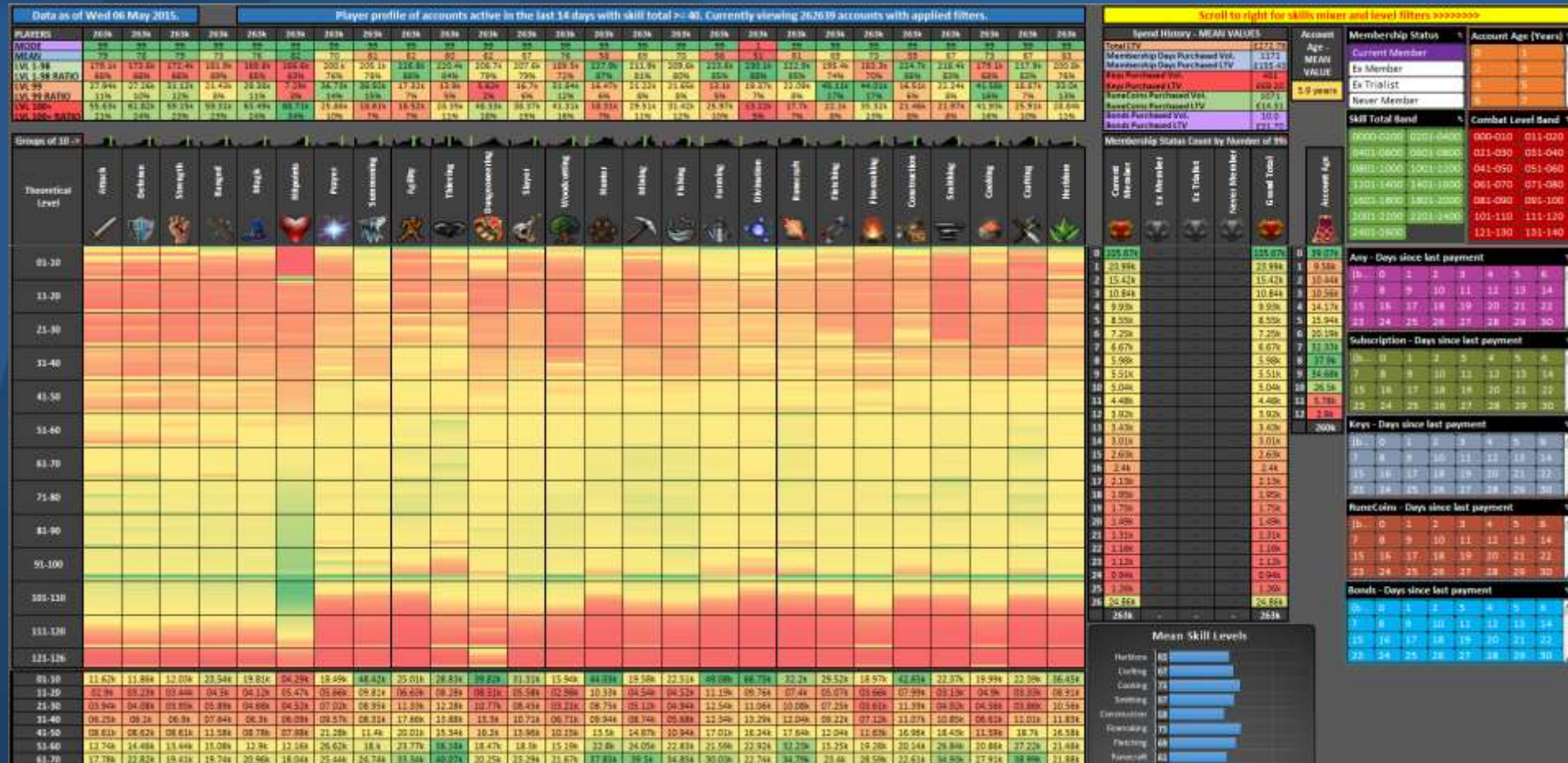
How We Work - RS Game Analytics

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



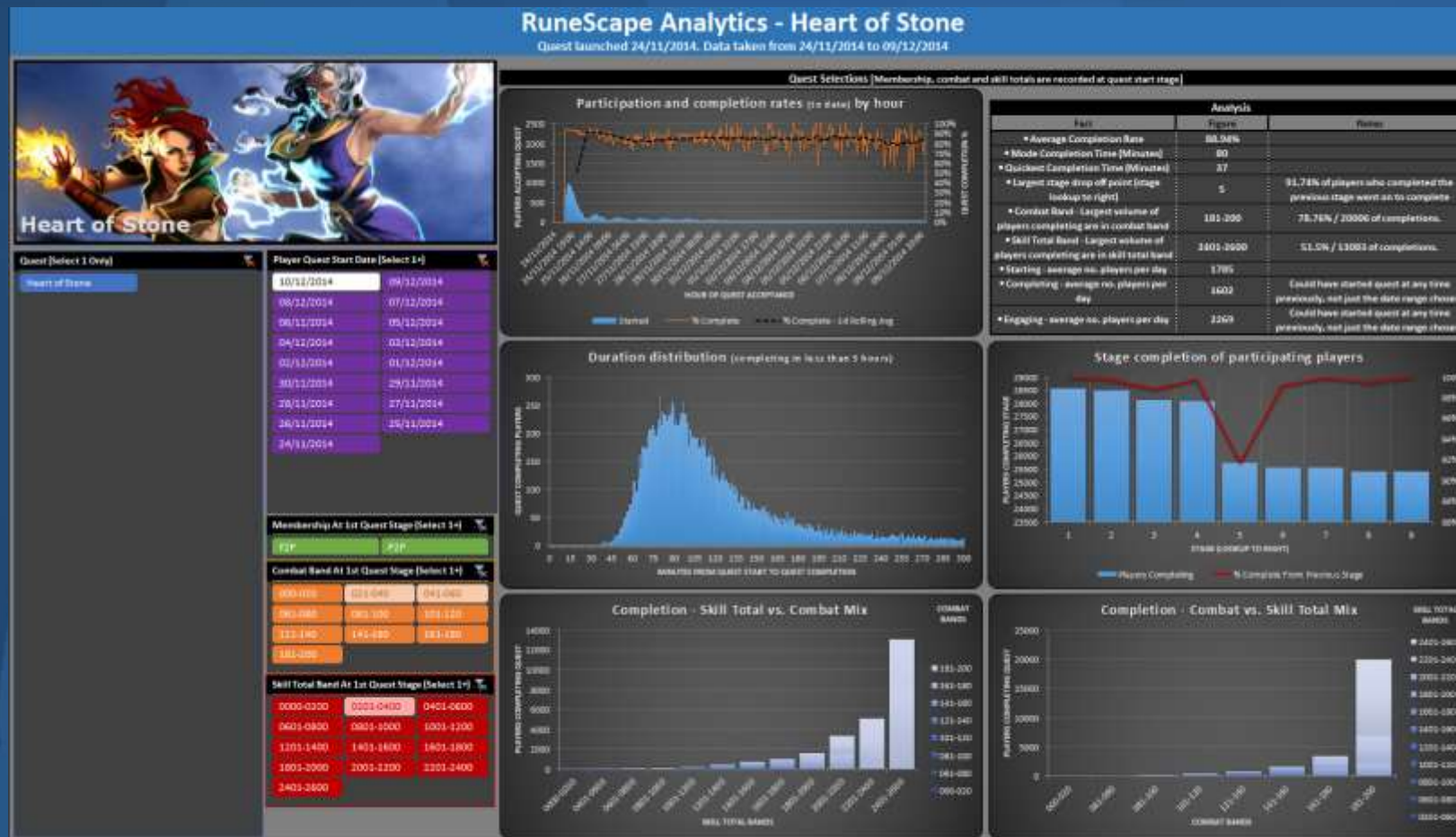
How We Work - RS Game Analytics

- Self Service Tools e.g. Player Profile Suite



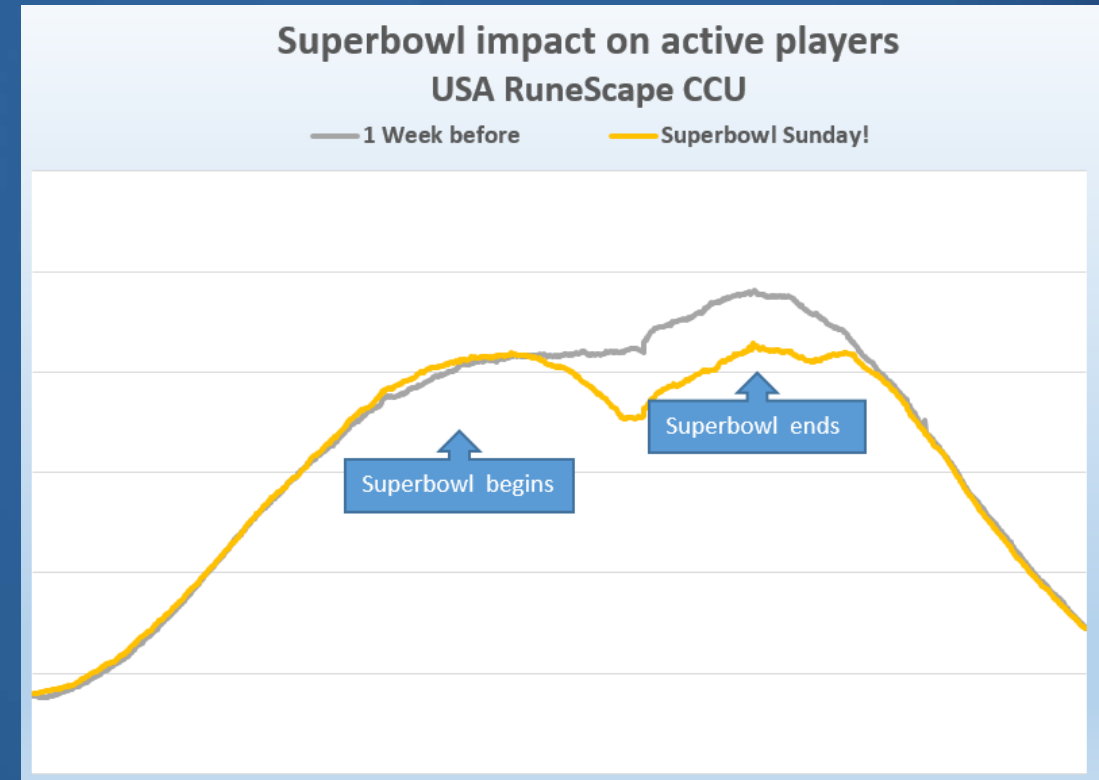
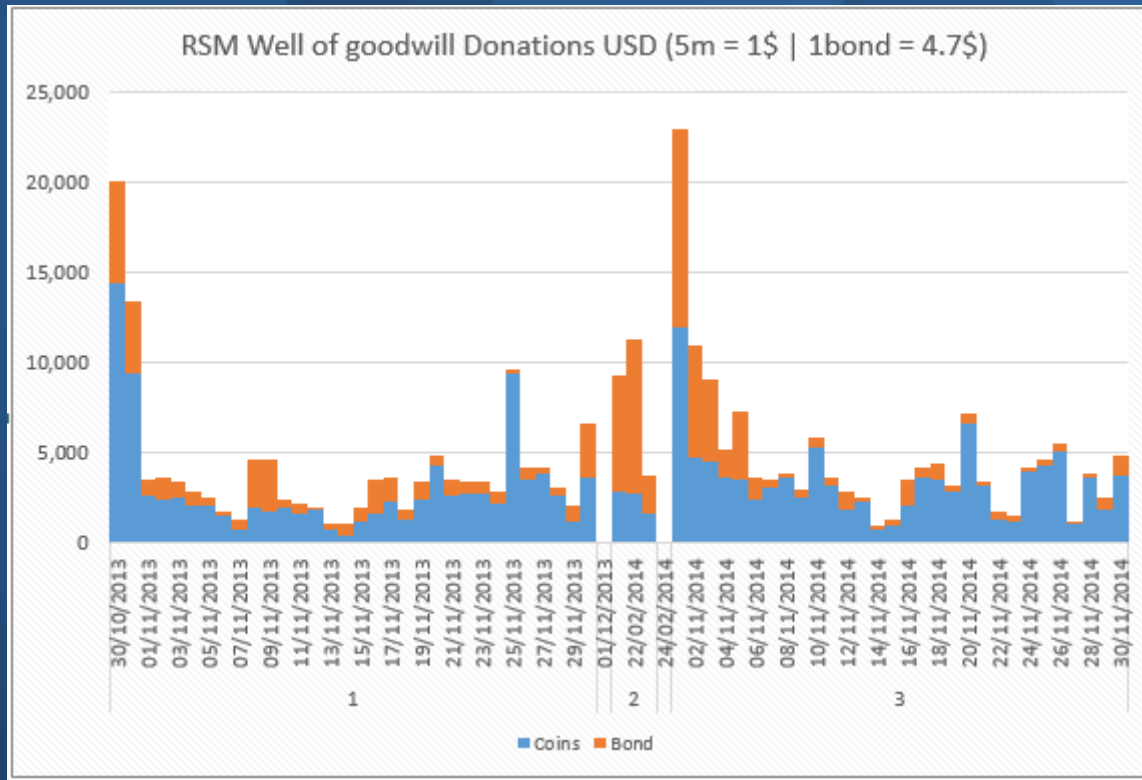
How We Work - RS Game Analytics

- 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



Mod Porky @JagexPorky · Feb 9

I wouldn't want to fight against these;
RuneScape's Top Boss Killers by killcount

RUNESCAPE TOP BOSS KILLERS		
Boss	Player	Kills
Araxxi	xRegal	4,150
Barrows	lambal89	2,096
Chaos Elemental	Pio Kildare	3,251
Commander Zilyana	Efb	10,105
Commander Zilyana (Hard)	Omid	1,276
Corporeal Beast	Bjoerun	4,398
Dagannoth Kings	x Auspride	10,982
General Graardor	King DeJay	17,064
General Graardor (Hard)	Divine Eel	646
Giant Mole	Ben Has A	577



49



75



How We Work - RS Game Analytics

• Monthly Reports



Business Practice Mode 1 (outgoing immigrants) (Launch 9th Mar 2015)

This update aimed to lessen the blow for new players looking to try their hand at boss hunting whilst providing incentives for experienced players to help show them the ropes. It also implemented private instances for many bosses and streamlined the interface for creating one, resulting in a slicker and more intuitive experience for the player. Similar to the [Scales of Justice](#) launch in January 2015, launch week saw a positive upthrust of +1,850 boss-killing players per day, +8% from the [Darkmoon](#) era launch.

In a month where our player count is dropping due to seasonality, the results can be underrepresented as there's a smaller pool of players to begin with. A deeper view on the update would be to look at the percentage of active members taking part pre, during and post launch - this rose from 12.5% to 14.2% and has settled back down at 12.3% a week post launch. Overall, rather than bringing in new players to boost billing this update largely seems to have shifted the focus towards a tier 1, losing allies of water estates like General Gargano and moving them onto harder bosses like the Hungry, five and Anxious. The King Black Dragon also has a +44% increase of players at launch due to the new instancing which meant faster saunas and a quicker route to his rare pet slot.

The below shows the changes in housing expenditure overall and for each individual house.

[illegible]

Disaster of Disaster – 200th Quest Launch 27th Mar 2015

The launch of RuneScape's 200th quest was extremely successful with strong player participation and deep engagement with all aspects of the quest. In the opening week 52,850 players had started the quest with 50% of them completing. Normally for a quest the ratio of starts to completions would be a concern, but in this case it reflects the multi-quest structure and length of the content and additionally has been boosted by players stopping to engage with the full New Varrock experience and achievements before they faced off against Zenzougar.

Quest	Launch Date	Starts	Completes	Comp %
One of a Kind	10/07/2014	29,447	38,150	56.7%
Fake of the Gods	24/04/2014	22,811	20,489	89.8%
Shadow Over Ashdale	22/03/2014	57,650	56,550	98.1%
Nightly Fall	02/06/2014	34,367	30,722	89.4%
Plagues End	11/08/2014	20,235	17,006	84.0%
Broken Home	27/31/2014	56,529	62,834	78.8%
Heart of Stone	34/11/2014	23,886	21,133	88.5%
Outlander among Thieves	23/02/2015	20,198	14,058	69.6%
Dimension of Disaster	23/09/2015	52,840	36,777	50.7%

Quests searched ILM records

The event was also a real triumph in terms of time spent playing, with a common first play through time of 2 hours and 20 minutes the community had racked up over 3,750 days of playtime in the opening week, before taking abnormally short and repeat late account. One third of players have gone on to replay the quest two or more times with one exceptionally keen player completing the entire quest twenty times! Above this there's been thorough attention to all the mechanics incorporated into New Verrock for instance, all the chests scattered around New Verrock have been thoroughly looted and 3,874 players have unlocked the monumental task of attaining enough Zenomarks to purchase the mystery box, containing a chromatic partyhat, which is several million hours of playtime to itself! The mystery box also quickly became a talking point in-game and on social media with players racing each other to find out what it contained.

If you're interested in more guest stats, the Quest Analysis Report in the [analytics sharejet.commercial.ly](https://sharejet.commercial.ly) has several including completion times, level breakdowns and drop off points for 100+ quests.

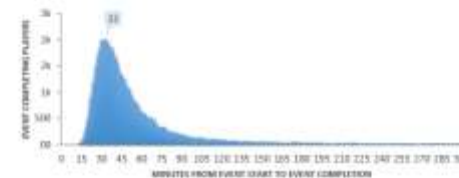


Easter Eggs apartments - Holiday Mini-Crest (Laurel) 30th Mar 2015!

This year's seasonal Easter event was a light-hearted and charming mix-quizz with bonanza to the events of old and a return of the Easter zander. Throughout the 2 week event 368 (140,000) of active members started with 61d making 2 head to correlation. In comparison, Halloween 2014 had 59% (129,000) after the 2 week event and Christmas 2014 had 40% (124,000) after the month long event. It looks as though the close proximity of the Easter event to the OldSchool bond release opened the active player pot for Runescape thus lowering the engagement % overall (due to returning players dipping in Runescape for a New Minuties to use what's changed, then heading over to OldSchool which is the game they came back for). Reversing the engagement calculation to exclude all players whose game has been played towards OldSchool the Easter event has 41% (51%) engagement. During the same for Halloween 2014 and Christmas 2014 so there's a like comparison results in 43% (44%) and 43% (49%) respectively, so removing game bias did close the performance gap but not entirely.

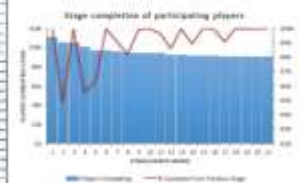
The event task most members 33 minutes to complete with the quickest being 10 minutes. This is 10% more than the target playtime of 30 minutes and with the 90,000 completions results in over 2,000 days of combined playtime for a small development update.

Duration distribution (completed in less than 5 hours)



A community event to collect the most eggs also took place with an estimated 5,000 players engaging and several of them collecting 10s of thousands. The winner collected a mammoth 90,000 eggs and was deservedly awarded the title "the Egg-cellent" along with the top 100 collectors.

As mentioned above the event completion rate was 81%, with the largest drop off points occurring immediately after talking to the Easter bunny, identifying that players had a glance at the event but quickly decided that the overall premise or rewards simply weren't for them. Aside from that there were a few dips across each stage but the puzzle difficulties certainly weren't set too high.





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

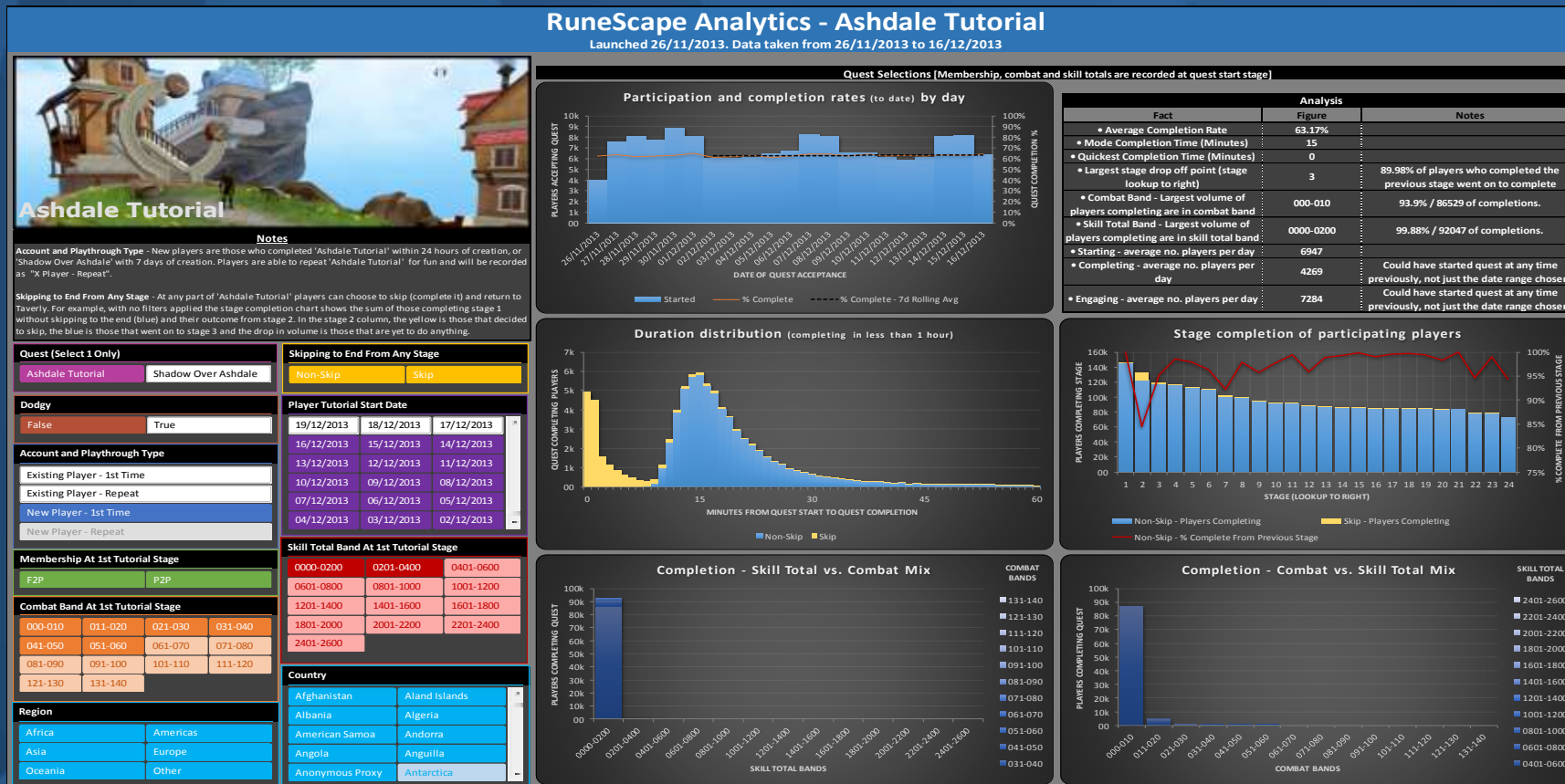
“What game feature should we work on next?”

- 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



Ashdale Tutorial

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		

Country

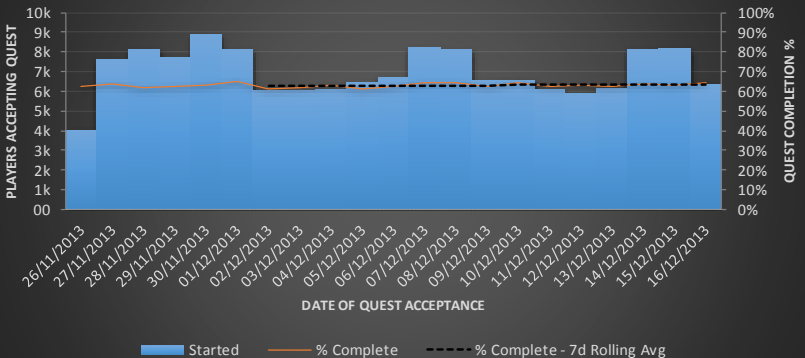
Afghanistan	Aland Islands
Albania	Algeria
American Samoa	Andorra
Angola	Anguilla
Anonymous Proxy	Antarctica

Region

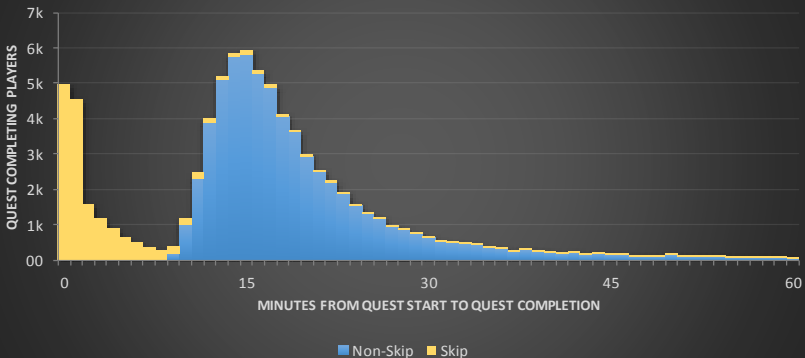
Africa	Americas
Asia	Europe
Oceania	Other

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

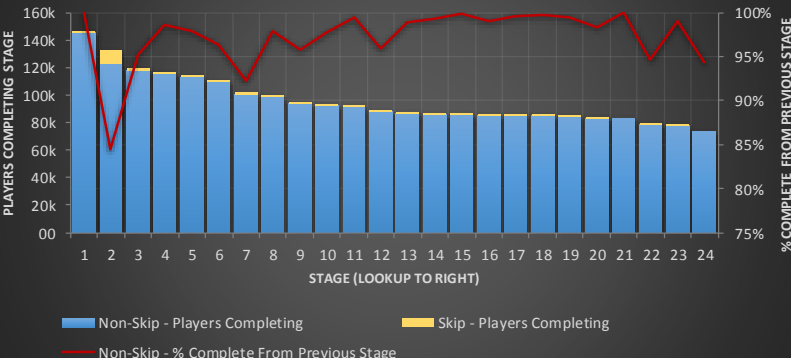
Participation and completion rates (to date) by day



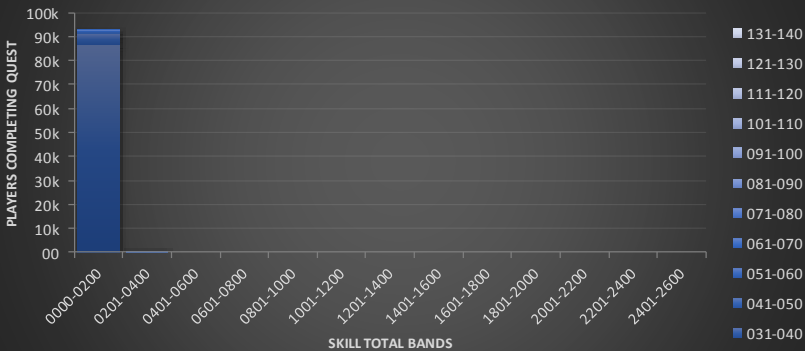
Duration distribution (completing in less than 1 hour)



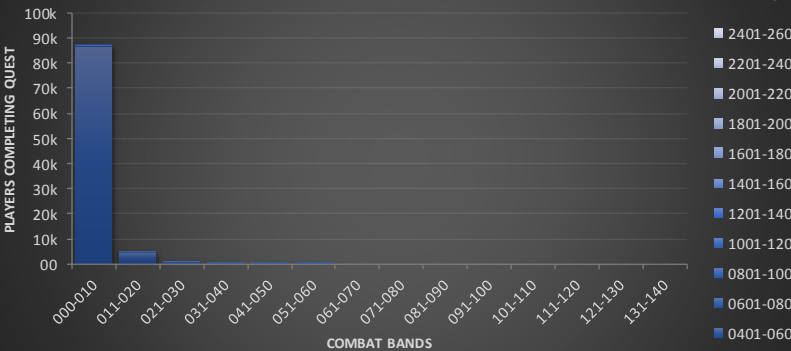
Stage completion of participating players



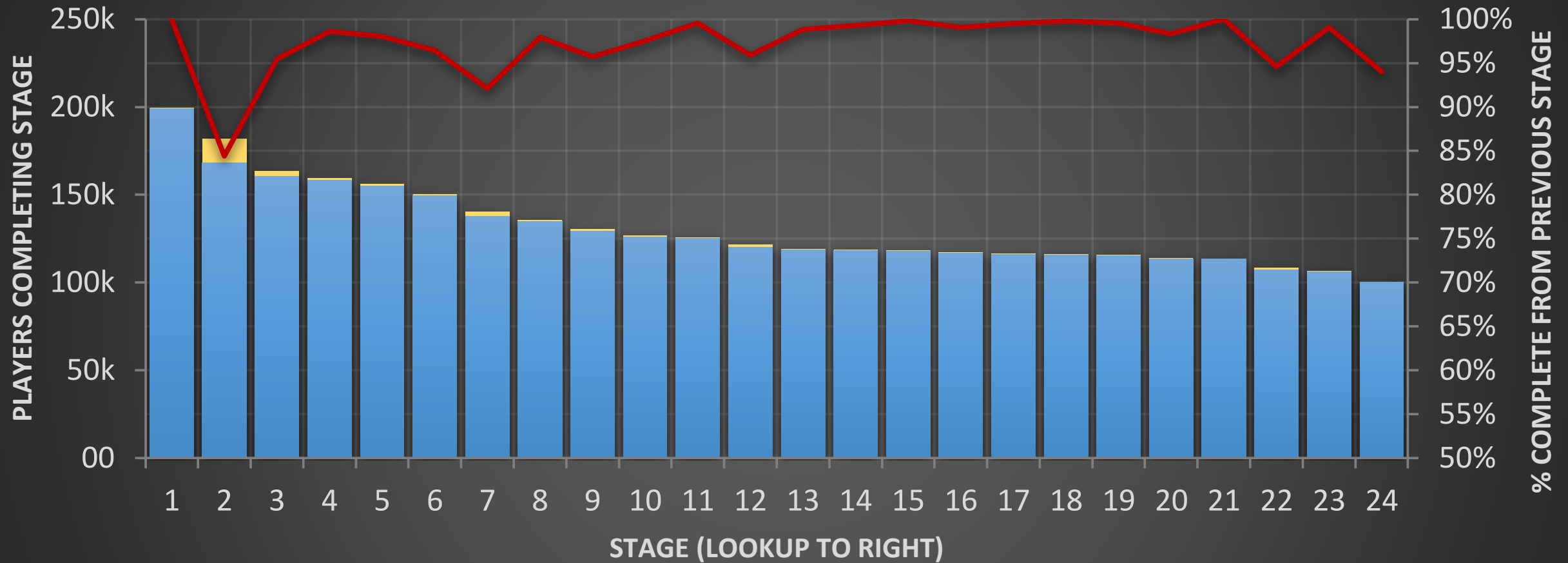
Completion - Skill Total vs. Combat Mix



Completion - Combat vs. Skill Total Mix



Stage completion of participating players



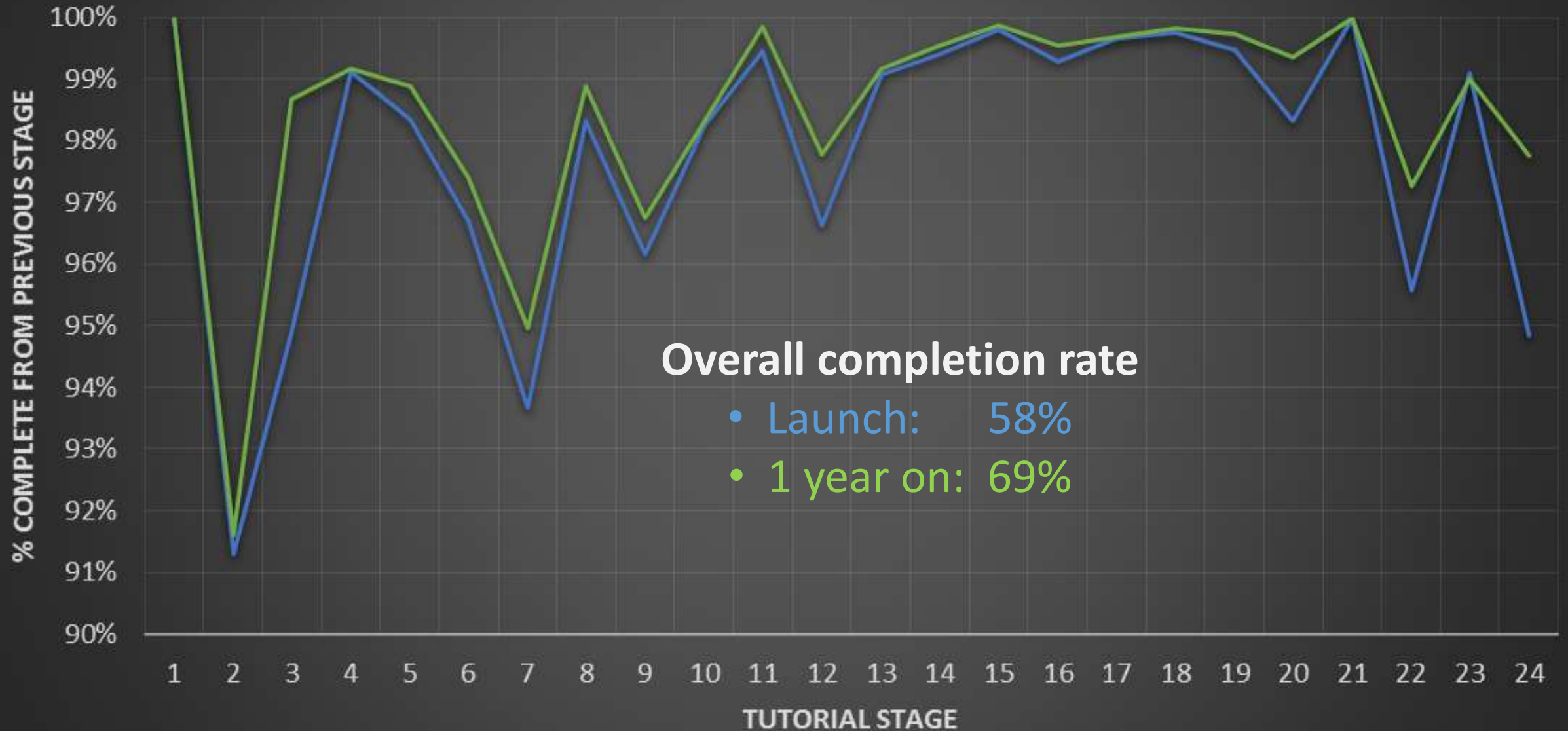
Non-Skip - Players Completing

Skip - Players Completing

Non-Skip - % Complete From Previous Stage

Tutorial Stage Completion %

Launch Week 1 Year Later



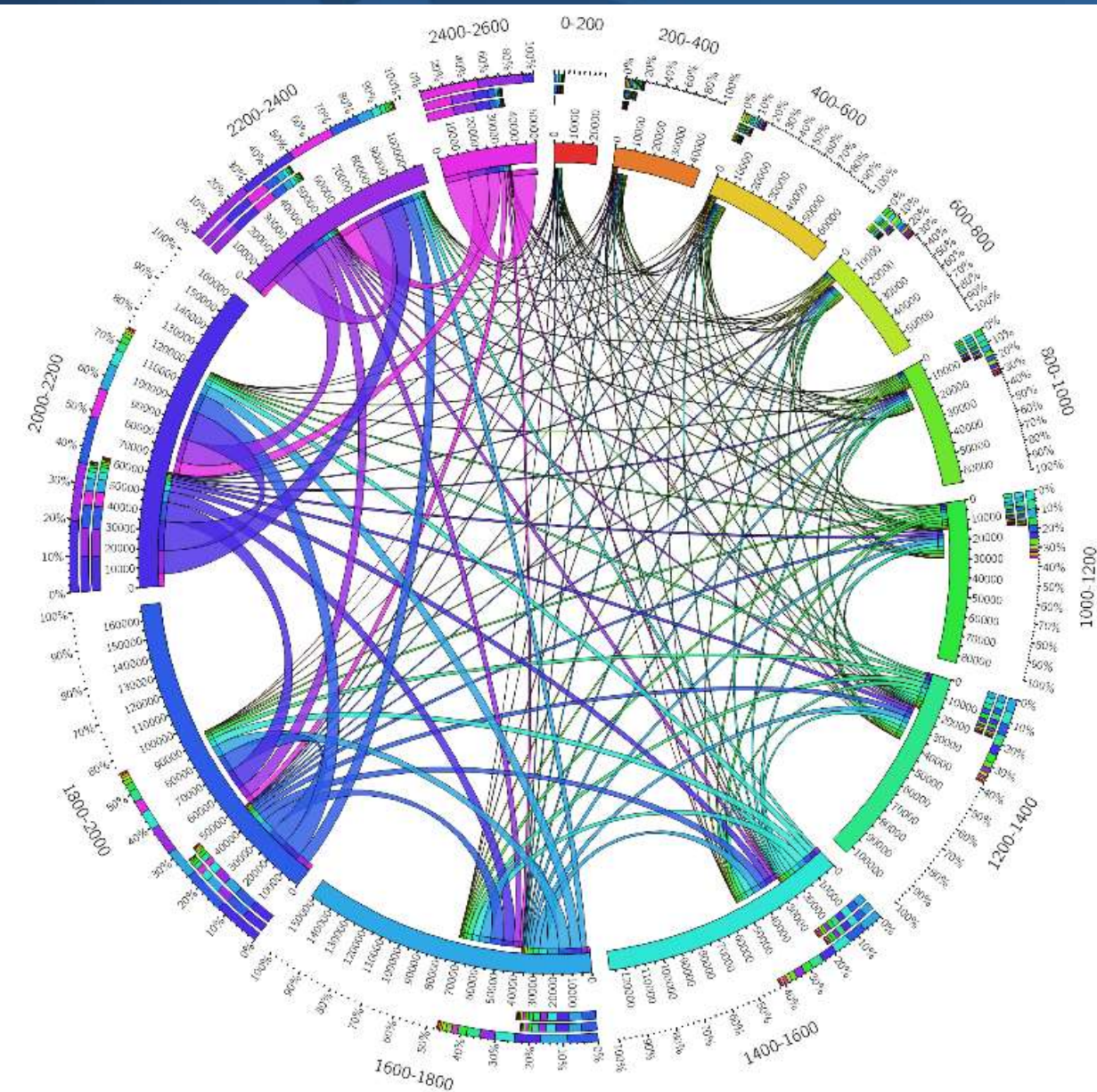


Tools – Pre-production Analytics

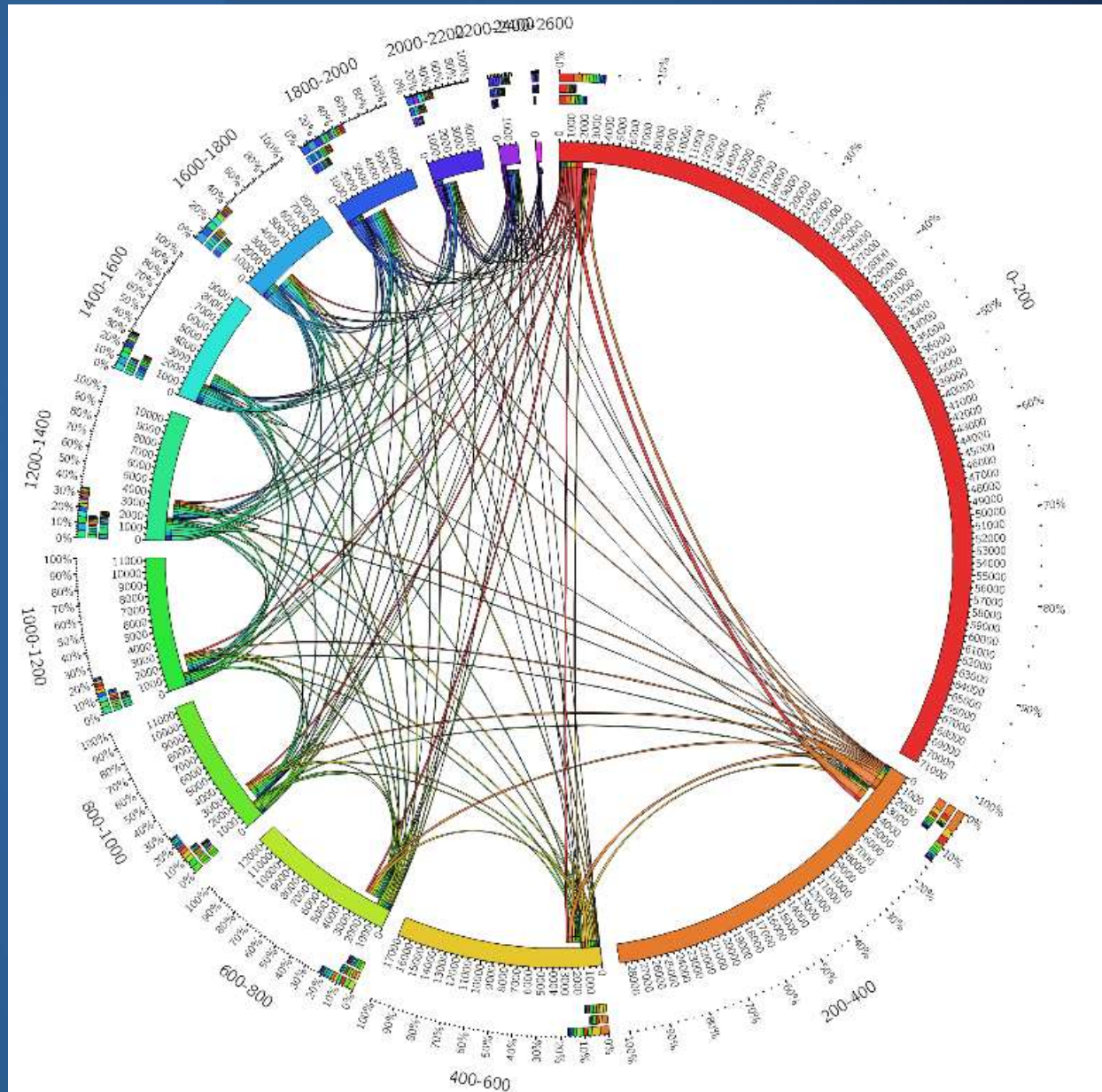
- Churn – Leaver profiling – social connection analysis



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]
```





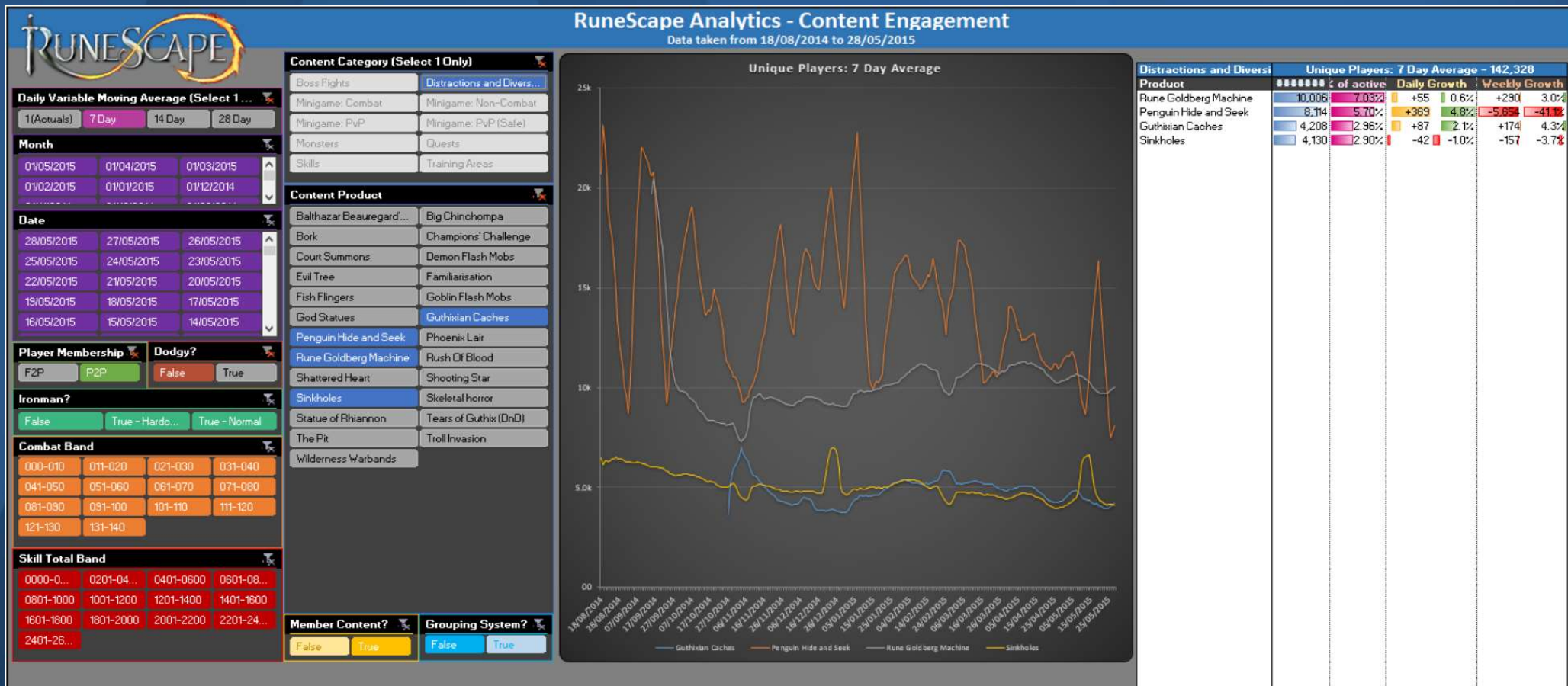
Tools – Pre-production Analytics

“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 False True

Ironman?

False True - Hardc... 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

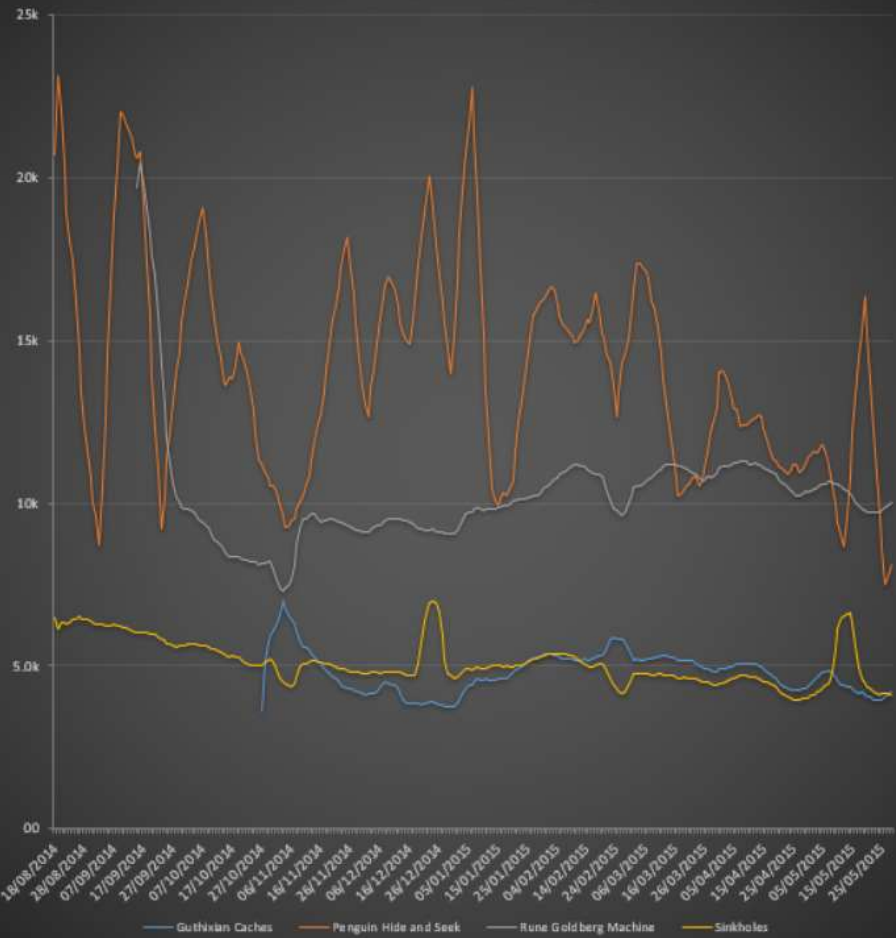
Member Content?

False True

Grouping System?

False True

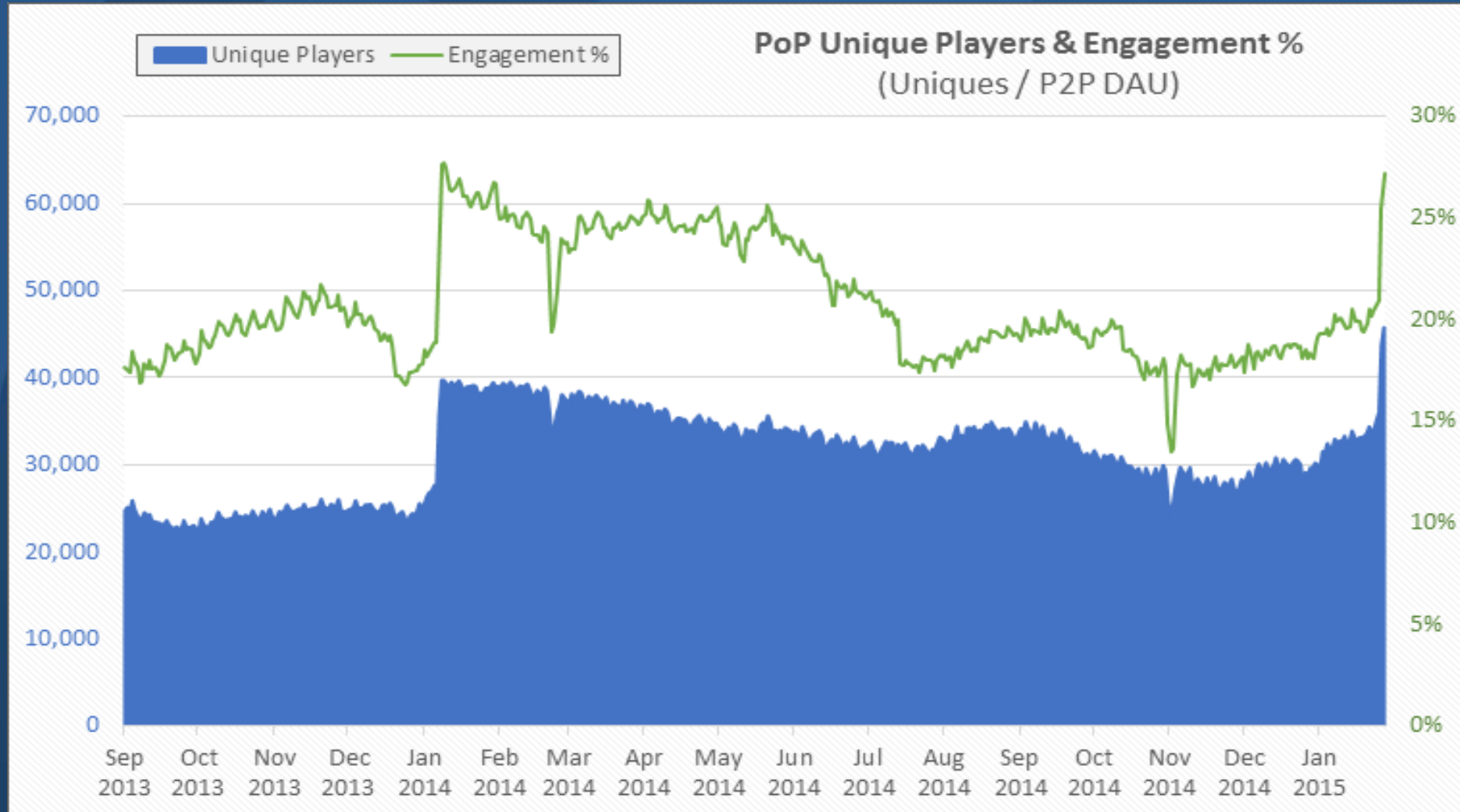
Unique Players: 7 Day Average



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?

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.																									
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	260k	260k		
MODE	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99		
MEAN	79	79	79	74	77	82	70	61	63	61	63	68	76	59	69	71	56	61	61	69	74	60	68	73	67	64	64		
LVL 1-98	176.7k	170.9k	170.2k	179.4	167.2k	164.4	197.5k	203.4	224.1k	217.9k	206.4	204.4	186.5k	225.1k	209.1k	206.6k	220.9k	227.3k	220.2k	192.9k	181.1k	222.5k	216.4	176.7k	235.2k	198.7k	198.7k		
LVL 1-98 RATIO	68%	66%	65%	69%	64%	63%	76%	70%	86%	84%	79%	78%	72%	86%	80%	79%	85%	87%	85%	74%	70%	85%	83%	68%	83%	76%	76%		
LVL 99	28.06k	27.29k	31.16k	21.56k	29.15k	7.39k	36.55k	38.55k	17.38k	13.73k	9.65k	16.99k	31.89k	16.62k	21.19k	21.74k	12.81k	19.51k	22.19k	45.07k	43.7k	19.26k	22.12k	41.58k	18.82k	32.53k	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%	8%	8%	16%	7%	12%	12%		
LVL 100+	55.65k	62.15k	59.04k	59.82k	64.06k	89.03k	24.31k	18.83k	18.88k	28.69k	48.72k	39.39k	41.61k	18.83k	30.12k	32.03k	26.71k	18.53k	17.96k	22.44	35.61k	21.64k	22.26k	42.12k	26.3k	29.16k	29.16k		
LVL 100+ RATIO	24%	24%	22%	22%	25%	84%	10%	7%	7%	11%	19%	15%	16%	7%	12%	12%	10%	5%	7%	9%	14%	8%	8%	16%	10%	11%	11%		

Groups of 10 ->																											
Theoretical Level	Attack	Defence	Strength	Ranged	Magic	Healing	Prayer	Summoning	Agility	Thieving	Dungeoneering	Slayer	Woodcutting	Hunter	Mining	Fishing	Farming	Distraction	Funecraft	Fletching	Firemaking	Construction	Smithing	Cooking	Crafting	Herblore	
																											
01-10																											
11-20																											
21-30																											
31-40																											
41-50																											
51-60																											
61-70																											
71-80																											
81-90																											
91-100																											
101-110																											
111-120																											
121-125																											

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	20.4	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	40.28k	19.99k	22.81k	21.71k	37.83k	39.6k	34.98k	30.4	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	26.4	
81-90	46.01k	41.4	43.76k	37.16k	37.82k	38.81k	17.6k	25.68k	31.4	20.21k	34.61k	39.87k	49.18k	28.73k	35.41k	38.36k	25.34k	25.02k	25.49k	37.01k	33.63k	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	93.02k	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	85.46k	
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	0.63k	01.08k	02.81k	0.6k	0.87k	02.27k	0.77k	01.42k	
121-125	0.74k	01.29k	0.83k	01.47k	01.67k	02.62k	0.18k	0.68k	0.17k	01.63k	11.11k	0.79k	0.38k	0.24k	0.63k	0.35k	0.45k	0.17k	0.16k	0.32k	0.94k	0.15k	0.18k	01.05k	0.18k	0.56k	

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

Spend History - MEAN VALUES										Account Age - MEAN VALUE	6 years	
Total LTV	£227.25											
Membership Days Purchased Vol.	1188											
Membership Days Purchased LTV	£157.75											
Keys Purchased Vol.	458											
Keys Purchased LTV	£30.25											
RuneCoins Purchased Vol.	109											
RuneCoins Purchased LTV	£14.64											
Bonds Purchased Vol.	10.3											
Bonds Purchased LTV	£32.95											
Membership Status Count by Number of 99s										Account Age		
Current Member												
Ex Member												
Ex Trialist												
Newer Member												
Grand Total												
												
0	103.27k									0	35.64k	
1	24.1k									1	10.08k	
2	15.31k									2	9.93k	
3	10.8k									3	10.29k	
4	9.87k									4	14.0k	
5	8.5k									5	15.47k	
6	7.27k									6	19.78k	
7	6.69k									7	31.6k	
8	5.98k									8	17.68k	
9	5.51k									9	15.31k	
10	4.93k									10	27.65k	
11	4.52k									11	6.16k	
12	3.92k									12	3.16k	
13	3.45k										258k	
14	2.93k											
15	2.61k											
16	2.39k											
17	2.14k											
18	1.9k											
19	1.7k											
20	1.51k											
21	1.36k											
22	1.11k											
23	1.09k											
24	0.92k											
25	1.13k											
26	25.4k											
	260k	-	-	-	-	-	-	-	-		260k	

Mean Skill Levels

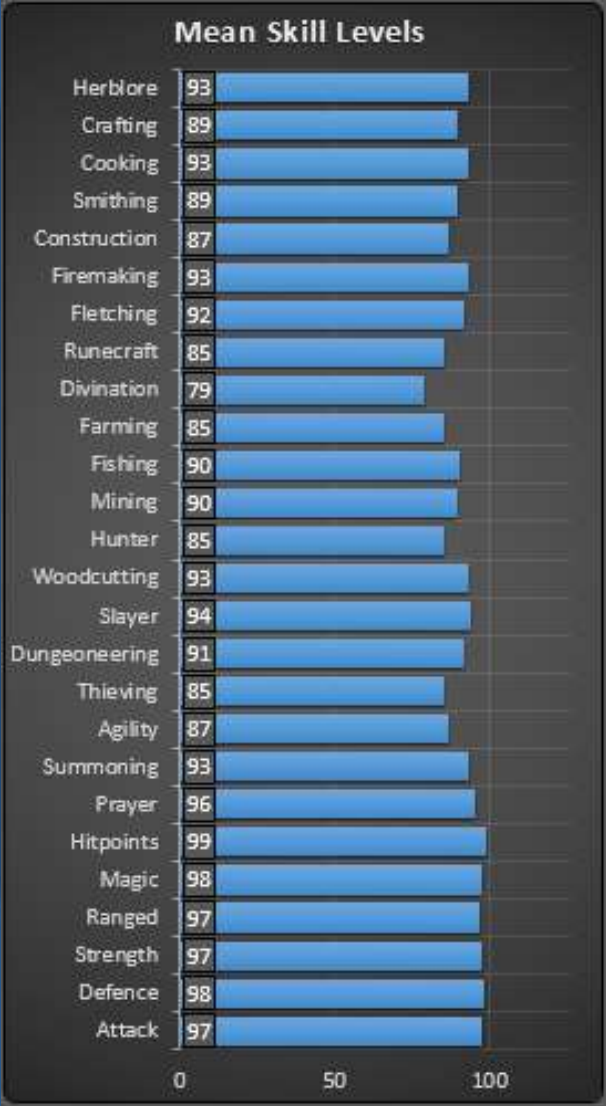
Herstone 64

Membership Status		%	Account Age (Years)		%			
Current Member			0	1				
Ex Member			2	3				
Ex Trialist			4	5				
Newer Member			6	7				
Skill Total Band		%	Combat Level Band		%			
0000-0200	0201-0400		000-010	011-020				
0401-0600	0601-0800		021-030	031-040				
0801-1000	1001-1200		041-050	051-060				
1201-1400	1401-1600		061-070	071-080				
1601-1800	1801-2000		081-090	091-100				
2001-2200	2201-2400		101-110	111-120				
2401-2600			121-130	131-140				
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	



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

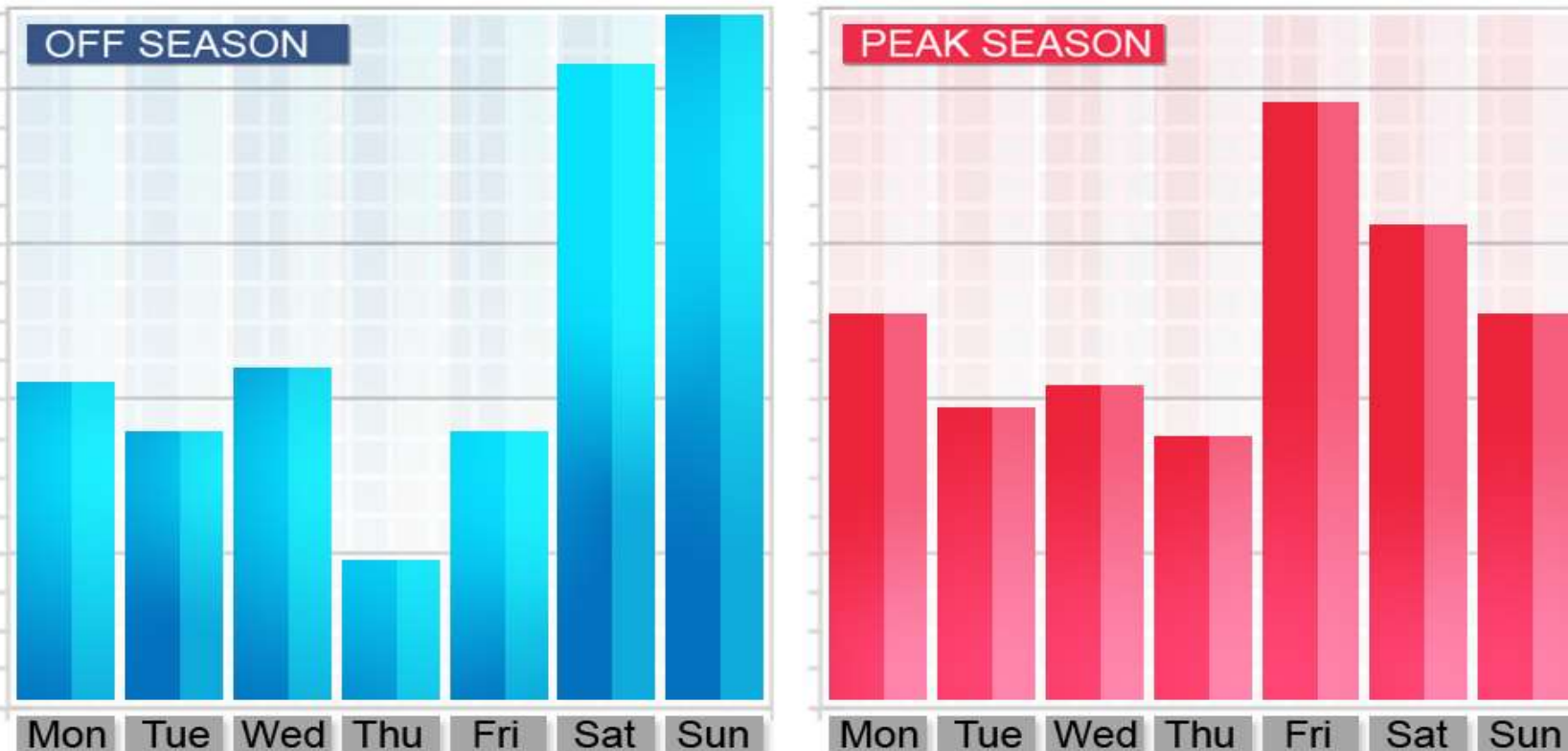




Tools – Production Analytics

- **Seasonality analysis** – daily activity

Runescape Returners by Day of Week





Tools – Post-launch Analytics

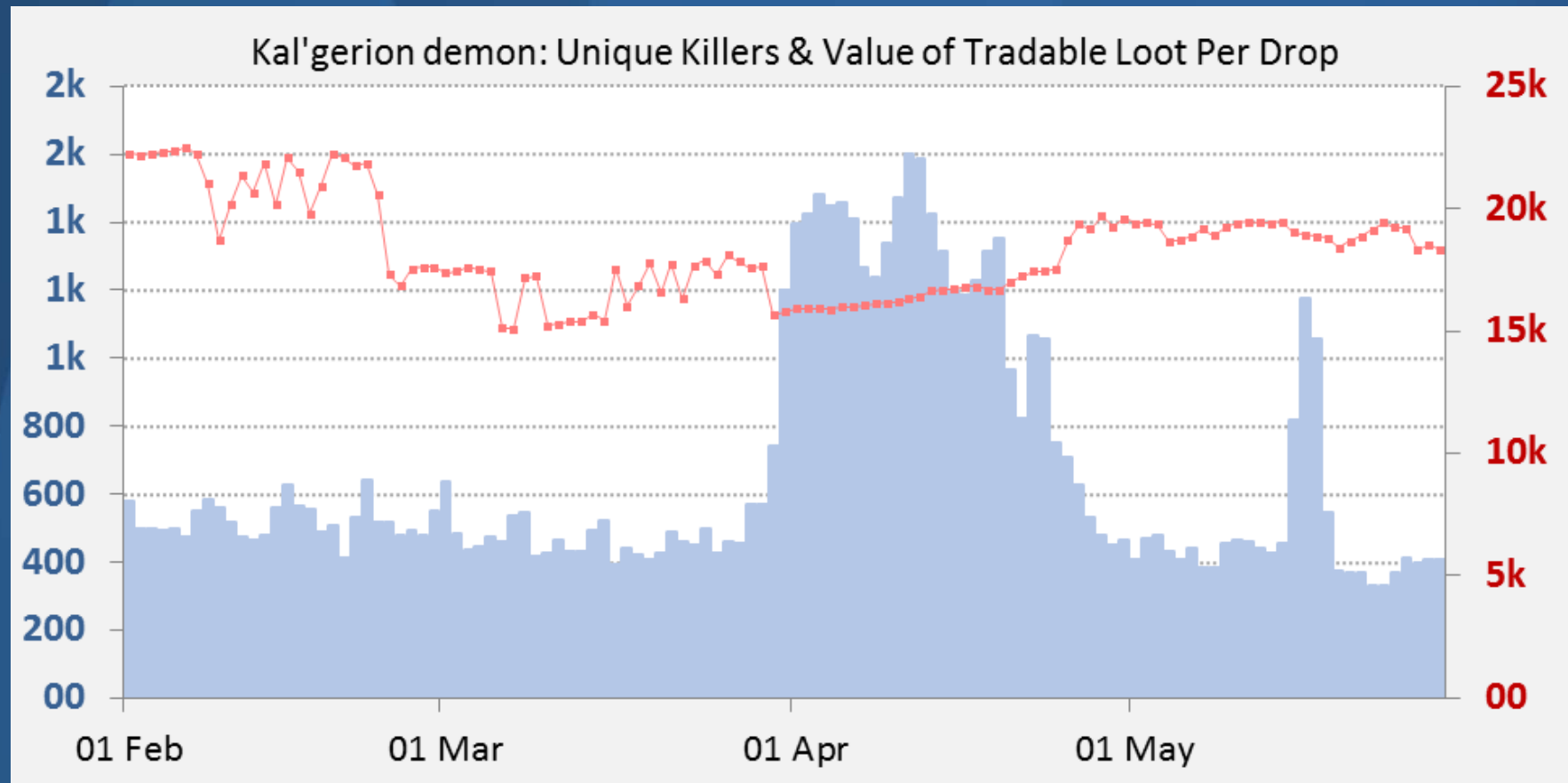
“Did it work as I wanted and how can I make it better?”

- 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?



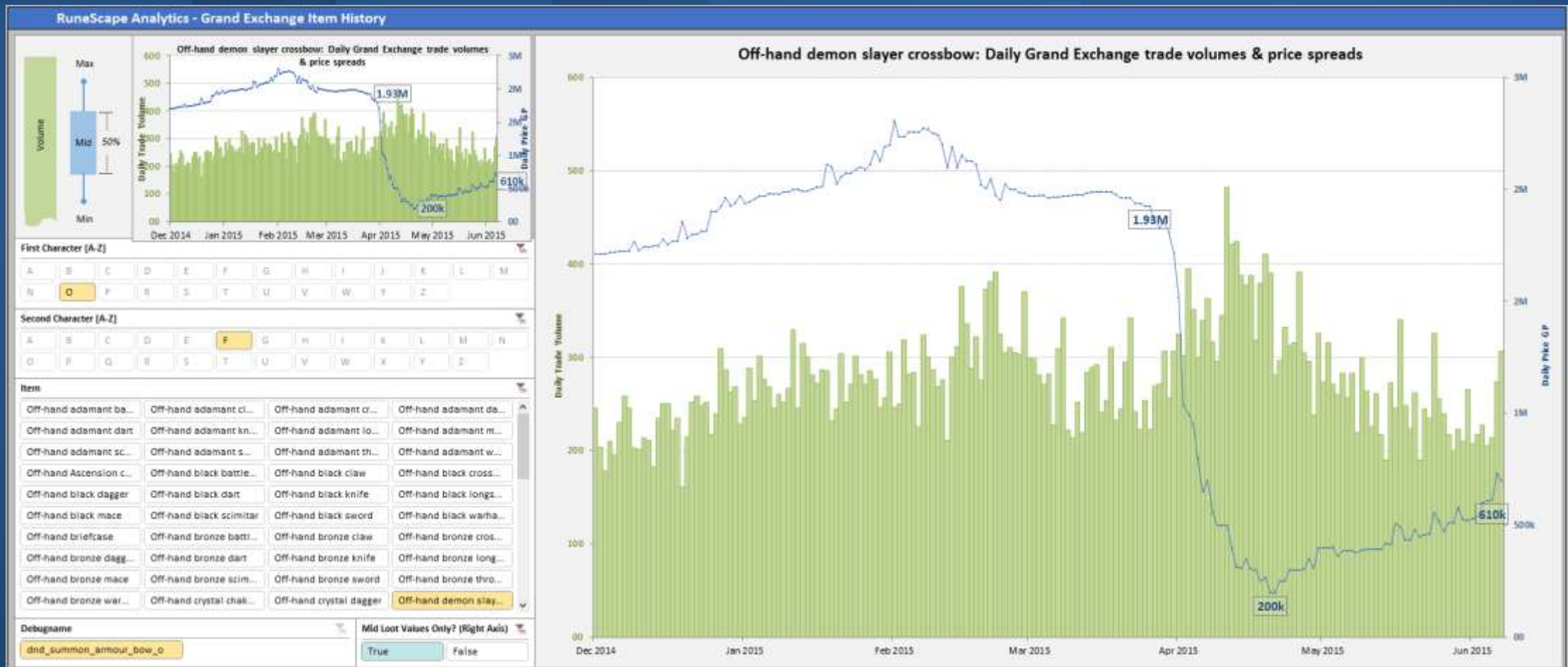
Tools – Post-launch Analytics

- **Economy analysis** – Loot value



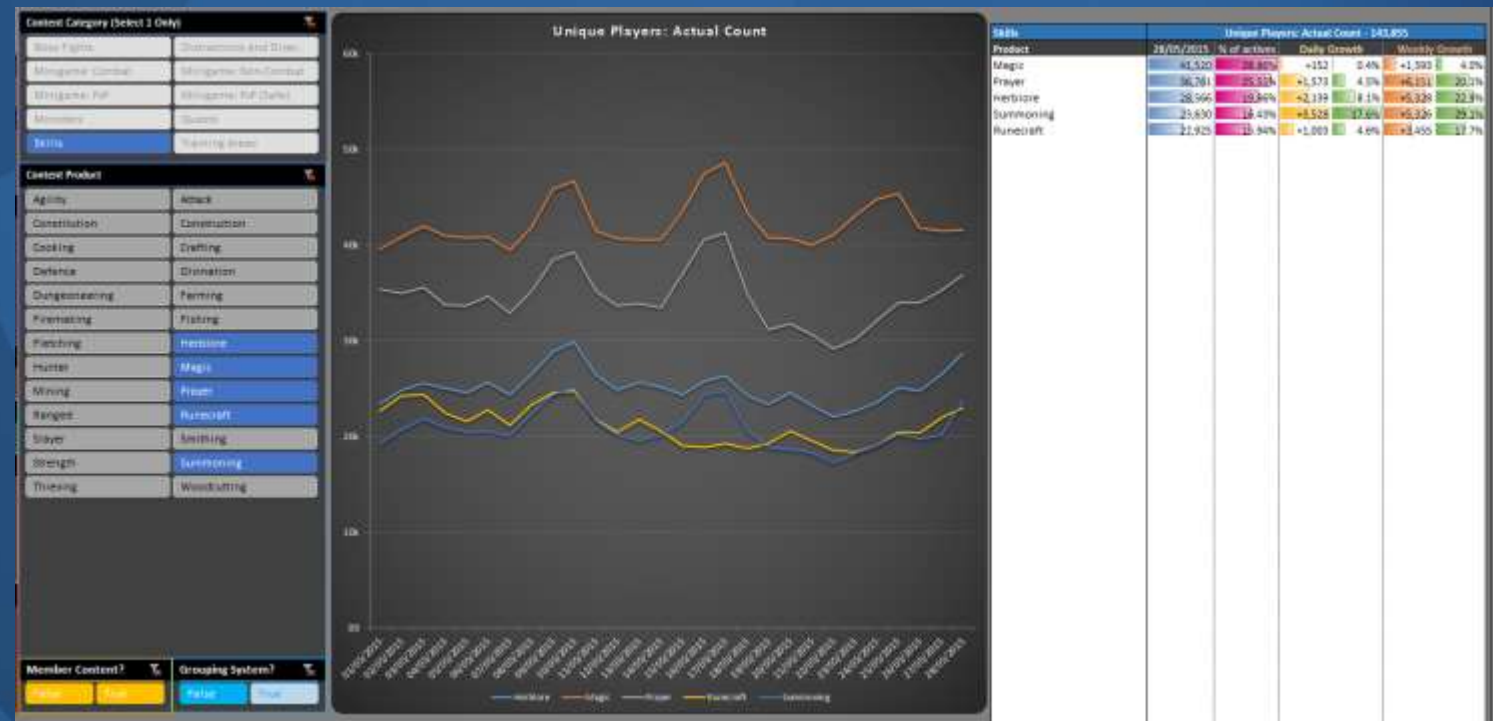
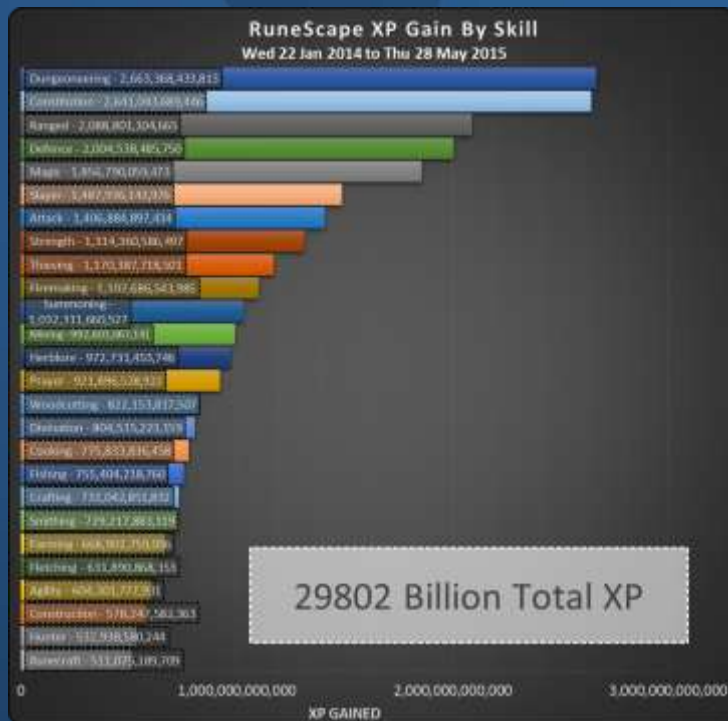
Tools – Post-launch Analytics

- **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

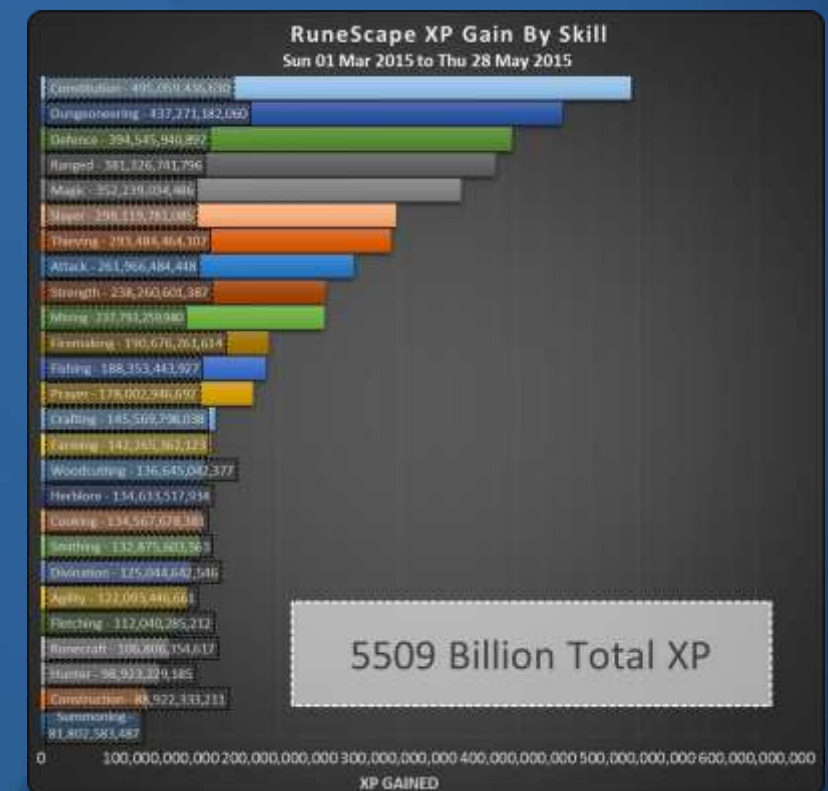
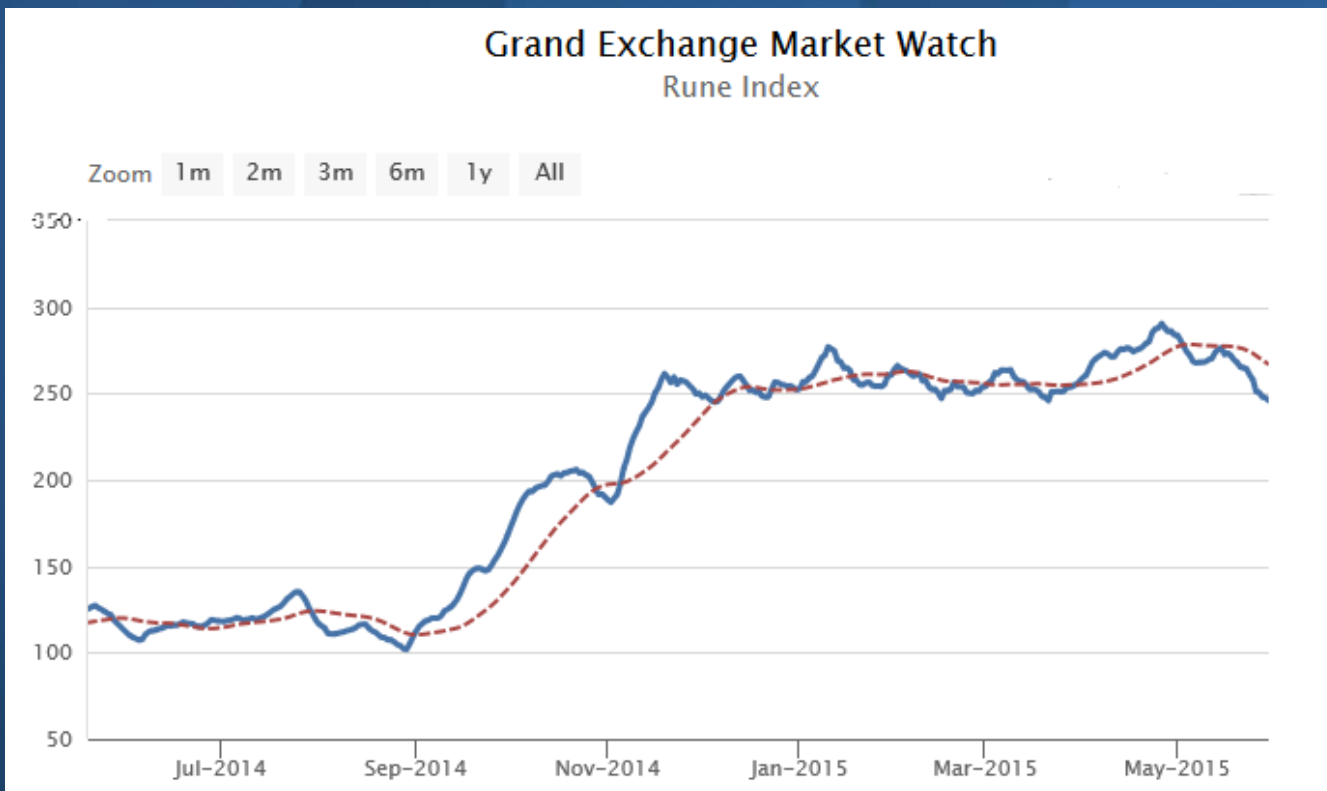
rune	volume traded	coins traded	median price
airrune	58.2M	1.3B	23
astralrune	4.2M	1.1B	264
bloodrune	16.4M	4.3B	260
bodyrune	3.8M	25.9M	7
chaosrune	4.9M	203.8M	41
cosmicrune	2.9M	695.6M	244
deathrune	14.1M	2.1B	147
earthrune	18.2M	227.3M	12
firerune	69.4M	2.4B	35
lawrune	5.1M	1.4B	266
mindrune	8.3M	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





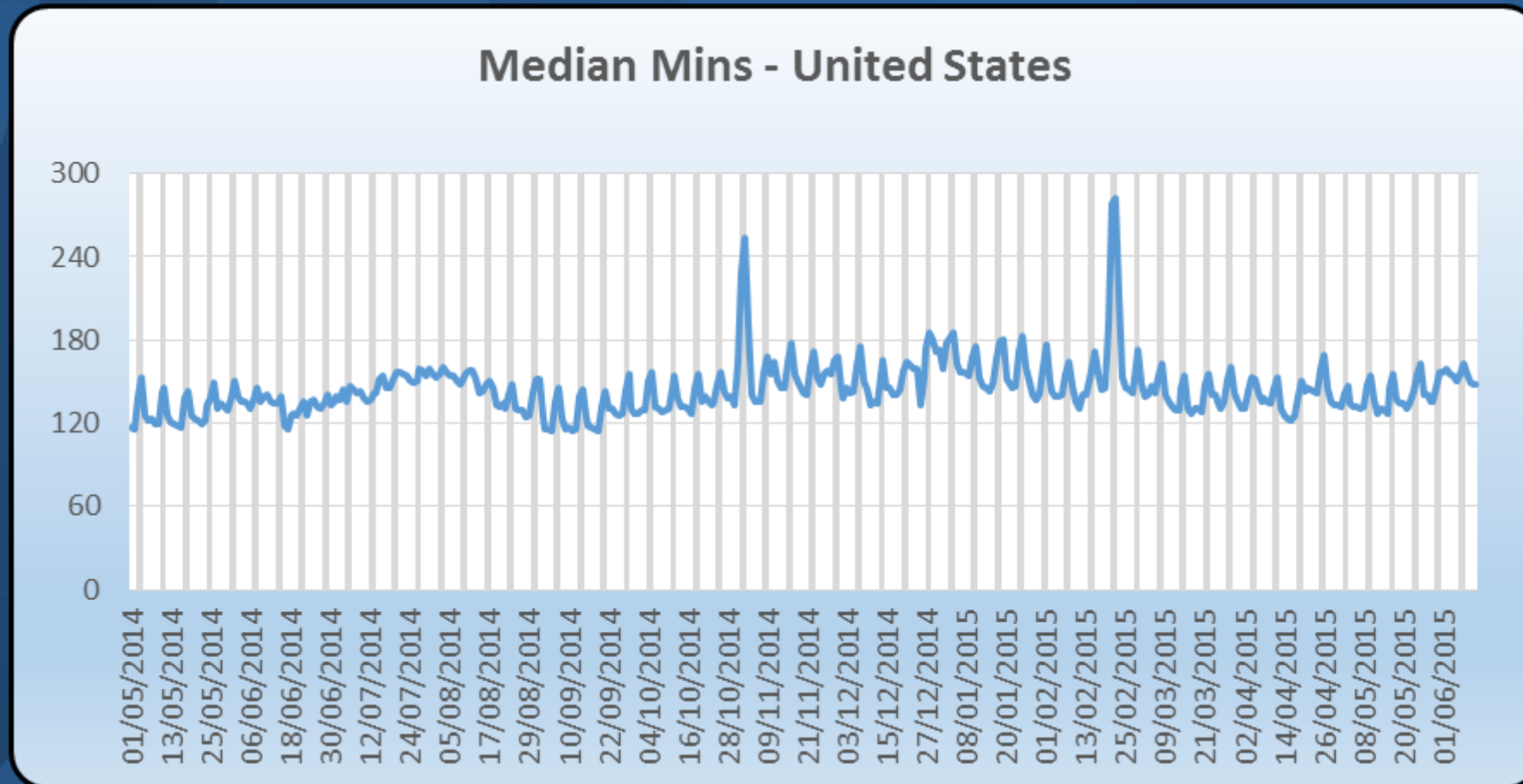
Game health

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



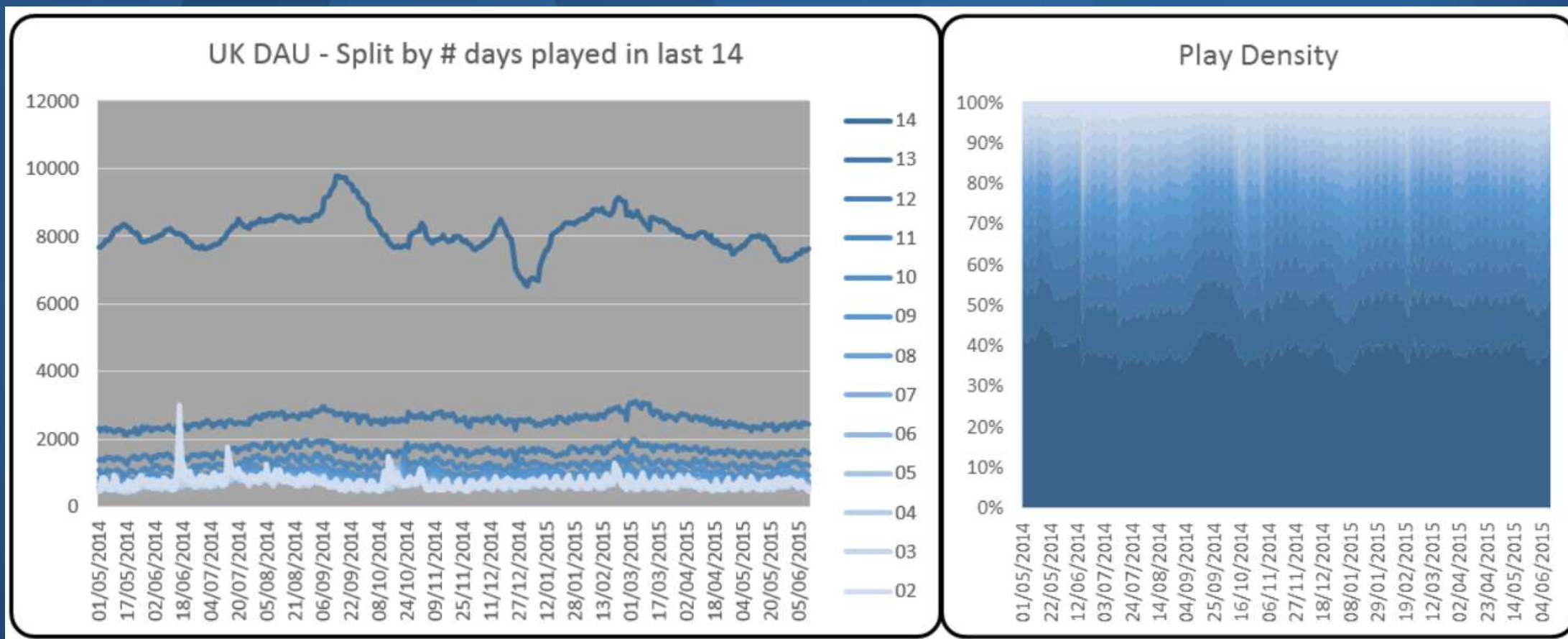
Game health

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



Game health

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





Game health

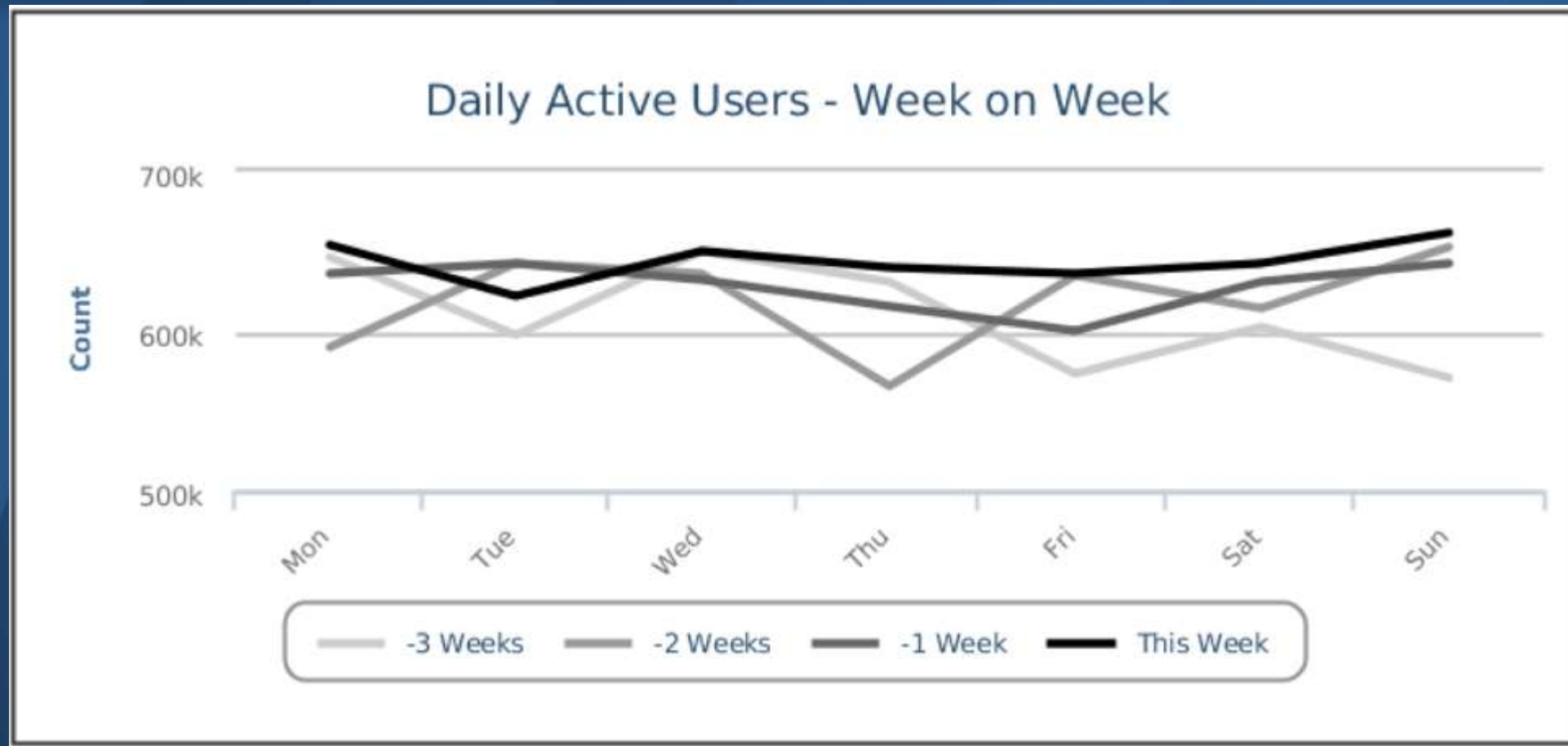
- **Metrics for underlying game health**
 - Play intensity, play density
- **Historical benchmarks**
 - Divergence from similar period in the past





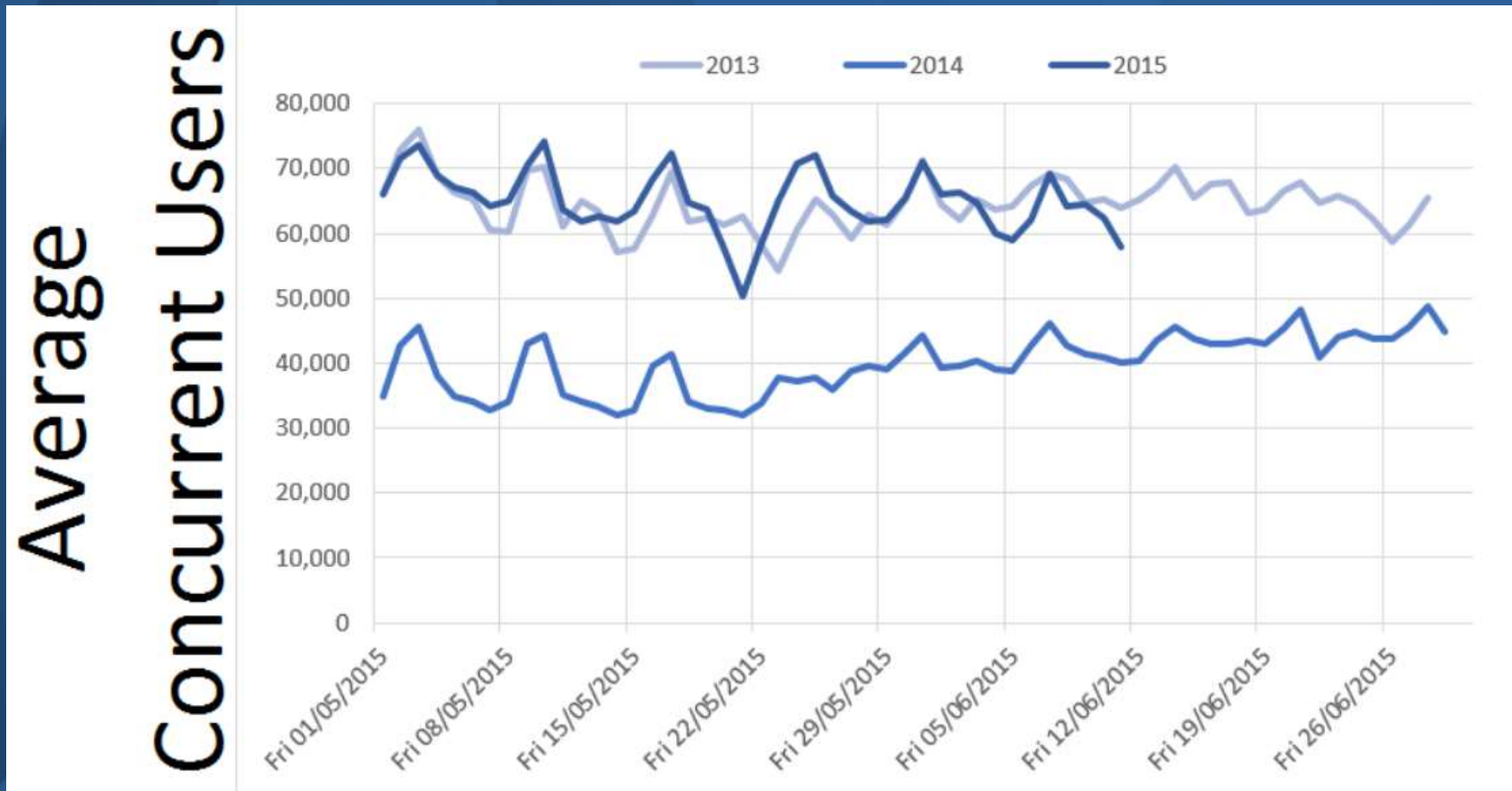
Game health

- **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

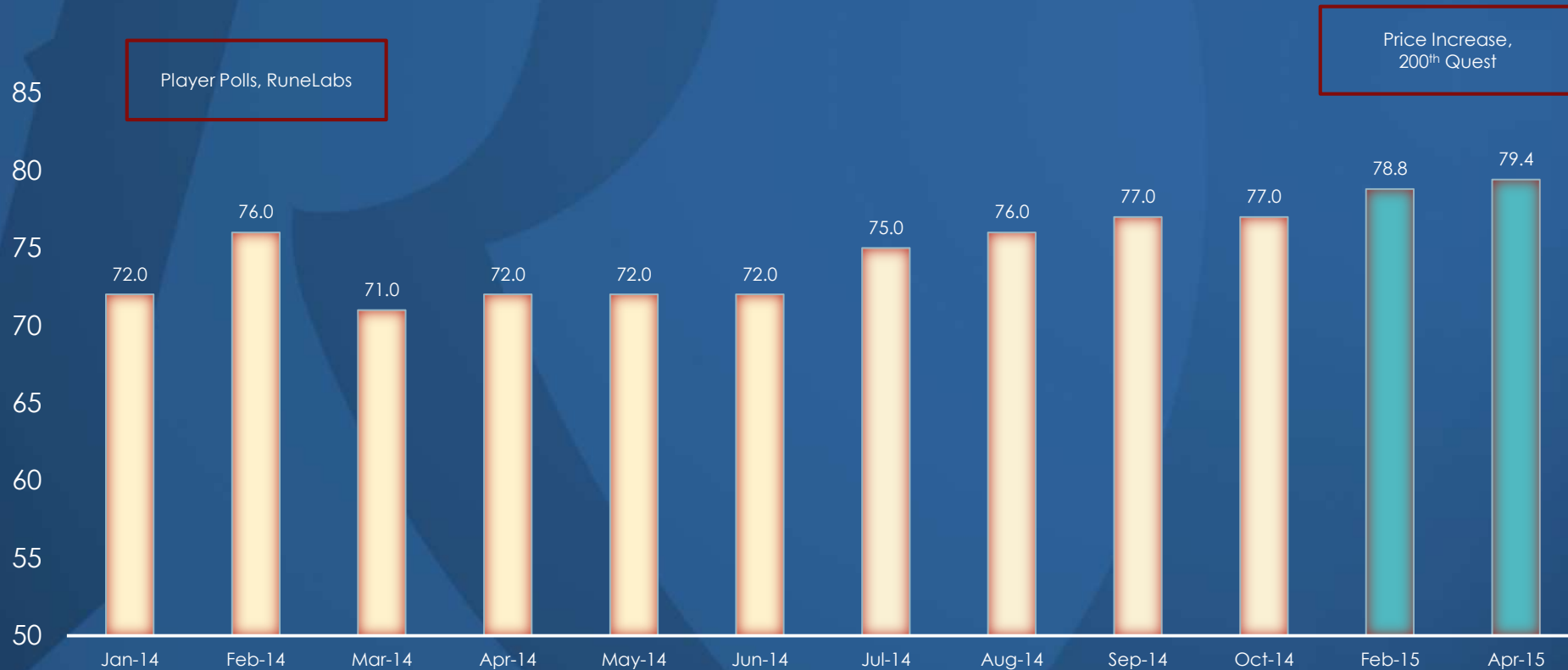




Game health

- **Customer Satisfaction** – Trends over time

OVERALL SATISFACTION

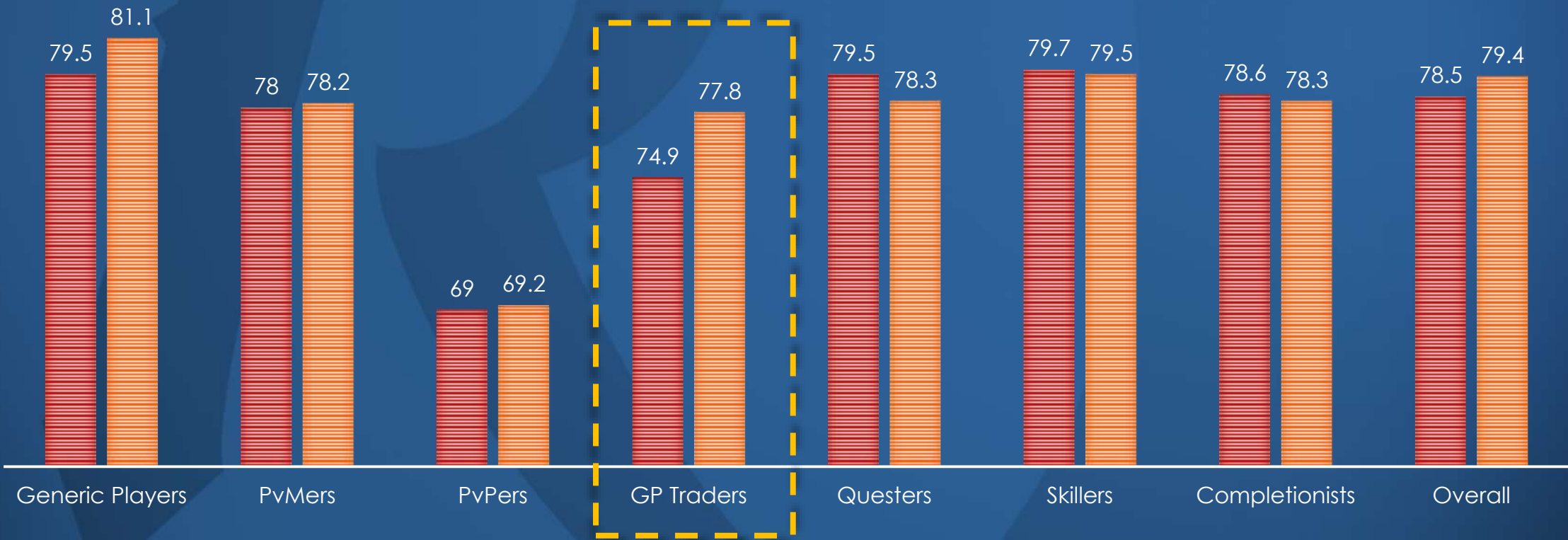




Game health

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

SATISFACTION COMPARISON FEB VS APR



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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