Game Biz

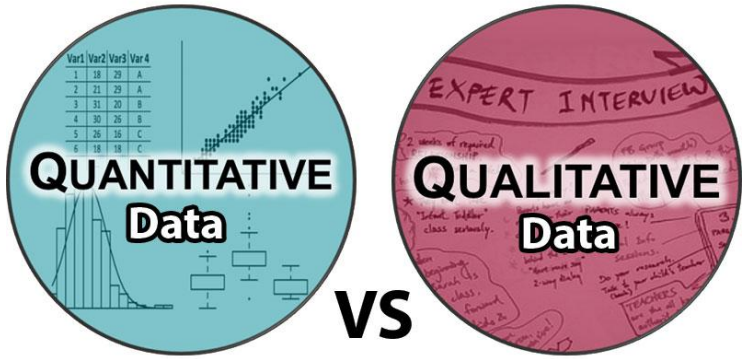
Tiago Tex Pine

@texpine

Data Analysis for Games

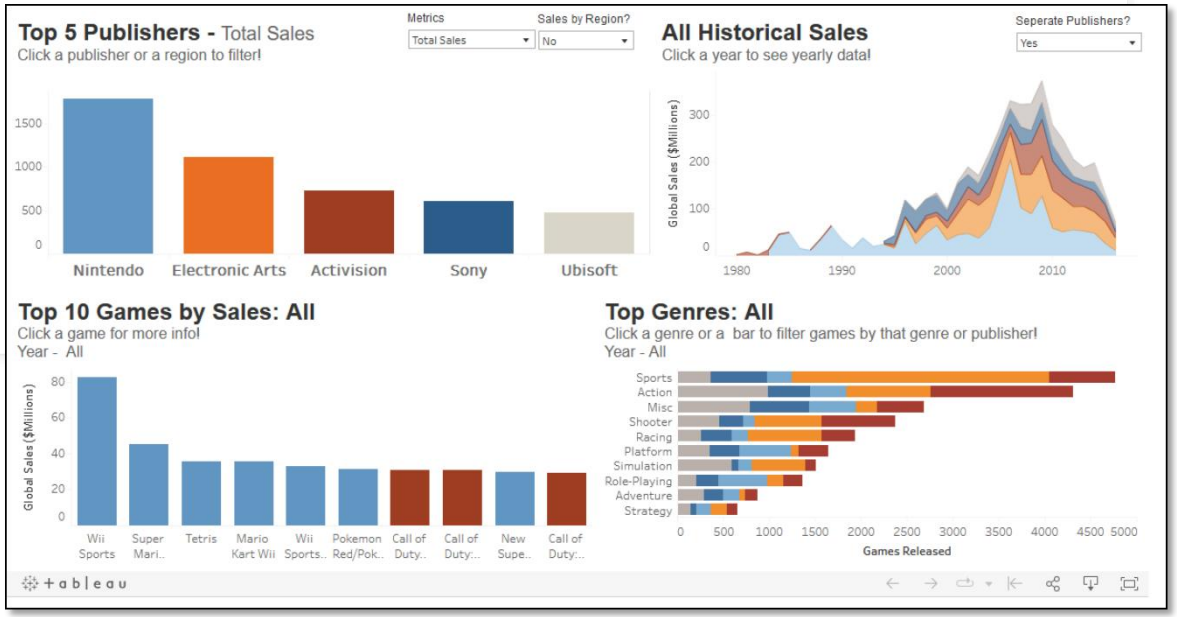
Beyond averages

How to use Data



- Two kinds:
  - **Qualitative**: opinions. User surveys, playtests, usability labs, Twitch, experience. Cross multiple dimensions of pattern in the mind and tells you **why things happen**.
  - **Quantitative**: real user behavior and actions in the game. Data tracking and analytics. Tells you **what is happening and how**.
- ***Both*** are necessary.
  - Qualitative data is the classical way, player impressions.
  - But Quantitative is the real behavior not distorted by perceptions.
  - *Example*: when some complain about metagame imbalance, they could be just angry. Data can resolve if it's real in the universe of all matches.

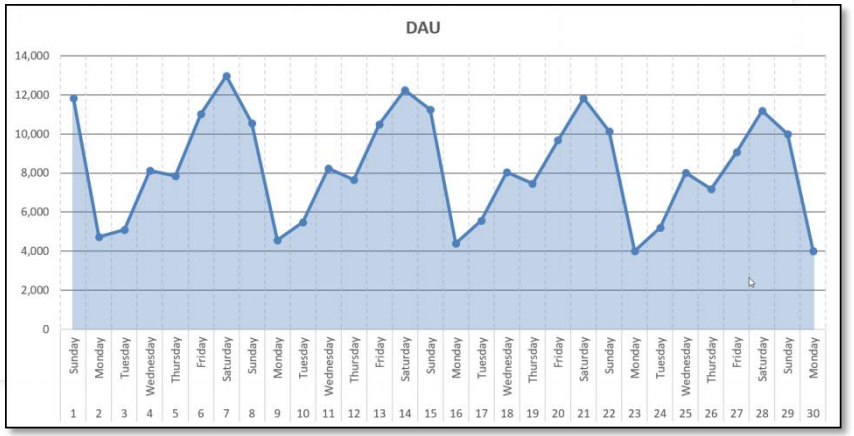
How to use Data

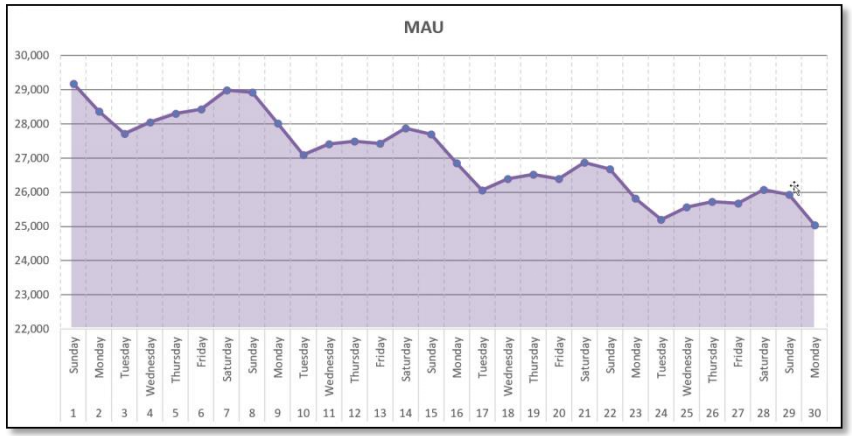


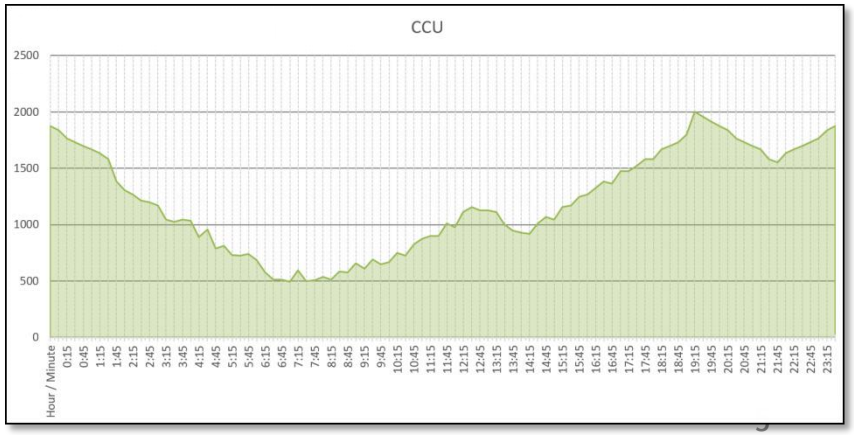
- Pure data is just trivia: useless.
  - It needs to be compounded with actions.
  - "*Data is the new oil*" - but oil is only useful after processing, refinement and manufacturing.
- Needs to be **followed by actions**.
  - Analytics cannot *decide* directions for the game, they can only inform.
  - Analytics cannot *design* features or loops, they can only measure those that exist.
- This means any investment in data tracking, analysis or science needs to be integrated into decision-making systems, otherwise it's a waste of resources.
- Let's see some key **KPIs - Key Performance Indicators for games.**

Main Usage KPIs

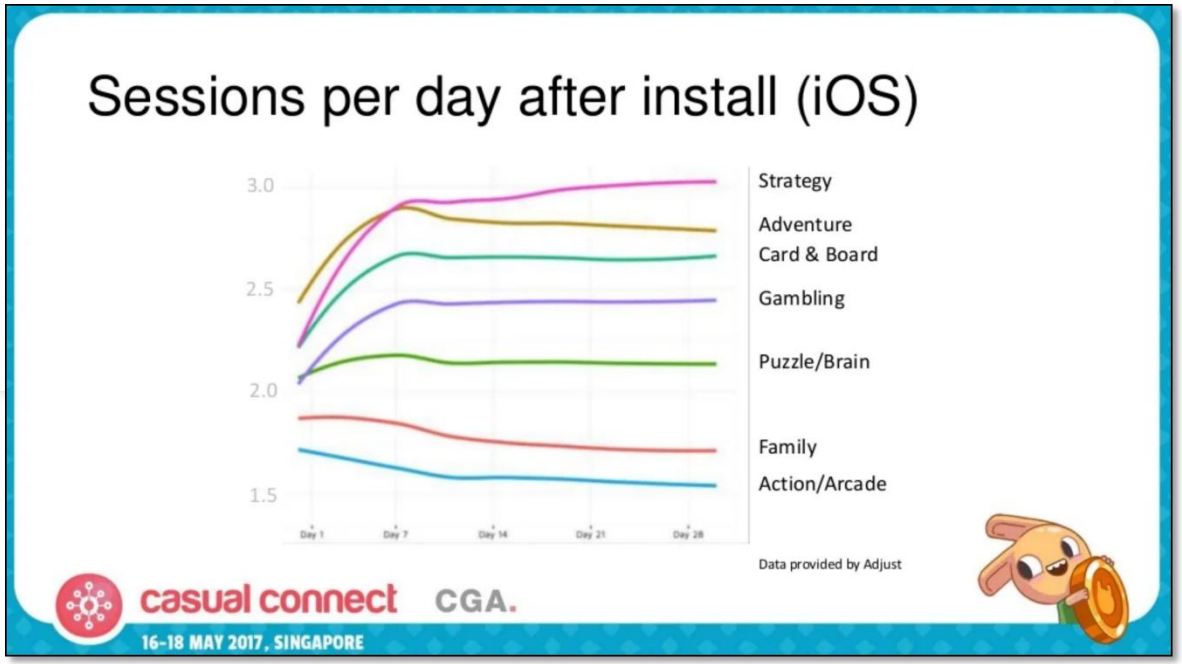
- **DAU** - Daily Active Users.
  - Count of unique user IDs in a whole day.
  - Daily health of activity of the game as a business
  - Fluctuates down quite a bit on Mondays and up on holidays.
- **MAU** - Monthly Active Users.
  - Count of unique user IDs in a 30-day rolling window.
  - More stable measure of the game as a business.
  - If it's going down for several weeks, a severe business trend.
- **CCU** - Concurrent Users.
  - Measured in intervals of 5 to 15 minutes across the day.
  - Useful for backend stability. ***Peaks*** matter more than Averages.
  - Also informs Live Ops on intra-day behavior, which is useful for notifications and short Events.







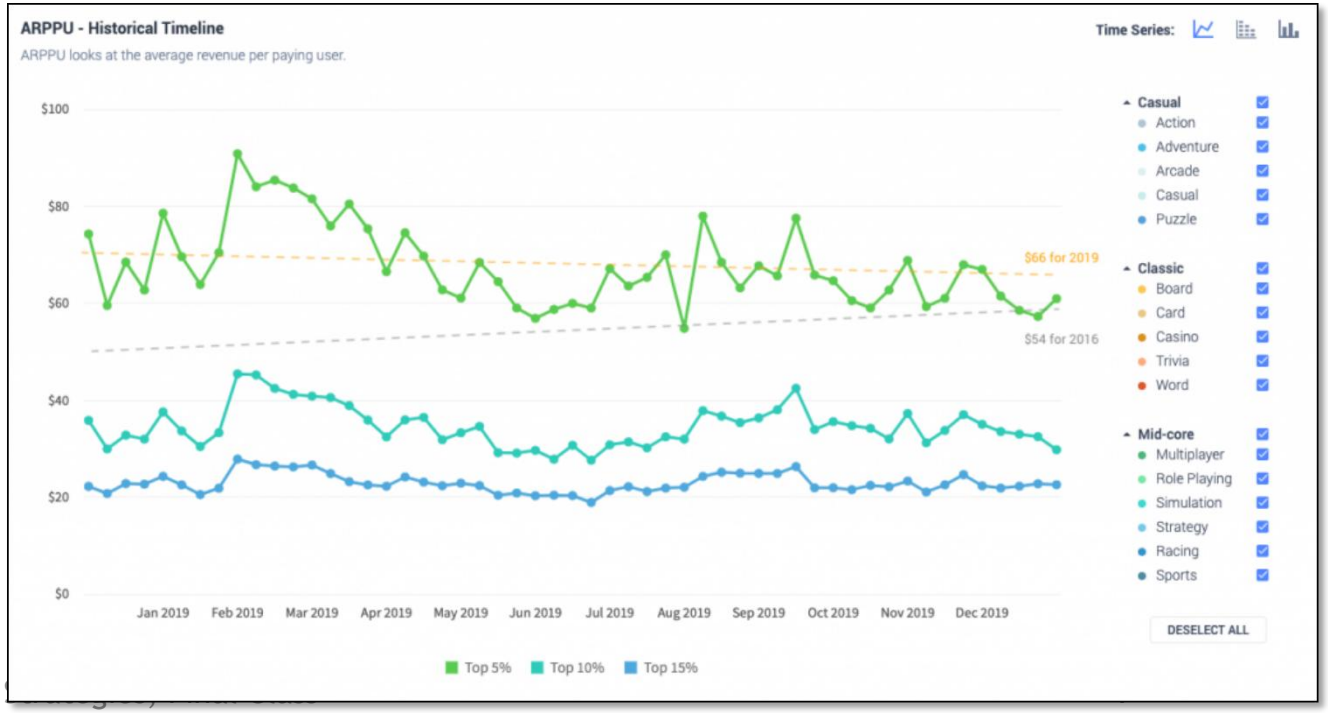
Engagement KPIs



- **DAU / MAU Ratio** = stickiness.
  - Good stickiness start at around 0.2 (20%).
  - Games should not be lower than 0.15. Lower indicates retention issues.
  - Top of the line: Facebook and social media reaches 0.5 (50%).
- **Sessions per Day** / per Week
  - Average amount of sessions per user, per day of activity. For mobile games, normally between 3 and 5.
  - Could also be measure per week for a more stable behavior, but less useful for heavy Live Ops.
  - Useful for design of Live Ops features as well.
- **Session Duration**
  - Average minutes of gameplay in a session. For mobile games, anywhere between 7 and 25 minutes.
  - Very good information for game designers, particularly for stage/core loop duration and Appointment mechanics.
- Beware those can **change significantly in different points of the player progression.**
- **Installs / New Users**
  - In premium, same as purchases. In free-to-play, very different. For both, key for marketing investments.

Main Revenue KPIs

- **ARPU** - Average Revenue per User.
  - Measured as a ratio of Revenue / Amount of users ratio.
  - Could be calculated on different time windows: monthly, daily, yearly or lifetime (all users since the App launched).
  - When Daily Revenue / DAU, also called **ARPDAU**. For free-to-play mobile, between anywhere $0.05 and $0.50.
- **ARPPU** - Average Revenue per Paying User.
  - Measures how much a paying user is willing to pay.
  - For Premium games, buyers + DLC.
  - For free-to-play games, ideally US$ 30 or more.
  - Top games have this US$ 70+, all the way up to $500+.
- **Conversion Rate**: % of users who purchase something.
  - Users who purchases something in the game at least once.
  - Calculated on different time windows.
  - *Daily* Conversion is good to measure short-term impact of promos.
  - We want this above 1% for *lifetime* conversion.
  - Top games can reach 5%+.



SOURCE: GAMEANALYTICS

Retention

- Measure of how many users come back at N-days-after-install.
- There are a number of ways to calculate Retention. The most important ones:

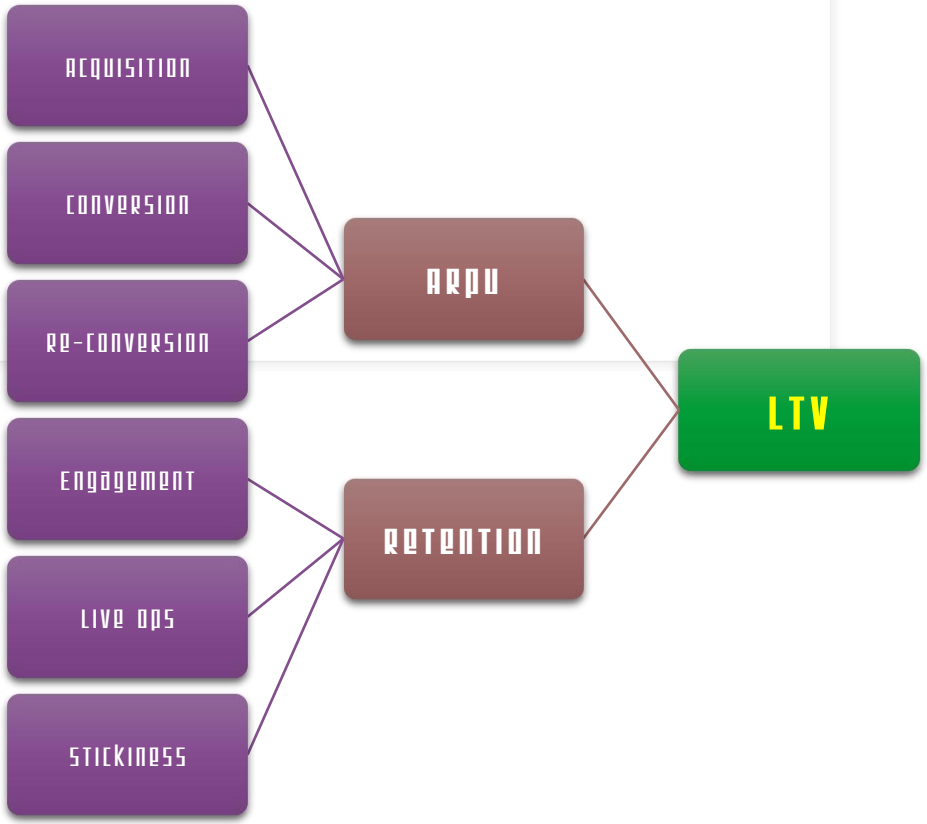
CLASSIC

✚ INDUSTRY STANDARD.
✚ EASY TO EXPLAIN.
➖ SENSITIVE TO DAILY FLUCTUATIONS.

ROLLING

✚ FASTER TO CALCULATE: DATE OF FIRST USE AND LAST USE
✚ REFLECTS LONG-TERM STICKINESS BETTER.
➖ POOR FOR DAILY ENGAGEMENT, TREATS A DAILY USER THE SAME AS A USER WHO COMES BACK ONLY EVENTUALLY.

Lifetime Value (LTV)



- A composition of Retention and Revenue to try to project the value of each *future* user.
- **Key** for **marketing efforts**: you *cannot* spend more on acquiring 1 user than your LTV.
- There are *many* ways to calculate this.
  - The simpler, just a past ARPU, but that's the *past*, as the game was before.
  - A more robust way considers **Churn / Retention** as updates and Live Ops kick in.
  - The time period of all KPIs should be the same: monthly, daily, weekly or yearly, depending on how marketing budgets are assigned.
  - The Churn part is the trickier part of the formula.

$$LTV = ARPU \times \frac{1}{Churn\ rate}$$

EXAMPLE

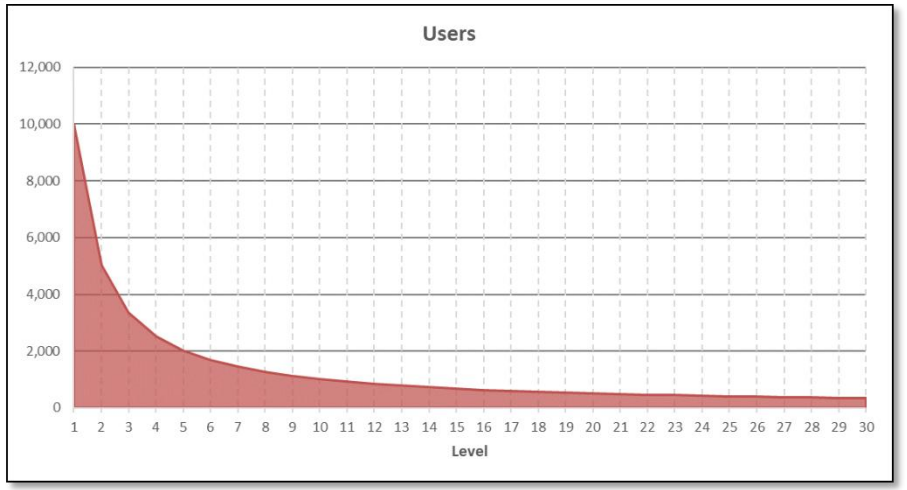
$$LTV = \$1.35 \times \frac{1}{0.6} = \$2.25$$

With a *monthly* ARPU $1.35 and a *monthly* Churn rate of 60%, your average customer moving forward has a predicted LTV of $2.25.

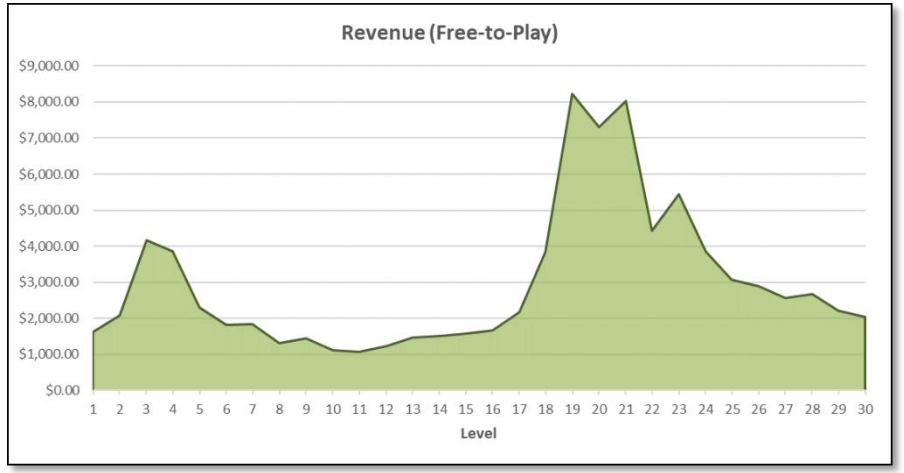
Averages vs. Distributions

- ***Be careful with averages.***
  - Guiding oneself too much with them lose the finer details.
  - Amongst your entire population of players, your Fans are outliers.
- Example: progression and ARPU.
- High-level averages are often demanded by managers,
- ... but what *game designers* need to improve the game are those distributions.
  - They are the one that can locate *where* problems are.

AVERAGE LEVEL **7.5**



ARPU **$2.17**



Final words!