GDC 2014: Analytics 101

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Talk Overview

- Setting up: Why are you doing this? What do you need up front?

- Definitions, acronyms, jargon

- Understanding a distribution

- Segmentation, cohort analysis, funnels

- Statistics & modeling

- Advanced stuff (time permitting) predictive analytics, machine learning, social networks analysis

Before you do anything else

- You want to be "data driven." Great. Really?

- What do we want to know?

- How will we act on it?

What do we want to know?

- How much money have I made this (day/week/month/period)?
- How much money am I likely to make in the coming (day/week/month/period)?
- How stable is my player base?
- What is my churn rate?
- Which players are likely to leave in the next period?
- How much are each of my players worth?
- Which promotions are generating positive results?
- Do my players generate value among each other, or are they relatively isolated?
- Which marketing sources are leading to conversions? What is the ROI on each?
- What mechanics drive player churn?
- What mechanics drive player conversion?
- What are the effects of the changes I've made?

How will we act on it?

- Benchmark reporting?

- Actionable? OK, who's acting?

- What tools? Can you reach players (in-app, email, push)? Can you have systems, e.g. queuing, matchmaking, call those results tables?

Setting Up

- Instrumentation

- Review the SDK

- Make security decisions, Enterprise vs. SaaS

- Understand "real time"

Definitions, Acronyms, Jargon

- Acronym Soup

- DAU

- Concurrency

- MAU

- DAU/MAU

Definitions, Acronyms, Jargon

- ARPU/ARPPU

- Retention

- Churn

- Conversion

Definitions, Acronyms, Jargon

- Session metrics: Avg. Length, Avg. # of Sessions

- Virality

- K-Factor vs. other approaches

Definitions, Acronyms, Jargon

- CaC: Cost of Customer Acquisition
  e.g. PAX: $20, Google Ad $1.50, Ad platform $1

- LTV: Lifetime Value
  PAX: $35, Google Ad $2.50, Ad platform $1.25.

Understanding a distribution

- Why an average is sometimes not a good metric, and why a SD and a Gini coefficient are super useful.
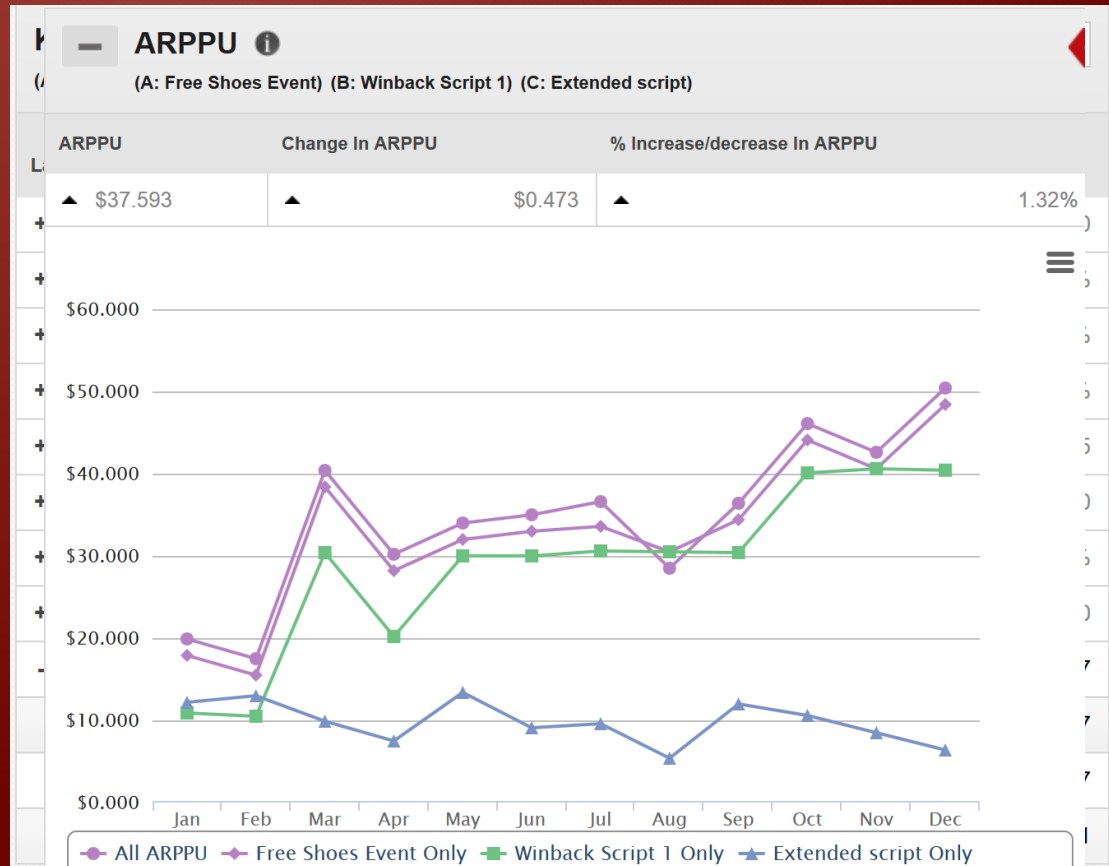

Average = $17
SD = $29
Gini = .52
Min = $5
Max = $100

Segmentation

By:

- Demographic group

- CRM event

- Region

- Platform

- AB Group

- Start Date
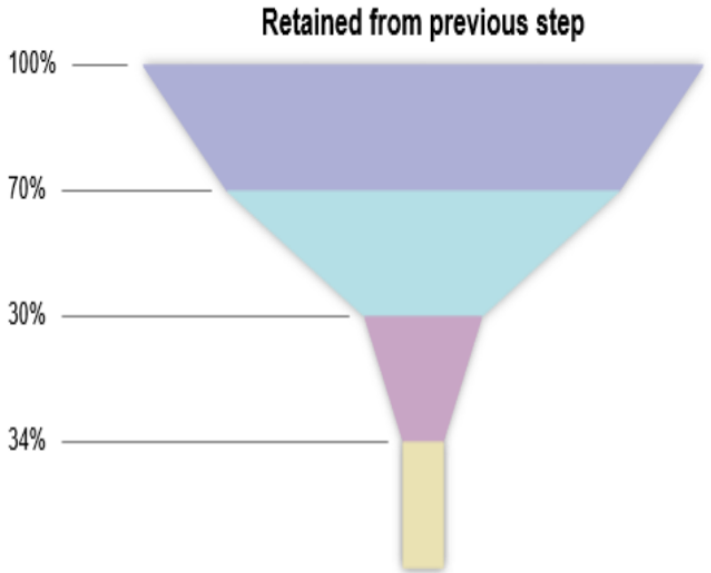
Cohort Analysis

Age, Period & Cohort

Amy Jo Kim's stages:
Visitor, Novice,
Regular, Leader, Elder

Stop judging me for playing
as a female blood elf!

Funnels

Funnel: Facebook Ad #68

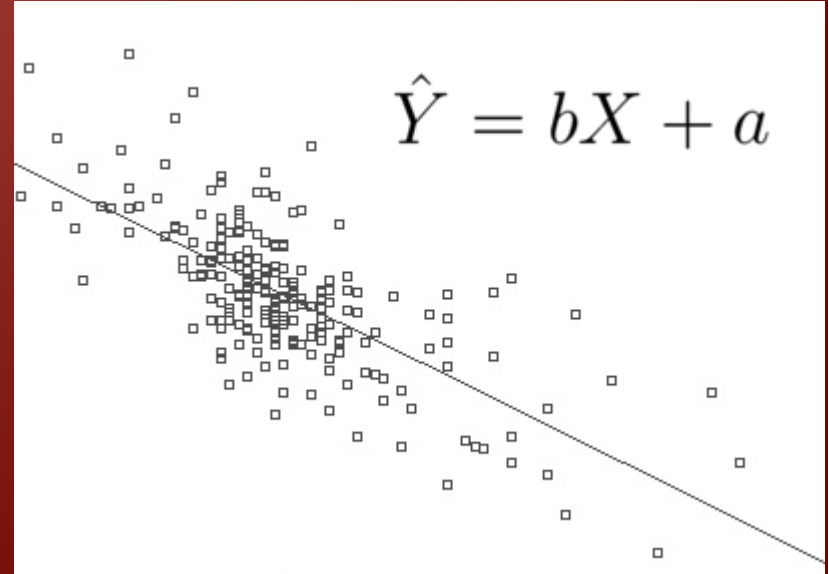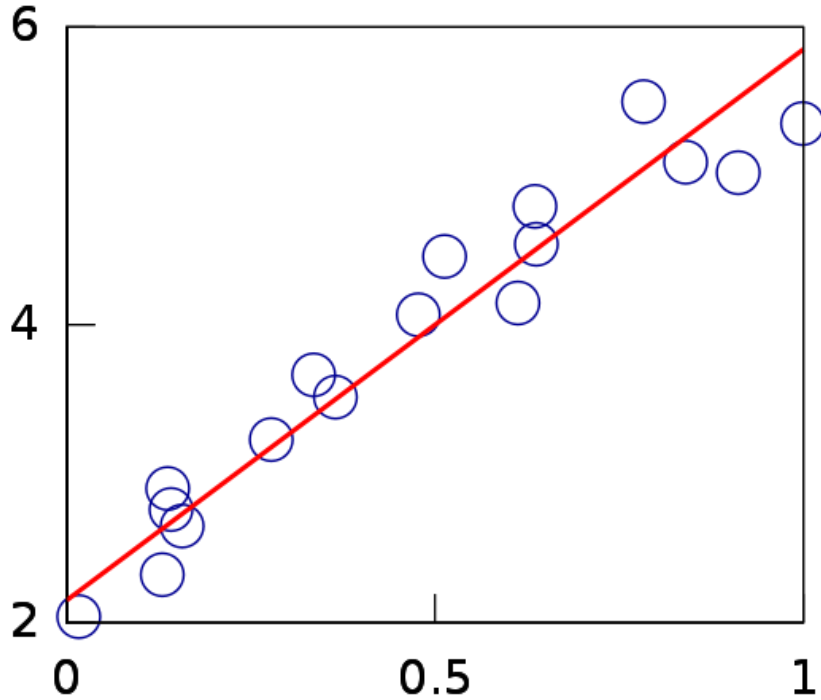| Step		# Of Users	Time To Step
Facebook Ad #68 (CRM/Advertising)		34587	na
Tutorials (Levels)		24211	3 min, 45 sec
Group Invite (Social Events/Group Events)		7263	12 hours, 32 min, 41 sec
Bought any item (Monetization/In-app Purchase)		2470	15 min, 27 sec

Retained from previous step

100%
70%
30%
34%

Modeling

No, data modeling

Statistics in 5 min

$$\hat{Y} = bX + a$$
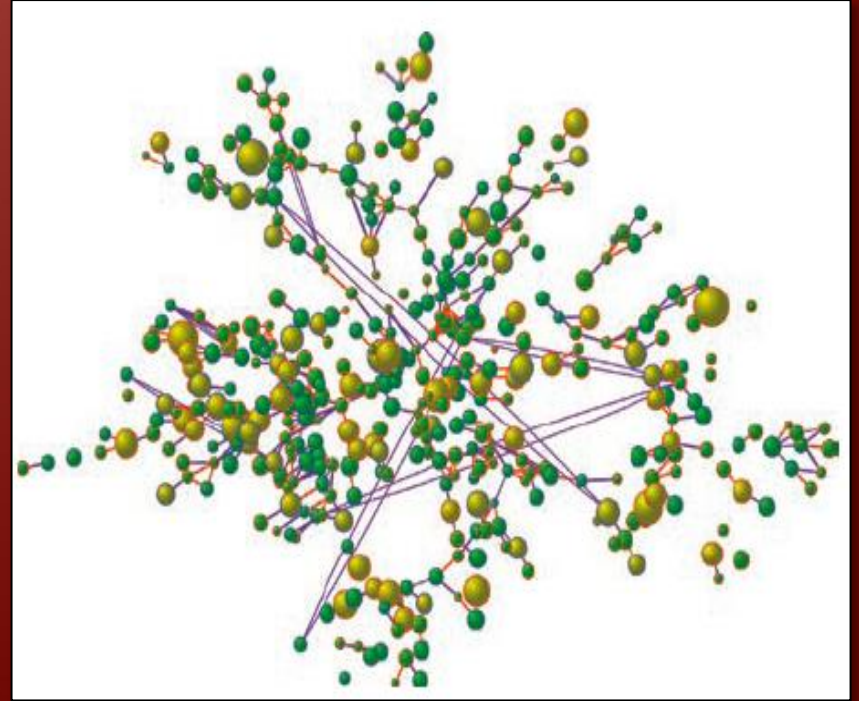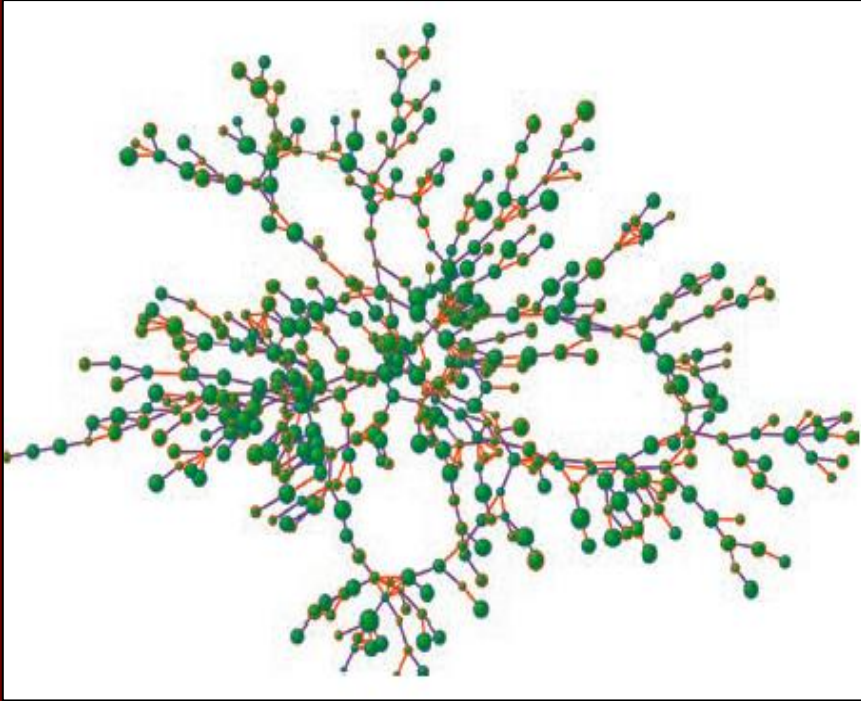
Machine learning and predictive models: power vs. understandability

- A->B->C->D 45/50 times. Now A->B->C->?

- If a player in EQII has 18,324 NPC kills or less, has completed 234 or more quests, has 1889 or more total power, has 194 or less total agility points, and has 2395 or more total health points, 68% will be partnered in real life (n= 954, 954/306, Accuracy = 68%, Coverage = 10%). JRip .59

- So, *do* you need to understand "Why?"

Social Network Analysis

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Models and Predictive Analytics