

Lecture #3

Prof. John W. Sutherland

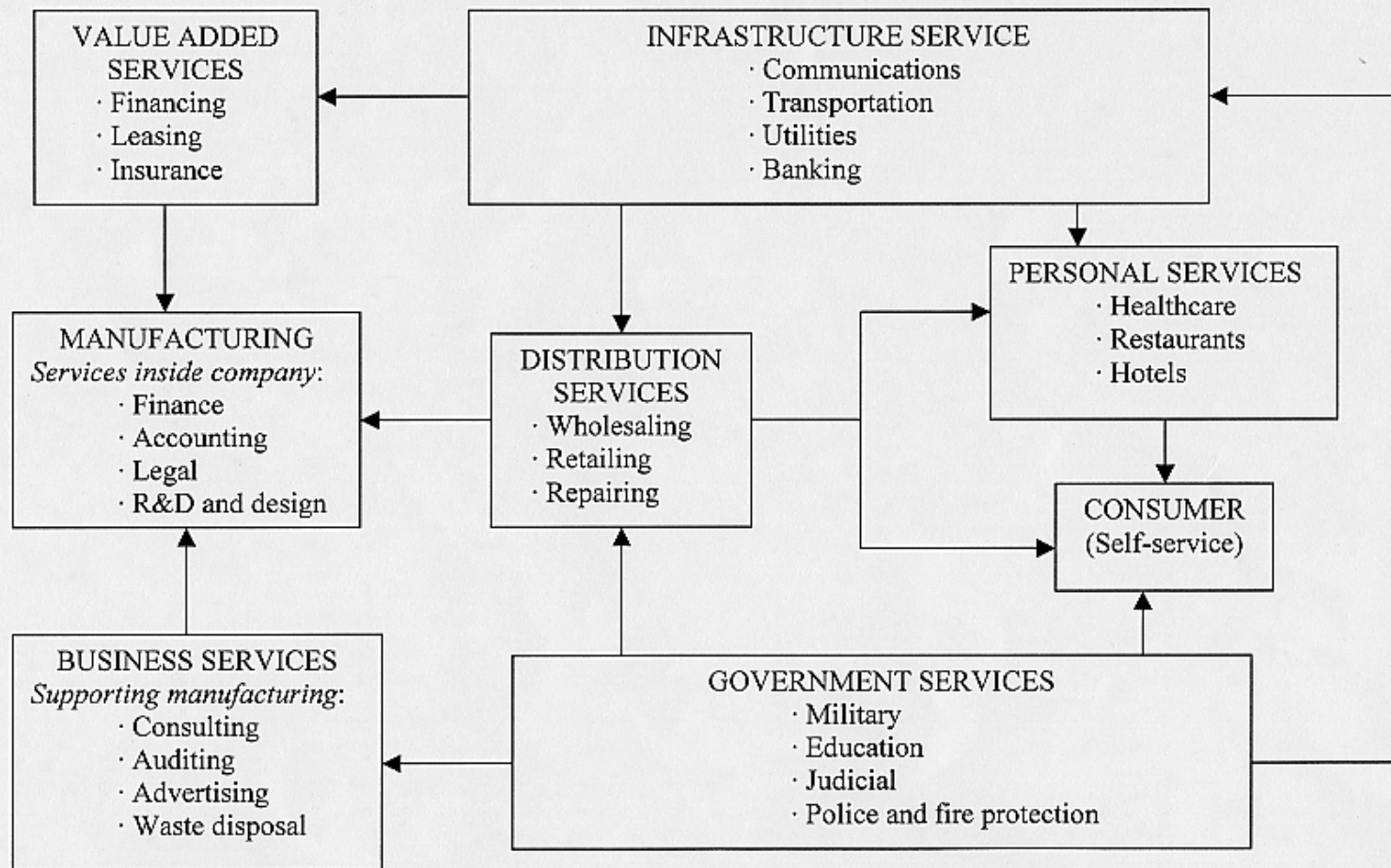
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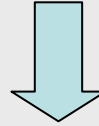
Service Processes & Systems
Dept. of Mechanical Engineering - Engineering Mechanics
Michigan Technological University

Service Process Relationship

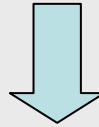


Evolution of Services in an Economy

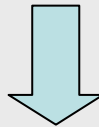
Infrastructure Services



Support Services



Recreational and Leisure Services



Time Saving Services

Some More Thoughts on Classification

v Definitions:

- q **Interaction: a mutual or reciprocal action.**
- q **Customization: making or altering to individual or personal specifications.**
- q **Labor: productive work (especially physical work done for wages);**

Service Classification: Interaction vs. Labor

		Degree of Interaction and Customization	
		Low	High
Degree of Labor Intensity	Low	Service factory: <ul style="list-style-type: none"> • Airlines • Trucking • Hotels • Resorts and recreation 	Service shop: <ul style="list-style-type: none"> • Hospitals • Auto repair • Other repair services
	High	Mass service: <ul style="list-style-type: none"> • Retailing • Wholesaling • Schools • Retail aspects of commercial banking 	Professional service: <ul style="list-style-type: none"> • Physicians • Lawyers • Accountants • Architects

Source: Schmenner 1986

Service Classification: Nature of the Service Act

		Direct recipient of the service	
		People	Goods
Nature of the service act	Tangible actions	Services directed at people's bodies: <ul style="list-style-type: none"> • Health care • Passenger transportation • Beauty salons • Restaurants 	Services directed at goods and other physical possessions: <ul style="list-style-type: none"> • Freight transportation • Repair and maintenance • Laundry • Veterinary care
	Intangible actions	Services directed at people's minds: <ul style="list-style-type: none"> • Education • Theaters • Information services • Broadcasting 	Services directed at intangible assets: <ul style="list-style-type: none"> • Banking • Accounting • Insurances

Source: Lovelock 1983

Service Classification: Relationship with Customers

		Type of relationship between service organization and its customers	
		"Membership" relationship	No formal relationship
Degree of labor intensity	Continuous delivery of service	<ul style="list-style-type: none"> • Insurance • Telephone subscription • Electric utility • Banking 	<ul style="list-style-type: none"> • Radio station • Police protection • Lighthouse • Public highway
	Discrete transactions	<ul style="list-style-type: none"> • Long-distance phone calls • Transit pass • Airline frequent flyer • Theater series tickets 	<ul style="list-style-type: none"> • Toll highway • Pay phone • Movie theater • Public transportation • Restaurant

Source: Lovelock 1983

Service Classification: Customization and Judgment

		Extent to which service characteristics are customized	
		High	Low
Extent to which customer contact personnel exercise judgment in meeting	High	<ul style="list-style-type: none"> • Surgery • Taxi service • Gourmet restaurant 	<ul style="list-style-type: none"> • Education (large classes) • Preventive health programs • Family restaurant
	Low	<ul style="list-style-type: none"> • Telephone service • Hotel services • Retail banking • Cafeteria 	<ul style="list-style-type: none"> • Public transportation • Movie theater • Spectator sports • Institutional food service

Source: Lovelock 1983

Service Classification: Nature of Demand and Supply

		Extent of demand fluctuations over time	
		Wide	Narrow
Extent to which supply is constrained	Peak demand can usually be met without major delay	<ul style="list-style-type: none"> • Electricity • Telephone • Hospital maternity unit • Police emergencies 	<ul style="list-style-type: none"> • Insurance • Legal services • Banking • Laundry
	Peak demand regularly exceeds capacity	<ul style="list-style-type: none"> • Tax preparation • Passenger transportation • Hotels and motels 	<ul style="list-style-type: none"> • Fast-food restaurant • Movie theater • Gas station

Source: Lovelock 1983

Service Classification: Method of Service Delivery

		Availability of service outlets	
		Single site	Multiple sites
Nature of interaction between customer and service organization	Customer travels to service firm	<ul style="list-style-type: none"> Theater Barbershop 	<ul style="list-style-type: none"> Bus service Fast-food chain
	Service provider travels to customer	<ul style="list-style-type: none"> Pest control service Taxi 	<ul style="list-style-type: none"> Mail delivery AAA emergency repairs
	Transaction is at arm's length	<ul style="list-style-type: none"> Credit card company Local TV station 	<ul style="list-style-type: none"> National TV network Telephone company

Source: Schmenner 1986

Performance Measures

✓ **Speed/efficiency**

✓

✓ **Profitability**

✓

✓ **Perceived value**

✓

✓ **Sustainability**

✓

✓ **Other?**

✓

✓

✓

✓

✓

✓

✓ **We will revisit this
topic next week**

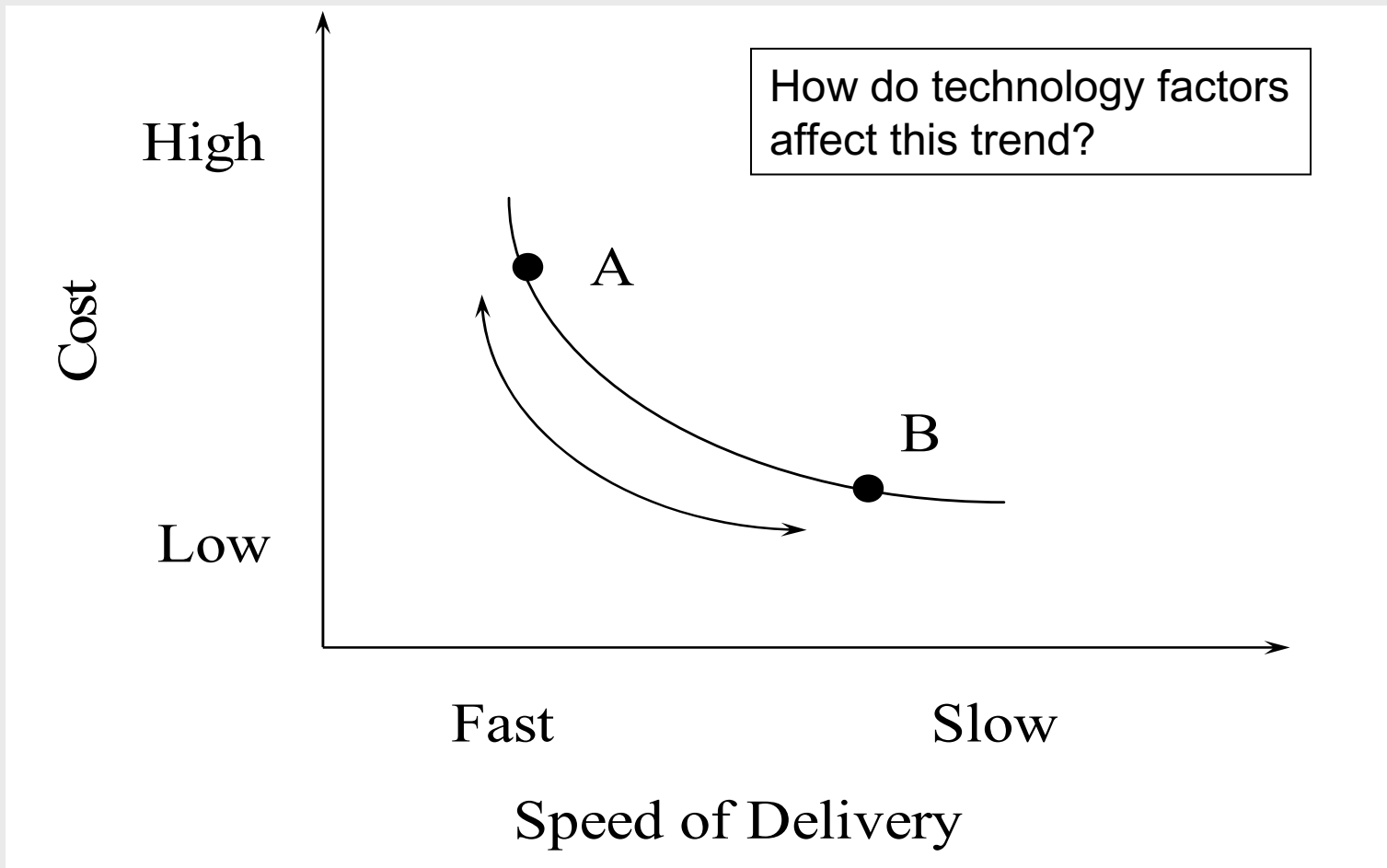
Customer Value

**Perceived Customer Value =
Total Benefits / Total Costs**

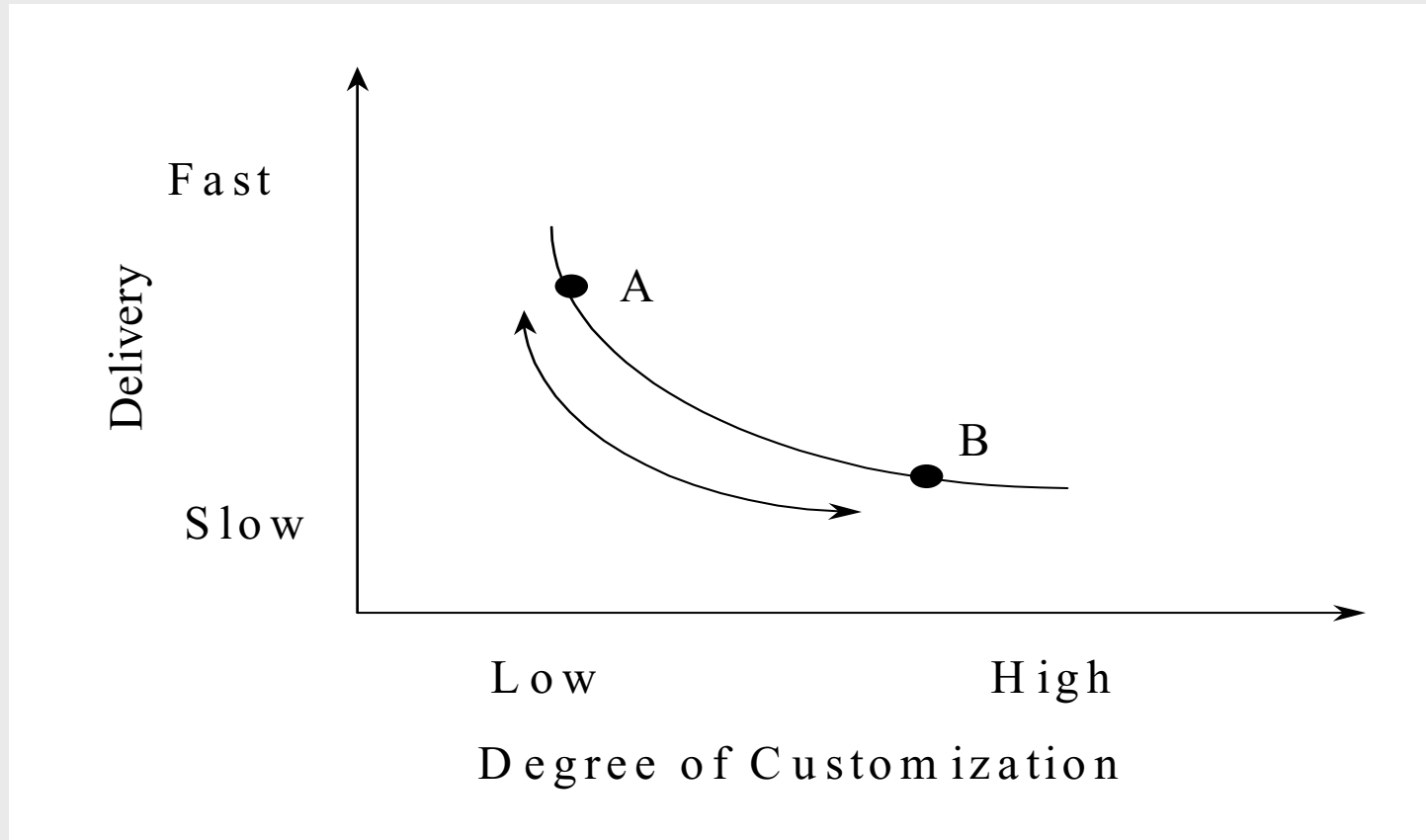
**Perceived Customer Value =
Total Benefits - Total Costs**

Other??

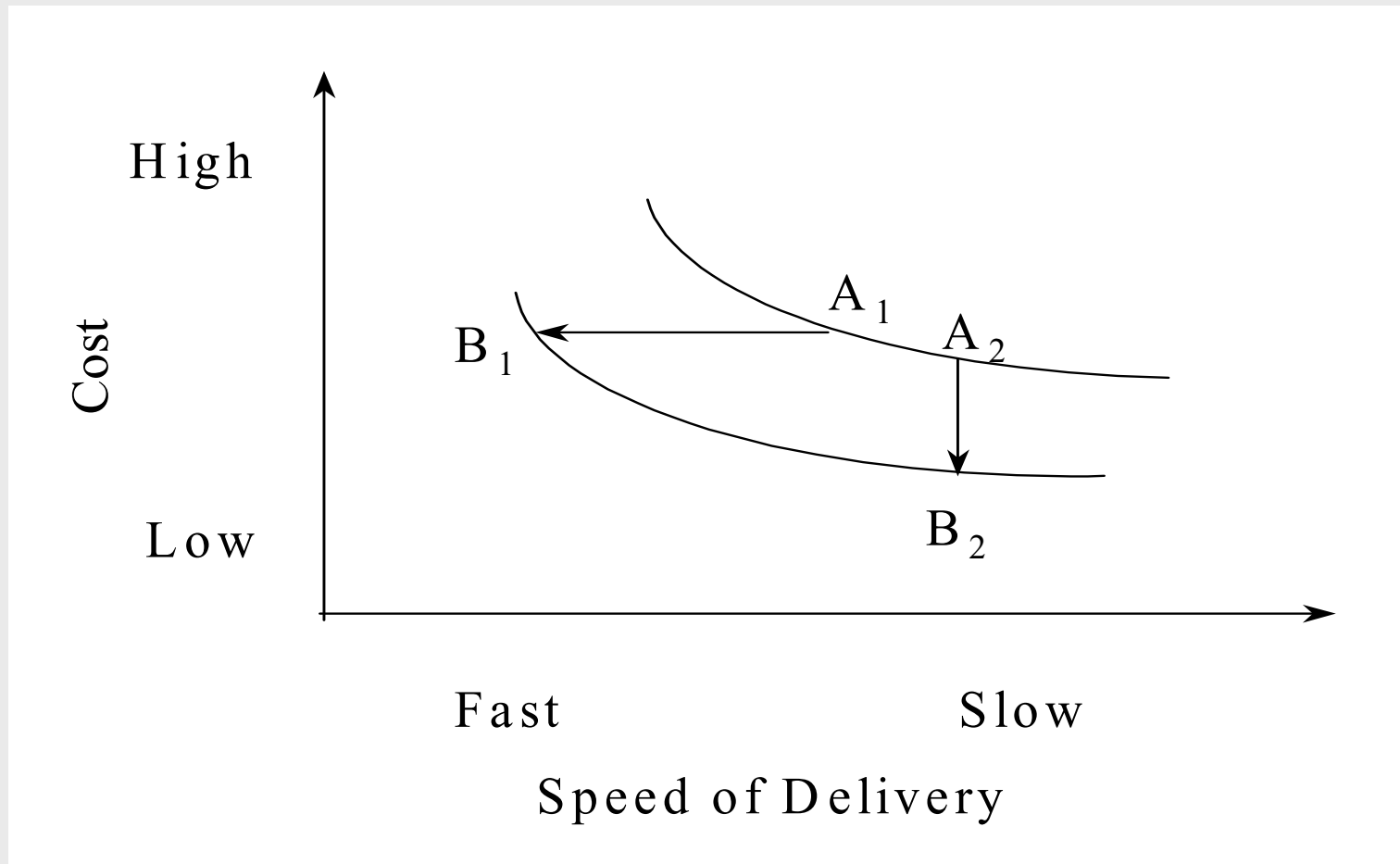
Traditional Trade-off between Speed of Delivery and Cost



Traditional Trade-off between Degree of Customization and Speed of Delivery



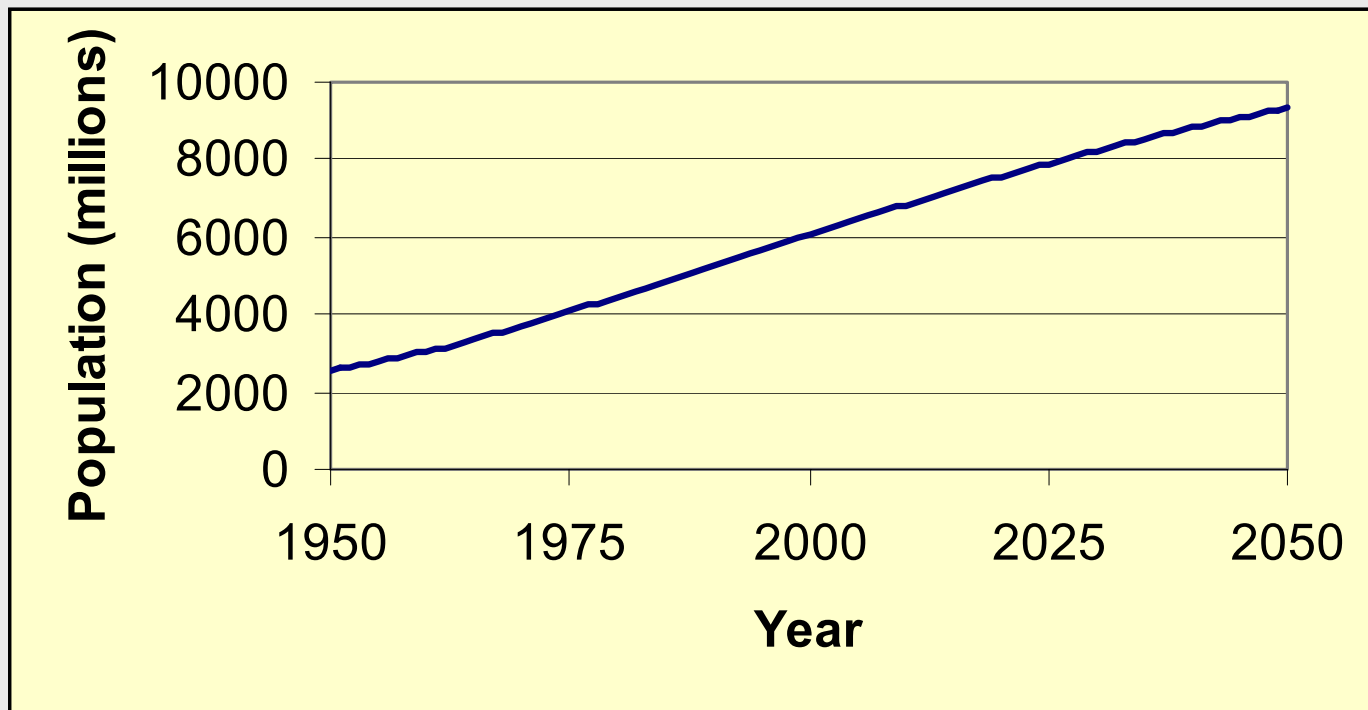
Creating Value by Moving to a Superior Performance Curve



Sustainability?????

Where are we Heading?

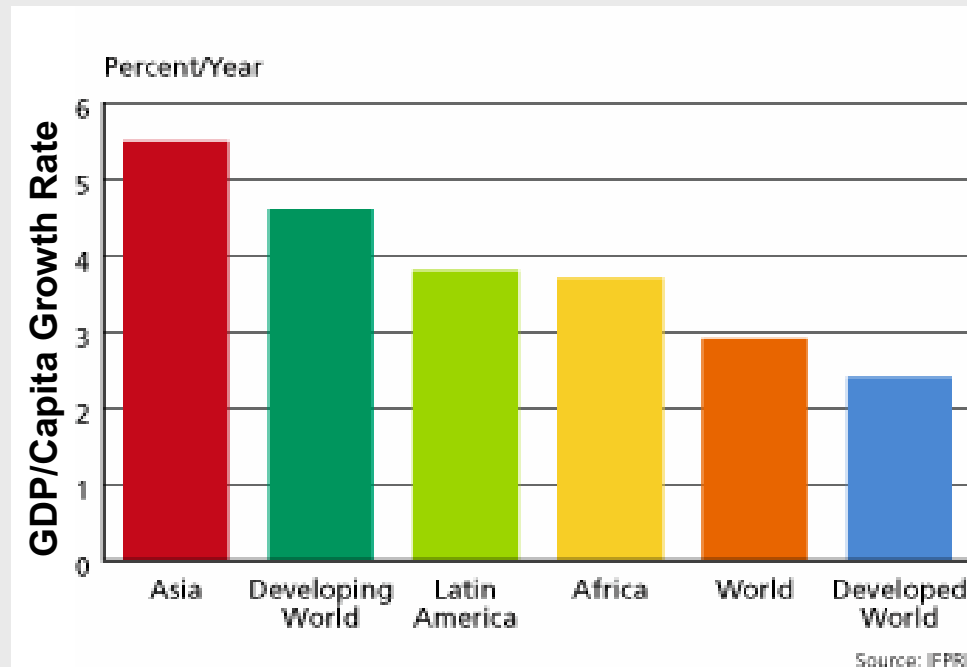
∨ **Global population is increasing...**



Population – Not the Whole Story

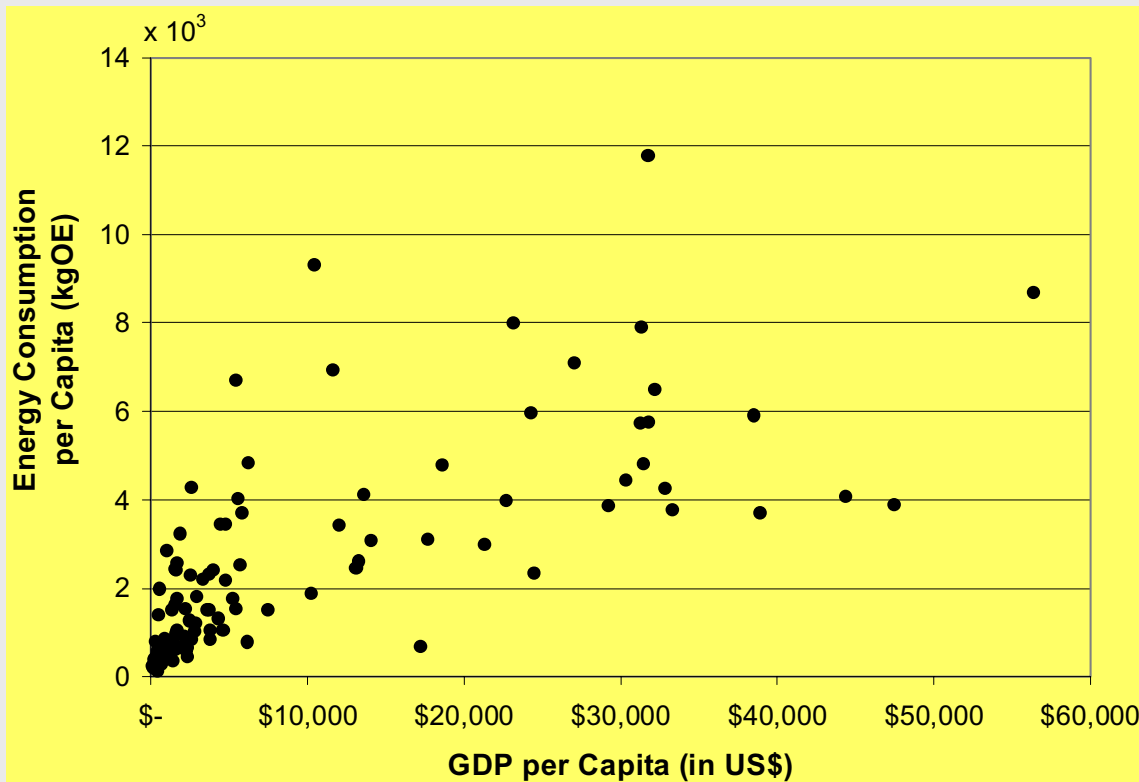
v Economic Growth (GDP/Capita)

- q U.S. (3%) – may be ~\$100k by 2050
- q India & China (6-8%) – may be \$50k by 2050



Resources and GDP

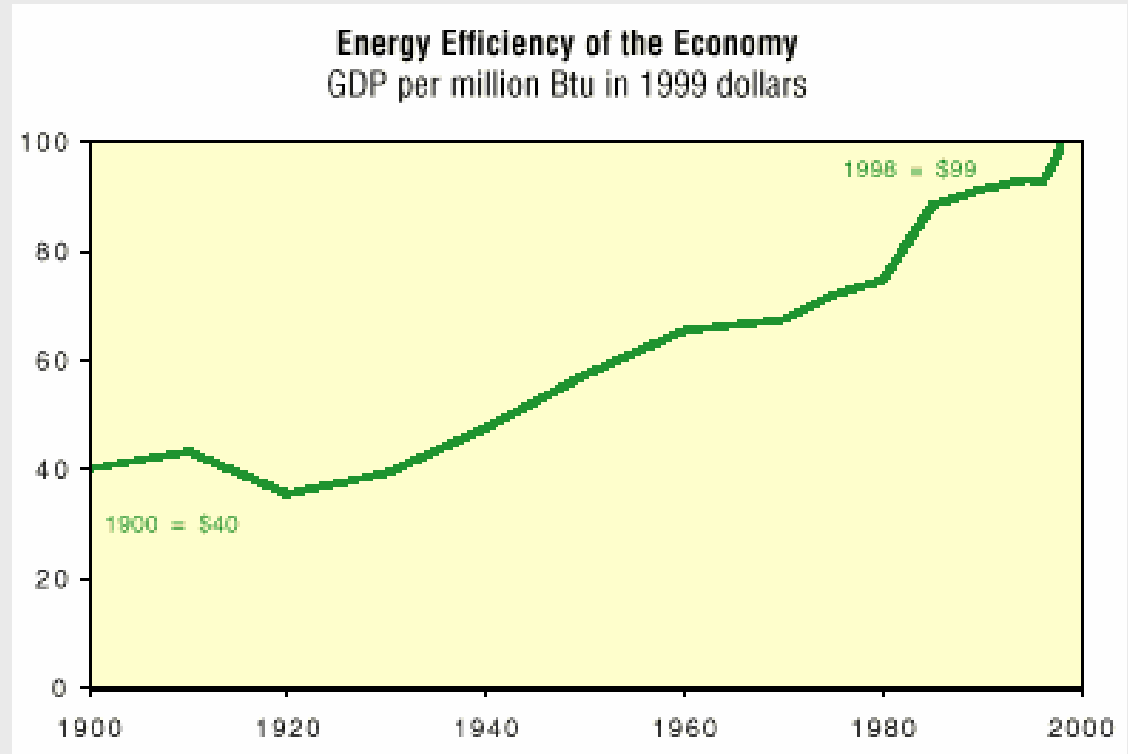
- Resource use, wastes, and energy consumption all proportional to GDP



$$\text{Master Eqn.} \\ I = N \cdot E \cdot \eta$$

Are We Sustainable?

- ∨ In 50 years
 - q 2x Population
 - q 5-10x economic growth
 - q 10-20x Earth Demand/Impact



- ∨ Can we meet this increased demand using business as usual? **NO!!**

Many Sustainability Challenges

- ✓ **Energy**
- ✓ **Take-back / Demanufacturing**
- ✓ **Manufacturing / Remanufacturing**
- ✓ **Dematerialization / Servicizing**
 - q **The selling of a service or function rather than a product. May include operating leases and trade-ins. Actual ownership of the product remains with the supplier – customers pay for use/ maintenance. Examples: carpet leasing, office equipment leasing, outsourcing of onsite chemical management, and office furniture supply, maintenance, and moving services.**