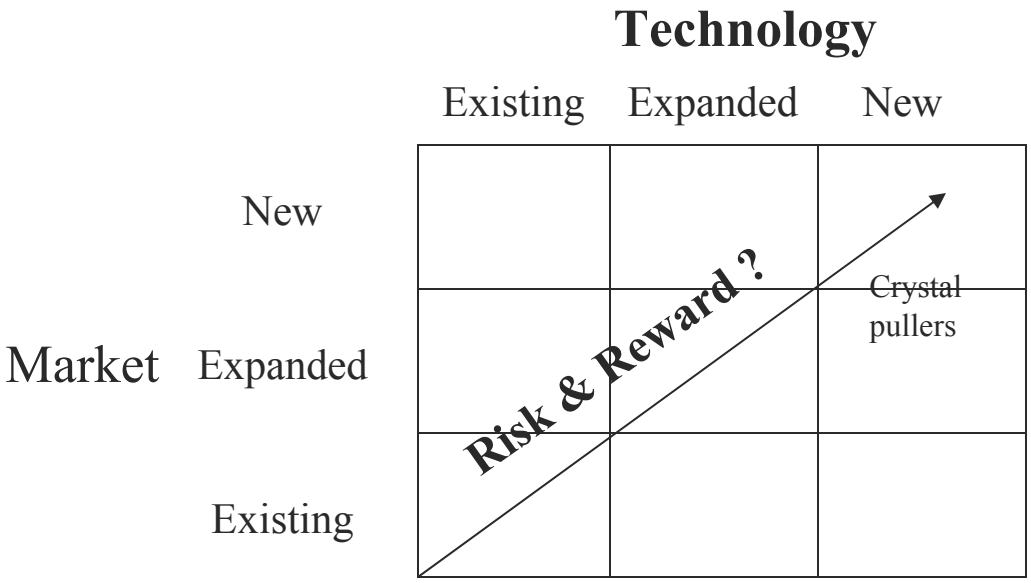
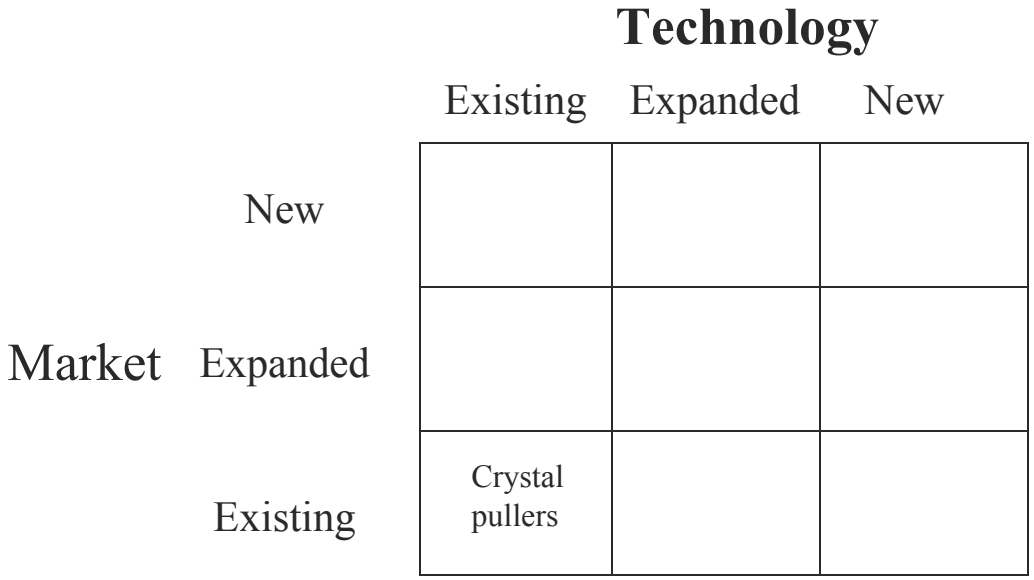
4

Technology Commercialization and Global Environment

Technology Market Matrix

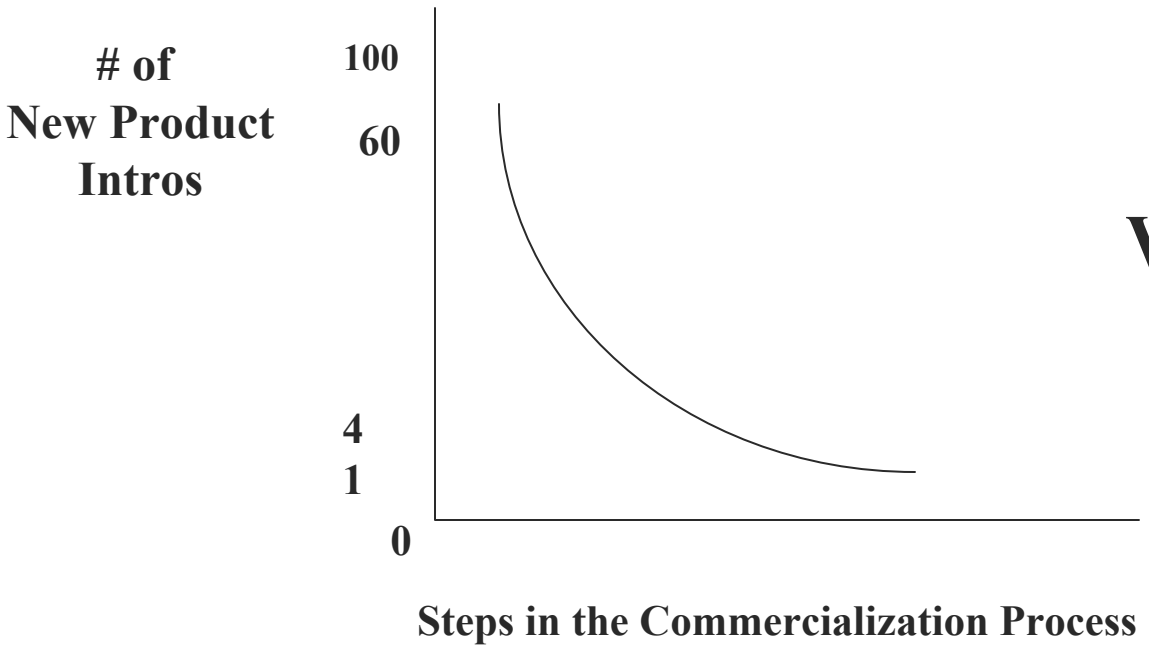


The Firm



The Competitor Composite

Innovation Win Rate



Why do firms Worry When New Product Success Rate Too High?

What does it say about Capabilities? Innovation Portfolio?

"*Rule of Thumb*" Costing

Take the sales price of a good as 100%. The actual percentages vary by category and industry. But approximate values are:

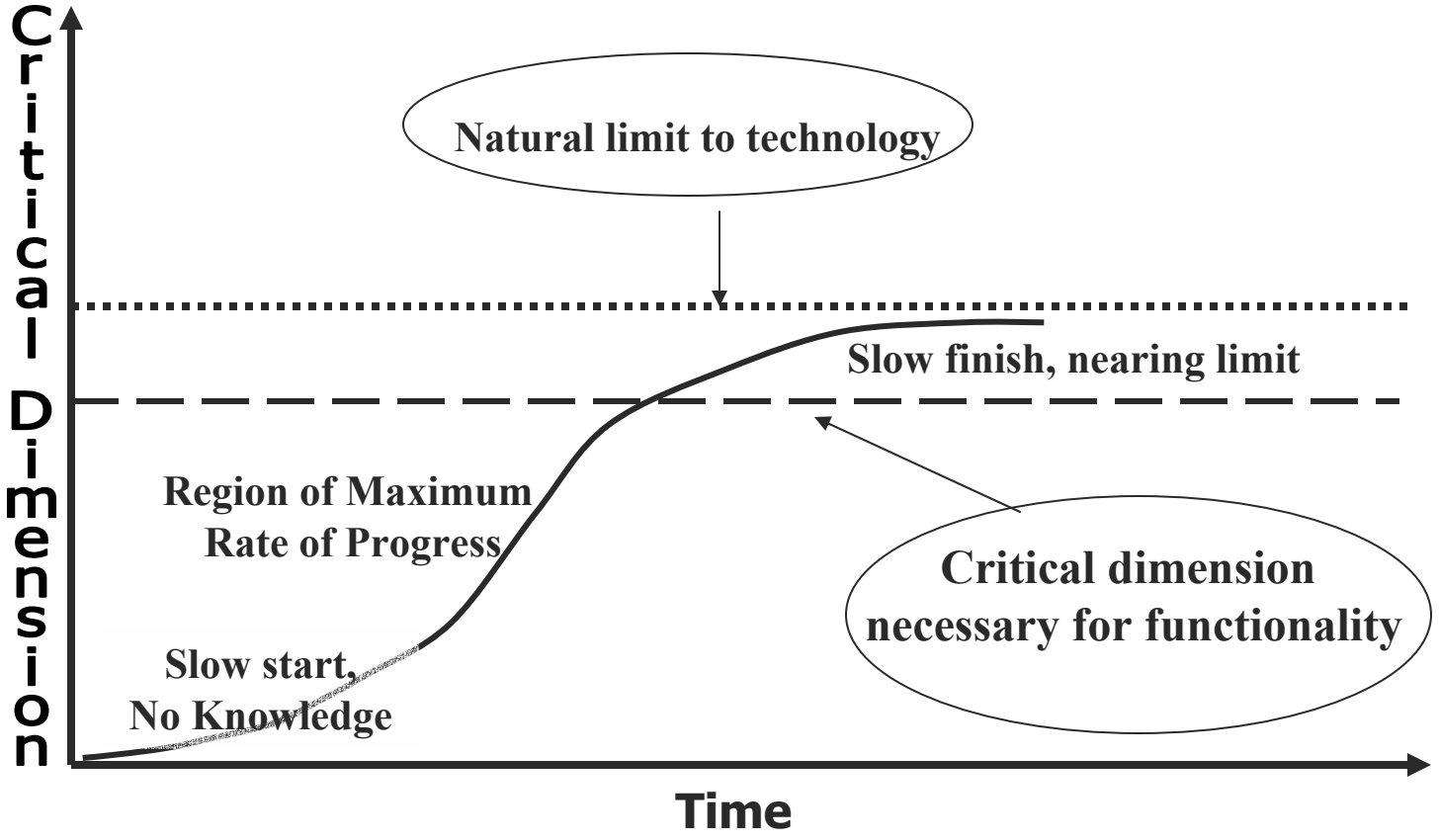
- 15-40% cost of the goods
- 15-40% labor
- 15-35% wholesale price
- 25-50% Gross margin
  - Ex. What are the capital requirements if retail price $2,500
    - manufacturing cost 70% $1,750
    - materials cost 50% of Man. Cost or $875

Licensing and Marketing Technologies

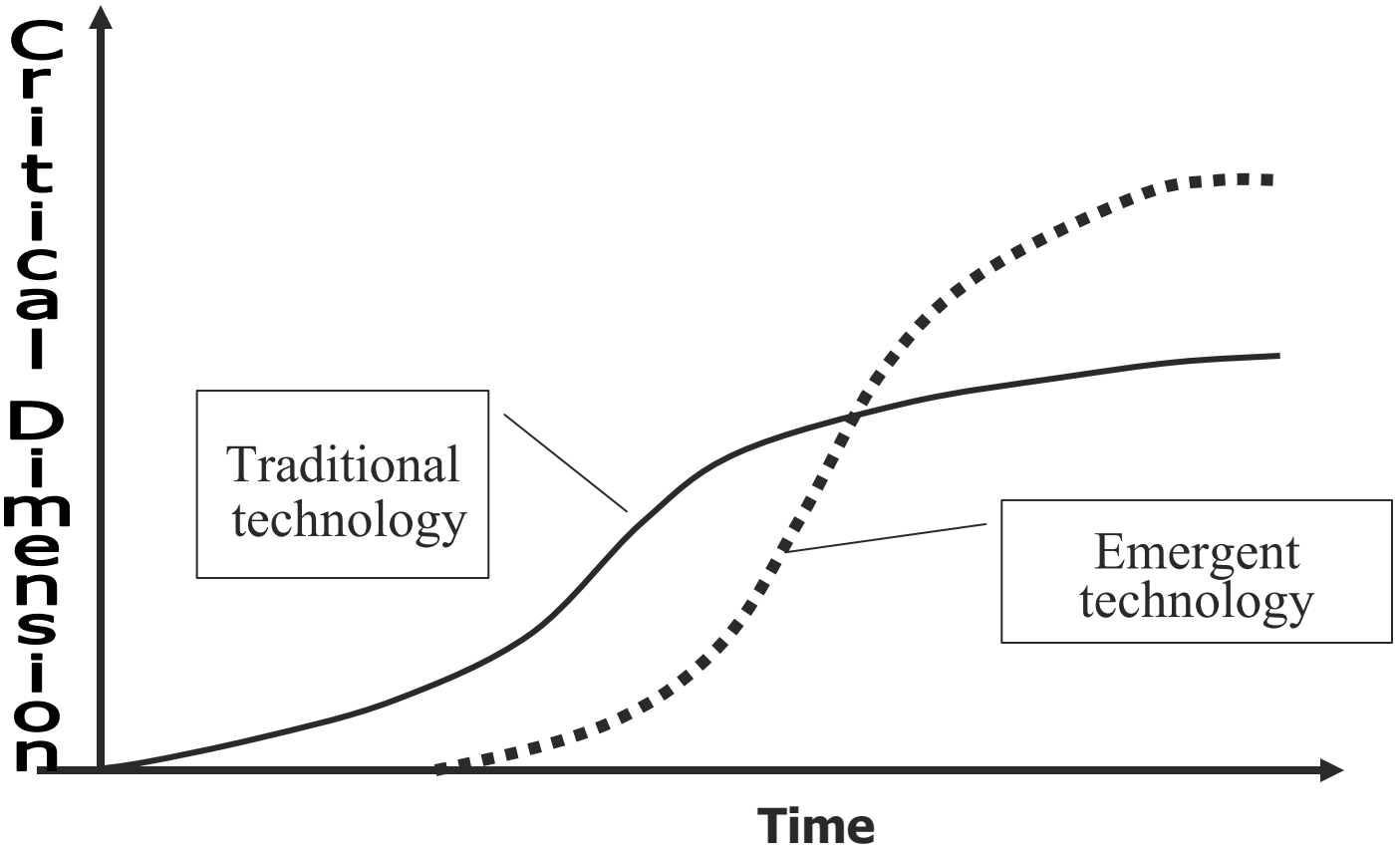
Deriving Value from technology

1. Full Commercialization (Internal)
2. Strategic Partnering
3. Licensing

Technology Lifecycle

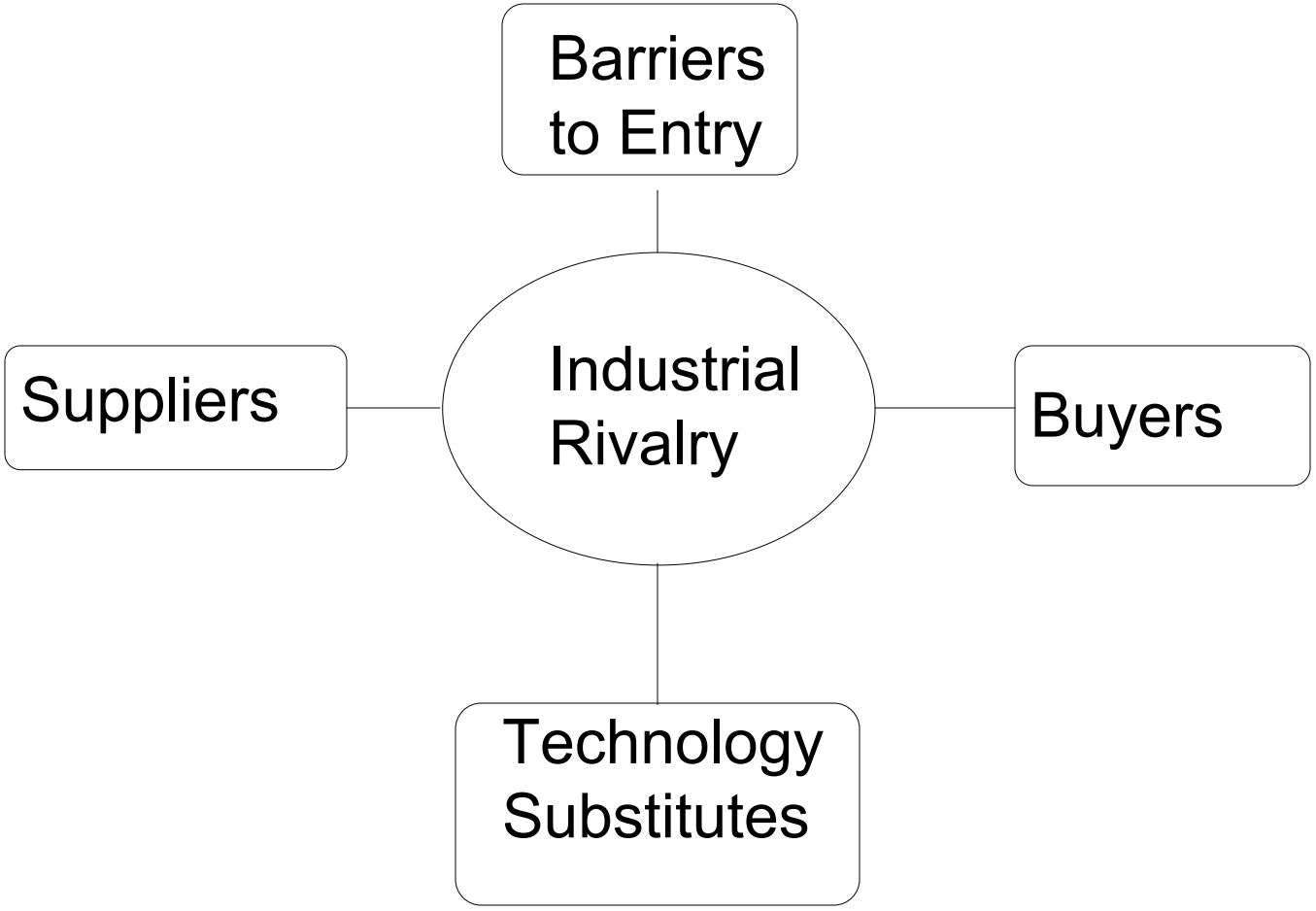


Competitive Technology Lifecycle



Ex: Vacuum tubes v. transistors
: Sail v. steamships

Technology affects all Forces Driving Industry Competition



Sustaining Versus Disruptive Technologies

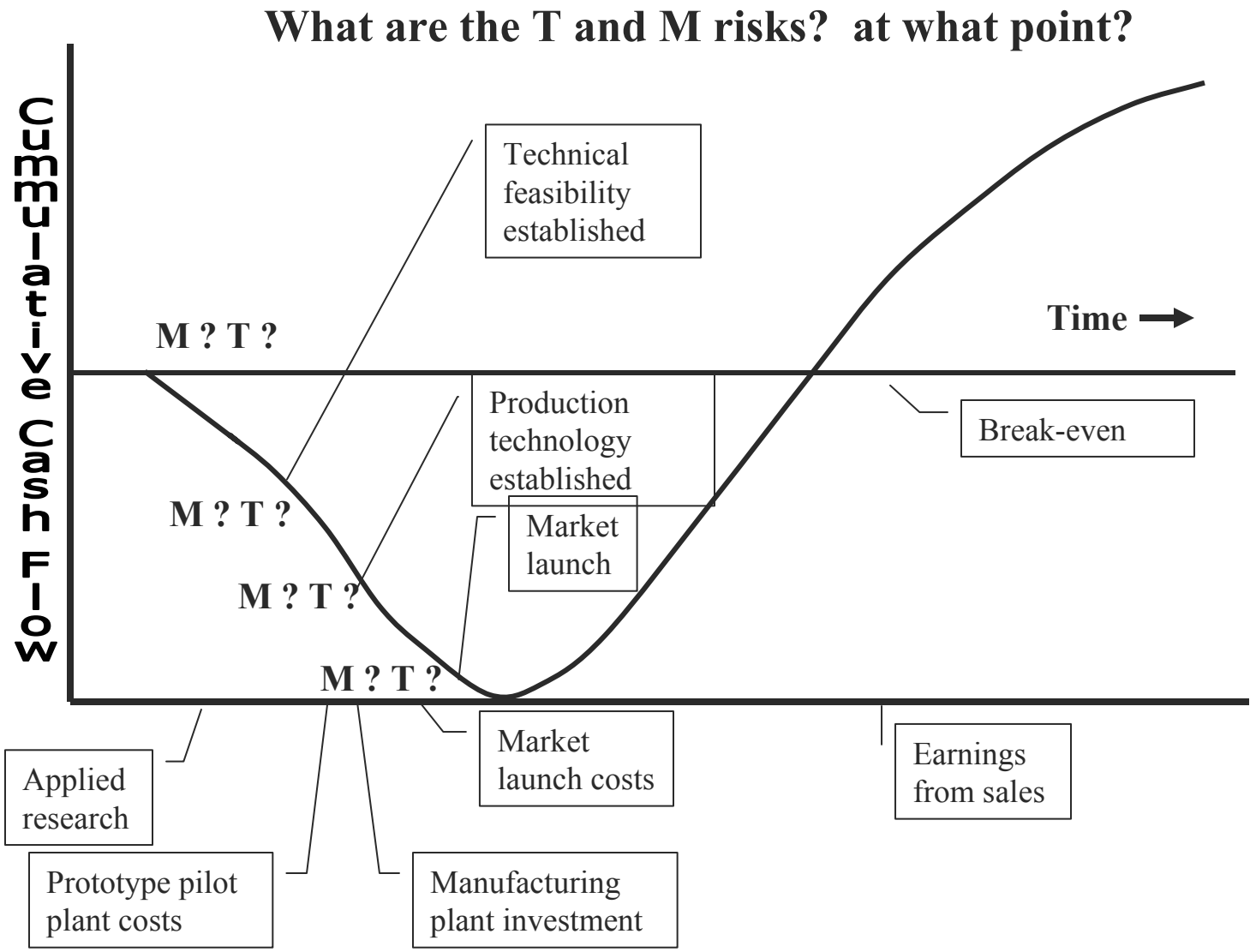
Sustaining

- Support Current Industry Capabilities and Competencies
- Support Current Firm Capabilities and Competencies.

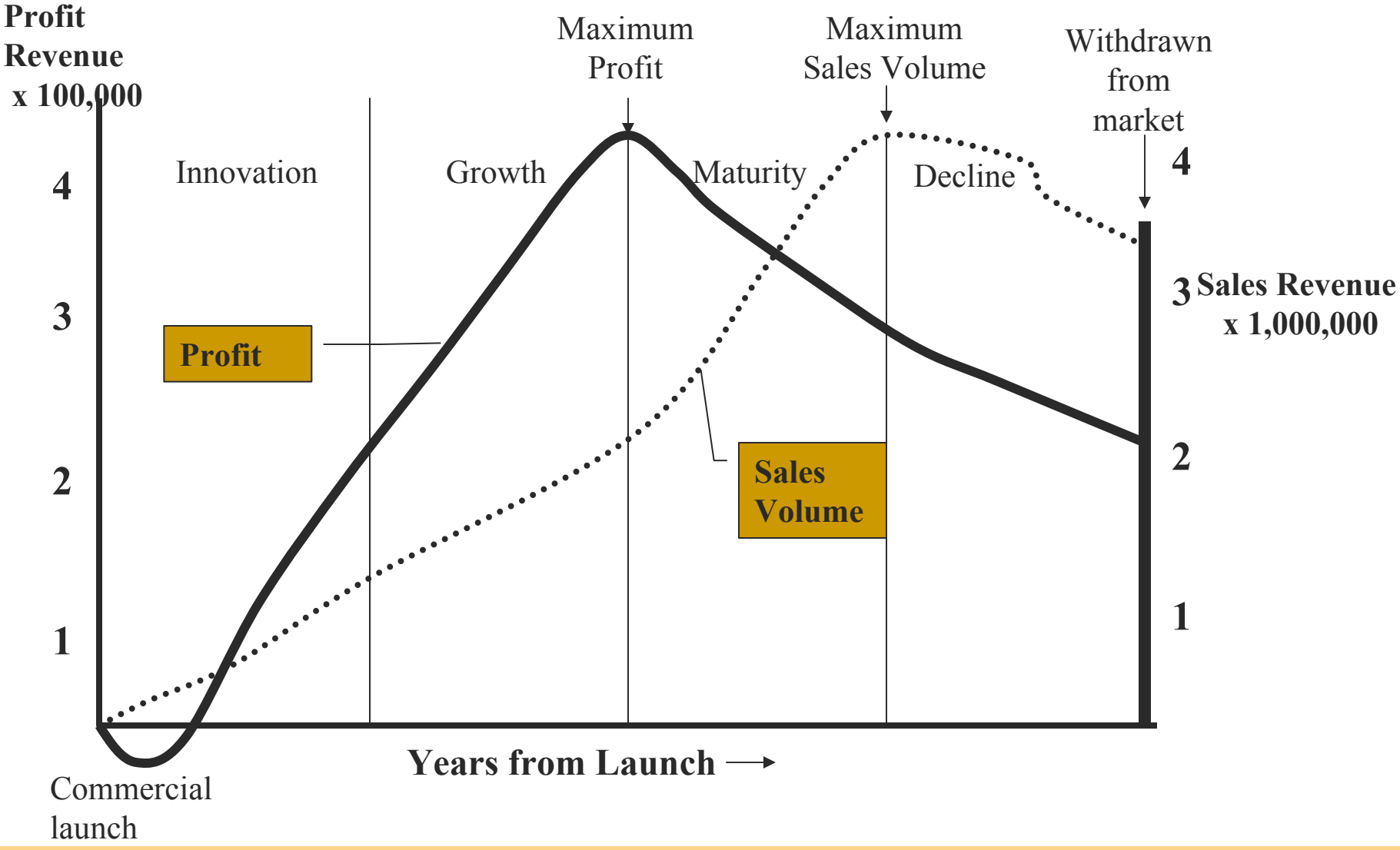
Disruptive

- Exogenous Technologies to Any Industrial Setting
- Technologies That Do Not Find Support in the Firms Current Technological Portfolio

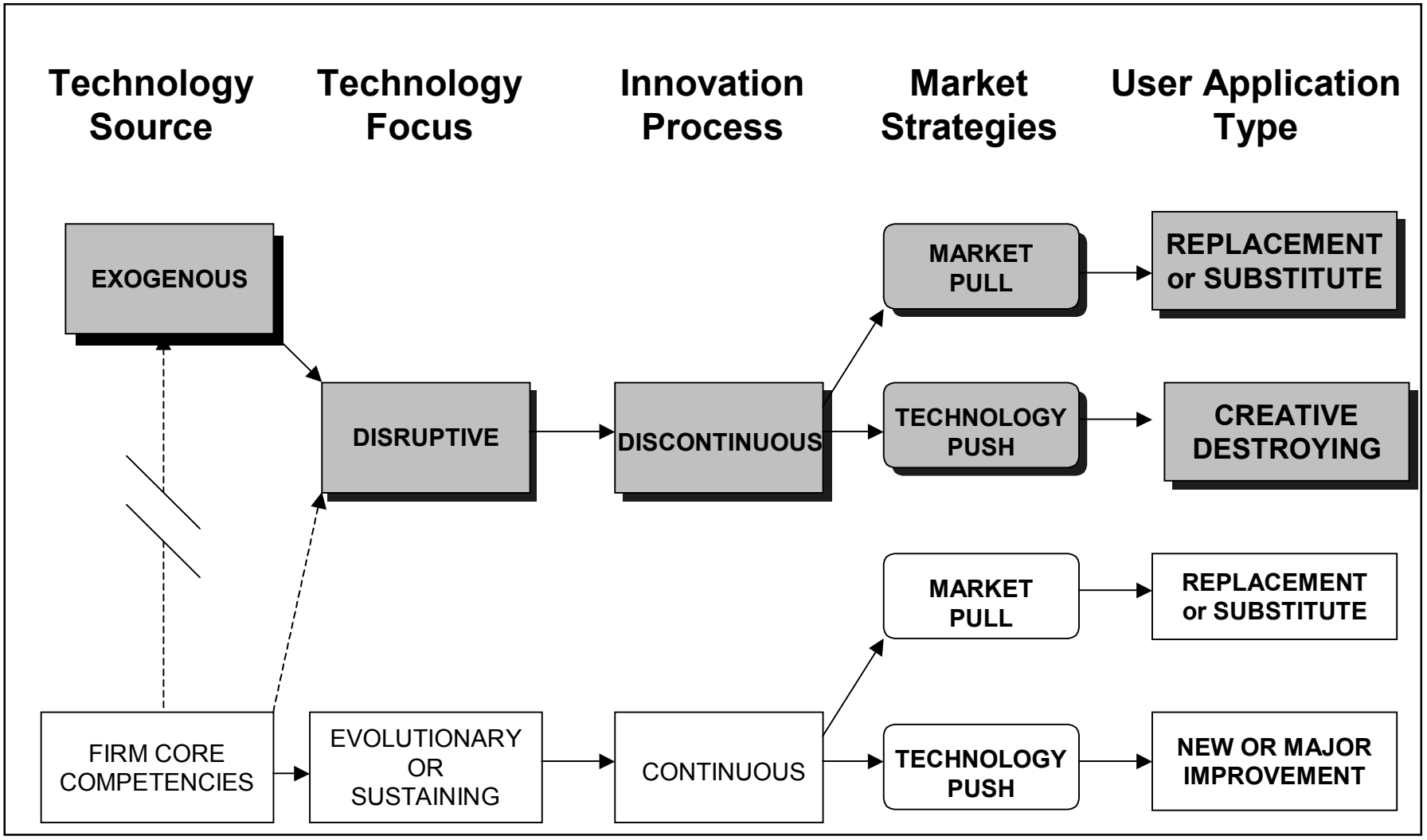
Cumulative Cash Flow Diagram



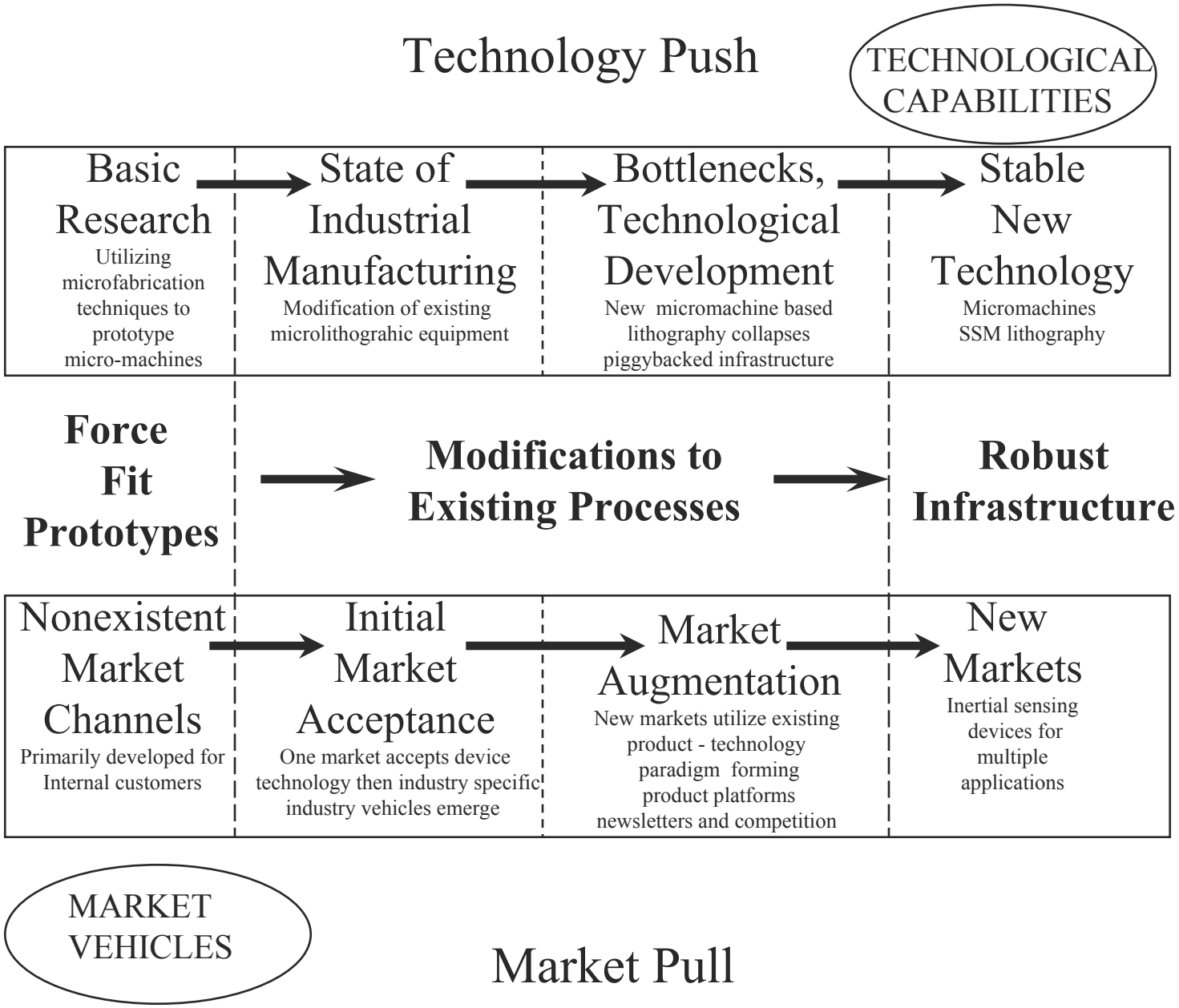
Profit and sales volume
- life cycles for a typical product



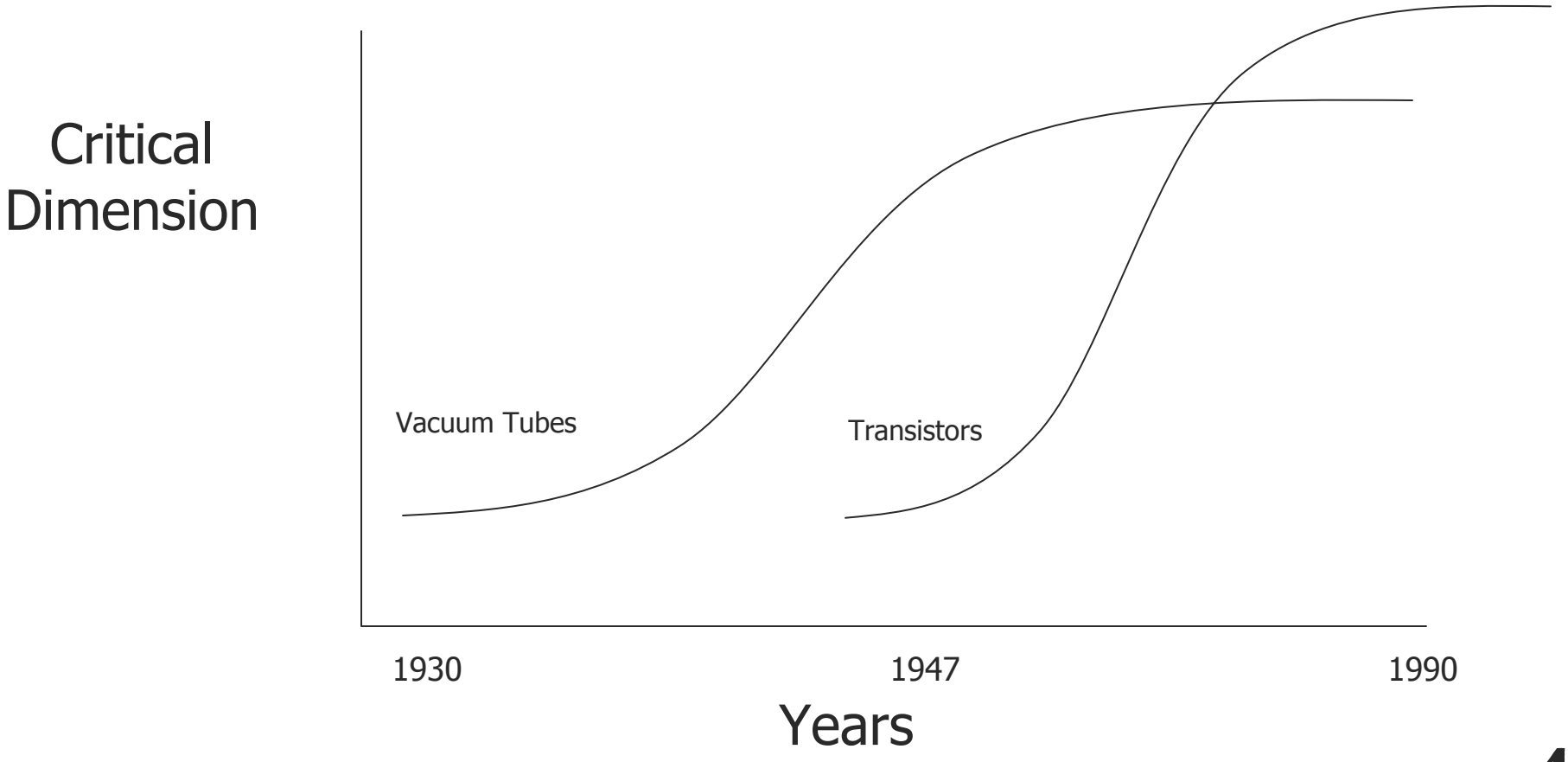
WALSH AND KIRCHHOFF DISRUPTIVE TECHNOLOGIES MODEL



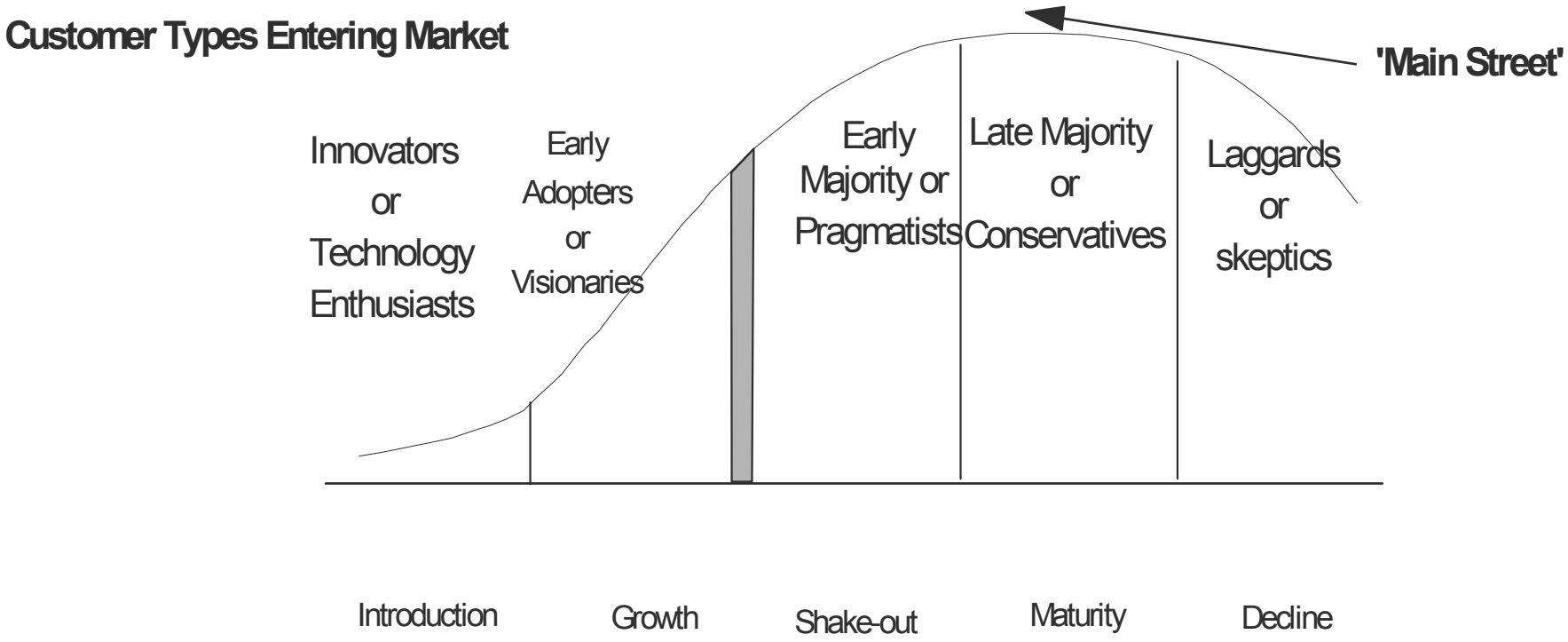
Infrastructure Model for Discontinuous MEMS Innovations



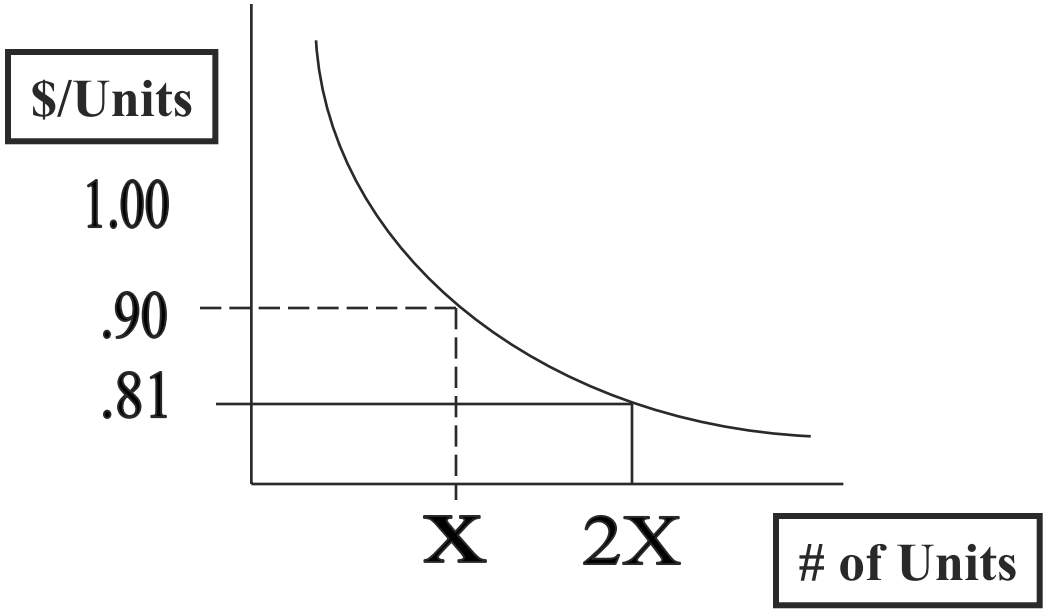
Competing Technologies



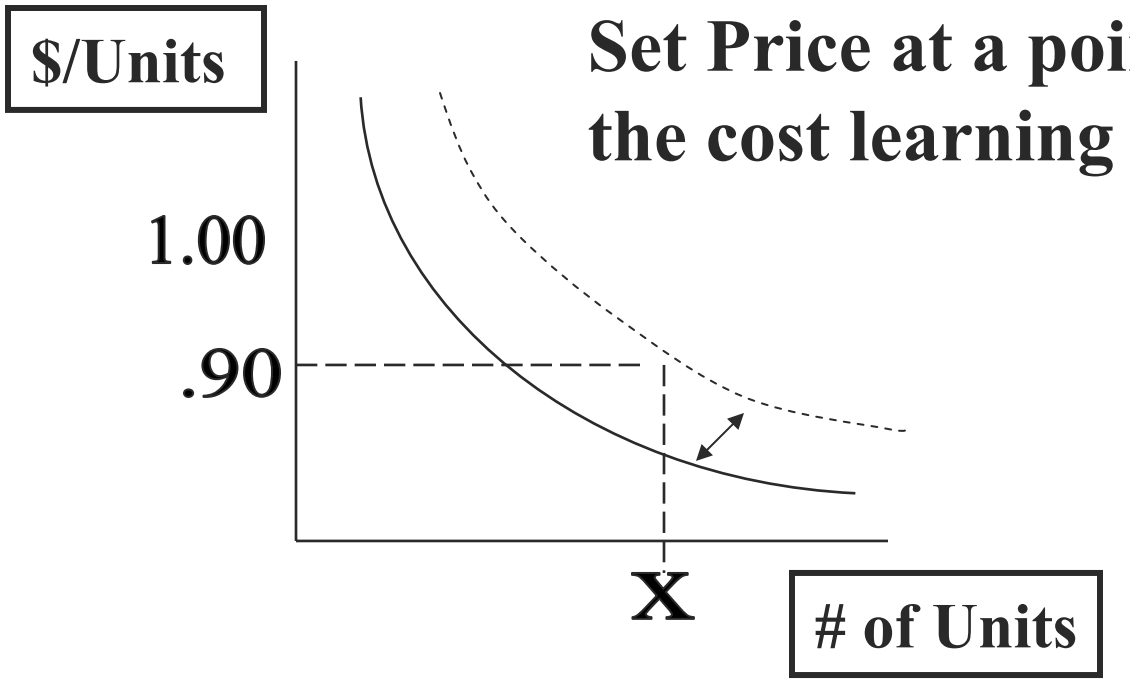
Sandia Assist Firms throughout the Lifecycle



The Traditional Learning Curve

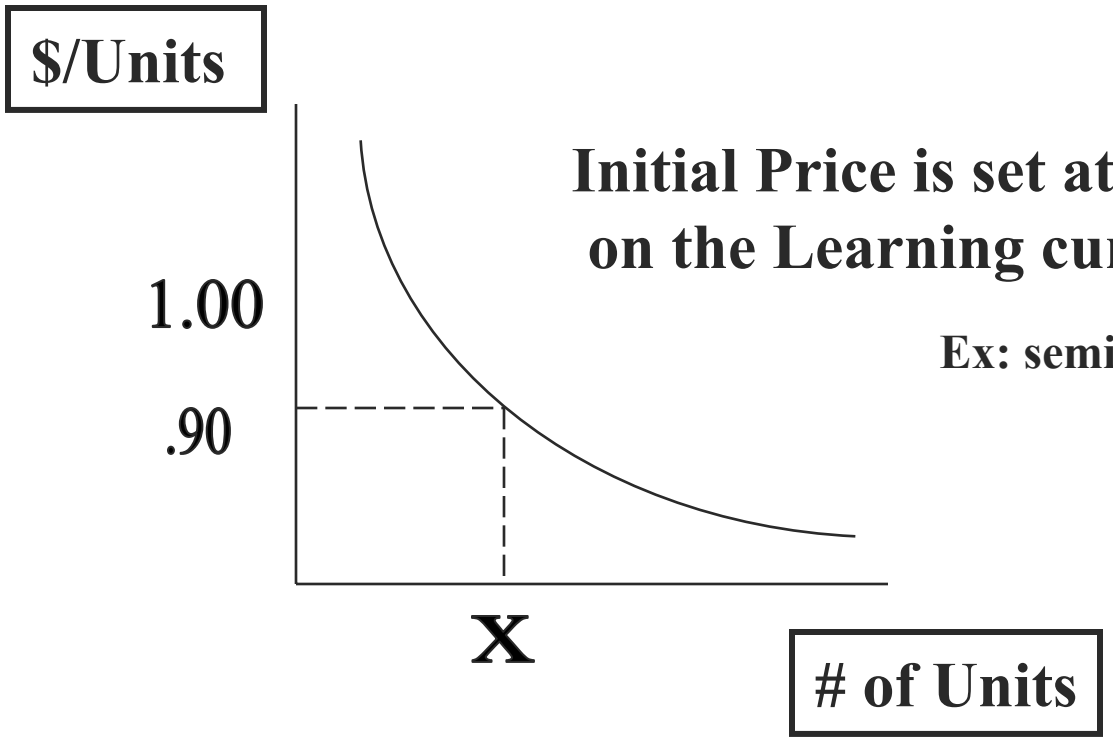


Profit Maximization and the Learning Curve



Set Price at a point higher than the cost learning curve at all times

Competitor Minimization and Learning Curve



Initial Price is set at a future point on the Learning curve

Ex: semiconductor devices

Design To Cost Vs. Design To Performance

- Lowest cost design to produce
- When do you redesign?
  - When you can make it cheaper
  - When industry Standards Change
    - upping the hurdle or
    - allowing you to make it cheaper

- Highest Performing Design along specific Critical Dimensions
- When do you redesign?
  - When you can make it perform better along a specific critical dimension

The Performance Curve