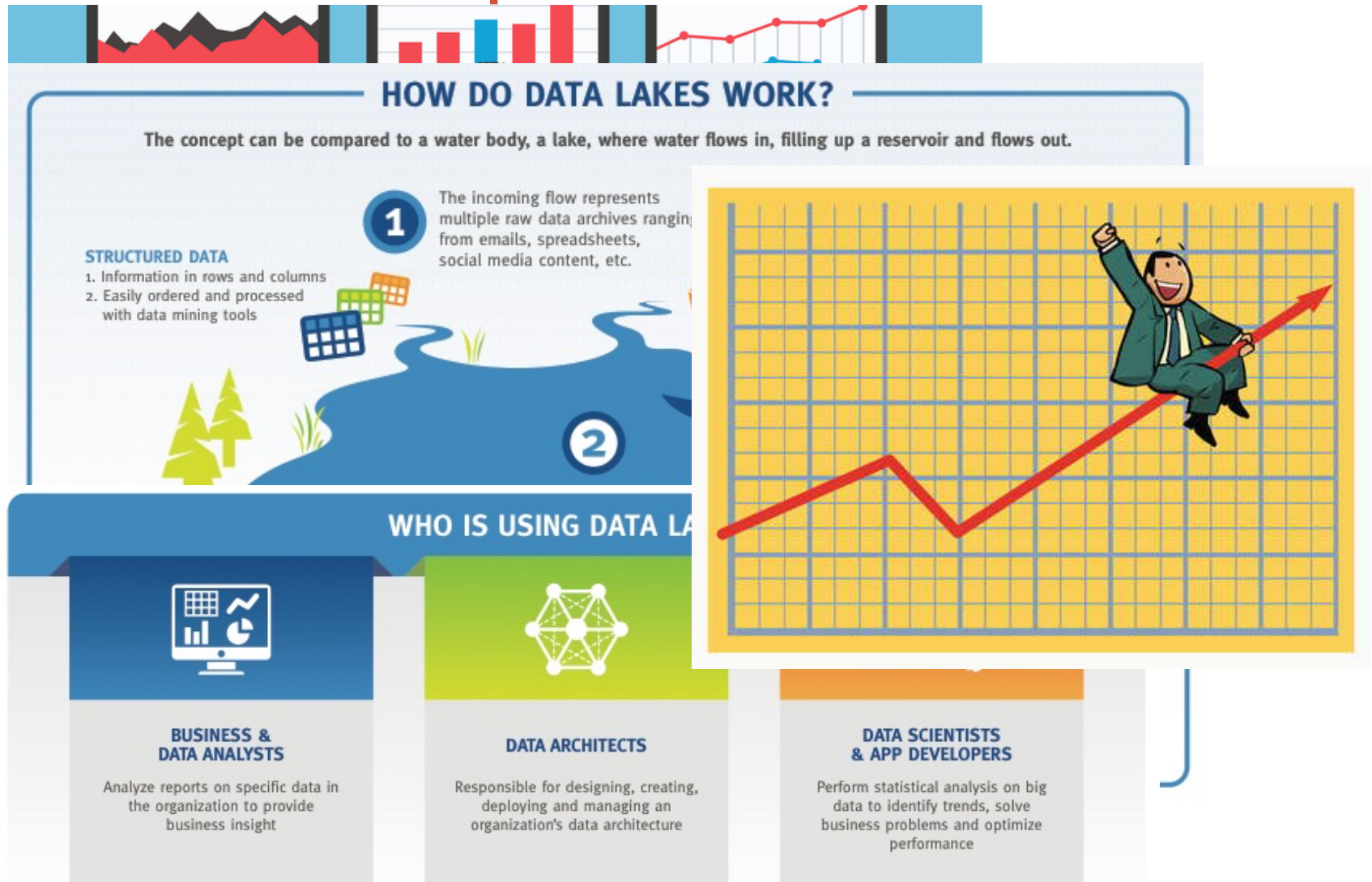


Data-Driven Disruption: Lessons from Silicon Valley

Anand Rajaraman



Data-driven Optimization

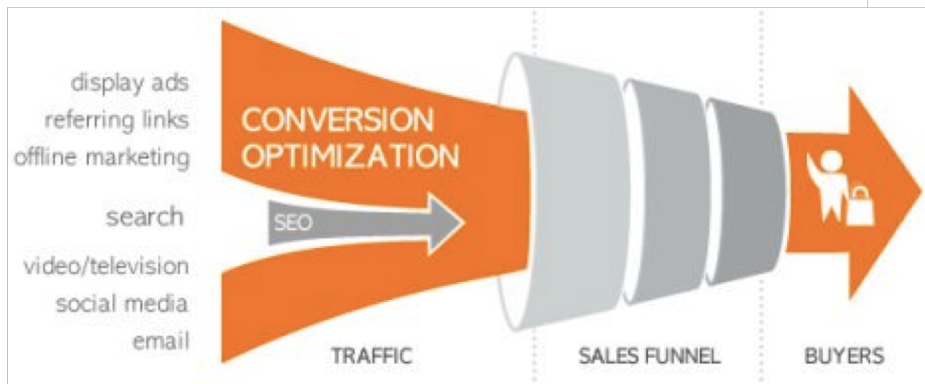


Optimization Opportunities



Supply Chain

Fulfillment



Marketing

Data-driven Disruption

amazon

Walmart

STREAMING VS. CABLE

NETFLIX DOMESTIC SUBSCRIBERS: 31.7M / COMCAST CUSTOMERS: 21.7M



Source: Financial Times / Netflix

[INSIDE.COM]

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STATE OF TELEVISION

Disruption Enabler: Marketing Myopia



Disruption Enabler

HiPPO = Highest Paid Person's Opinion

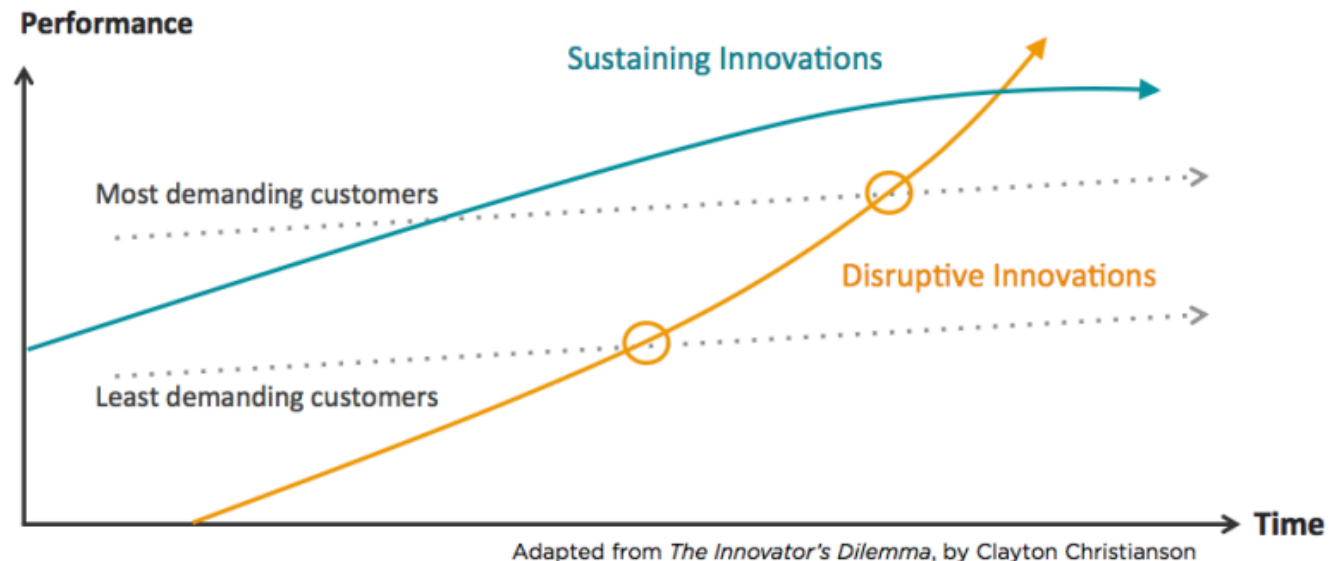
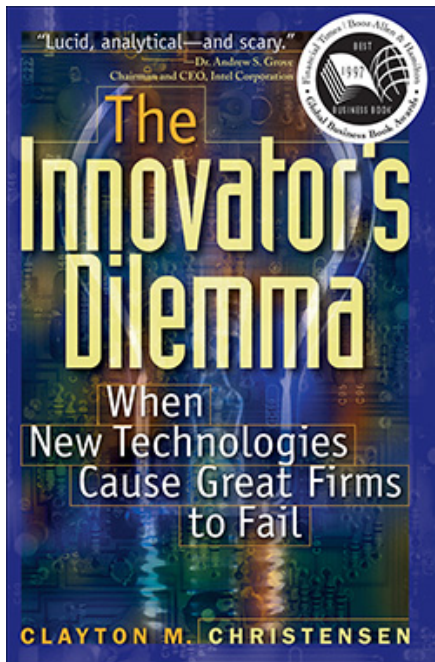


Why does disruption happen?

- Data scientist as advisor not decision maker
 - Domain expertise and experience often win out over data
- Data-driven approach enables a completely different business model
 - E.g., A la carte streaming vs fixed number of channels
 - Cannibalization concerns
- Or requires a different human-machine collaboration model
 - E.g., Lilt for translation

Why does disruption happen?

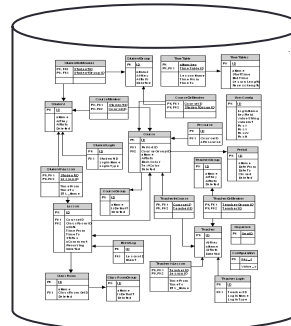
- Classic Innovator's Dilemma with a turbo-boost: **data network effects**
 - Accelerates the pace of disruption



Data Network Effects

Google

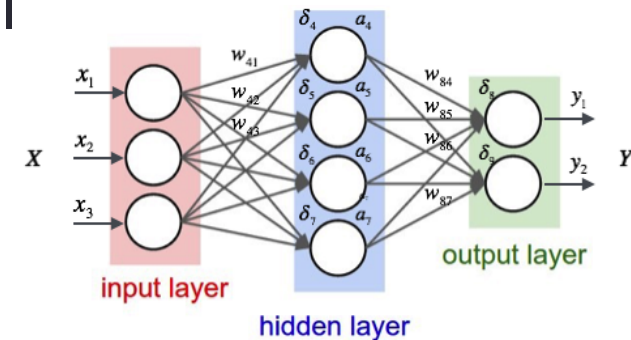
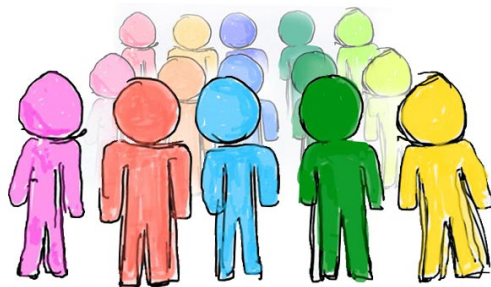
amazon



Data

Product

Model



Disruption Case Study: Venture Capital

- Venture Capital has been an established industry for several decades
 - Process has not changed much since early days
 - VC firms expect entrepreneurs to approach them with pitches
- Some VC firms have tried using data
 - Data scientists in advisory role
 - Not partners who make investment decisions
- High concentration in Silicon Valley
 - And a few other places...

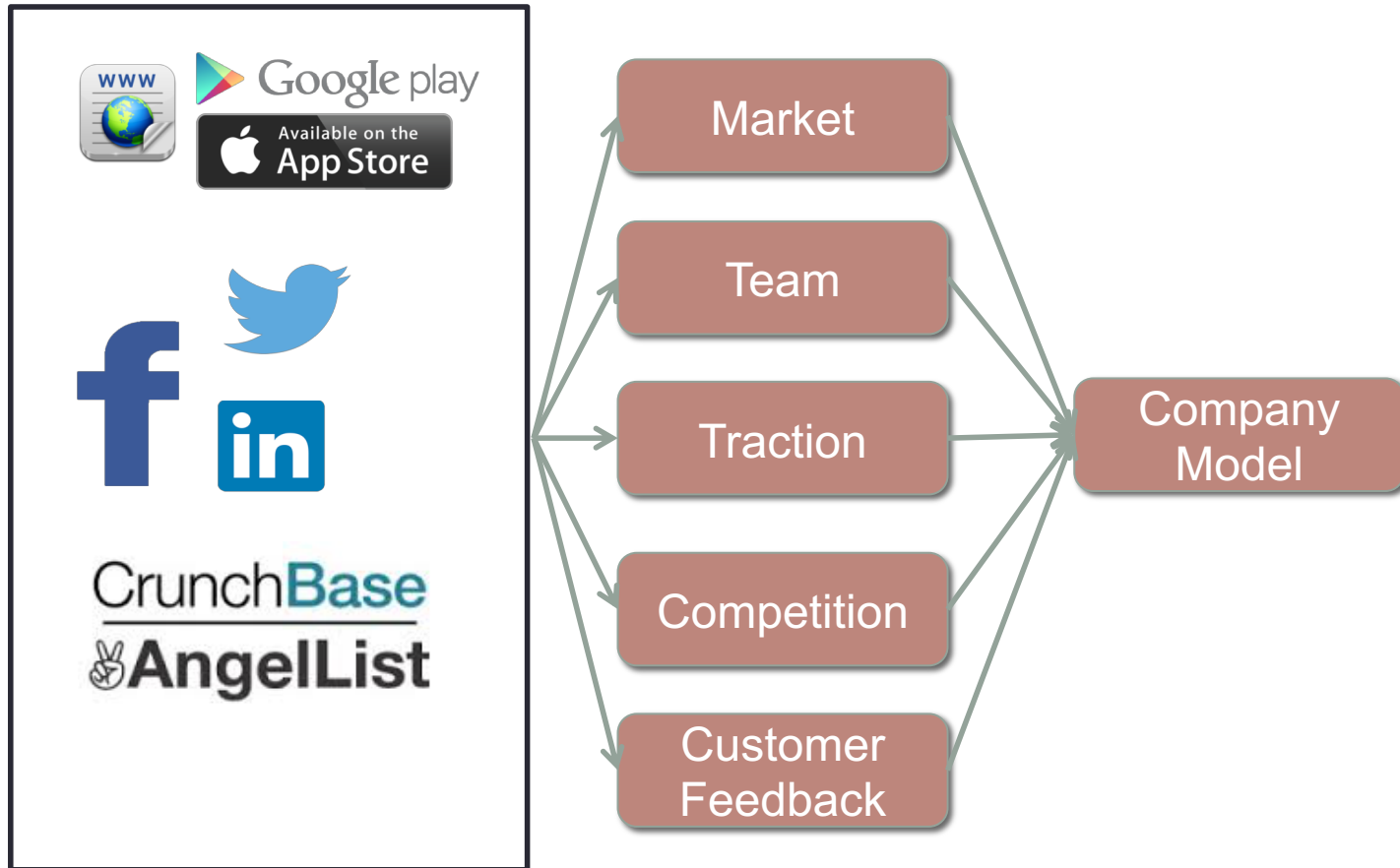
Sets the stage for...



rocketship.vc

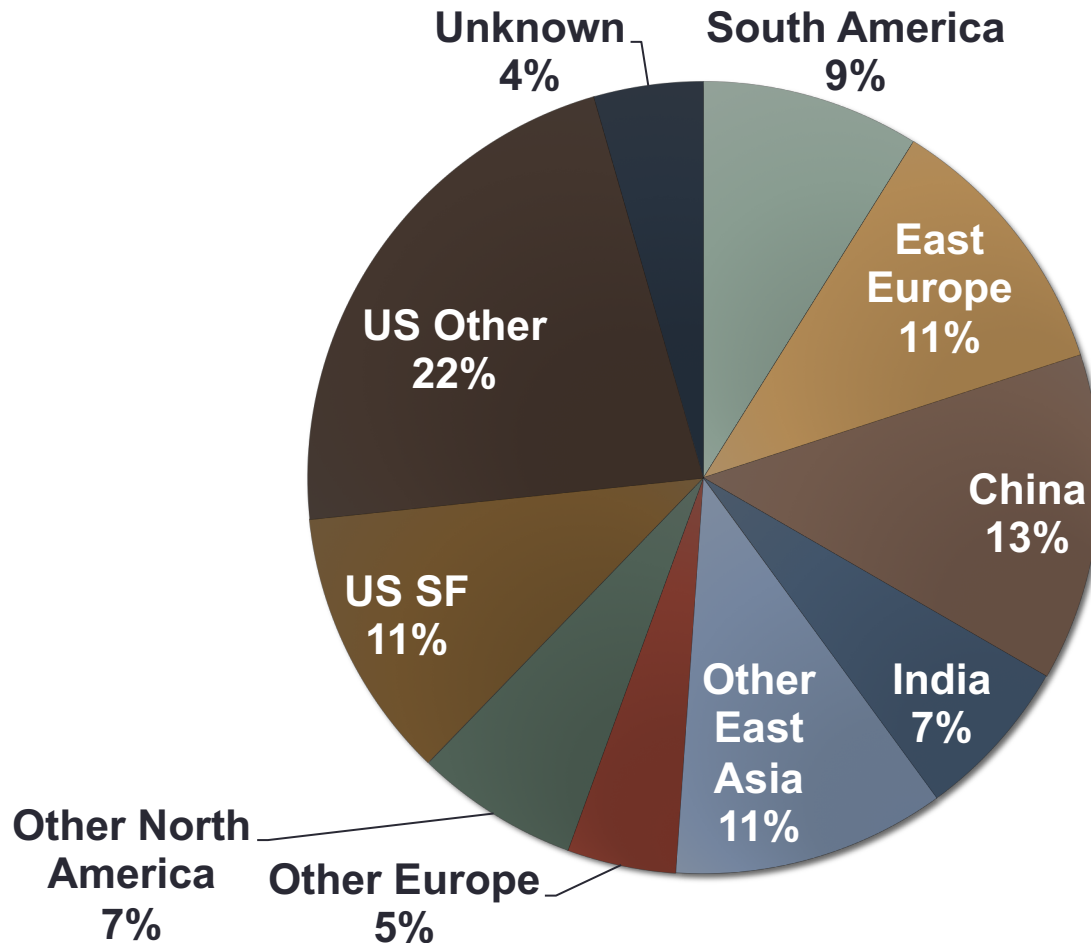
Data-Driven Venture Investing

The Company Model



Business Model Innovation

- Proactively identify interesting companies and reach out to them at the appropriate moment



Optimize or Disrupt?

- ML for radiology?
- ML for handling customer support enquiries?
- ML for cashier-less supermarket checkout?
- ML for drug discovery?

Optimize or Disrupt?

- Key question for every entrepreneur (and researcher too!)
 - Often difference between success and failure
- Hard to answer in general, but look out for disruption cues
 - Established, fragmented industry
 - Slow to adopt latest technology trend
 - Asset-heavy models
- Risk/reward tradeoff
 - Disruption is much riskier but the rewards compensate

Go Forth And Disrupt!

Security

Sciences

Manufacturing

Education

Government

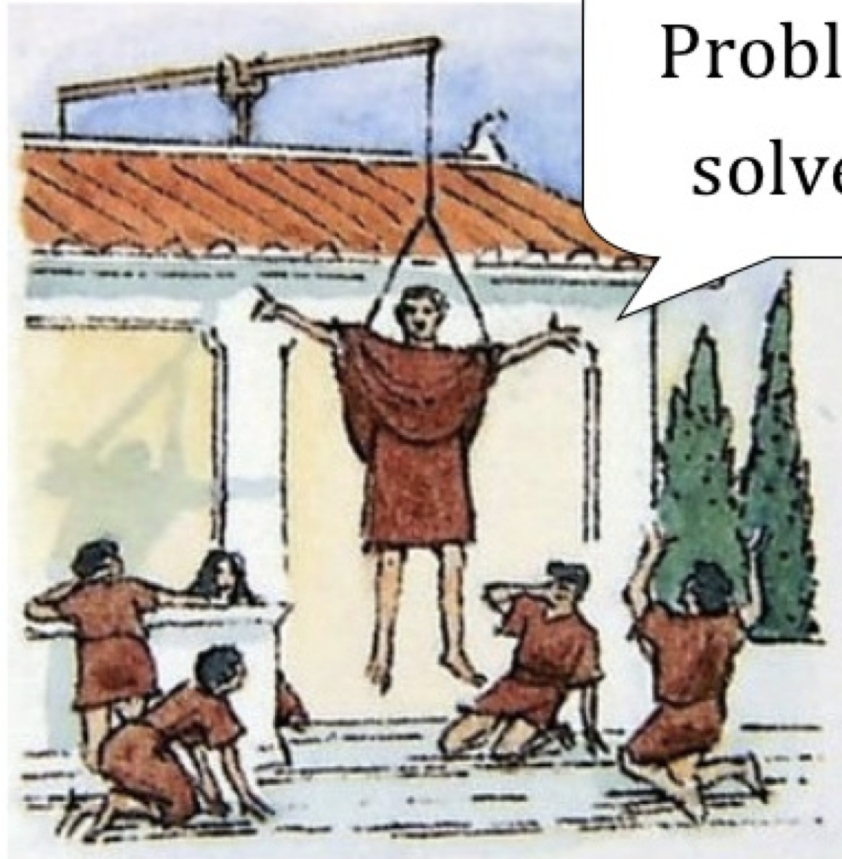
Entertainment

Commerce

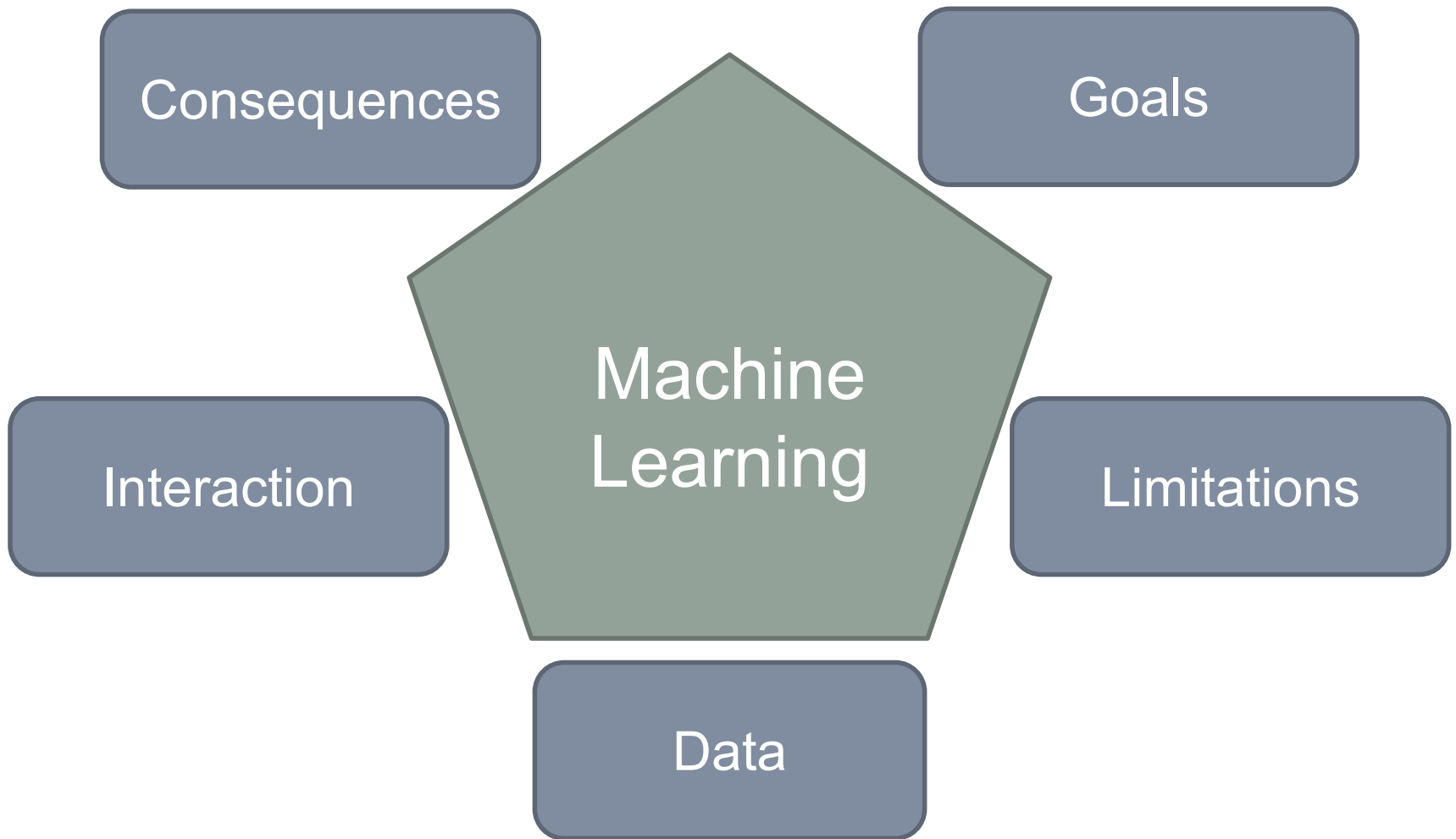


Transportation

Machine Learning as Deus ex Machina



Designing Machine Learning



Thanks!

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