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Lecture 3 Markets and Industries

Who I am…

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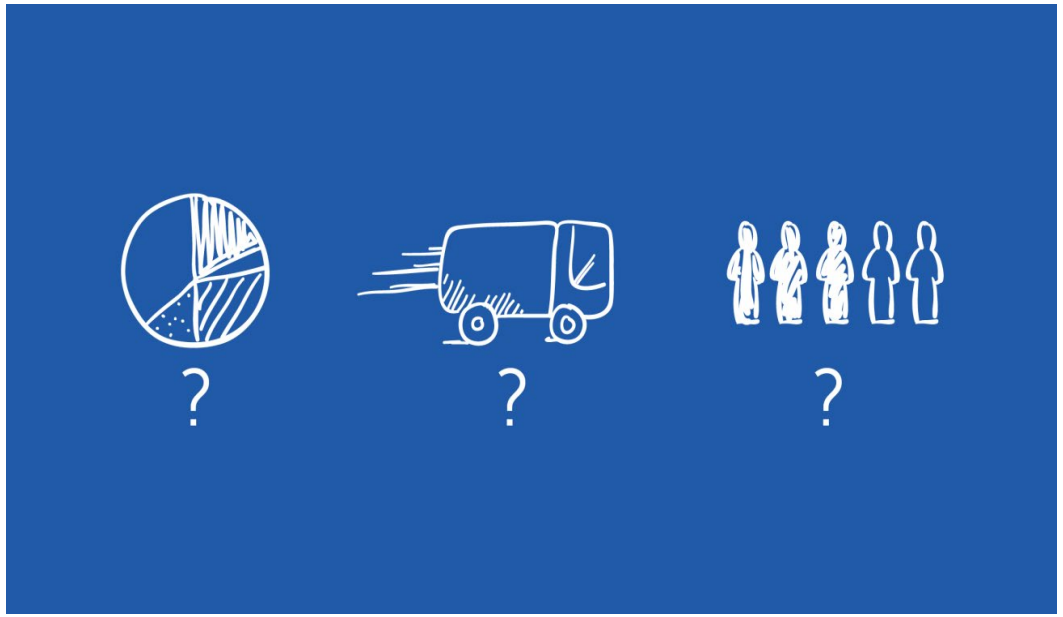
Startups in the Medical Sciences

The Bridge Between Lab and Industry

Market vs Industry

Market is WHO you will sell your product to



Industry is a GROUP of companies who sell similar products/services

Who's your Client?

Healthcare Providers – Purchasing decision over prescription drugs / medical devices

Patients – Purchasing decisions over OTC drugs / medical devices

Research Institutions – Purchasing supplies and software pertaining to the lab

Hospitals & Government – Purchase everything via contracts, rarely form direct manufacture purchasing

Privatized Companies – Purchase via suppliers under determined contracts

Basics of Market Analysis

Analysis enables us to identify and target customers, understand their buying patterns to help develop price points

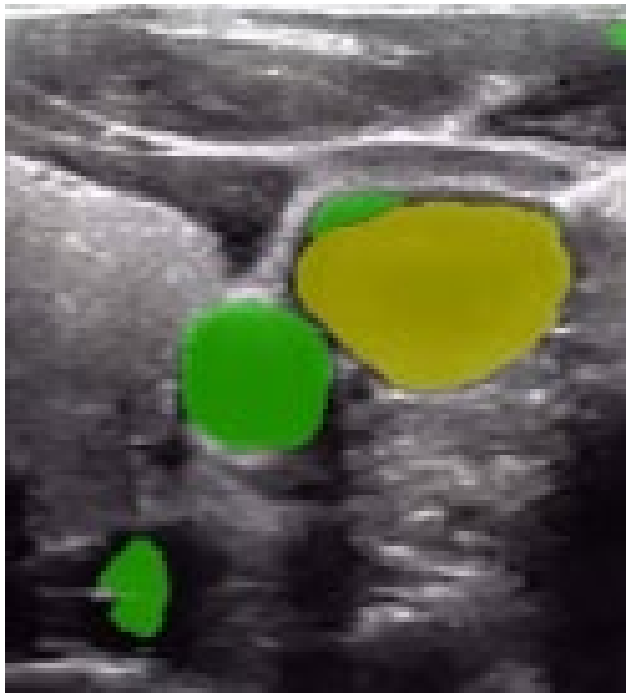
Customer Types in Life Sciences:

- Healthcare providers
- Patients
- Research Institutions
- Hospitals & Government
- Privatized Companies
  - Pharma, Biotech, Specialized practices

Initiating Market Analysis

Let's say we have a novel AI strategy for tumor-detection from ultrasound imaging...

1. Who will buy our product?
2. Any competitors we should be worried about?
3. Where can we see the product being used?
4. How would we charge for this?



Initiating Market Analysis

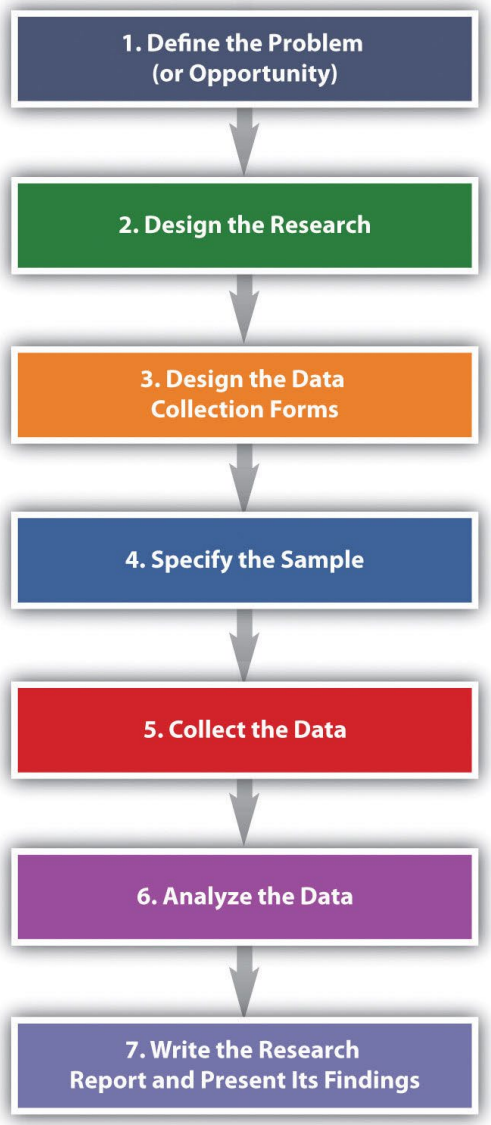
Answering those 4 questions has provided us a comprehensive understanding of our market!

1. Who will buy our product? **Customer Identification**
2. Any competitors we should be worried about? **Market Share**
3. Where can we see the product being used? **Market Trends**
4. How would we charge for this? **Price Points**

Steps of Market Analysis

1) Know your purpose
2) Research the **Industry**
3) Identify target customers
4) Understand the competition
5) Gather & Analyze data
6) Compile and Create **Internal Strategy**

We will touch on this topic more in the next lecture!



Market Sizing

Estimating the volume or value of a specific market

- Understanding the potential demand for a new medical device or drug
- Sizing for AI in medicine is almost impossible right now!

Methods:

Top-Down: Starting with a large demographic and narrowing it down to your target market.

Bottom-Up: Starting with a small sample and extrapolating to the larger market.

Market Segmentation

Dividing a market into sub-groups with similar characteristics

- Sub-groups exist such as oncology therapeutics, mental health resources, rare disease research, emergency and trauma supplies…

Types of Segmentation:

Demographic: Segmenting based on age, gender, income, etc.

Psychographic: Segmenting based on lifestyle, behavior, etc.

Geographic: Segmenting based on location.

Behavioral: Segmentation based on occasion or benefits perceived by consumer

Market Growth Potential

The ability of a market to grow over time, introducing CAGR…

- Compound Annual Growth Rate – Used to forecast the growth of a market

$$\mathrm{CAGR} = \left(\frac{V_{\mathrm{final}}}{V_{\mathrm{begin}}}\right)^{1/t} - 1$$

V_{begin} = beginning value

V_{final} = final value

t = time in years

Factors for growth:

Market Trends: Current trends that might affect growth.

Innovation: How innovation can drive market growth.

Regulatory Environment: How the regulatory environment can impact growth.

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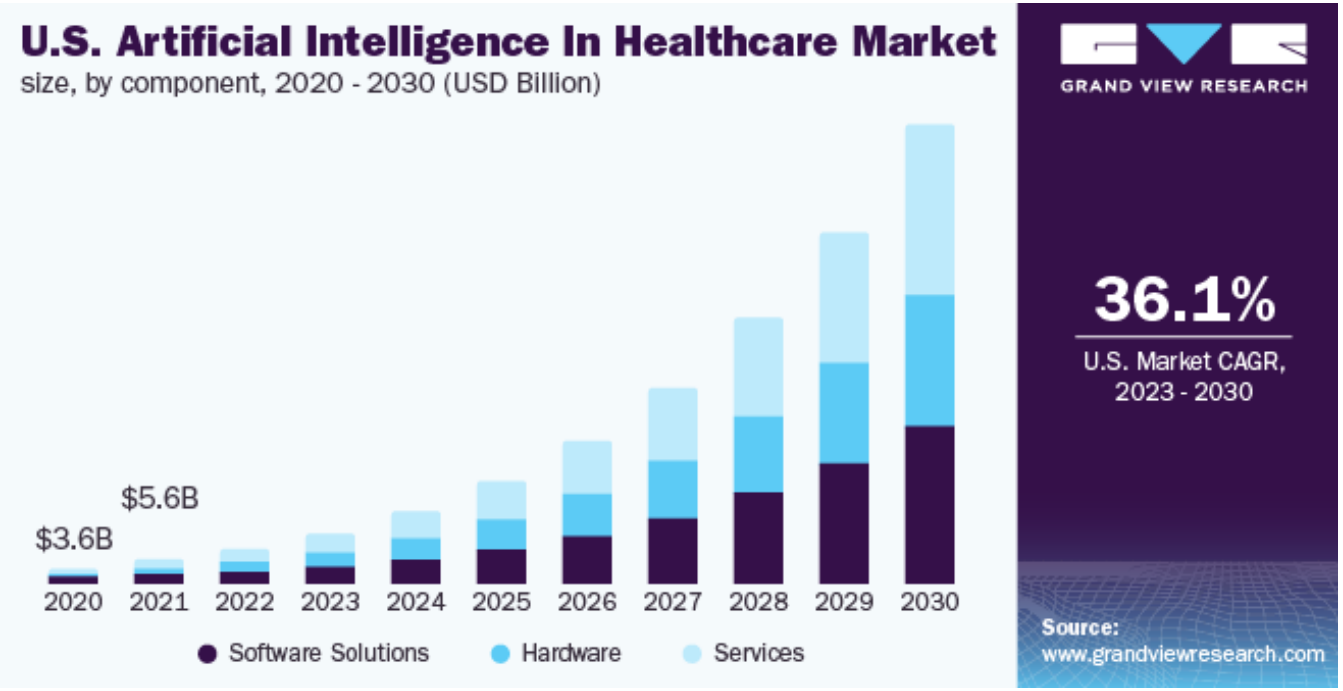
Estimating Market Size and Growth

Market size = Number of target users x purchases expected in a given period.

What about AI in Healthcare?



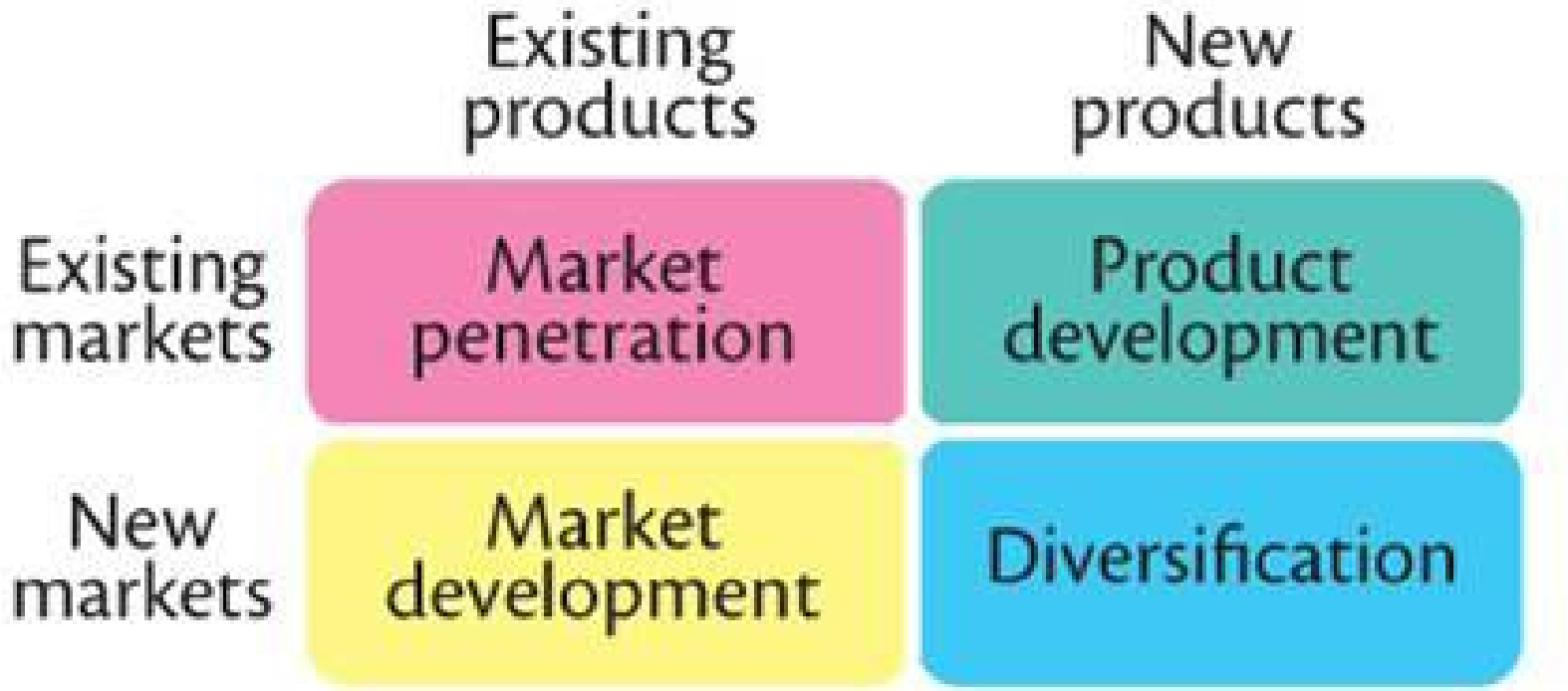
Market Structure - Industries

Market Share – Percent of total sales for a company within an industry

Market Penetration – Percent of target customers you sell to compared to compared to the total customers in the industry

Product Market Expansion Grid

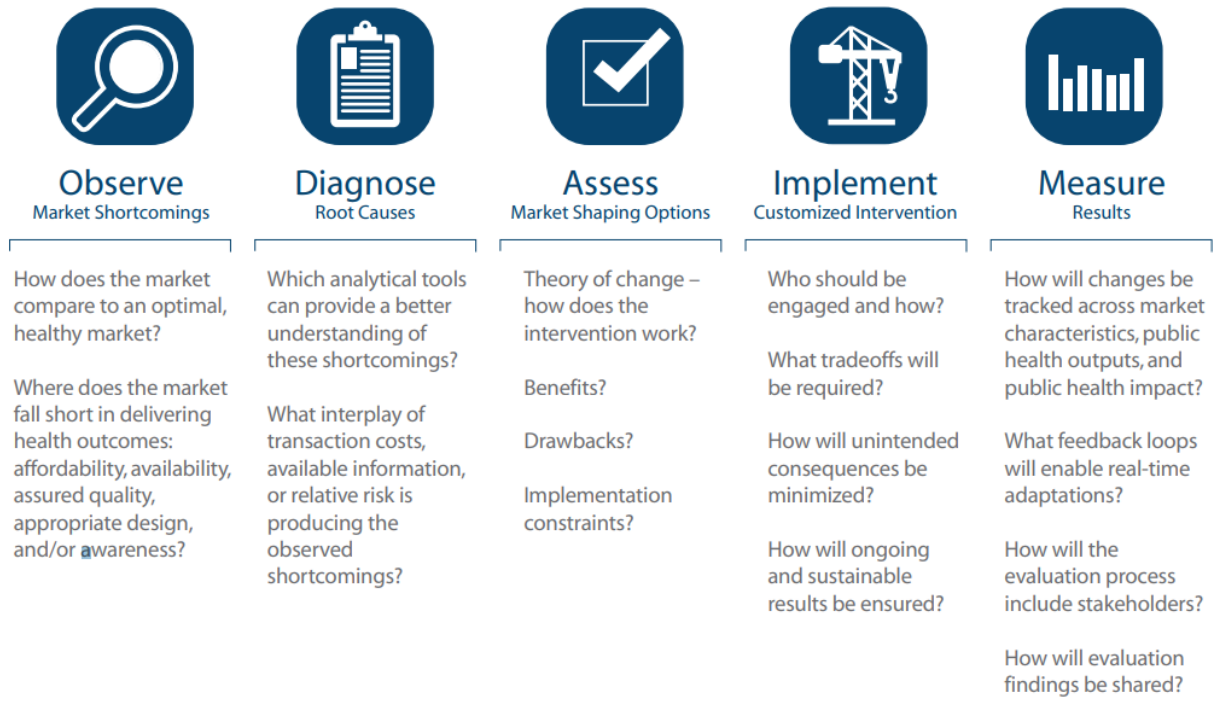
What is the businesses current alignment with their product mix?



Market Shaping

Influencing and Constructing markets to improve their ability to increase their accessibility

- Maximize public health impact
- Improve sustainability



Great Resource!

What is Market Access?

Ability for a company to sell goods and services across borders

- Market access correlates to patient access

Market access is a complex environment with many regulators

- Administrations (FDA, Health Canada, etc.)
- Procurement (Suppliers & Government)
- Key Opinion Leaders (Healthcare providers)

Now moving on to Industries…

Industries are collaborations of companies that breed competition and fight for **market share** and **market penetration**

Pharmaceutical / Biotechnology Industries are

- Dynamic
- Rapid Growth (CAGR)
- Potential for High profits
- Lastly, **Tight Barrier of Entry**

Barrier to Entry

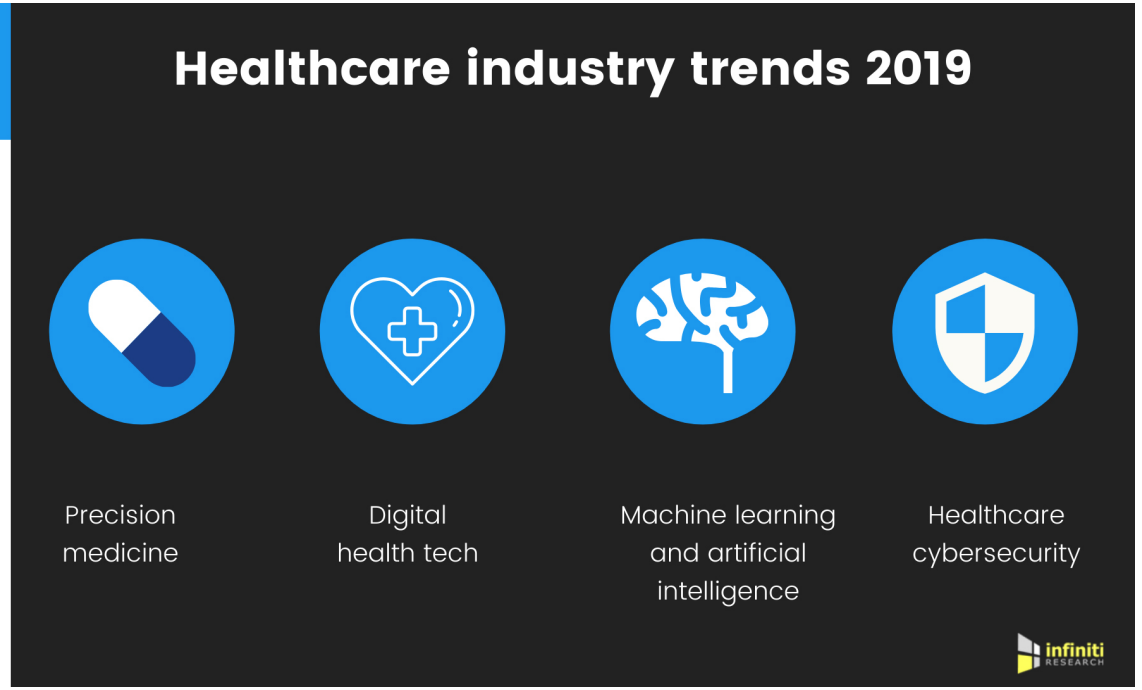
Health Canada/FDA – intense regulatory body with strict approval criterion

Costs of R&D – Require the need for funding via investors and public grants

Intellectual Property – Protect your invention through patents, very costly and time consuming to apply and maintain status

How do we overcome these barriers?

Industry Trends

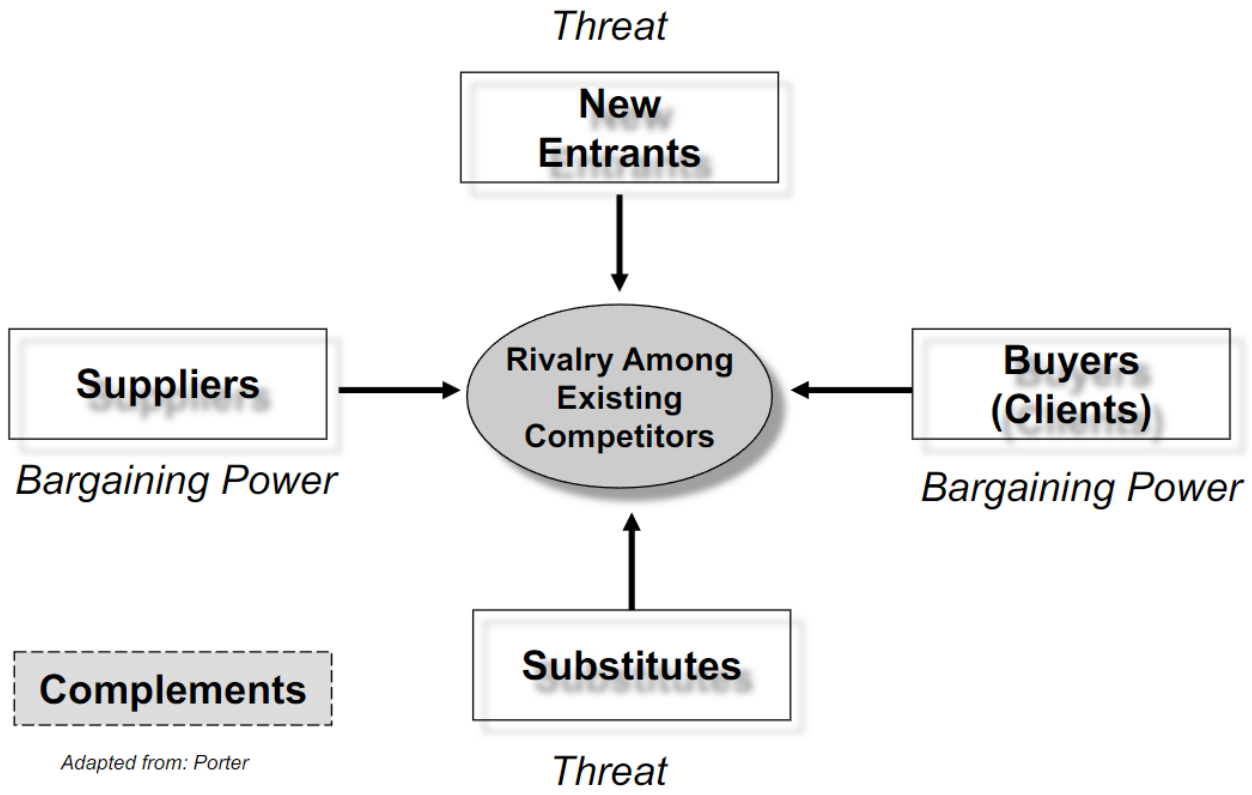


Changes in an industry due to…

- Changes in customer behavior
  - Wants vs Needs
- Changes in regulation
- New innovations
- Increase / Decrease in funding
  - Funding can come from government, private equity, etc.

Porters 5 Forces

To assess the **competitive environment of an industry** based on threats to the industry and bargaining power of stakeholders



End of Lecture 3

Next up Lecture 4: Business Plan and Teams