Search, Design, and Market Structure

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Basic search model

- Consumers search to find the lowest price.

- Diamond paradox:
  - All firms charge the monopoly price.
  - No search in equilibrium.
Basic search model + product differentiation

- What happens if products are (horizontally) differentiated?
- All firms charge the monopolistically competitive price.
- Consumers search for the ‘best match’.
Basic search model + product differentiation + product design

THIS PAPER

- Firms can choose product design.

- Designs range from Broad to Niche.
  - **Broad**: Product appeals to many consumers. Consumer valuations are not so dispersed.
  - **Niche**: Product appeals to few consumers. Consumer valuations are dispersed. Some love and some hate the product.
Demand rotation: Mean preserving spread

Price vs. Quantity

- Niche product
- Average consumer
- Broad product
Product design that appeals to few consumers

Discussant: Konstantinos Serfes (Drexel)
An even more ‘extreme’ product design makes the firm better off

The firm gains by providing more value to its marginal consumer

Discussant: Konstantinos Serfes (Drexel)
Product design that appeals to many consumers

Price

Quantity

Average consumer

Marginal consumer

Discussant: Konstantinos Serfes (Drexel)
A less ‘extreme’ product design makes the firm better off

| Price | Quantity | Average consumer
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Discussant: Konstantinos Serfes (Drexel)
Overall

- Profits are U-shaped with respect to product design.
- Firms choose either a niche or a broad design.
Firms differ with respect to quality

- A high quality firm is more likely to choose a broad product design.
  - Due to the strong appeal of the product, it is more likely that the marginal consumer is below the average consumer.

- Low quality firm is more likely to choose a niche product design.
  - Given the low quality, it is more likely that the marginal consumer is above the average consumer.

- Both types of designs can coexist in the market.
Search costs decrease; product design fixed

- **Superstar effect**: Market share of high quality firms increases.
  - More intense consumer search benefits the high quality firms.
  - Low quality firms lose market share.
Search costs decrease; firms choose product design

- More (low quality) firms offer better-suited (niche) designs.
- This softens price competition, allowing low quality firms to sell more.

Discussant: Konstantinos Serfes (Drexel)

Search, Design, and Market Structure
Longtail effect: Market share of low quality firms increases.

By allowing firms to change product design, the superstar and long-tail effects arise simultaneously.

Nice result! Empirically relevant!
Some thoughts

- Why demand rotation?

- Product design seems like a ‘black box’.
  
  - If there are $n$ product attributes, each niche firm should ‘focus’ on a different attribute.

- Does it matter?

- Does it constraint the longtail effect, if there are many more firms than attributes?
Some thoughts, continued

- How does it relate to product customization?
  - Can we view the niche design as a product customization strategy?
  - The firm provides a technology that allows consumers to design a product closer to their ‘ideal’ design.

- Multiproduct firms?
  - Does each firm have incentives to offer more products (ranging from to niche, or just broad and niche) when search costs decrease?