aws SUMMIT

# The OLX data theory of everything

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Head of Global BI

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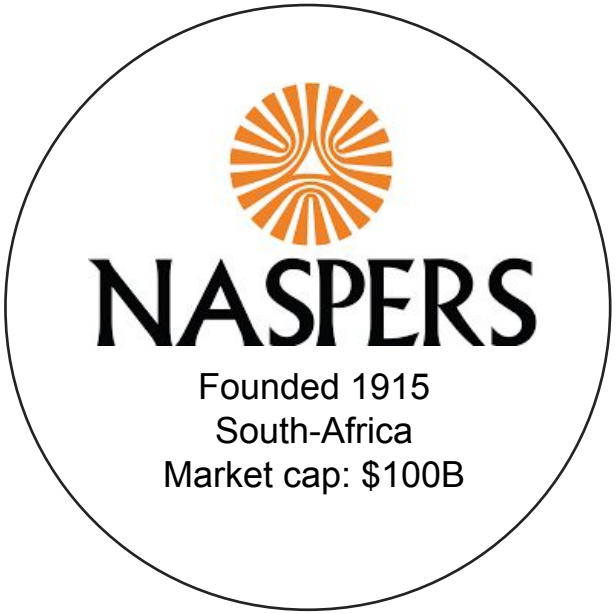
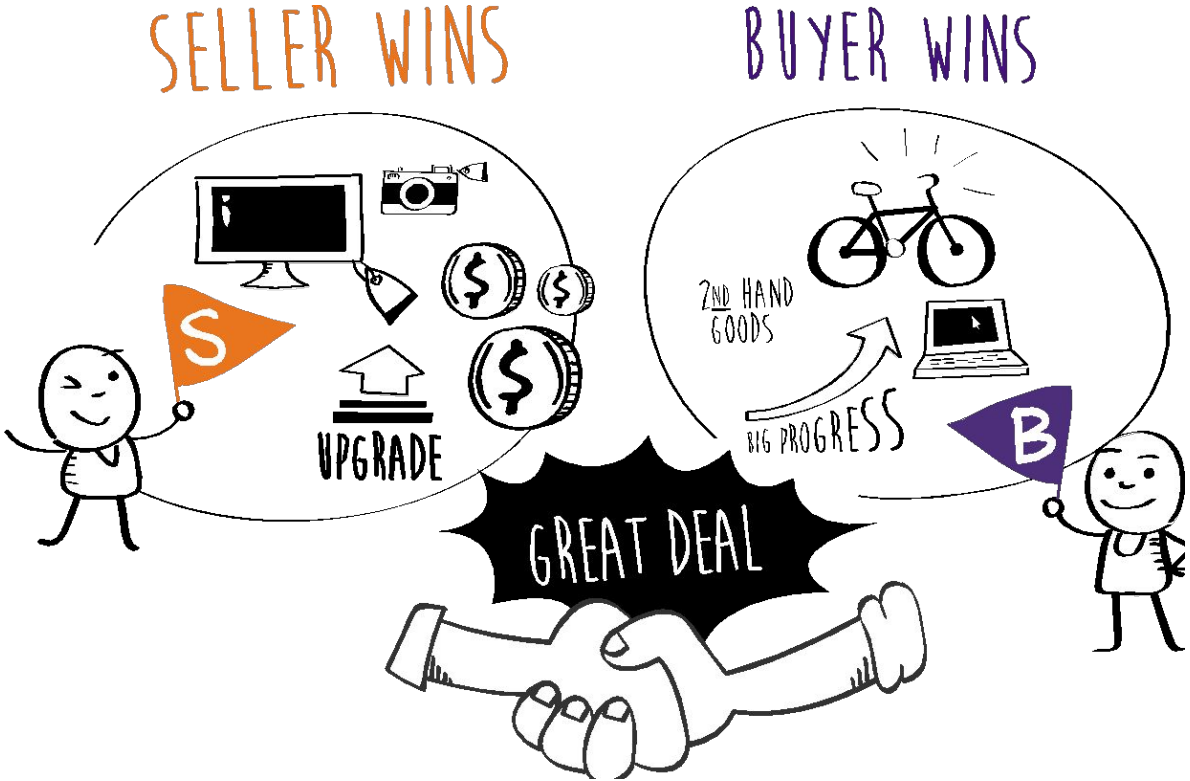
Data engineering manager

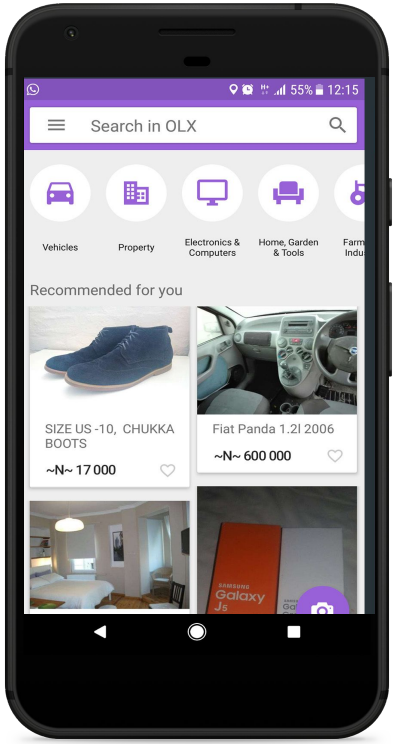

*‘The biggest internet company that you have never heard of’*







**43** Countries

**35** Offices

**+5,000** Employees

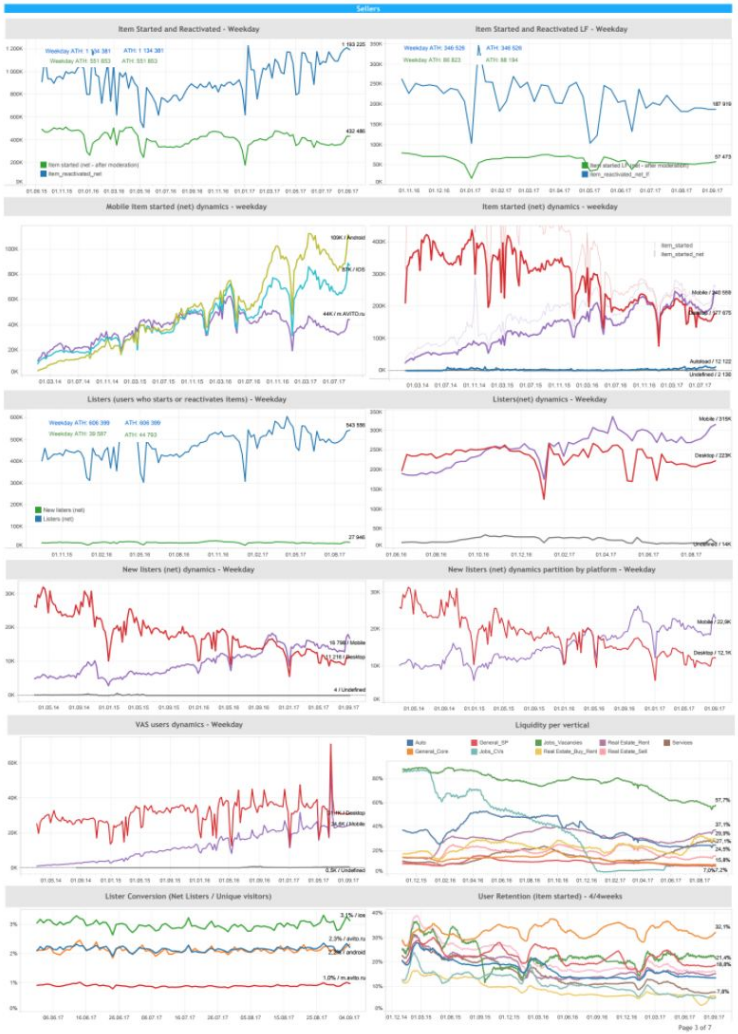
**+350M** MAU

**+4B** events / day

The OLX challenge:

# *‘Give everybody the data that he or she needs’*

(but also not much more)


Sellers
Item Started and Reactivated - Weekday
Item Started and Reactivated LF - Weekday
Mobile Item started (net) dynamics - weekday
Item started (net) dynamics - weekday
Listers (users who starts or reactivates items) - Weekday
Listers(net) dynamics - Weekday
New listers (net) dynamics - Weekday
New listers (net) dynamics partition by platform - Weekday
VAS users dynamics - Weekday
Liquidity per vertical
Lister Conversion (Net Listers / Unique visitors)
User Retention (item started) - 4/4weeks
Page 3 of 7

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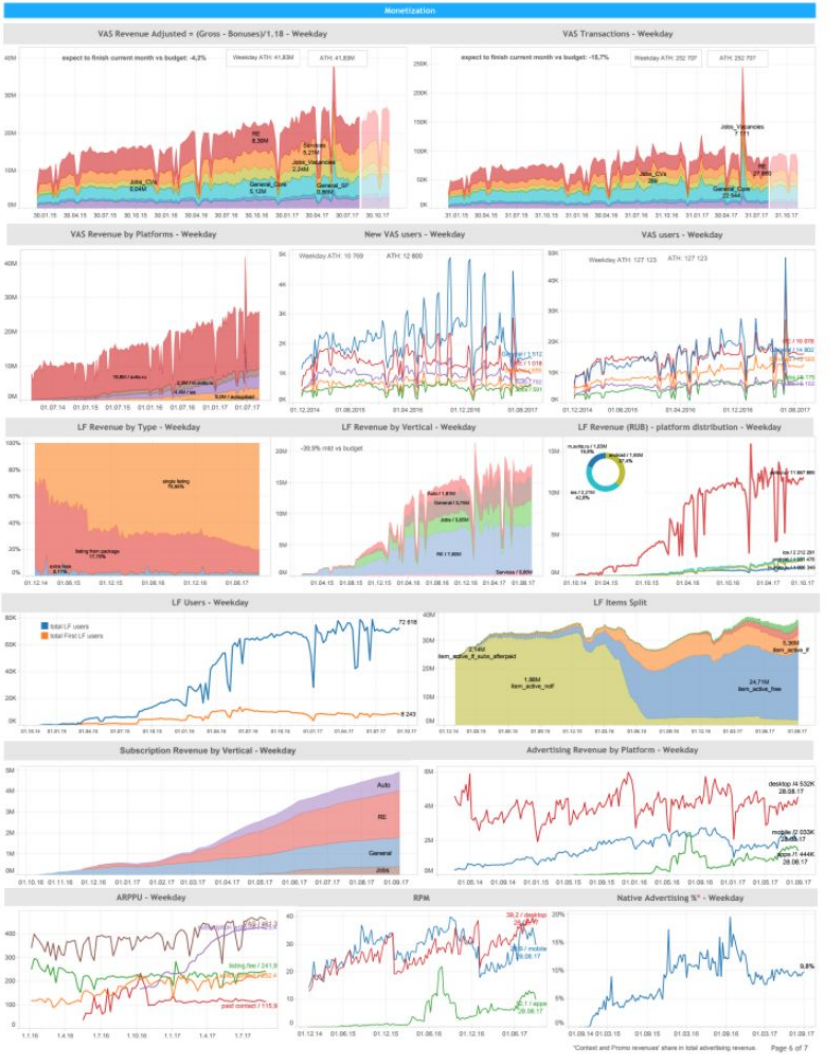
Monetization
VAS Revenue Adjusted = (Gross - Bonuses)/1.18 - Weekday
VAS Transactions - Weekday
VAS Revenue by Platforms - Weekday
New VAS users - Weekday
VAS users - Weekday
LF Revenue by Type - Weekday
LF Revenue by Vertical - Weekday
LF Revenue (RUB) - platform distribution - Weekday
LF Users - Weekday
LF Items Split
Subscription Revenue by Vertical - Weekday
Advertising Revenue by Platform - Weekday
ARPPU - Weekday
RPM
Native Advertising %* - Weekday
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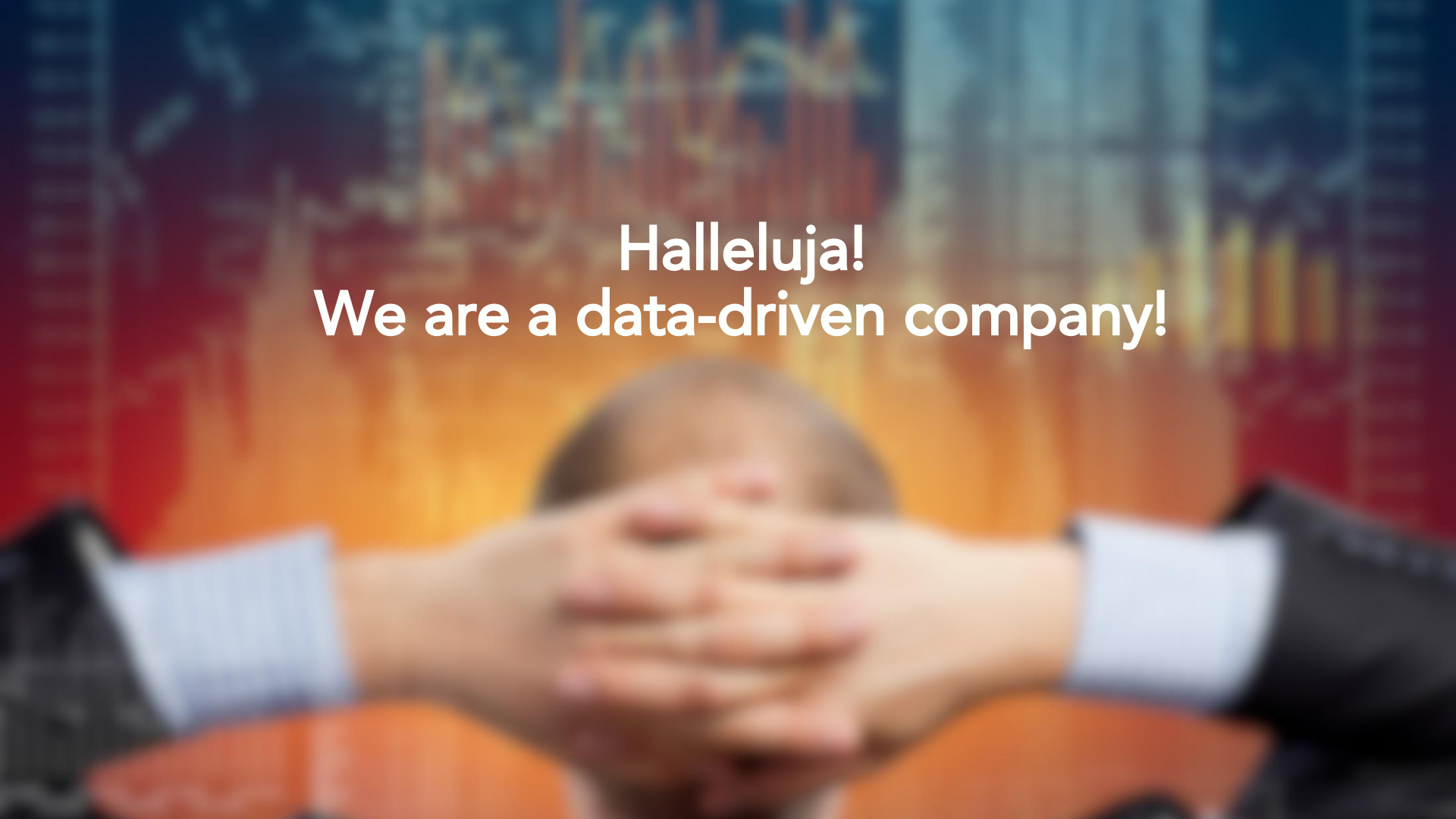
Silver $774.00 $1,061.93 37.20%
Copper $616.00 $837.76 36.00%
Steel $449.00 $537.90 19.80%
Beryllium $743.00 $754.89 1.60%
Manganese $598.00 $795.34 33.00%
Aluminum $299.00 $354.61 18.60%
Chrome $666.00 $727.27 9.20%
Nickel $421.00 $453.84 7.80%
Bauxite $730.00 $791.32 8.40%
Cotton $162.00 $196.34 21.20%
Flax $172.00 $182.32 6.00%
Textiles $243.00 $330.48 36.00%
Wool $261.00 $359.66 37.80%
Fur $116.00 $118.55 2.20%
Sateen $201.00 $246.43 22.60%
Silk $177.00 $184.79 4.40%
Oil $609.00 $811.19 33.20%
Gas $516.00 $708.98 37.40%
Electric power $578.00 $808.04 39.80%
1/1/2008
1/3/2008
1/5/2008
1/7/2008
1/9/2008
1/11/2008
1/13/2008
1/15/2008
1/17/2008
1/19/2008
Cotton
Flax
Textiles
Wool
Fur
Sateen
Silk
Beryllium
Manganese
Aluminum
Chrome
FINAL SALES
SALES BY CATEGORY


Halleluja!
We are a data-driven company!

- Kg of food in the valley
- # of apes in the valley
- Kg of food / ape needed per day
- # days of left this winter

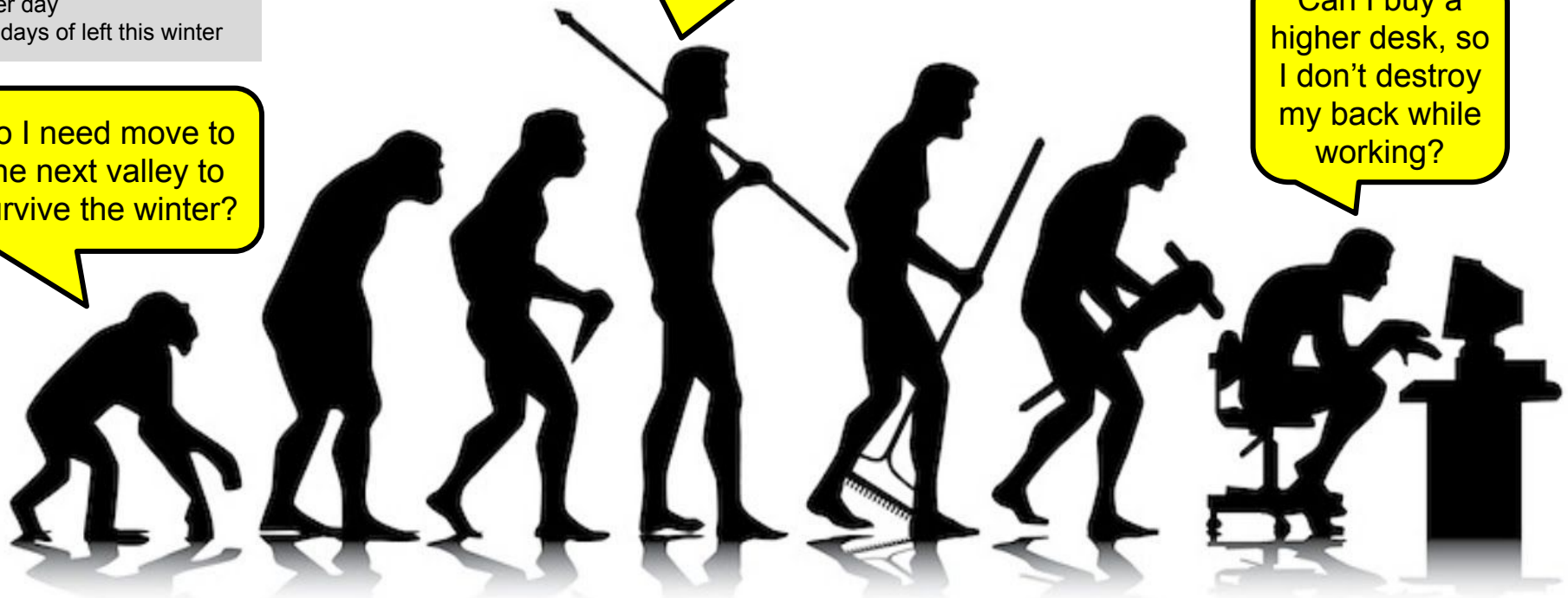
Do I need move to the next valley to survive the winter?

Can I win the javelin throw competition at the next Olympics?

- WR javelin throw in m
- PB javelin throw in m
- Time between date of PB and next Olympics

- $ in the bank
- Price of a decent desk in $

Can I buy a higher desk, so I don't destroy my back while working?



# What decisions are *you* really taking on a daily basis? And how does data play a role?

- Size of the prize of online cars market in Mexico
- Cost of success
- Chance of success
- Available war chest

Do I launch a new car portal in Mexico?


CEO

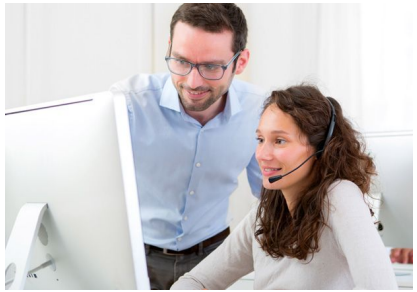
- ROI of a typical offline marketing campaign
- ROI of continuous online marketing
- Expected reach of both offline and online marketing

Shall I invest more in online or in offline marketing?


GM

- Average # of ads moderated by agent #6 in the last month
- Average # of ads moderated by the team in the last month
- Error rate agent #6
- Error rate of the team

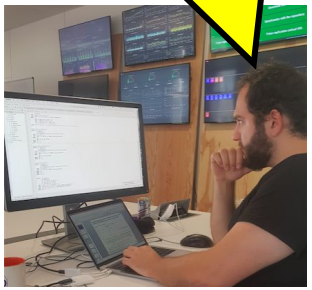
Should I fire CS agent #253?



CS Manager

- Detailed properties of all listings (# pictures, attributes, length of the the title, etc)
- All individual replies, including related buyers and seller data

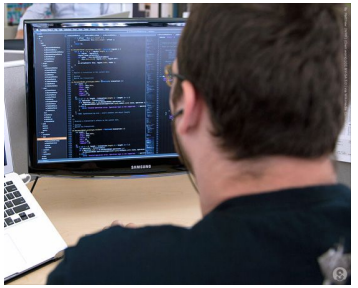
Can I predict which listings have the highest probability to sell?



Business analyst

- Requests per second
- Post per second

Is the platform still online?



Infra engineer

months ← urgency → seconds

**The same goes for an organization like OLX.**
**Which data points are really influencing your decisions?**


BenQ

Disc

42

is broken

| | |
|---|---|
| System: | PA: Sirius |
| Package: | IS Management |
| Created: | 10/14/2016 3:49:53 PM |
| Modified: | 4/21/2017 12:53:44 PM |
| Rows: | Naspers Management Structure: Naspers Management Structure (Ext), IS Accounts: IS100000 |
| Columns: | Scenario: Actual, Scenario: SC002, Period: FY 2017 |
| Context: | Currency: Currency, Transaction Type: Transaction Type, Level: Level, Consolidation Percent: Consolidation Percent, FX Rates: FX Rates, YTD: YTD, Measure: Monthly Value |
| Filter rows: | |
| Filter columns: | |

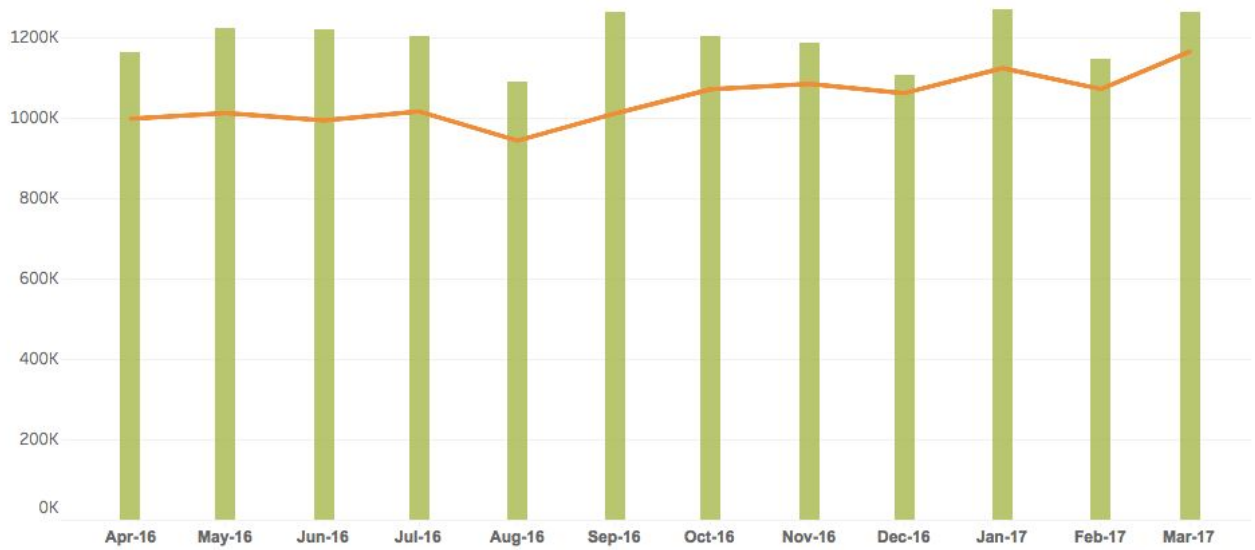
| | | Actual | | | | | | | | | | | | | Budget | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2017 | 2016-04 | 2016-05 | 2016-06 | 2016-07 | 2016-08 | 2016-09 | 2016-10 | 2016-11 | 2016-12 | 2017-01 | 2017-02 | 2017-03 | FY 2017 | 2016-04 | 2016-05 | 2016-06 | 2016-07 | 2016-08 | 2016-09 | 2016-10 | 2016-11 | 2016-12 | 2017-01 | 2017-02 | 2017-03 |
| Classifieds managed | TOTAL REVENUE | 398,991,353 | 29,752,207 | 29,224,519 | 30,889,393 | 30,327,947 | 31,813,124 | 33,716,405 | 34,441,518 | 36,563,599 | 34,104,141 | 33,674,988 | 34,517,727 | 30,965,785 | 375,058,078 | 26,167,701 | 26,508,418 | 27,146,963 | 27,187,764 | 28,348,433 | 30,926,589 | 34,044,987 | 35,274,365 | 33,471,680 | 32,021,275 | 34,974,972 | 33,984,930 |
| | e-Commerce revenue | 317,137,028 | 23,372,880 | 23,287,091 | 24,585,848 | 24,507,461 | 23,967,136 | 26,718,292 | 27,238,029 | 27,376,764 | 26,460,807 | 27,542,810 | 27,168,262 | 34,911,648 | 320,933,060 | 22,402,735 | 22,593,162 | 23,313,711 | 23,332,778 | 24,369,432 | 26,498,111 | 29,149,874 | 30,188,026 | 28,680,202 | 27,069,359 | 29,906,811 | 33,428,860 |
| | Classifieds revenue | 315,477,252 | 23,313,026 | 23,236,550 | 24,566,530 | 24,368,848 | 23,845,180 | 26,586,012 | 27,138,109 | 27,064,965 | 26,286,110 | 27,360,564 | 26,980,888 | 34,730,468 | 320,082,897 | 22,334,792 | 22,525,203 | 23,248,324 | 23,270,850 | 24,305,240 | 26,429,215 | 29,077,266 | 30,114,275 | 28,605,869 | 26,990,319 | 29,832,962 | 33,348,581 |
| | Classifieds - Subscriptions | 28,989,792 | 2,460,924 | 2,062,308 | 2,255,362 | 2,262,880 | 2,433,662 | 2,283,019 | 2,630,771 | 2,173,927 | 2,112,840 | 2,731,940 | 2,441,466 | 3,140,693 | 27,797,826 | 1,760,266 | 1,777,089 | 1,814,172 | 1,677,735 | 1,818,049 | 1,954,543 | 2,331,515 | 2,541,674 | 2,633,742 | 2,900,877 | 3,175,109 | 3,413,055 |
| | Classifieds - Listing fees | 157,840,514 | 11,699,667 | 12,101,602 | 12,566,647 | 12,808,938 | 11,161,303 | 13,682,596 | 13,586,578 | 13,679,830 | 12,707,334 | 13,757,652 | 13,074,852 | 17,013,514 | 269,228,298 | 18,869,014 | 19,040,622 | 19,803,025 | 19,942,478 | 20,790,700 | 22,551,030 | 24,625,444 | 25,430,103 | 23,956,425 | 21,938,100 | 24,653,789 | 27,618,566 |
| | Classifieds - Promotional fees | 128,580,437 | 9,146,942 | 9,067,583 | 9,739,992 | 9,292,669 | 10,246,196 | 10,615,726 | 10,915,022 | 11,202,618 | 11,460,156 | 10,864,996 | 11,458,494 | 14,570,042 | 22,983,765 | 1,699,429 | 1,701,409 | 1,624,863 | 1,644,373 | 1,681,164 | 1,917,590 | 2,114,315 | 2,136,507 | 2,009,890 | 2,145,414 | 1,998,017 | 2,310,793 |
| | Classifieds - Succes fees | 66,508 | 5,492 | 5,057 | 4,530 | 4,361 | 4,019 | 4,672 | 5,737 | 8,589 | 5,780 | 5,976 | 6,076 | 6,219 | 73,009 | 6,082 | 6,082 | 6,265 | 6,265 | 6,327 | 6,052 | 5,992 | 5,992 | 5,812 | 5,928 | 6,047 | 6,168 |
| | Payments revenue | (240) | (2,554) | 2,314 | 34 | 0 | (34) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | E-shop platforms revenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54,516 | 4,624 | 4,624 | 4,624 | 4,624 | 4,624 | 4,516 | 4,516 | 4,516 | 4,516 | 4,516 | 4,409 | 4,409 |
| | Total sales of goods | (452,920) | (21,094) | (36,033) | (73,330) | (23,866) | (23,604) | (46,152) | (33,001) | (42,696) | (39,931) | (38,033) | (38,886) | (36,295) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sales of financial products | 732 | 0 | 0 | 152 | 0 | 0 | 0 | 1,020 | (951) | 51 | 0 | 205 | 255 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Agency revenue on sales of courier services | 2,112,205 | 83,502 | 84,261 | 92,462 | 162,479 | 145,594 | 178,432 | 131,902 | 355,445 | 214,578 | 220,278 | 226,054 | 217,219 | 795,646 | 63,319 | 63,335 | 60,763 | 57,303 | 59,568 | 64,381 | 68,092 | 69,235 | 69,817 | 74,523 | 69,440 | 75,870 |
| | Advertising revenue | 74,489,339 | 5,311,369 | 5,427,310 | 5,789,051 | 5,610,348 | 7,273,972 | 6,557,508 | 6,799,778 | 6,314,228 | 6,688,528 | 5,584,481 | 6,051,488 | 7,081,278 | 44,013,491 | 3,073,303 | 3,179,516 | 3,089,519 | 3,085,071 | 3,158,328 | 3,594,807 | 4,022,408 | 4,195,398 | 3,895,322 | 4,030,644 | 4,126,749 | 4,562,425 |
| | Advertising - Barter | (85,682) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (85,682) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising - Adsense | 22,764,233 | 1,590,559 | 1,680,302 | 1,704,467 | 1,738,252 | 2,422,277 | 1,913,303 | 2,193,477 | 1,832,537 | 2,011,589 | 1,718,376 | 1,789,507 | 2,169,587 | 8,768,634 | 650,698 | 672,250 | 629,897 | 597,489 | 593,021 | 745,902 | 786,988 | 821,871 | 782,100 | 791,163 | 794,273 | 902,981 |
| | Advertising - Banners | 47,715,012 | 3,567,612 | 3,540,640 | 3,858,898 | 3,650,878 | 4,652,506 | 4,296,387 | 4,234,173 | 4,085,528 | 4,274,692 | 3,442,540 | 3,696,647 | 4,414,512 | 5,340,998 | 411,899 | 409,387 | 412,348 | 363,592 | 350,840 | 449,760 | 493,901 | 554,537 | 457,397 | 462,619 | 432,408 | 548,290 |
| | Advertising - Other advertising | 4,095,776 | 153,199 | 206,368 | 225,686 | 221,218 | 199,189 | 347,818 | 372,128 | 396,163 | 402,248 | 423,565 | 565,334 | 582,861 | 29,903,860 | 2,010,717 | 2,097,880 | 2,047,274 | 2,123,990 | 2,214,467 | 2,399,145 | 2,741,518 | 2,818,990 | 2,662,825 | 2,776,863 | 2,899,978 | 3,111,214 |
| | Total other revenues | 7,364,985 | 1,067,957 | 510,118 | 514,493 | 210,137 | 572,017 | 440,605 | 403,711 | 2,872,608 | 954,806 | 547,694 | 1,297,976 | (1,027,141) | 10,111,528 | 691,663 | 735,740 | 743,733 | 703,915 | 820,673 | 833,670 | 872,703 | 890,942 | 896,157 | 921,272 | 941,412 | 993,645 |
| Africa | TOTAL REVENUE | 5,461,988 | 376,636 | 427,396 | 236,677 | 268,676 | 357,241 | 423,276 | 547,017 | 543,463 | 567,494 | 406,581 | 453,279 | 654,253 | 1,133,112 | 44,390 | 51,250 | 61,135 | 65,771 | 76,405 | 85,736 | 104,793 | 119,522 | 101,179 | 122,982 | 140,386 | 159,619 |
| | e-Commerce revenue | 200,170 | (57) | (110,845) | 70,158 | 14,424 | 3,507 | 18,524 | 33,118 | 37,423 | 32,470 | 32,228 | 30,672 | 38,548 | 705,703 | 25,595 | 20,636 | 29,771 | 32,927 | 42,681 | 51,377 | 68,354 | 82,391 | 64,266 | 82,277 | 99,234 | 116,195 |
| | Classifieds revenue | 200,170 | (57) | (110,845) | 70,124 | 10,222 | 7,749 | 18,524 | 33,118 | 37,423 | 32,470 | 32,228 | 30,672 | 38,548 | 705,703 | 25,595 | 20,636 | 29,771 | 32,927 | 42,681 | 51,377 | 68,354 | 82,391 | 64,266 | 82,277 | 99,234 | 116,195 |
| | Classifieds - Subscriptions | 0 | (116,755) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Classifieds - Listing fees | 316,932 | (57) | 5,910 | 70,124 | 10,071 | 7,901 | 18,524 | 33,118 | 37,423 | 32,470 | 32,228 | 30,672 | 38,548 | 705,703 | 25,595 | 20,636 | 29,771 | 32,927 | 42,681 | 51,377 | 68,354 | 82,391 | 64,266 | 82,277 | 99,234 | 116,195 |
| | Classifieds - Succes fees | (0) | 0 | 0 | 0 | 151 | (151) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Payments revenue | 0 | 0 | 0 | 34 | 0 | (34) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total sales of goods | (6) | 0 | 0 | 0 | 4,203 | (4,209) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising revenue | 639,651 | 4,448 | 5,548 | 6,773 | 6,209 | 6,244 | 30,058 | 134,016 | 202,879 | 90,833 | 62,580 | 95,044 | 95,037 | 427,409 | 28,795 | 30,624 | 31,364 | 32,844 | 33,724 | 34,359 | 36,385 | 37,131 | 36,913 | 40,706 | 41,151 | 43,424 |
| | Advertising - Adsense | 553,572 | 4,448 | 5,548 | 6,773 | 6,209 | 6,244 | 29,467 | 118,847 | 87,757 | 79,333 | 50,961 | 80,087 | 77,907 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising - Other advertising | 86,079 | 0 | 0 | 0 | 0 | 0 | 591 | 15,169 | 15,123 | 11,500 | 11,619 | 14,958 | 17,130 | 427,409 | 28,795 | 30,624 | 31,364 | 32,844 | 33,724 | 34,359 | 36,385 | 37,131 | 36,913 | 40,706 | 41,151 | 43,424 |
| | Total other revenues | 4,622,166 | 372,245 | 532,692 | 159,746 | 248,042 | 347,491 | 374,694 | 379,882 | 303,161 | 444,191 | 311,793 | 327,562 | 520,668 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Corporate - Africa | TOTAL REVENUE | 55,822 | 0 | 0 | 55,822 | 0 | 0 | (1,267) | 1,267 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | e-Commerce revenue | 55,822 | 0 | 0 | 55,822 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Classifieds revenue | 55,822 | 0 | 0 | 55,822 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Classifieds - Listing fees | 55,822 | 0 | 0 | 55,822 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising revenue | 0 | 0 | 0 | 0 | 0 | 0 | (1,267) | 1,267 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising - Other advertising | 0 | 0 | 0 | 0 | 0 | 0 | (1,267) | 1,267 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ghana | TOTAL REVENUE | 14,981 | 89 | 124 | 181 | 180 | 162 | 308 | 1,772 | 2,365 | 2,684 | 2,324 | 2,482 | 2,310 | 36,289 | 311 | 600 | 1,367 | 1,526 | 1,912 | 2,485 | 3,104 | 3,783 | 3,719 | 4,978 | 5,396 | 7,507 |
| | e-Commerce revenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16,117 | 0 | 0 | 56 | 144 | 322 | 716 | 1,221 | 1,669 | 1,862 | 2,750 | 3,142 | 4,237 |
| | Classifieds revenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16,117 | 0 | 0 | 56 | 144 | 322 | 716 | 1,221 | 1,669 | 1,862 | 2,750 | 3,142 | 4,237 |
| | Classifieds - Listing fees | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16,117 | 0 | 0 | 56 | 144 | 322 | 716 | 1,221 | 1,669 | 1,862 | 2,750 | 3,142 | 4,237 |
| | Advertising revenue | 14,981 | 89 | 124 | 181 | 180 | 162 | 308 | 1,772 | 2,365 | 2,684 | 2,324 | 2,482 | 2,310 | 20,172 | 311 | 600 | 1,312 | 1,383 | 1,590 | 1,769 | 1,883 | 2,114 | 1,857 | 2,228 | 2,254 | 2,870 |
| | Advertising - Adsense | 14,981 | 89 | 124 | 181 | 180 | 162 | 308 | 1,772 | 2,365 | 2,684 | 2,324 | 2,482 | 2,310 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising - Other advertising | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20,172 | 311 | 600 | 1,312 | 1,383 | 1,590 | 1,769 | 1,883 | 2,114 | 1,857 | 2,228 | 2,254 | 2,870 |
| Kenya | TOTAL REVENUE | 290,732 | 116,937 | (115,622) | 1,143 | 8,706 | 27,053 | 39,698 | 88,807 | 25,565 | 25,413 | 18,059 | 26,420 | 28,553 | 186,906 | 3,045 | 3,488 | 3,816 | 5,305 | 7,281 | 10,764 | 18,843 | 22,661 | 21,147 | 26,341 | 28,542 | 35,672 |
| | e-Commerce revenue | (116,760) | 0 | (116,421) | 460 | 4,781 | (5,580) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140,626 | 95 | 196 | 1,213 | 2,560 | 4,125 | 7,404 | 14,851 | 18,411 | 17,062 | 21,644 | 23,663 | 29,480 |
| | Classifieds revenue | (116,753) | 0 | (116,421) | 426 | 579 | (1,337) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140,626 | 95 | 196 | 1,213 | 2,560 | 4,125 | 7,404 | 14,851 | 18,411 | 17,062 | 21,644 | 23,663 | 29,480 |
| | Classifieds - Subscriptions | (116,755) | 0 | (116,755) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Classifieds - Listing fees | 2 | 0 | 334 | 426 | 428 | (1,186) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140,626 | 95 | 196 | 1,213 | 2,560 | 4,125 | 7,404 | 14,851 | 18,411 | 17,062 | 21,644 | 23,663 | 29,480 |
| | Classifieds - Succes fees | (0) | 0 | 0 | 0 | 151 | (151) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Payments revenue | 0 | 0 | 0 | 34 | 0 | (34) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total sales of goods | (6) | 0 | 0 | 0 | 4,203 | (4,209) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising revenue | 189,888 | 414 | 568 | 682 | 652 | 656 | 3,475 | 66,279 | 25,409 | 21,088 | 18,059 | 26,119 | 26,493 | 46,280 | 2,950 | 3,353 | 2,604 | 2,744 | 3,156 | 3,360 | 3,992 | 4,250 | 4,084 | 4,697 | 4,879 | 6,212 |
| | Advertising - Adsense | 103,809 | 414 | 568 | 682 | 652 | 656 | 1,618 | 52,371 | 10,286 | 9,588 | 6,450 | 11,161 | 9,363 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising - Other advertising | 86,079 | 0 | 0 | 0 | 0 | 0 | 1,858 | 13,902 | 15,123 | 11,500 | 11,609 | 14,958 | 17,130 | 46,280 | 2,950 | 3,353 | 2,604 | 2,744 | 3,156 | 3,360 | 3,992 | 4,250 | 4,084 | 4,697 | 4,879 | 6,212 |
| | Total other revenues | 217,603 | 116,523 | 231 | 0 | 3,273 | 31,976 | 36,223 | 22,534 | 157 | 4,324 | 0 | 302 | 2,060 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nigeria | TOTAL REVENUE | 142,540 | 191,768 | 198,114 | (368,558) | 9,345 | 9,444 | 8,940 | 13,164 | 21,147 | 26,245 | 13,131 | 13,799 | 15,401 | 304,500 | 13,500 | 13,500 | 16,500 | 19,000 | 22,000 | 22,000 | 27,000 | 27,000 | 30,000 | 35,000 | 39,500 | 39,500 |
| | e-Commerce revenue | 92,235 | 0 | 5,519 | 13,876 | 9,643 | 9,087 | 7,298 | 7,720 | 11,136 | 6,482 | 7,055 | 6,003 | 8,416 | 246,000 | 10,500 | 10,500 | 13,500 | 15,000 | 18,000 | 18,000 | 22,000 | 22,000 | 25,000 | 27,500 | 32,000 | 32,000 |
| | Classifieds revenue | 92,235 | 0 | 5,519 | 13,876 | 9,643 | 9,087 | 7,298 | 7,720 | 11,136 | 6,482 | 7,055 | 6,003 | 8,416 | 246,000 | 10,500 | 10,500 | 13,500 | 15,000 | 18,000 | 18,000 | 22,000 | 22,000 | 25,000 | 27,500 | 32,000 | 32,000 |
| | Classifieds - Listing fees | 92,235 | 0 | 5,519 | 13,876 | 9,643 | 9,087 | 7,298 | 7,720 | 11,136 | 6,482 | 7,055 | 6,003 | 8,416 | 246,000 | 10,500 | 10,500 | 13,500 | 15,000 | 18,000 | 18,000 | 22,000 | 22,000 | 25,000 | 27,500 | 32,000 | 32,000 |
| | Advertising revenue | 49,338 | 242 | 317 | 403 | 302 | 357 | 1,641 | 5,445 | 10,010 | 9,763 | 6,076 | 7,796 | 6,985 | 58,500 | 3,000 | 3,000 | 3,000 | 4,000 | 4,000 | 4,000 | 5,000 | 5,000 | 5,000 | 7,500 | 7,500 | 7,500 |
| | Advertising - Adsense | 49,338 | 242 | 317 | 403 | 302 | 357 | 1,641 | 5,445 | 10,010 | 9,763 | 6,076 | 7,796 | 6,985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Advertising - Other advertising | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58,500 | 3,000 | 3,000 | 3,000 | 4,000 | 4,000 | 4,000 | 5,000 | 5,000 | 5,000 | 7,500 | 7,500 | 7,500 |
| | Total other revenues | 967 | 191,526 | 192,277 | (382,836) | 0 | (0) | (0) | (0) | (0) | (0) | 0 | 0 | (0) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TOTAL REVENUE | 4,957,494 | 267,900 | 344,720 | 548,083 | 249,828 | 320,554 | 375,553 | 441,965 | 494,335 | 523,084 | 373,042 | 410,517 | 607,913 | 601,559 | 27,535 | 33,661 | 39,135 | 39,596 | 44,851 | 50,120 | 55,394 | 65,673 | 45,958 | 56,248 | 66,544 | 76,846 |

# Financial revenue dashboard - summary

OLX GROUP

Business Model

| All | Horizontal | Cars Vertical | RE Vertical |
|---|---|---|---|
| 14.3M | 4.7M | 6.2M | 3.5M |




| | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 | Jan-17 | Feb-17 | Mar-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monthly actual (USD) | 1.2M | 1.2M | 1.2M | 1.2M | 1.1M | 1.3M | 1.2M | 1.2M | 1.1M | 1.3M | 1.1M | 1.3M |
| Monthly budget (USD) | 1.0M | 1.0M | 1.0M | 1.0M | 0.9M | 1.0M | 1.1M | 1.1M | 1.1M | 1.1M | 1.1M | 1.2M |
| % vs. budget | 16.5% | 20.8% | 22.8% | 18.2% | 15.4% | 24.6% | 12.1% | 9.4% | 4.1% | 12.9% | 6.9% | 8.5% |
| | | | | | | | | | | | | |
| Cumulative actual (USD) | 1.2M | 2.4M | 3.6M | 4.8M | 5.9M | 7.2M | 8.4M | 9.6M | 10.7M | 11.9M | 13.1M | 14.3M |
| Cumulative budget (US.. | 1.0M | 2.0M | 3.0M | 4.0M | 5.0M | 6.0M | 7.1M | 8.1M | 9.2M | 10.3M | 11.4M | 12.6M |
| % vs. budget cumulative | 16.5% | 18.6% | 20.0% | 19.5% | 18.8% | 19.8% | 18.6% | 17.4% | 15.8% | 15.5% | 14.7% | 14.1% |

Filters

Fiscal Year
- (•) FY17
- ( ) FY18

Region
Europe

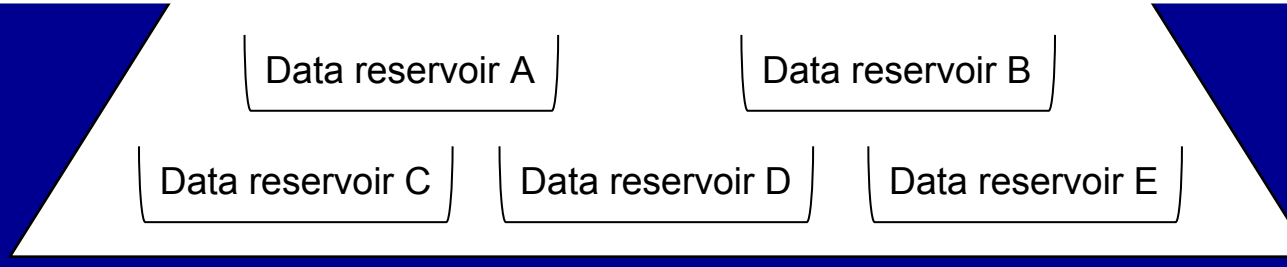
Country
- [ ] (All)
- [ ] Angola
- [ ] Belarus
- [ ] Bosnia
- [ ] Bulgaria
- [ ] Kazakhstan
- [ ] Mozambique
- [ ] Other
- [ ] Poland
- [x] Portugal
- [ ] Romania
- [ ] Ukraine
- [ ] Uzbekistan

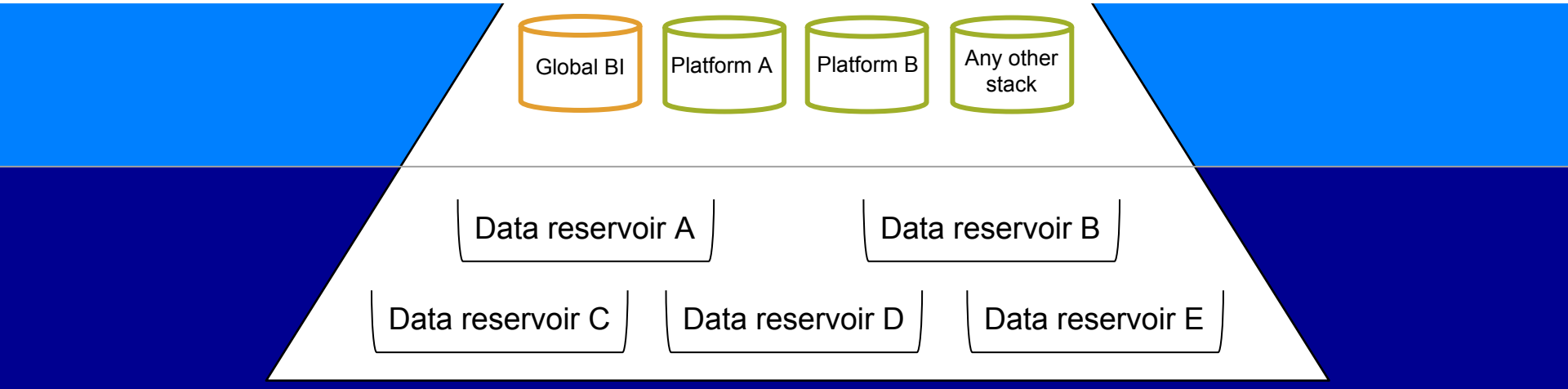
Revenue Type
- [x] (All)
- [x] Advertising revenue
- [x] Classifieds revenue
- [x] Total other revenues

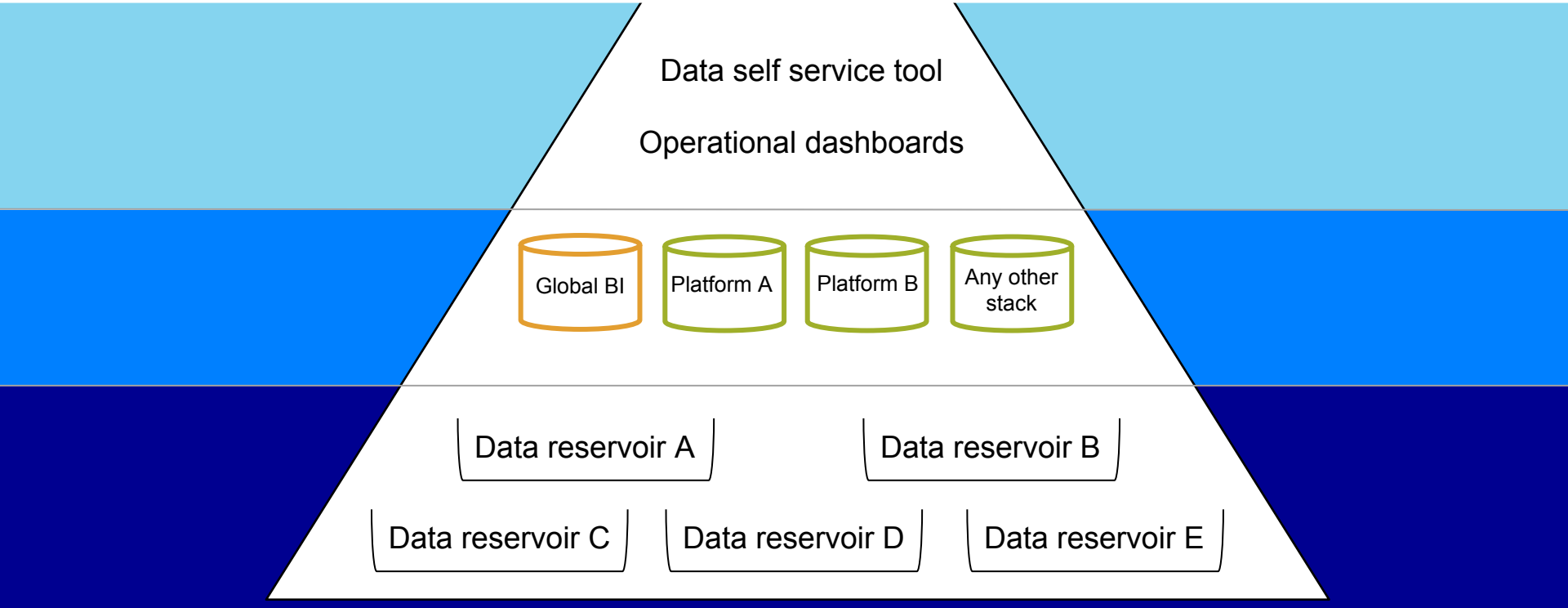
# The OLX data iceberg model

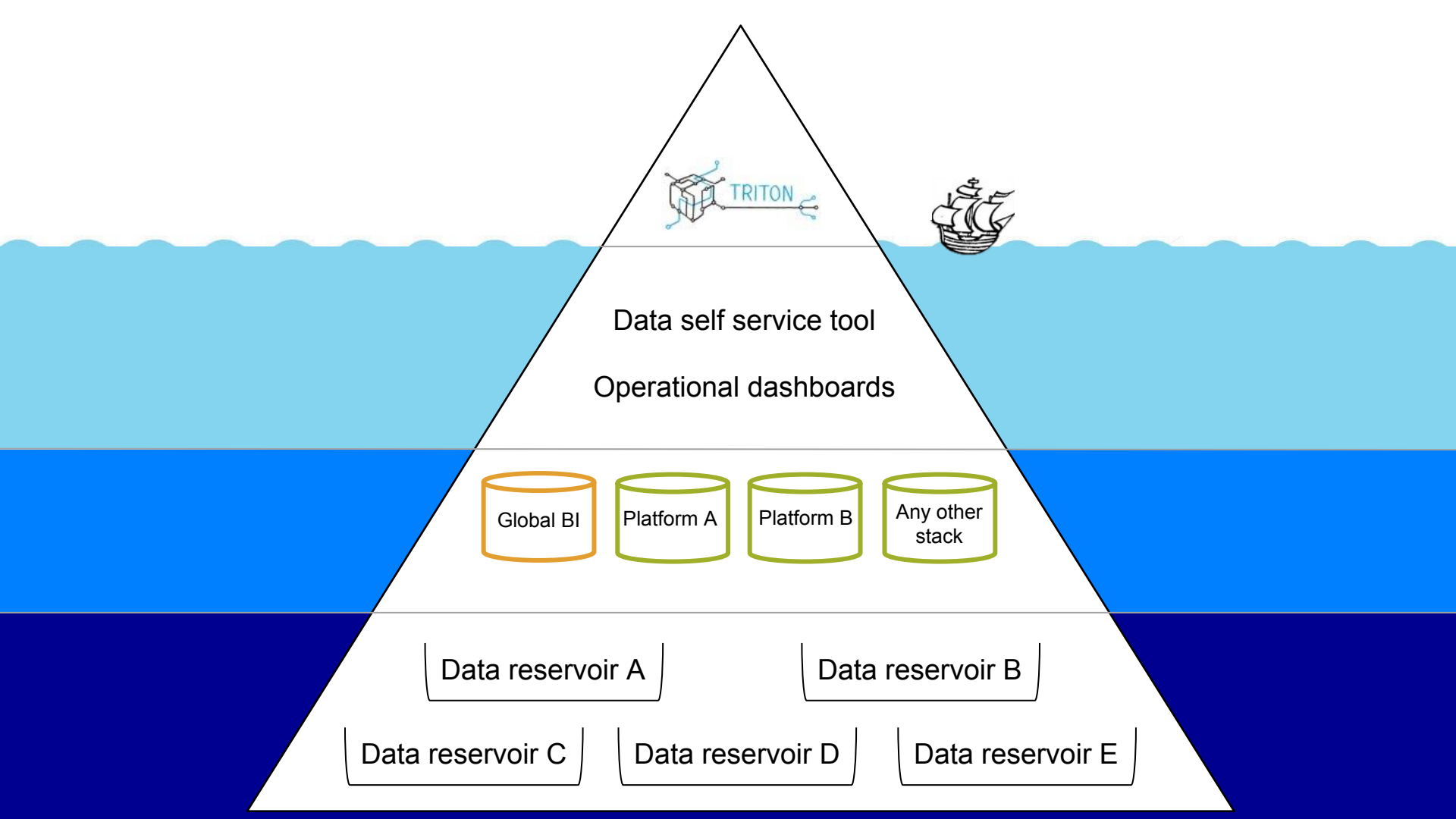
*The old school way of providing data…*

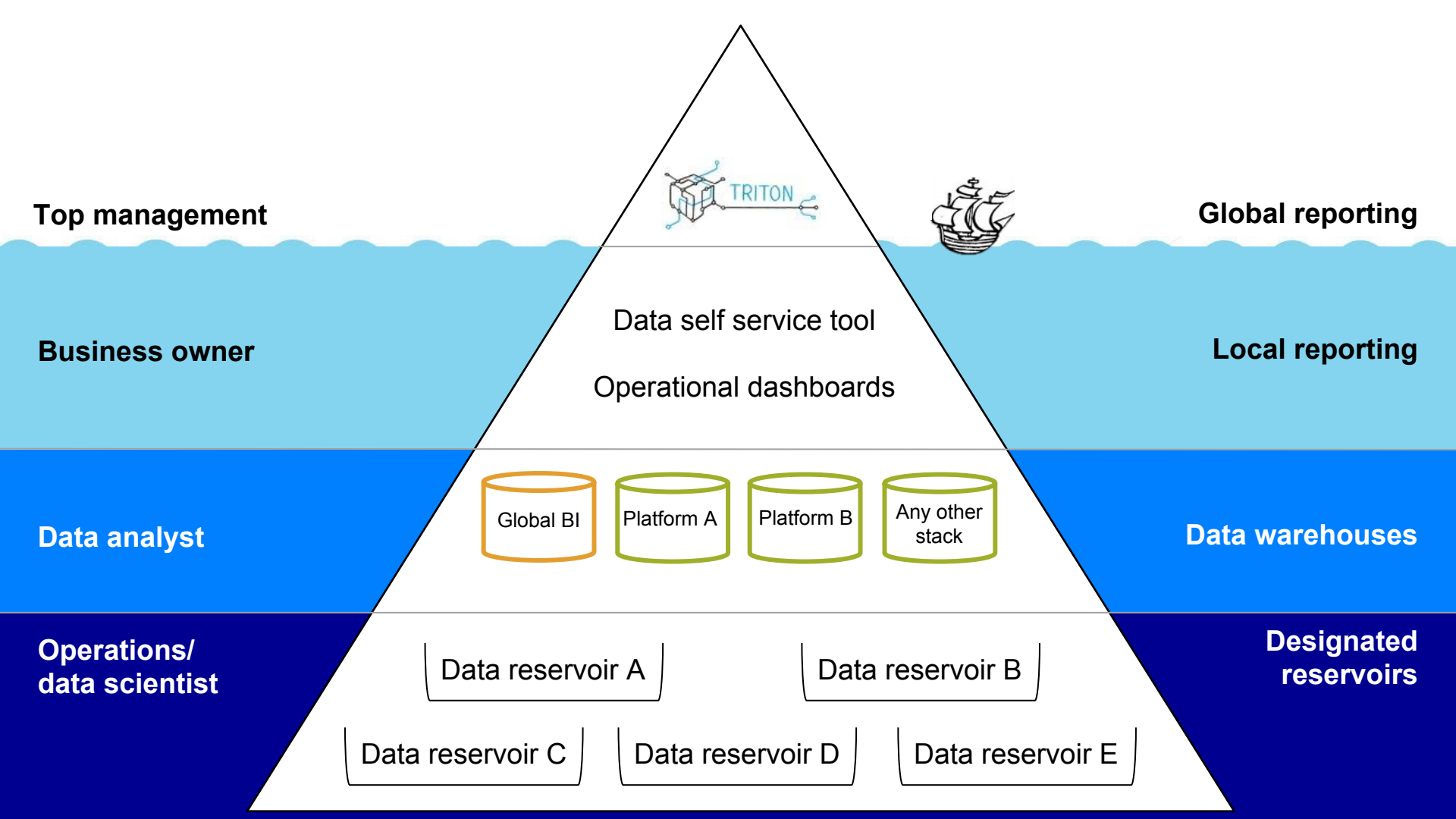
# OLX data lake

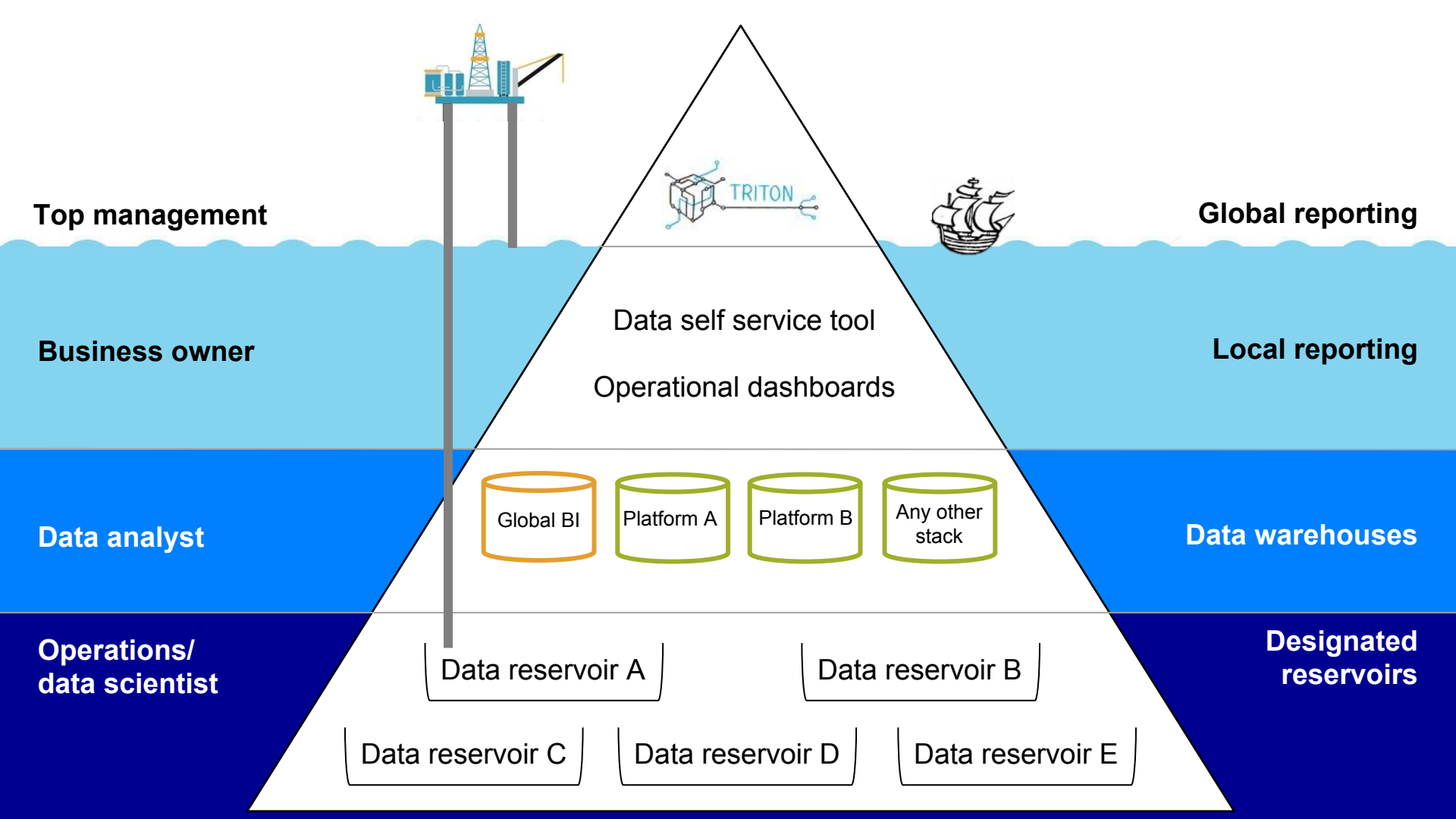

Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E


Global BI
Platform A
Platform B
Any other stack
Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E


Data self service tool
Operational dashboards
Global BI
Platform A
Platform B
Any other stack
Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E


TRITON
Data self service tool
Operational dashboards
Global BI
Platform A
Platform B
Any other stack
Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E


Top management
Global reporting
TRITON
Business owner
Data self service tool
Operational dashboards
Local reporting
Data analyst
Global BI
Platform A
Platform B
Any other stack
Data warehouses
Operations/ data scientist
Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E
Designated reservoirs


Top management
Global reporting
TRITON
Business owner
Data self service tool
Operational dashboards
Local reporting
Data analyst
Global BI
Platform A
Platform B
Any other stack
Data warehouses
Operations/ data scientist
Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E
Designated reservoirs

# 4 “V”s of Big Data

top challenges of data processing

Amazon S3

Amazon Redshift

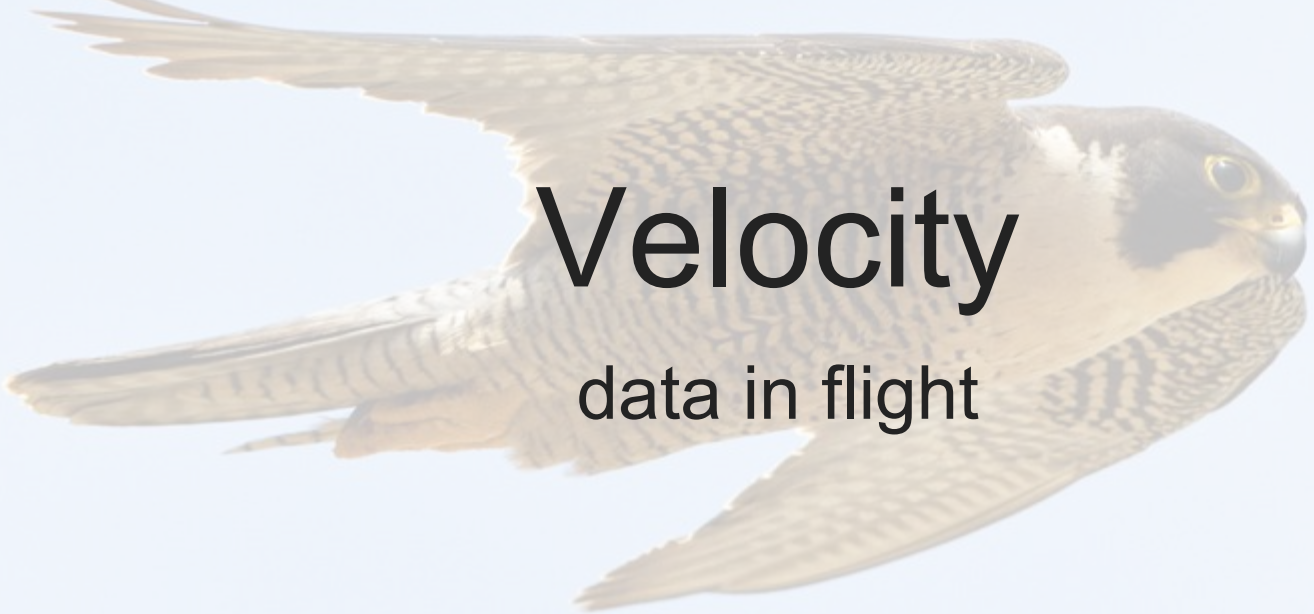
Amazon EMR

# Volume

## data at rest

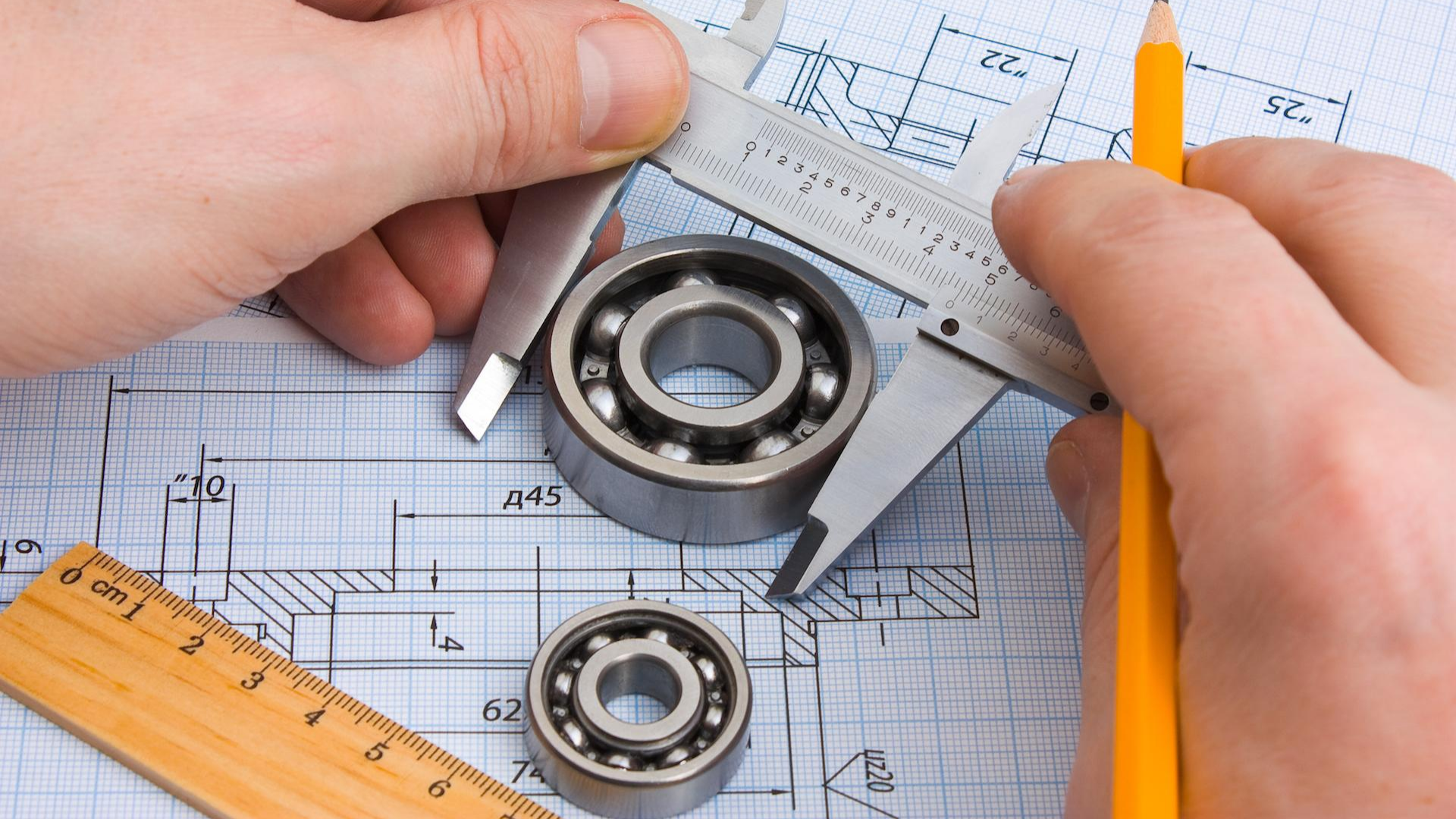
Amazon Kinesis

Amazon SQS



# Velocity

## data in flight

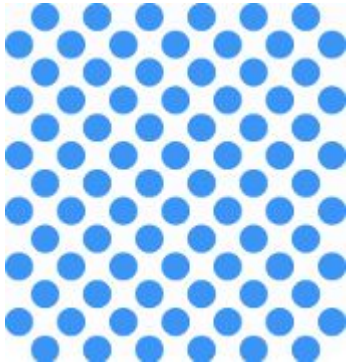

0 cm 1 2 3 4 5 6
д45

Amazon
Athena

# Veracity

## data quality

## Volume



### Data at rest

Terabytes of existing, historical data that needs to be stored for extended period

## Velocity

### Data in flight

Streaming, near real-time data sources, short reaction and computation time required

## Variety

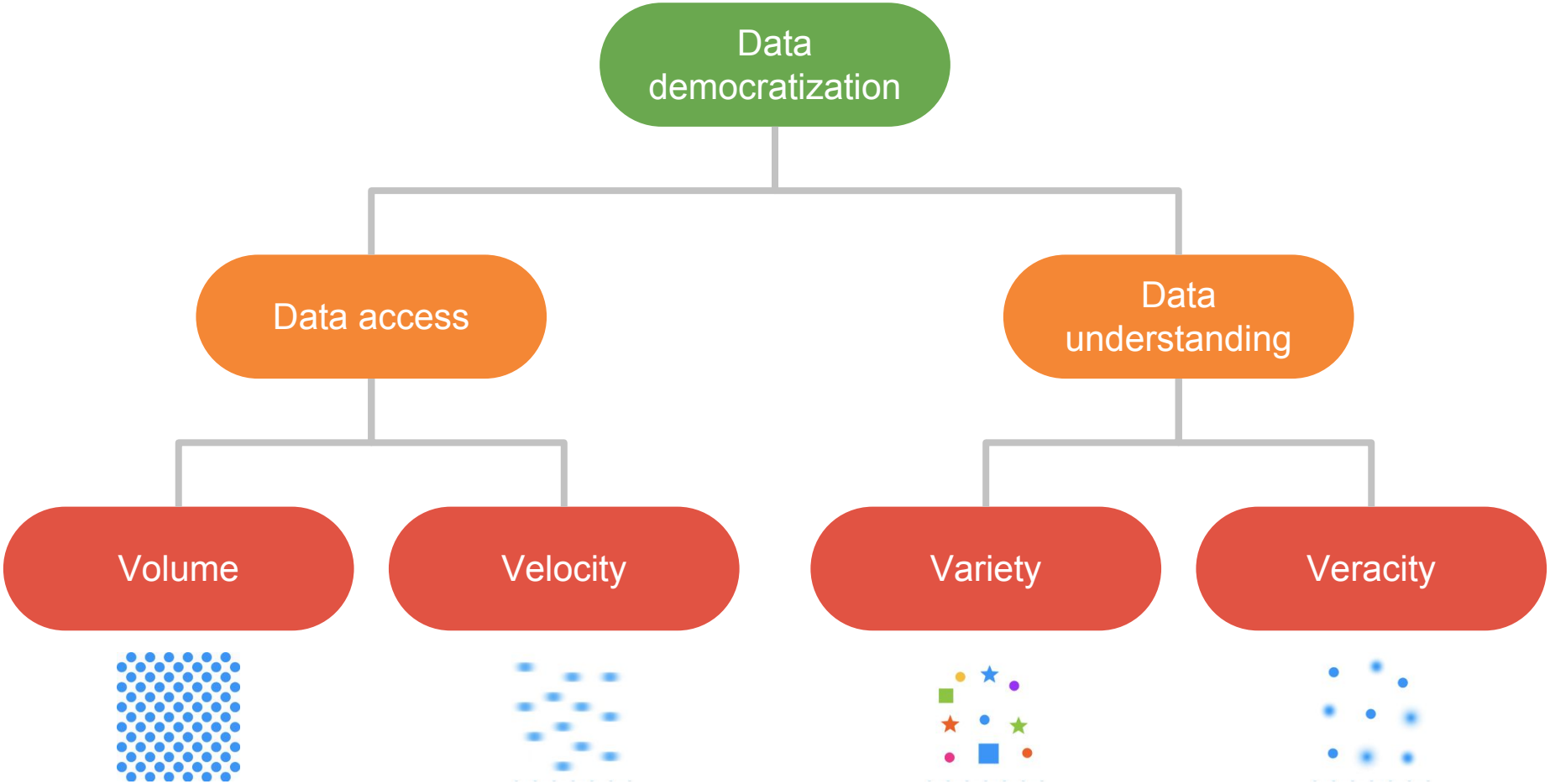
### Data types

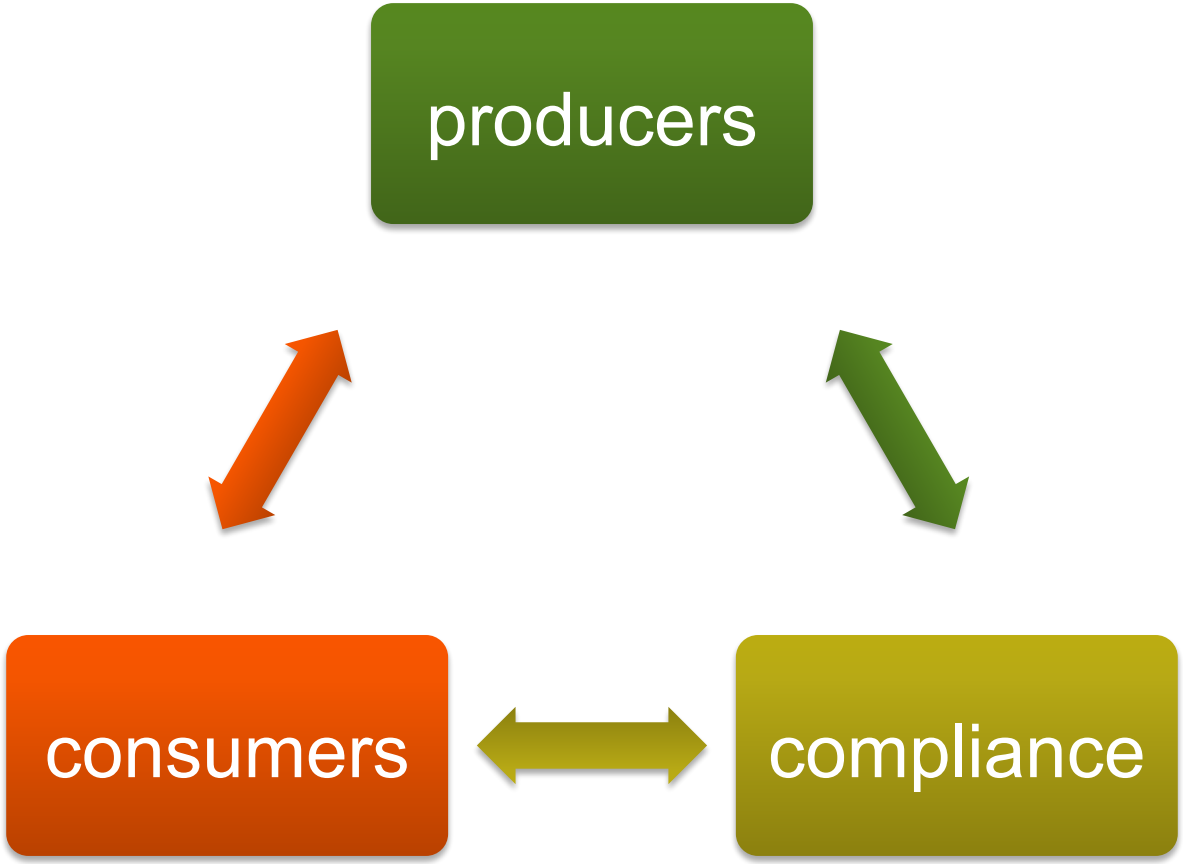
Platform databases, user behaviour, infrastructure monitoring, pictures

## Veracity

### Data quality

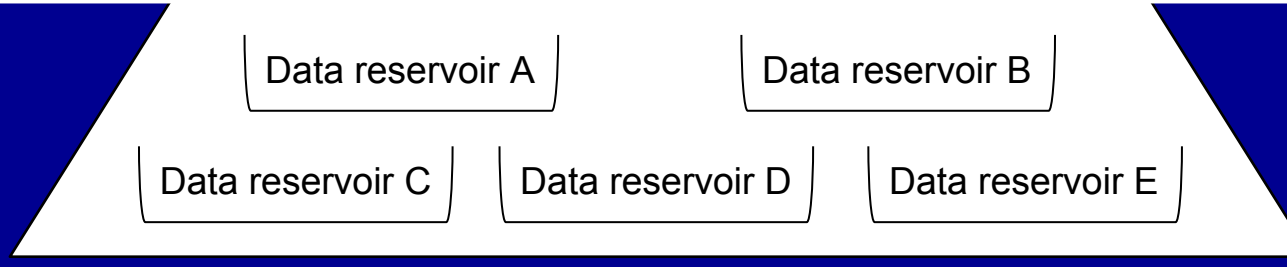
Tracking coverage, downtime, implementation errors, schema changes

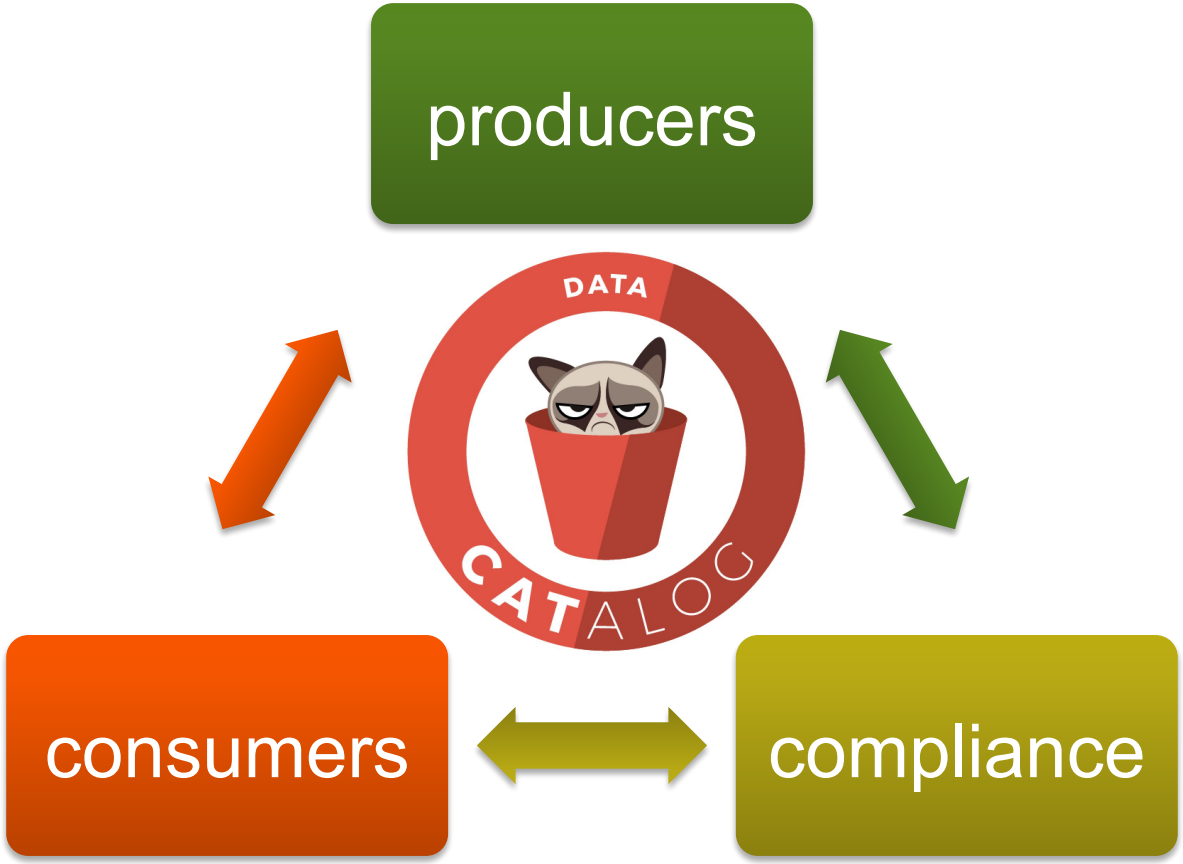




# Data democratization at OLX

architecture overview

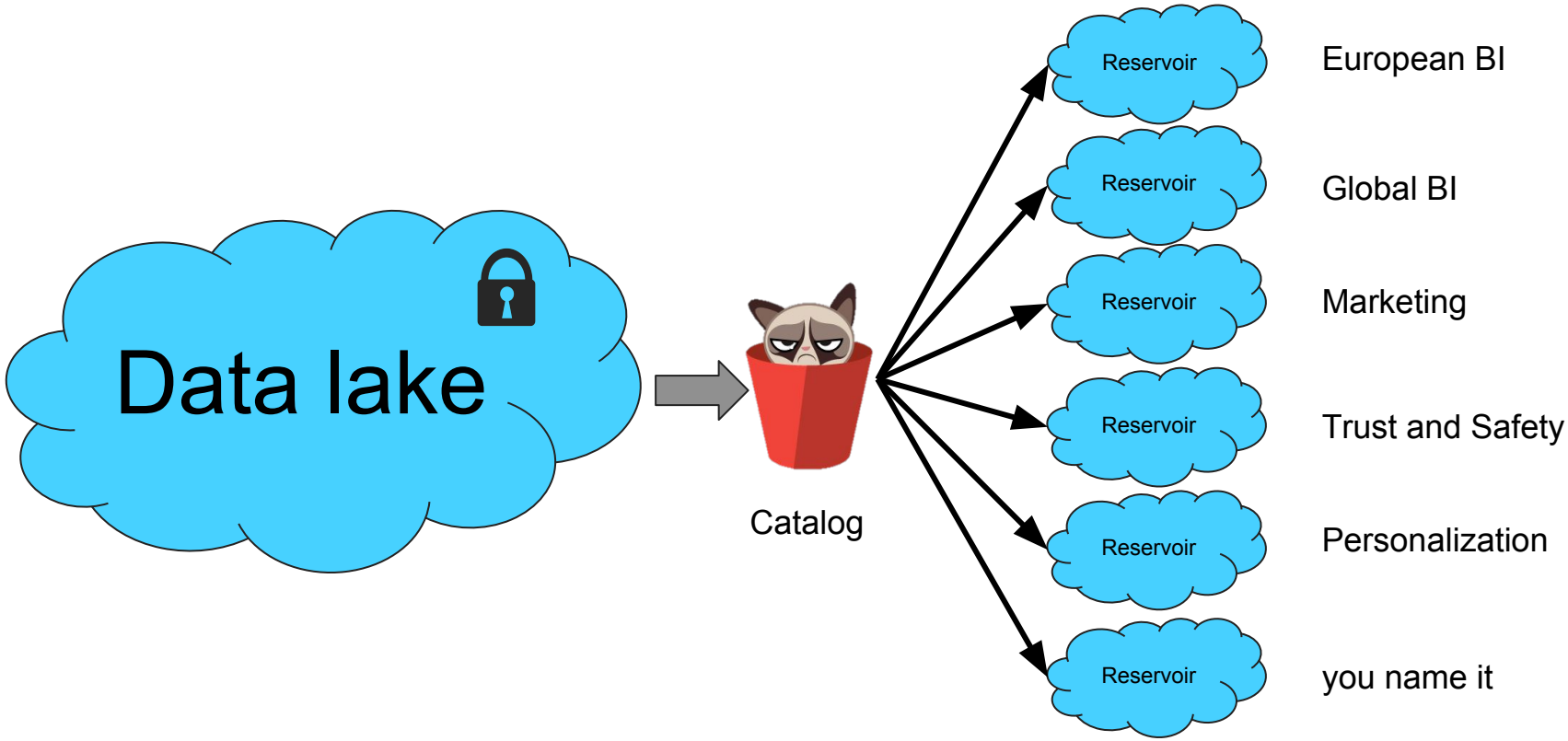

Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E



The OLX challenge:

# *‘Give everybody the data that he or she needs’*

(but also not much more)



# Reservoir structure - S3 bucket

**/in**

Incoming raw files in JSON format.
Files appear right after saving in data lake.

**/out**

Outgoing raw files in JSON format.
Files will be copied to data lake in real time.

**/parquet**

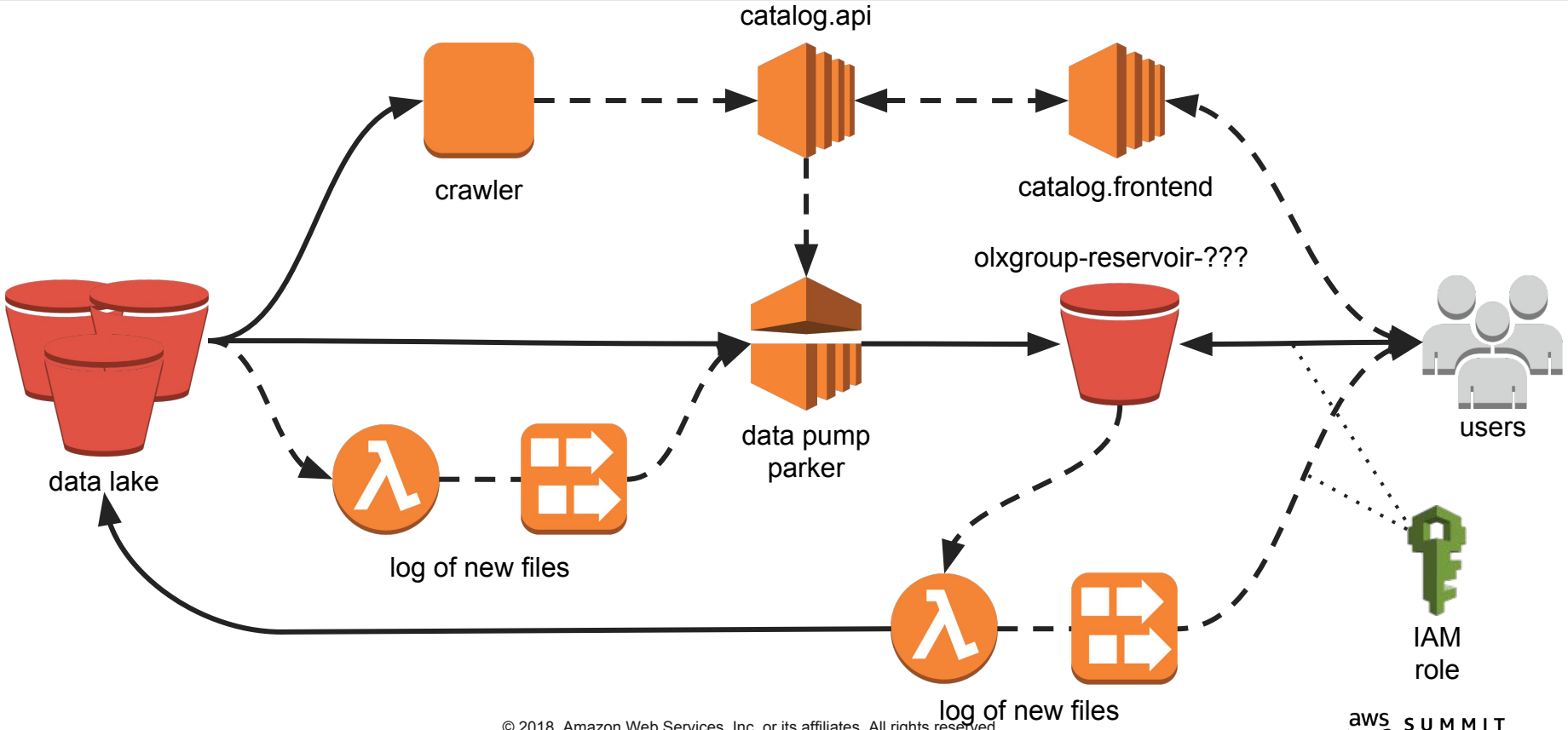
Incoming files in Parquet format.
Files are partitioned hourly.

**/tmp**

Folder for temporary files, can be used for higher-level data processing apps.

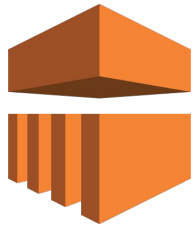
Reservoirs have individual data retention policies attached.

# Architecture overview



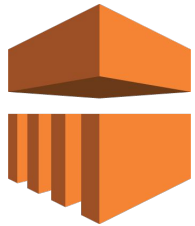
# Data Pump – raw data pre-processor

- **Technology:** Scala, Spark Streaming, EMR
- **Type:** CPU intensive
- **Cluster:**
  - Master: c4.xlarge
  - Core: 15 * c4.xlarge
  - Spot
- **Throughput:**
  - 220K files / hour
  - 280GB (compressed) / hour
- **Price:** $1500 / month

# Parker – raw-to-parquet converter

- **Technology:** Python3, PySpark, EMR
- **Type:** Memory intensive
- **Cluster:**
  - Master: r4.xlarge
  - Core: 10 * r4.xlarge
  - Auto scaling
  - Spot
- **Price:** $1100 / month

# Welcome to Catalog

## What do you need to do?

### Browse available data sources

There are 59,233 fields in 3,539 sources and 26 reservoirs.

100% of fields are classified

All sources | All reservoirs

### Subscription requests

You have 387 requests to review

Review

### Manage your data sources

You are not producing any data.

→ Start publishing data

### My reservoirs

Fully anonymised reservoir *2 subscriptions*

- ✔ All subscriptions use only classified fields!
- ⚠ 1 subscription are using personal fields not anonymized

### Overall health

- ✔ No owners with bad sources
- ✔ No subscribers consuming unclassified fields
- ✔ No sources have unclassified fields
- ⚠ 16 of 26 reservoirs have risky subscriptions

(subscriptions using personal fields not anonymized)

### Help

Introduction to Catalog
How to classify data
How to subscribe to data
How to approve subscriptions

## Top Owners

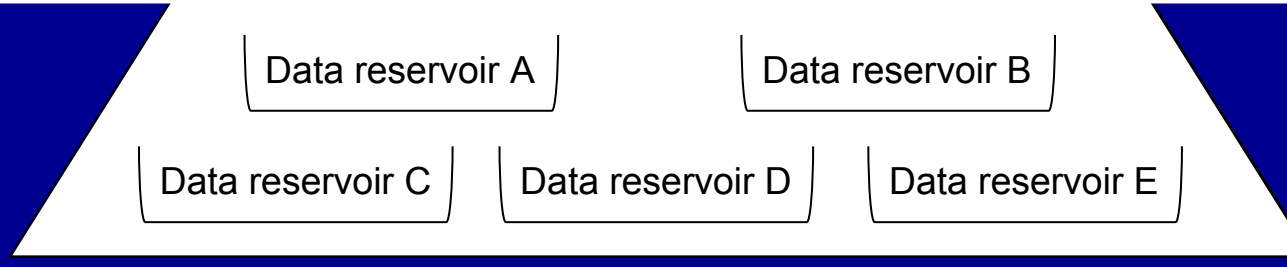
- By health
- By amount of sources

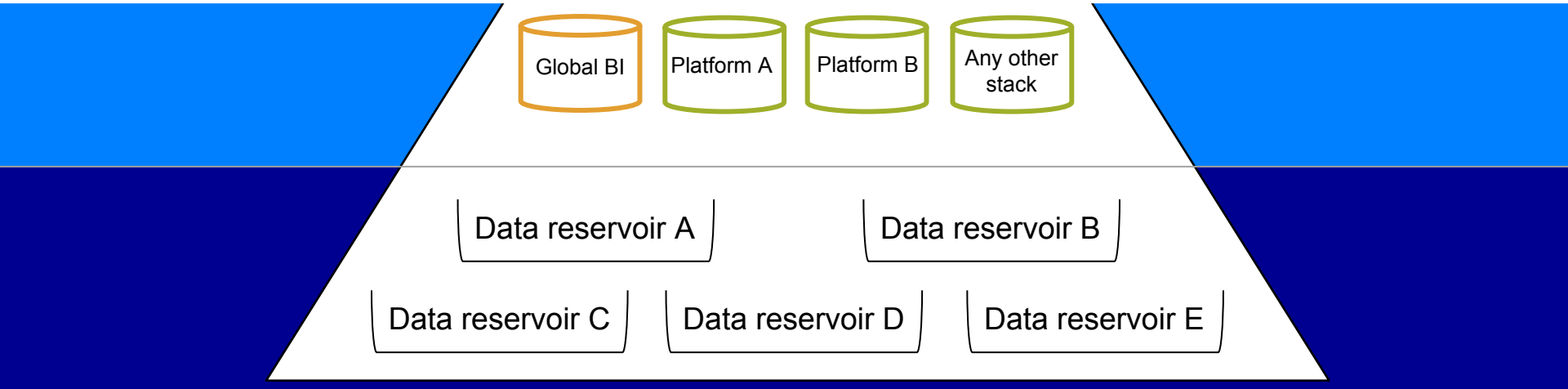
## Top Reservoirs

- By health
- By amount of subscriptions

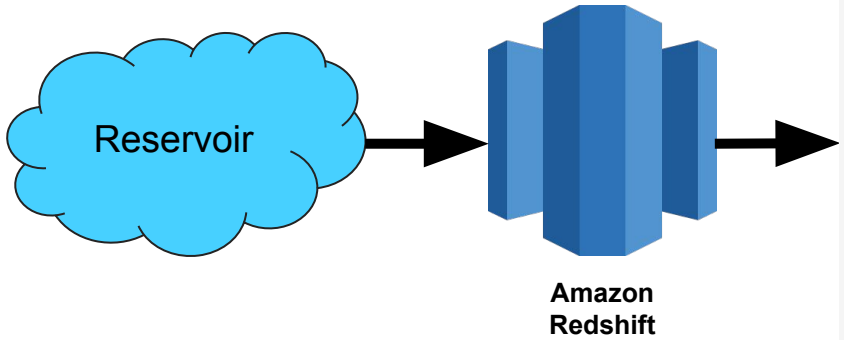
## Top Subscribers

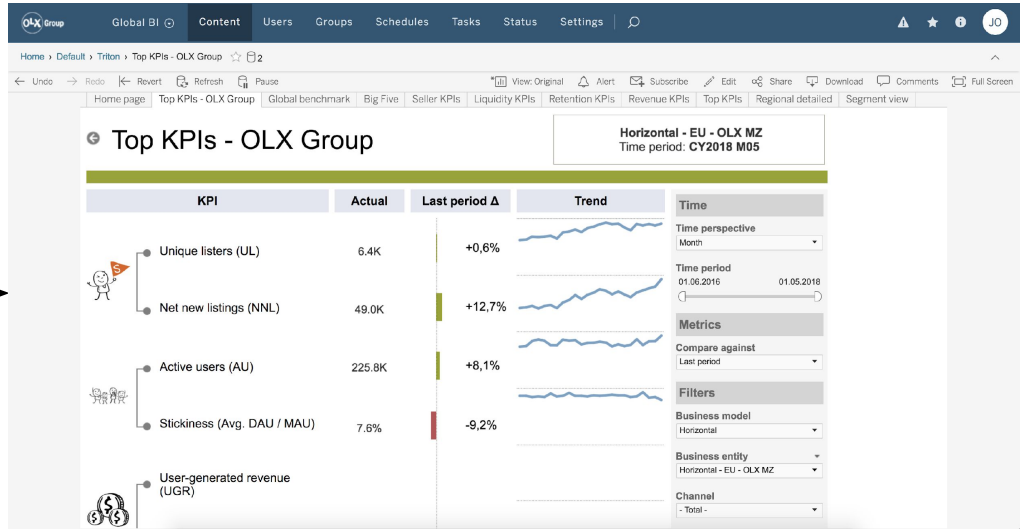
- By health
- By amount of subscriptions


Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E

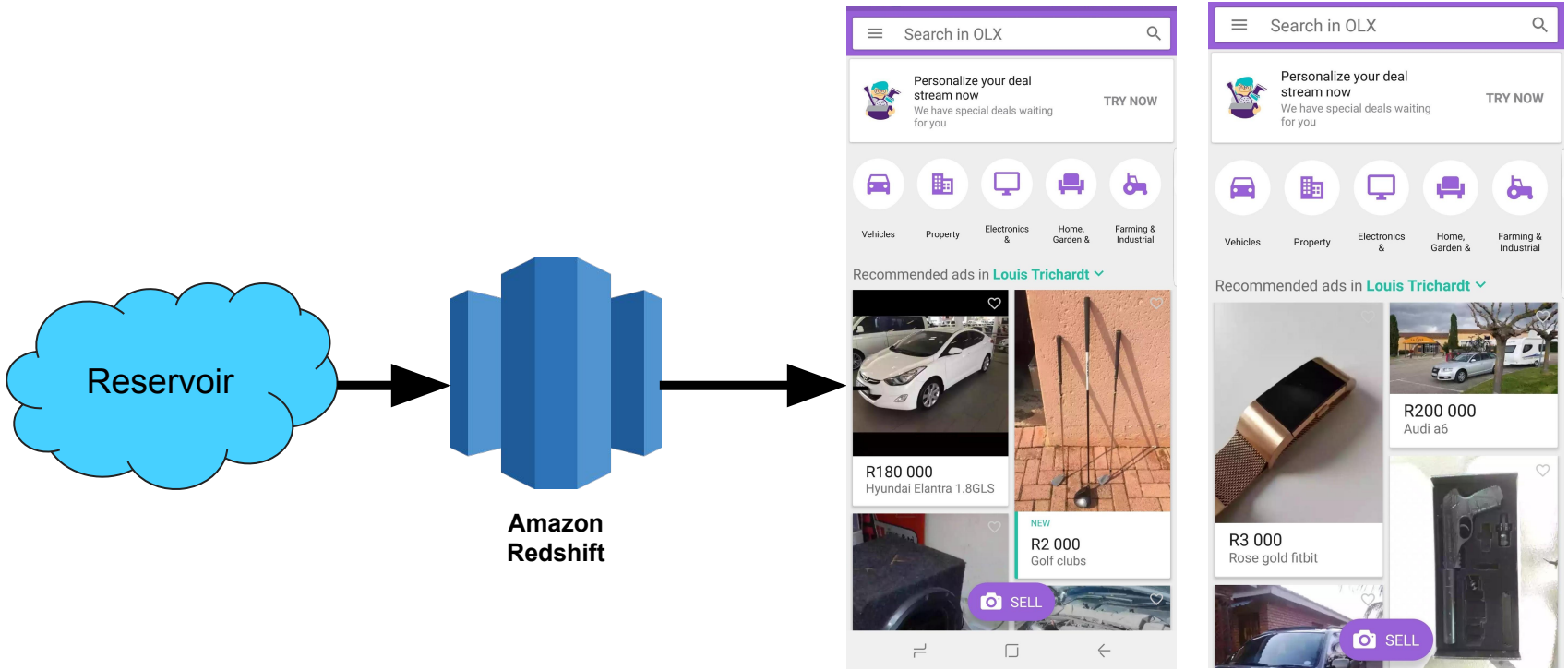

Global BI
Platform A
Platform B
Any other stack
Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E

# Usage examples – Business intelligence

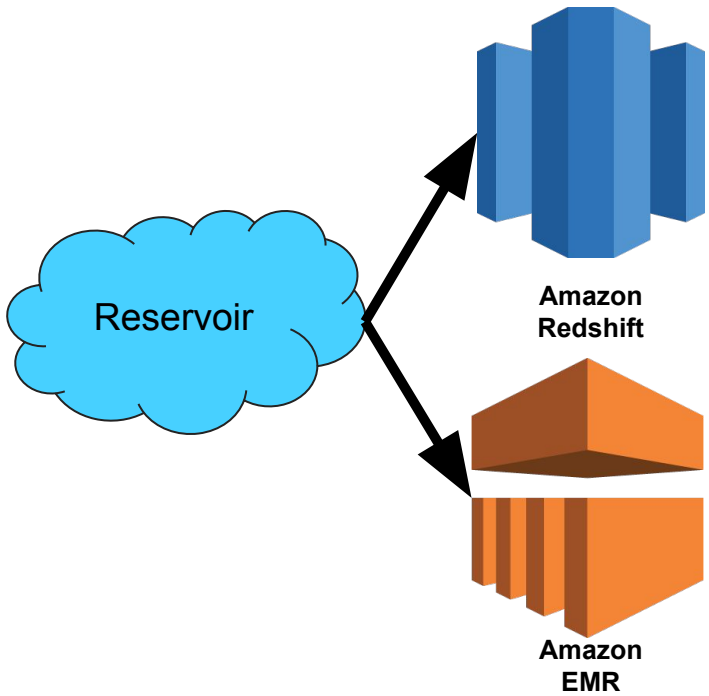


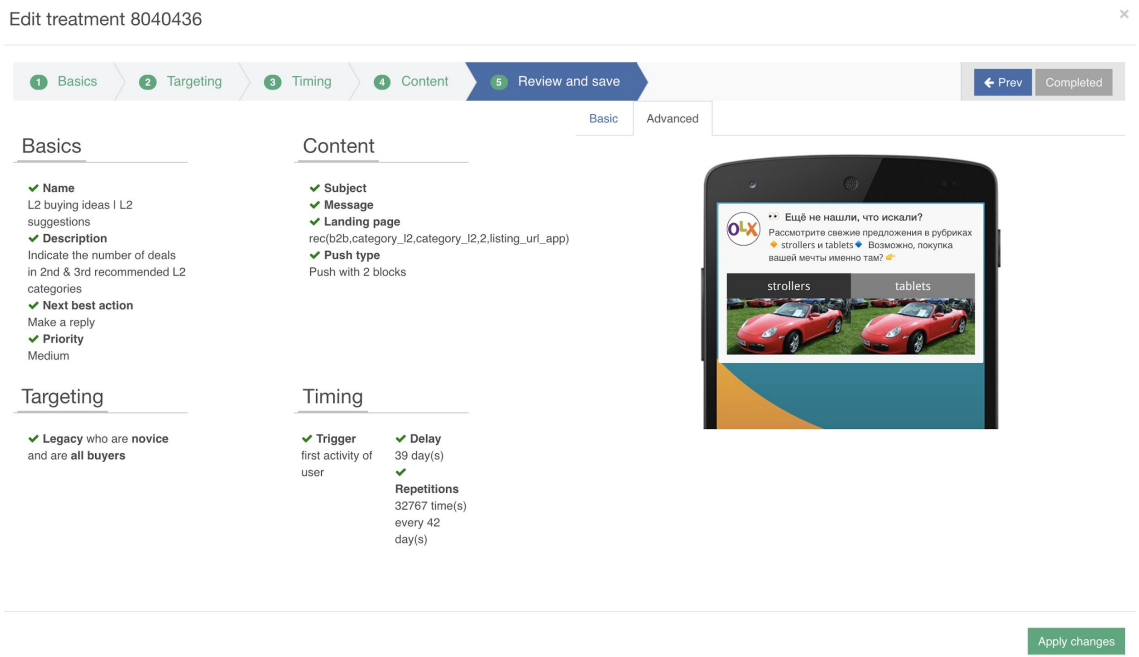



# Usage examples – Personalization & Relevance

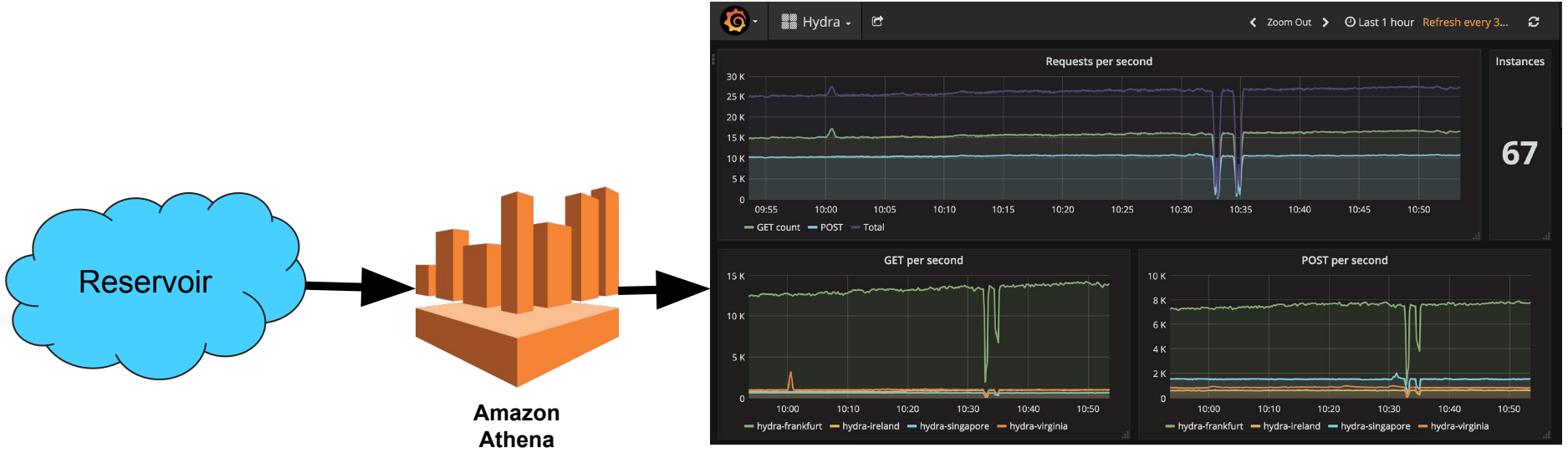


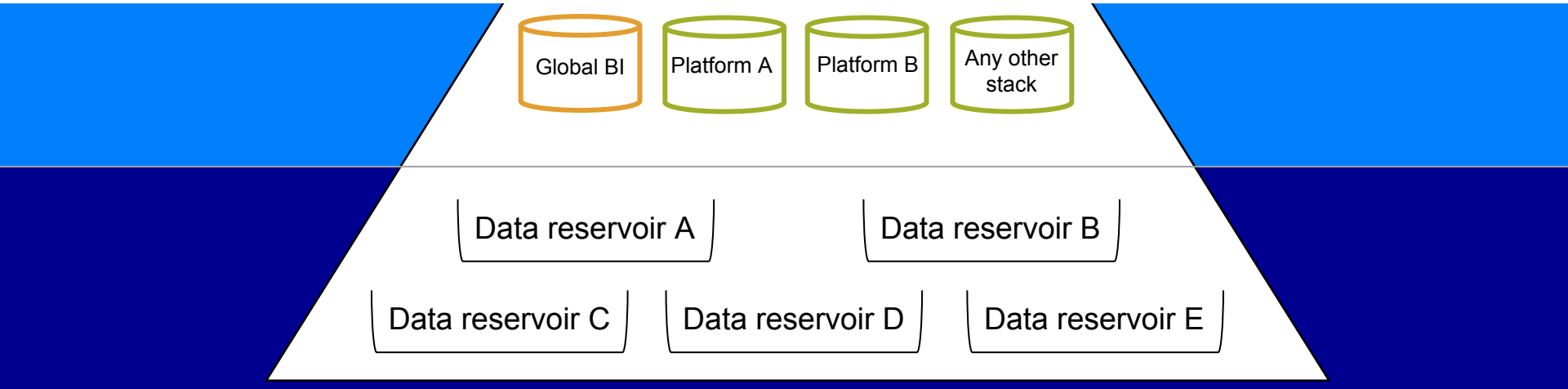
# Usage examples – User communication



# Usage examples – Exploration and monitoring



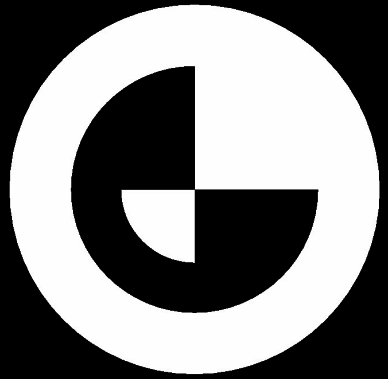

Global BI
Platform A
Platform B
Any other stack
Data reservoir A
Data reservoir B
Data reservoir C
Data reservoir D
Data reservoir E

# The (data) Theory of Everything:

*~ 'Everything' is over-rated, nobody needs everything*

# Key takeaways

- Not everybody needs all data
- Different stakeholders need different data solutions
- When it comes to user data, go with privacy by design and default
- Make sure to follow AWS Well-Architected framework
- Use spot instances and auto scaling where possible – it will help you focus on fault tolerance, and you will save money in return



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