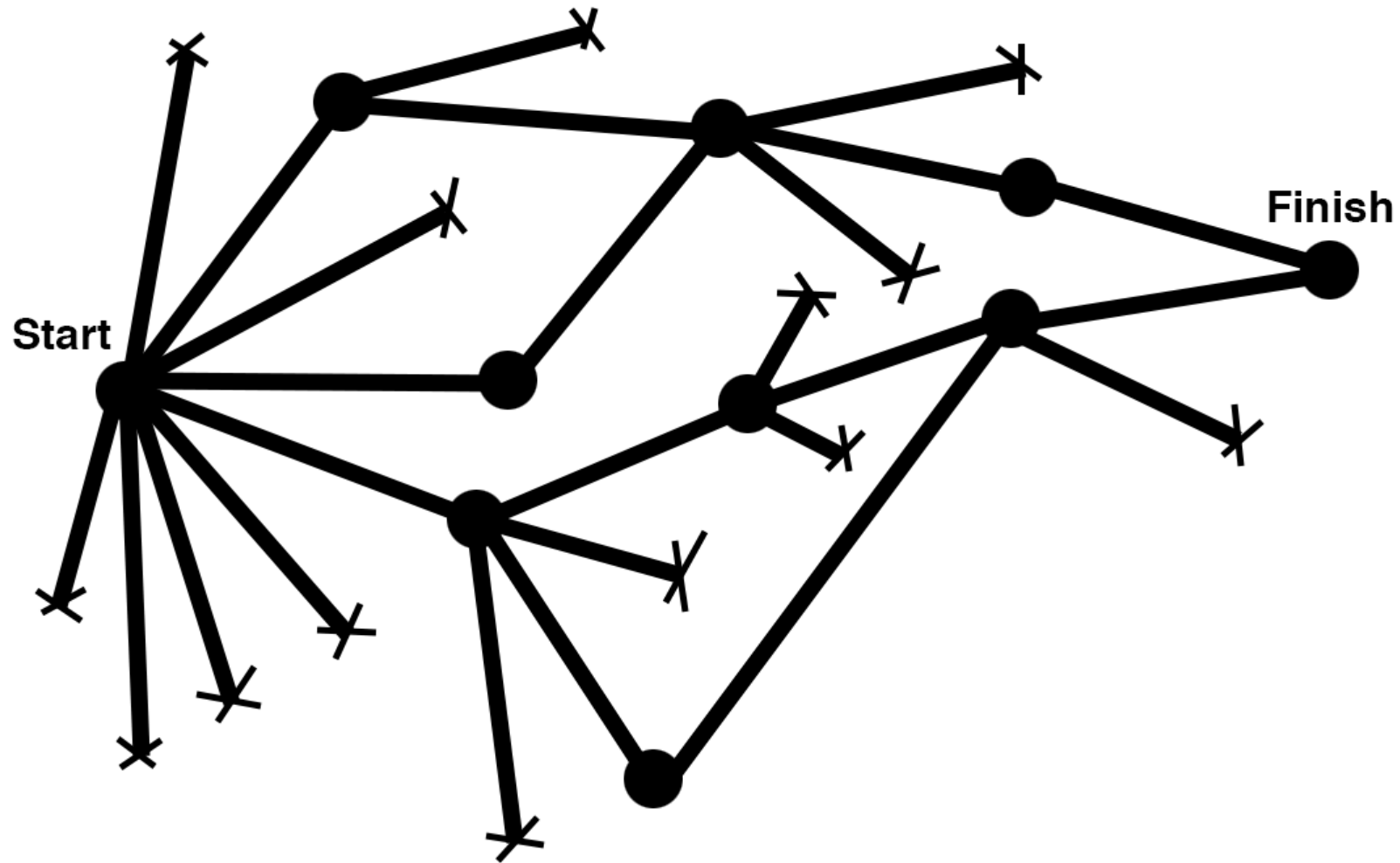
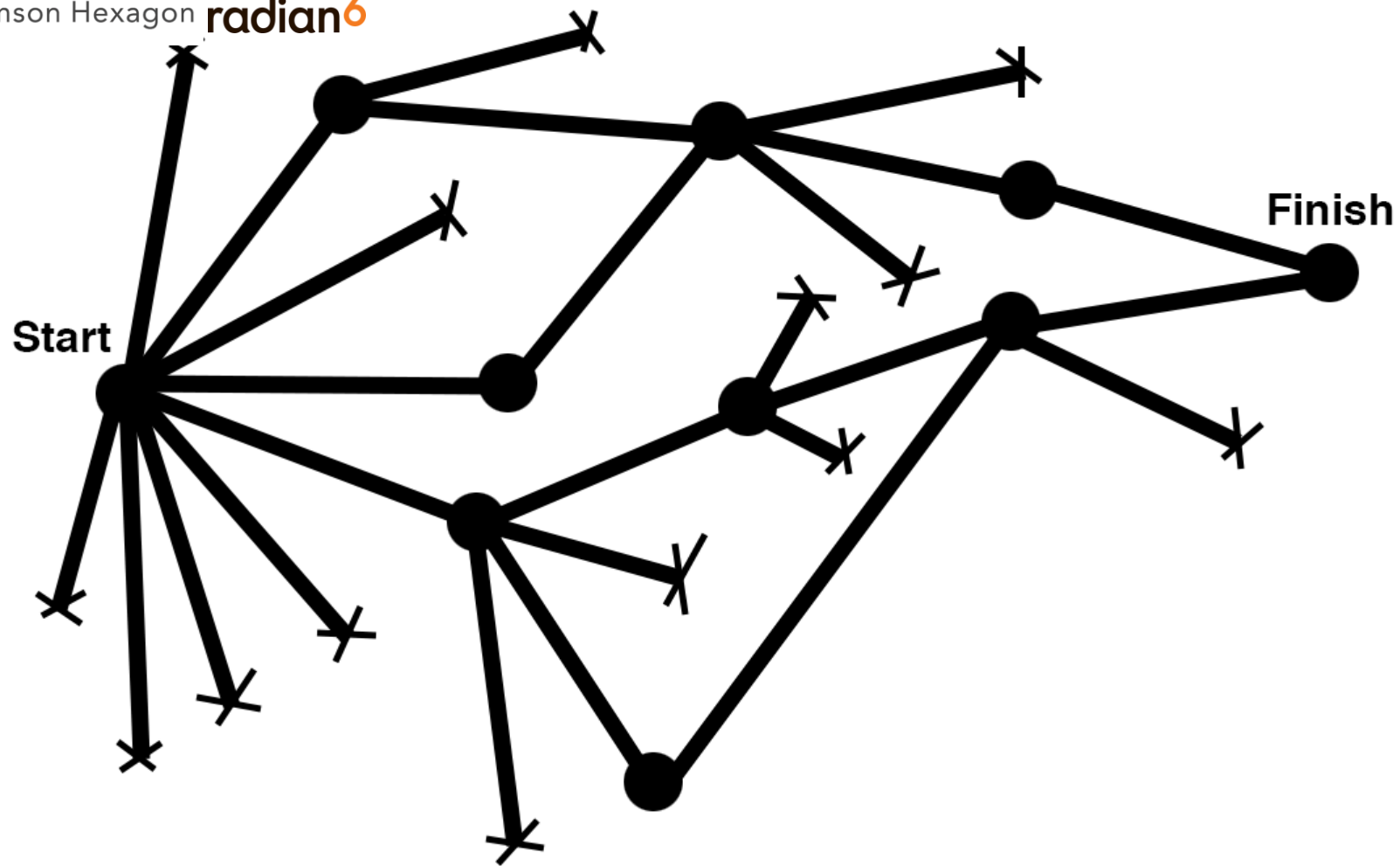


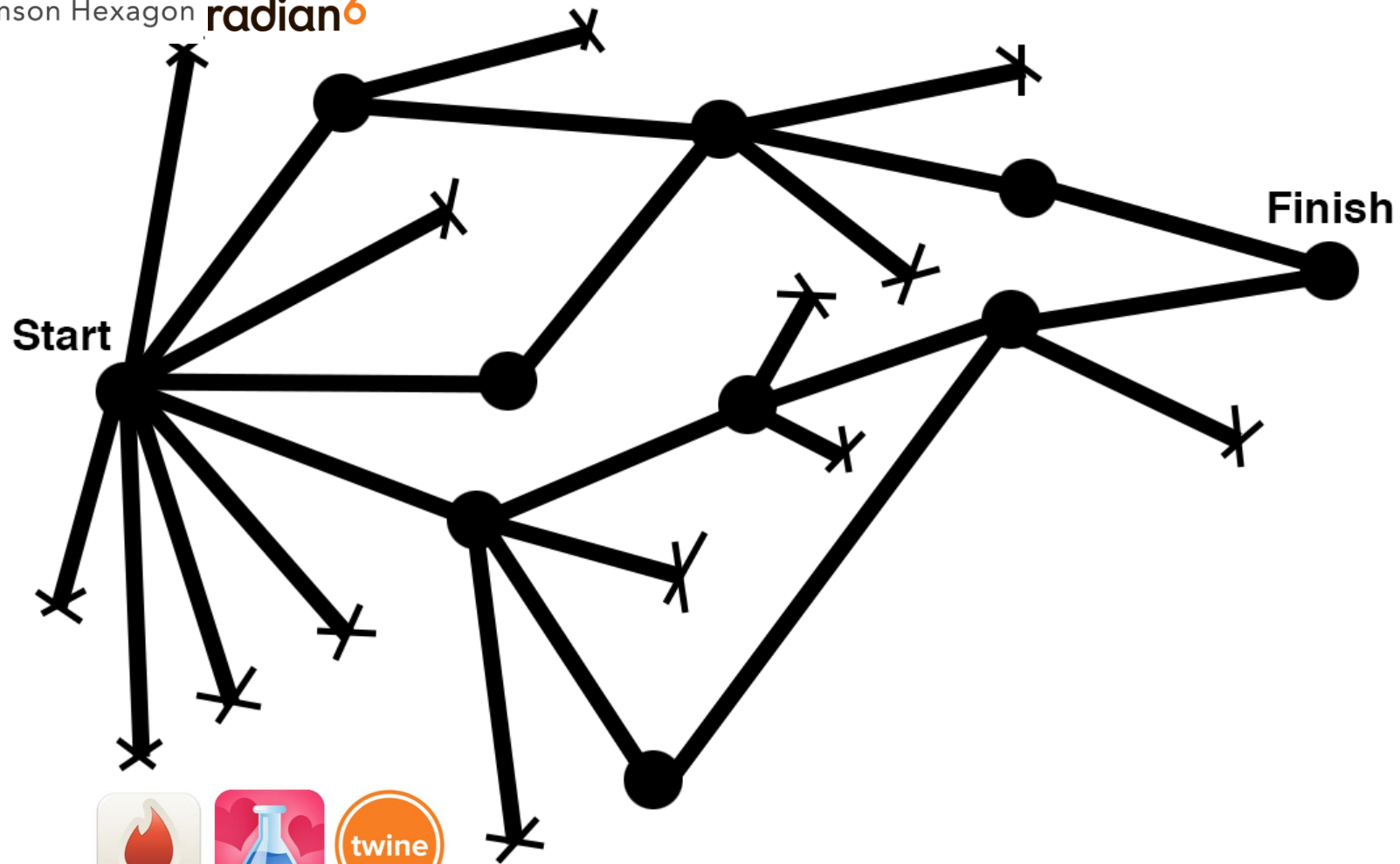
BLOOMBERG COMPANY CHALLENGE

HOW MIGHT WE IMPROVE & PRODUCTIZE SARCASM DETECTION?

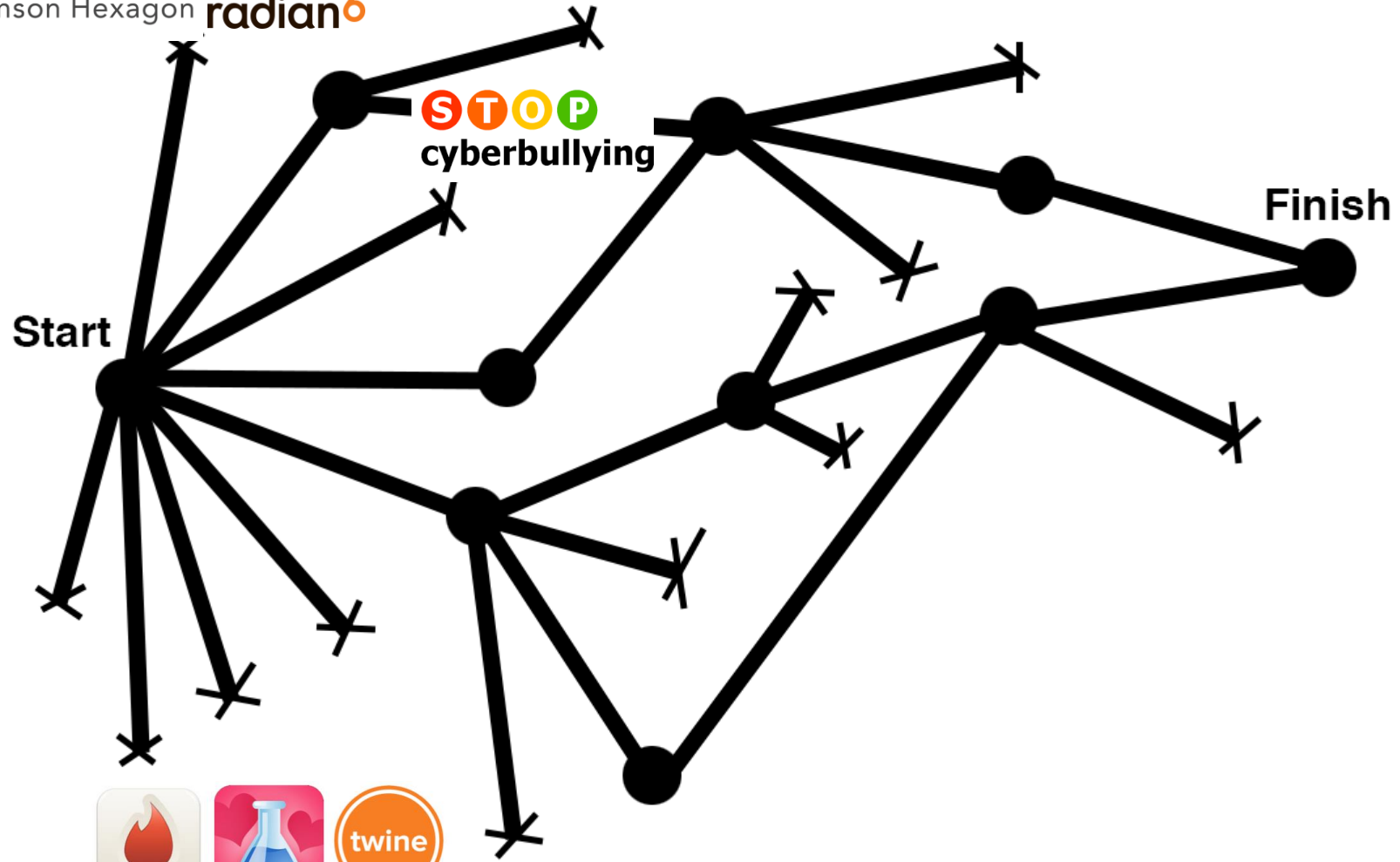
OUR JOURNEY

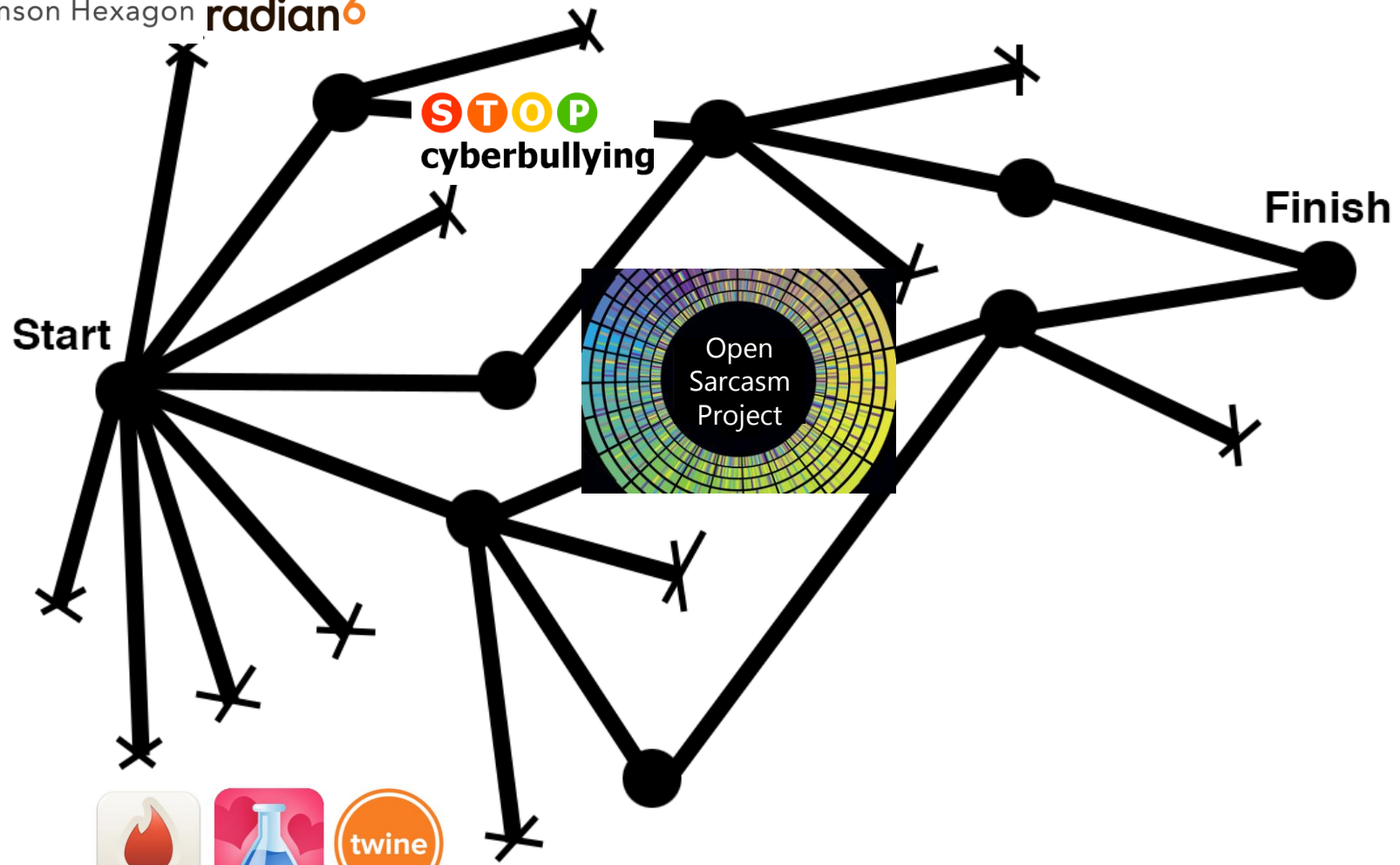


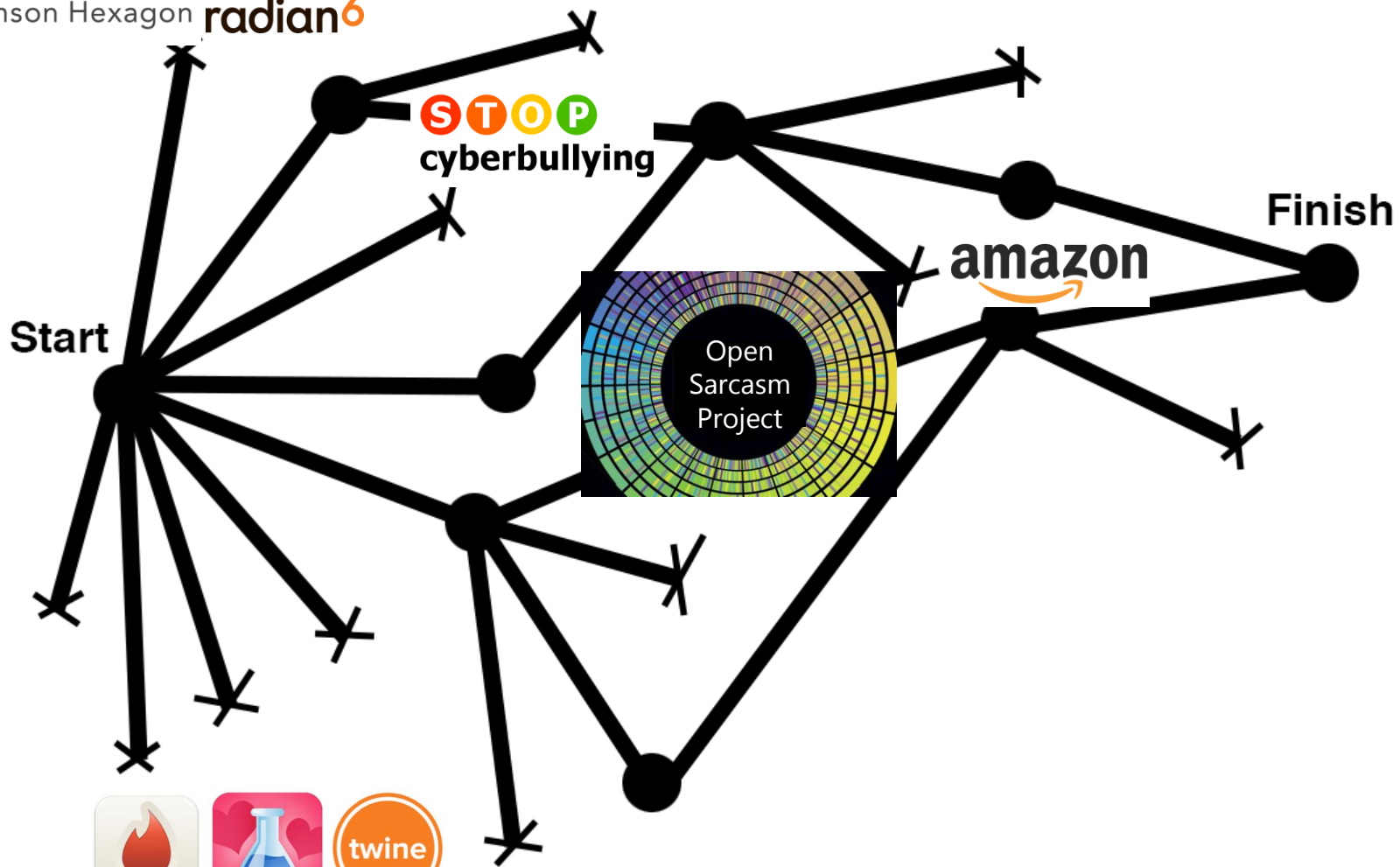




STOP
cyberbullying









Crimson Hexagon

radian6

STOP

cyberbullying

☆ TrueRatr

Finish



amazon

Open
Sarcasm
Project

Start



coffee
meets
bagel
QUALITY DATING MADE EASY

CORNELL
TECH



OUR NARRATIVE

//

Star ratings do not always reflect what is said in reviews, especially for mobile apps. To solve this problem, we provide consumers with a **true rating**, using sarcasm-corrected sentiment analysis.

Buyers remorse, **no more**.

//

OVERVIEW

- Market {
 - The app market generated \$11.5 billion in sales in 2013.
 - Apps are a valuable platform for brands. Over one quarter of mobile product searches start on branded apps. Apps generate the most number of reviews per product compared to Yelp, Amazon, etc.
- User {
 - Of smartphone users, 89% of time spent on media is through mobile apps: both men and women spend ~30hrs/month.
- System {
 - Online reviews drive nearly two-thirds of consumer purchase decisions.
 - 68% of consumers trust reviews more when they see both good and bad scores, while 30% suspect censorship when they don't see any negative opinions.
 - Current 5-star rating system relies on user judgment for star rating, and there is no interpretation of sarcasm in the review.

-
- **CONCLUSION:** Consumer buying behavior is shifting. The influence of user-generated reviews is stronger than ever, but is primarily held back by lack of accountability and transparency. As number of reviews per product increases, reading through reviews is not feasible. We need to shift away from our reliance on traditional review systems to gain better business insights.

DEMO

HOW ARE WE DIFFERENT?

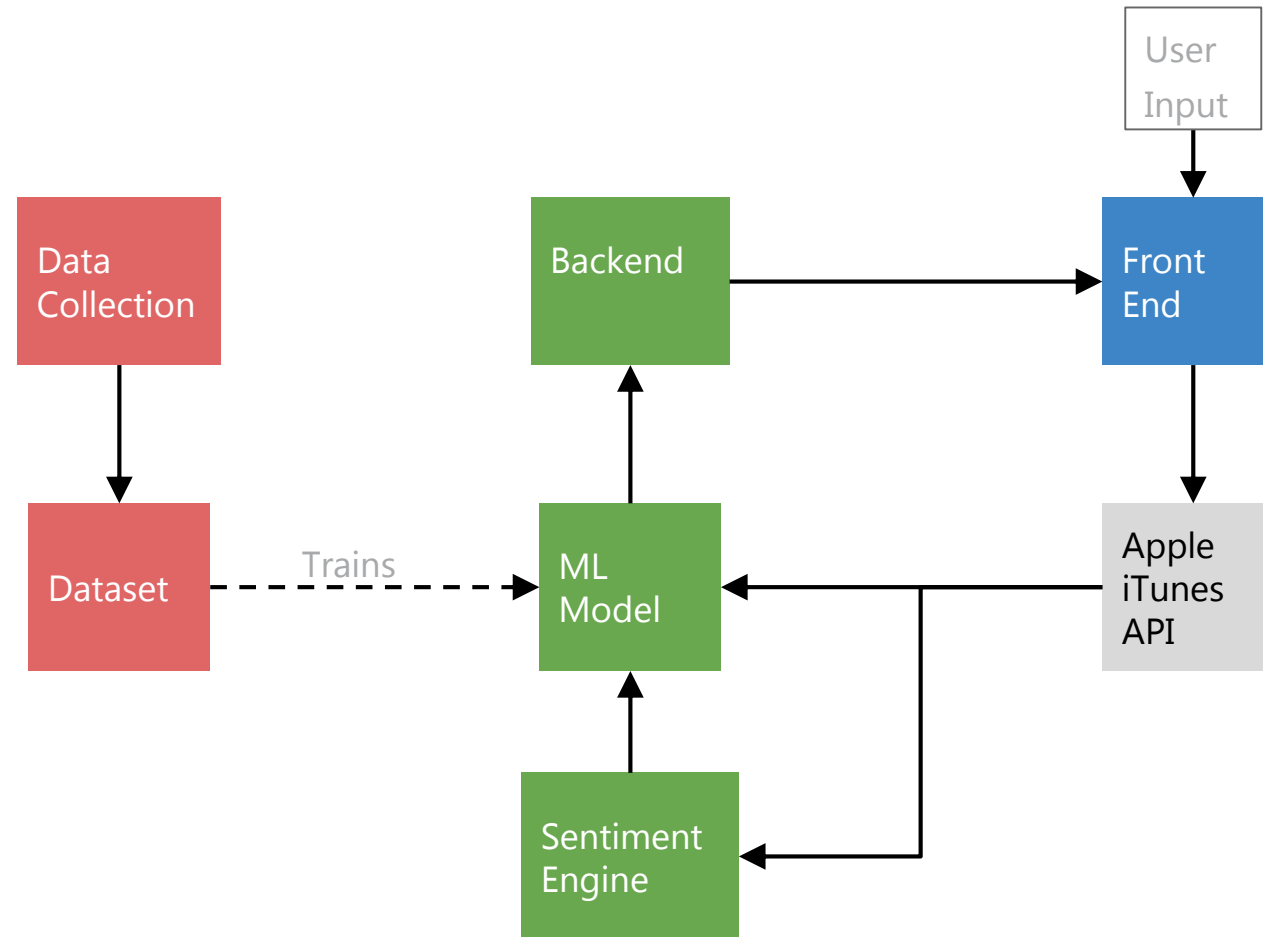
TECHNOLOGY

- We are using machine learning and natural language processing to build a platform that provides consumers, developers, and companies business insight for mobile apps, using a sarcasm-corrected sentiment analysis. This has never been done before.
- We scan for sarcastic reviews, which has traditionally caused problems with sentiment analysis. Our algorithm is based on multiple patterns of sarcasm found specifically in the context of online products and mobile apps.
- We have built and assembled a corpus of 698 sarcastic reviews from 20,000 reviews. Human validation was also performed.
- Our technology rapidly processes text from reviews using a variety of techniques and provides a quantifiable rating based on sentiment.

PRODUCT

- This technology enables a scalable NLP/machine learning platform solution for sentiment-based ratings across broader product categories such as movies, consumer product goods, electronics, etc.
- Going forward, this platform can be used by consumers to compare two products with similar attributes (specs, price, functionality) based on a fair sentiment analysis.
- We provide an unbiased rating based on what is said, which builds a community of trust around consumers, app developers, and marketers.

SYSTEM ARCHITECTURE



PATTERNS OF SARCASM

"Violence won't solve anything... But it sure makes me feel good."

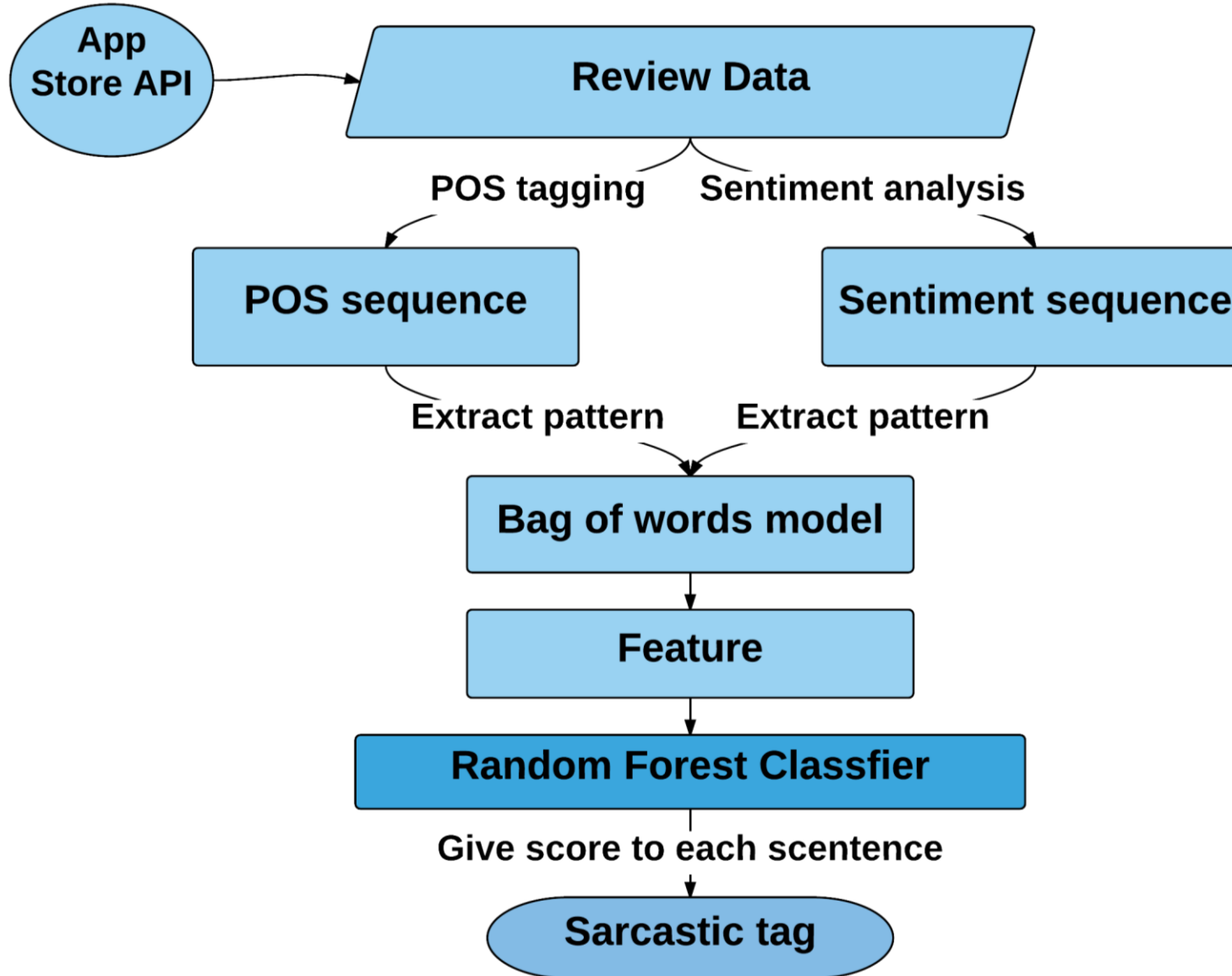
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Sentiment shifts exist in sarcasm. They have special sentiment patterns.

"Yea right."

Certain expressions lead to sarcasm. They have special POS patterns.

ML MODEL

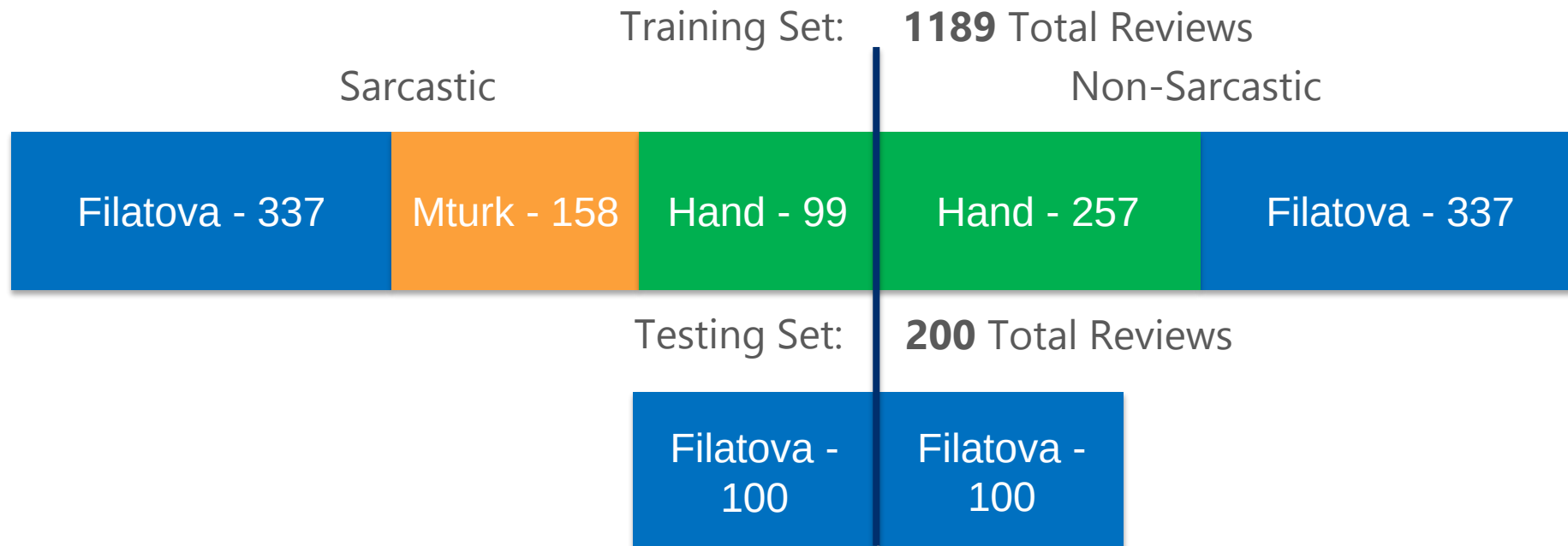


DATA CORPUS

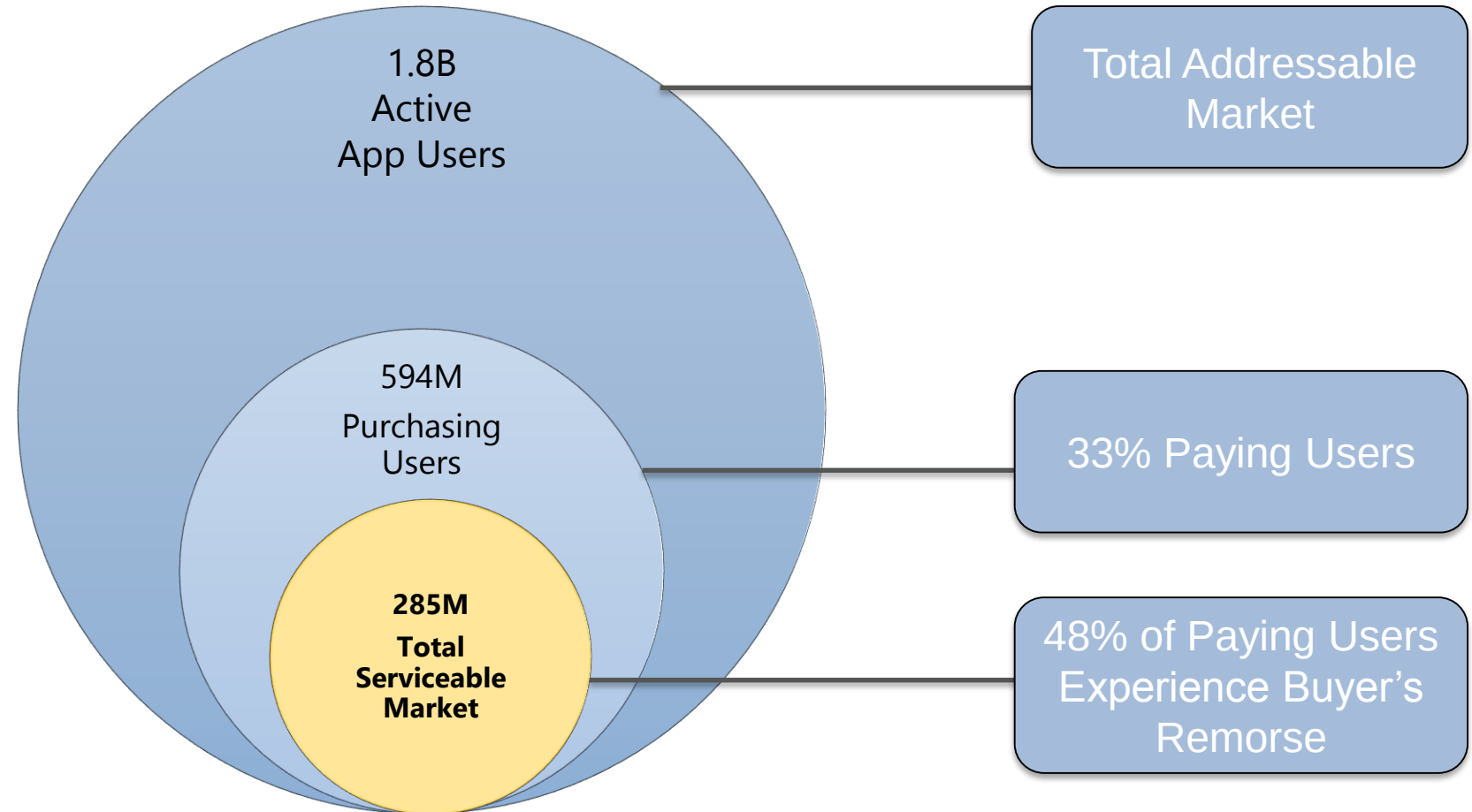
Filatova's Corpus → Dataset of 437 high quality sarcastic & non-sarcastic Amazon reviews

Mechanical Turk → Dataset of 158 reviews classified as sarcastic by worker consensus

Hand-Picked Reviews → Dataset of 356 reviews handpicked by team



MARKET SIZE



BUSINESS MODEL

LITE	PRO	PLUS	ENTERPRISE
FREE	\$20 /month	\$30 /month	CUSTOM
Unlimited searches on TrueRatr.com	All Lite Features + Alerts & Monitoring	All Pro Features + - Semantic Analysis - Competition Analysis	- White-Labeling - Industry Insights
<u>CONSUMERS</u> TrueRatings for any iTunes / Google Play app	<u>SMALL DEVELOPERS</u> Get alerts when your app rating changes	<u>LARGE DEVELOPERS</u> Slice your reviews into positive / negative chunks & track your competition's apps	<u>ENTERPRISES</u> White-Label TrueRatr for your organization. Gain industry insights

TARGET AUDIENCE

THE EIGHT DEVELOPER SEGMENTS THAT MAKE UP THE APP ECONOMY

Developer segments, sizes and revenues. Clusters shown based on common goals



HUNTERS

Experienced developers building an app business and focused on the money

MOTIVATIONS: Building business, money, self achievement



PRODUCT EXTENDERS

Companies using apps to promote or extend a non-mobile product or brand

MOTIVATIONS: Better products than competition, wide audience,



DIGITAL CONTENT PUBLISHERS

Developer teams using mobile apps to monetise digital content inventory

MOTIVATIONS: Building business, money, creativity

NEXT STEPS

- Build TrueRatr for Business
- Expand Search to include Google Play
- Expand to Multiple Languages
- Identify App Developer Partners & Evangelists to work with & reach Target Audience
- Open-Source current proof-of-concept on Github



THANK YOU!!

- Christopher Hong
- Sachin Roopani
- Greg Tobkin
- Clario Menezes
- Jun-Ping Ng
- Jonathan Dorando
- Cristina Mele
- Peter Andrew

