

INNOVATION FUNDAMENTALS

Why Innovate?

Innovation: The development of original solutions that meet new requirements or unanticipated needs.

During economic downturns, companies can maintain growth using innovation in the following ways:

- Innovate to improve internal efficiencies.
- License intellectual property to outside firms.
- Open up internal projects to external investment.

The three most common methods to measure innovation are:

1. The number of patents and patent citations a company owns.
2. The number of distinct products a company offers.
3. The frequency of new product releases.

Benefits for a company with a reputation for innovation:

- attracts better suppliers, top investors, and loyal customers
- employees willing to work for less

Sources of Innovation

Peter Drucker described seven specific sources for innovation.

Sources of Innovation	
Internal Sources can be found within a firm or its industry.	External Sources act upon a firm or its industry.
Unexpected occurrences: Innovations that arise from a surprising success or failure.	Demographic changes: Innovations that come from trends in a population's composition.
Incongruities: Innovations that come from resolving inconsistencies within a system or situation.	Changes in perception: Innovations that result from shifts in popular opinion.
Process needs: Innovations that perfect a process, or rework a procedure by supplying a missing link.	New knowledge: Innovations that emerge from new scientific, technical, or social knowledge.
Industry and market changes: Innovations that arise from changing industry and market dynamics.	

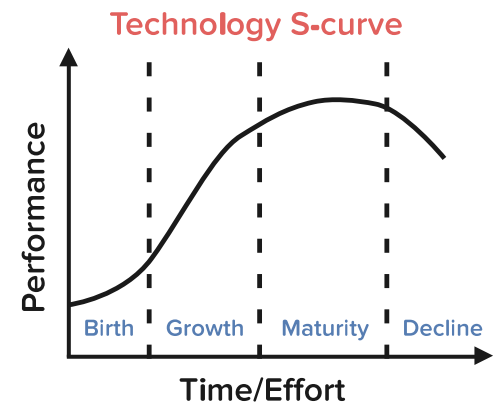
Types of Innovation

Technology s-curve: Maps out the performance and diffusion rate of a technology over time.

Birth phase: Development is slow due to poor understanding of the technology and the technology's lack of credibility.

Growth phase: As technology is better understood and the key drivers of performance are identified, performance improves exponentially.

Maturity and decline phases: Diminishing returns set in and technology/industry is ripe for disruption.



Types of Innovation

Radical innovation: An innovation that is fundamentally different from existing technologies.

Incremental innovation: A minor change from existing products

Product innovation: The creation of new goods and services.

Process innovation: A process that improves production methods.

Competence-enhancing innovation builds upon the firm's existing knowledge base.

Competence-destroying innovation: An innovation that renders the firm's existing competencies obsolete.

Architectural innovation changes how components are linked or overall design of the system, but leaves the components intact.

Component innovation: An innovation that changes a product's components but not the linkages between them.

Why are Dominant Designs Selected?

Dominant design: The common way that firms in an industry design a product.

- Pressure from market forces or government regulations leads industries to select a dominant design.
- A dominant design indicates that a product is stable, so customers are more likely to purchase it.
- The emergence of a dominant design marks a technology's transition into its growth phase.

Complementary goods: Goods that complement a product (e.g., headphones and phone cases for iPhones).

Products create value in two ways:

1. **Standalone value:**
Value derived from the functionality that the product itself provides to the customer.
2. **Network externalities:**
When the value of a product depends on the number of its users.

The Value of Dominant Design

	Effects of Dominant Design
The Winning Firm	• Can reduce production costs by investing in specialized equipment, increase production, and achieve economies of scale • Can strengthen its position in the industry by influencing the technology's development path
The Losing Firm	• Lose their investment in their own technology and must catch up in order to compete with the winning firm
Consumers	• Prefer stabler products or sets of features • Can compare clearer metrics and features between products • Benefit from network externalities and complementary goods • Winner-take-all markets result in higher prices and less product variety
Complementors and Suppliers	• Profit from the expanded market for their products • Increased market certainty allows them to avoid wasting resources supporting many technologies

Timing of Entry

First movers: Pioneers in a new product or service category.

Late movers: Enter after the product penetrates the mass market.

Advantages for Timing of Entry	
First Mover	Late Mover
Greater ability to exploit buyer switching costs.	Can free-ride on first movers' knowledge.
Greater brand loyalty and technological leadership.	Can better tailor their products to customer needs.
Greater control over scarce assets.	Can jump ahead of first movers' technology.
	Can take advantage of mature complementary technology.