Research and Teaching Overview
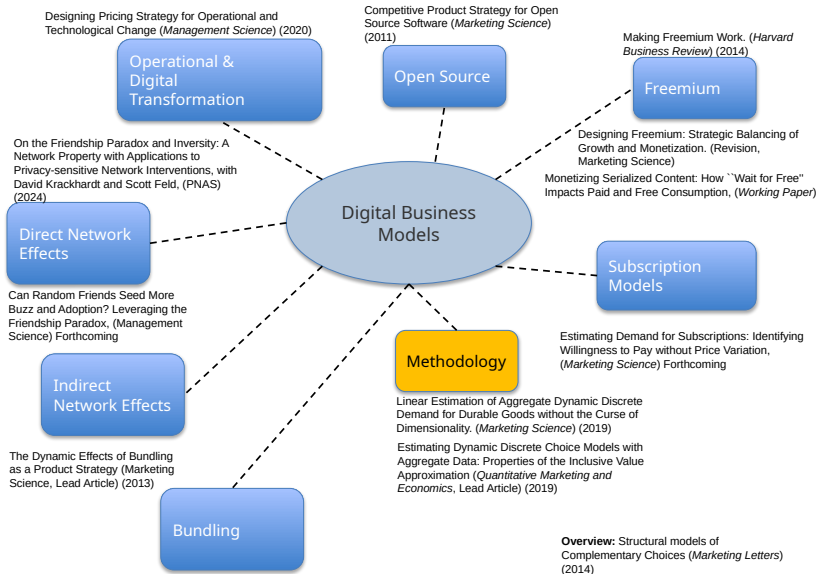
Vineet Kumar

Yale School of Management
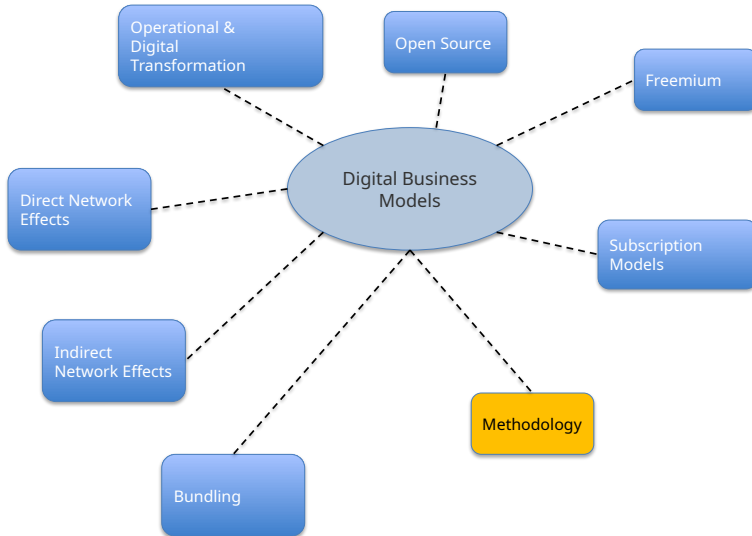
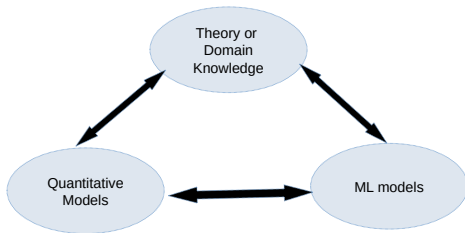# Digital Economy – Business Models

Designing Pricing Strategy for Operational and Technological Change (*Management Science*) (2020)

Competitive Product Strategy for Open Source Software (*Marketing Science*) (2011)

Making Freemium Work. (*Harvard Business Review*) (2014)

Operational & Digital Transformation

Open Source

Freemium

On the Friendship Paradox and Inversity: A Network Property with Applications to Privacy-sensitive Network Interventions, with David Krackhardt and Scott Feld, (PNAS) (2024)

Designing Freemium: Strategic Balancing of Growth and Monetization. (Revision, Marketing Science)

Monetizing Serialized Content: How ``Wait for Free'' Impacts Paid and Free Consumption, (*Working Paper*)

Direct Network Effects

Digital Business Models

Can Random Friends Seed More Buzz and Adoption? Leveraging the Friendship Paradox, (Management Science) Forthcoming

Subscription Models

Indirect Network Effects

Methodology

Estimating Demand for Subscriptions: Identifying Willingness to Pay without Price Variation, (*Marketing Science*) Forthcoming

Linear Estimation of Aggregate Dynamic Discrete Demand for Durable Goods without the Curse of Dimensionality. (*Marketing Science*) (2019)

The Dynamic Effects of Bundling as a Product Strategy (Marketing Science, Lead Article) (2013)

Estimating Dynamic Discrete Choice Models with Aggregate Data: Properties of the Inclusive Value Approximation (*Quantitative Marketing and Economics*, Lead Article) (2019)

Bundling

Overview: Structural models of Complementary Choices (*Marketing Letters*) (2014)

Role of Human Knowledge in Research

ML has typically been atheoretical

- One view of ML – advanced form of *statistical pattern matching*
  - Similar model (CNN) used both for detecting lung cancer (medicine) and for detecting stars (astronomy)
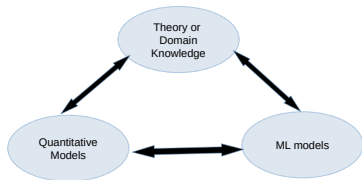
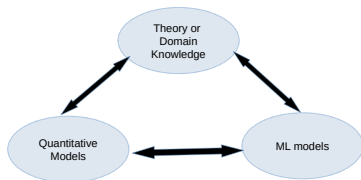### My Take

Our **domain knowledge (theory)** has a lot to add

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Why add domain knowledge?

Can improve predictive *accuracy*, *explainability*, provide *guarantees*

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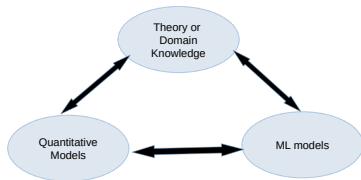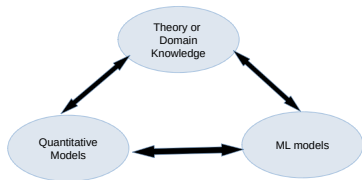- A Theory-Based Explainable Deep Learning Architecture for Music Emotion. *Marketing Science* 44 (1), 196-219

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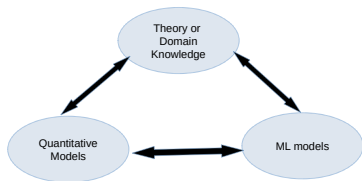Can improve predictive *accuracy*, *explainability*, provide *guarantees*

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- Market Structure Mapping with Visual Characteristics. (Research in progress)