# Session 3

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# Agenda

- **A/B Test at Vungle**
- Power analysis

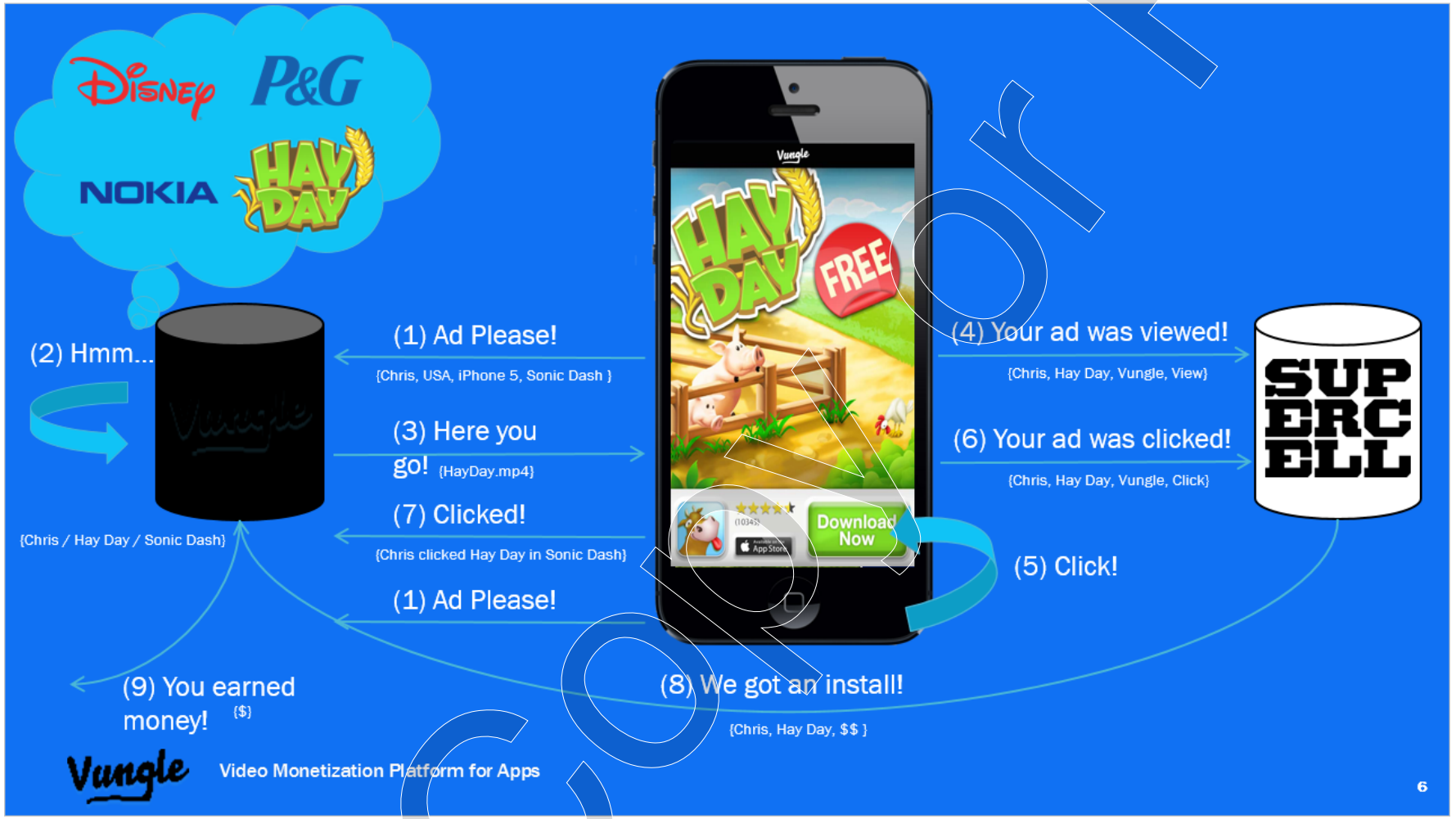
# A/B Testing at Vungle

Case

# Background

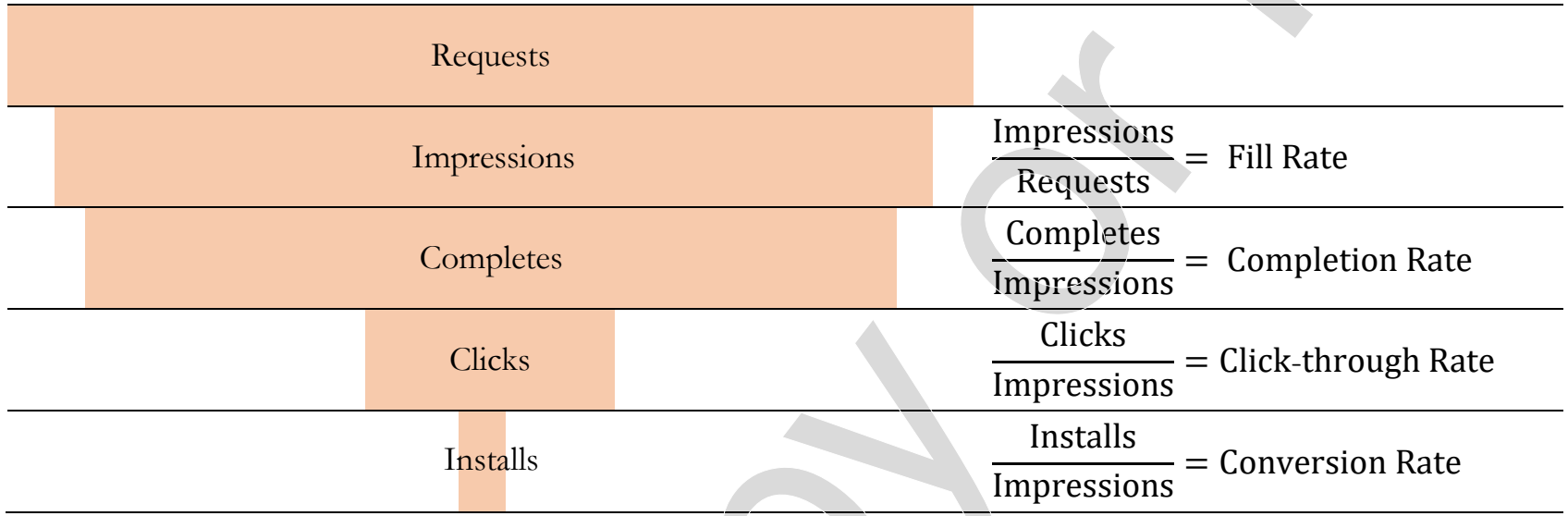
- Mobile advertising company with $100 m people getting ad exposures from Vungle
- In-app advertising of other apps
- Used an algorithm to pick the ad from ad-inventory of multiple advertisers to show to an potential customer
- Wanted to consider a data science based prediction algorithm in place of the current one
  - Would utilize user histories, advertiser characteristics, publisher characteristics

# Role of Vungle in ad-delivery



# Mobile in-app ad funnel

Figure 1. Mobile in-app advertising funnel.




**Ad-monetization model**

Cost per 1000 views, CPM

Cost per competed view, CPCV

Cost per click, CPC

Cost per Install, CPI

CPI was most popular - Publishers got 60% of revenue and Vungle got 40%

Current data – 98% fill rate; 88% completion rate; 5% CTR; 0.5% install rate

# eRPM – effective revenue per 1000 impressions

- Both publishers and Vungle measured revenue based on eRPM
- **Varied from $2 to $7**

# A/B test design

- 15/16 of users were shown ads based on current algorithm (A) and 1/16 of users shown ads based on data-science based algorithm(B)
- Vungle typically shows **hundreds of millions of ad-impressions in a month**
- Size of treatment group is kept smaller because if the new algorithm did not work well, then there could be a big loss