

### Major Forces of Change

The law seeks to satisfy your reasonable expectations.

Approximately the year

1500

**GUN POWDER**

**NEW WORLD**

**PRINTING PRESS**

**RURAL**

**LABOR SHORTAGE**

Approximately the year

2000

**FISSION**

**ONE WORLD**

**COMPUTER**

**URBAN**

**LABOR SURPLUS**

### NON-PRICE DETERMINANTS OF

#### SUPPLY

number and size of sellers  
horizontally sum

costs for inputs

prices of related goods  
substitutes (A or B)  
compliments (A and B)

taxes

technology

expectations

#### DEMAND

number and size of buyers  
horizontally sum

income

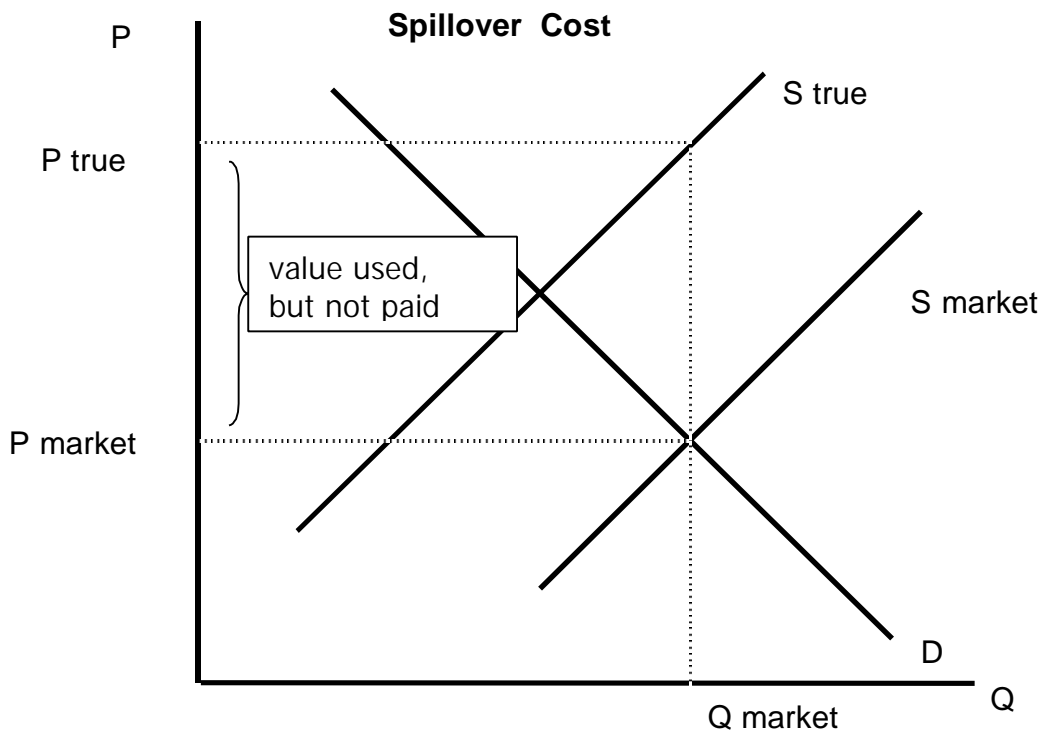
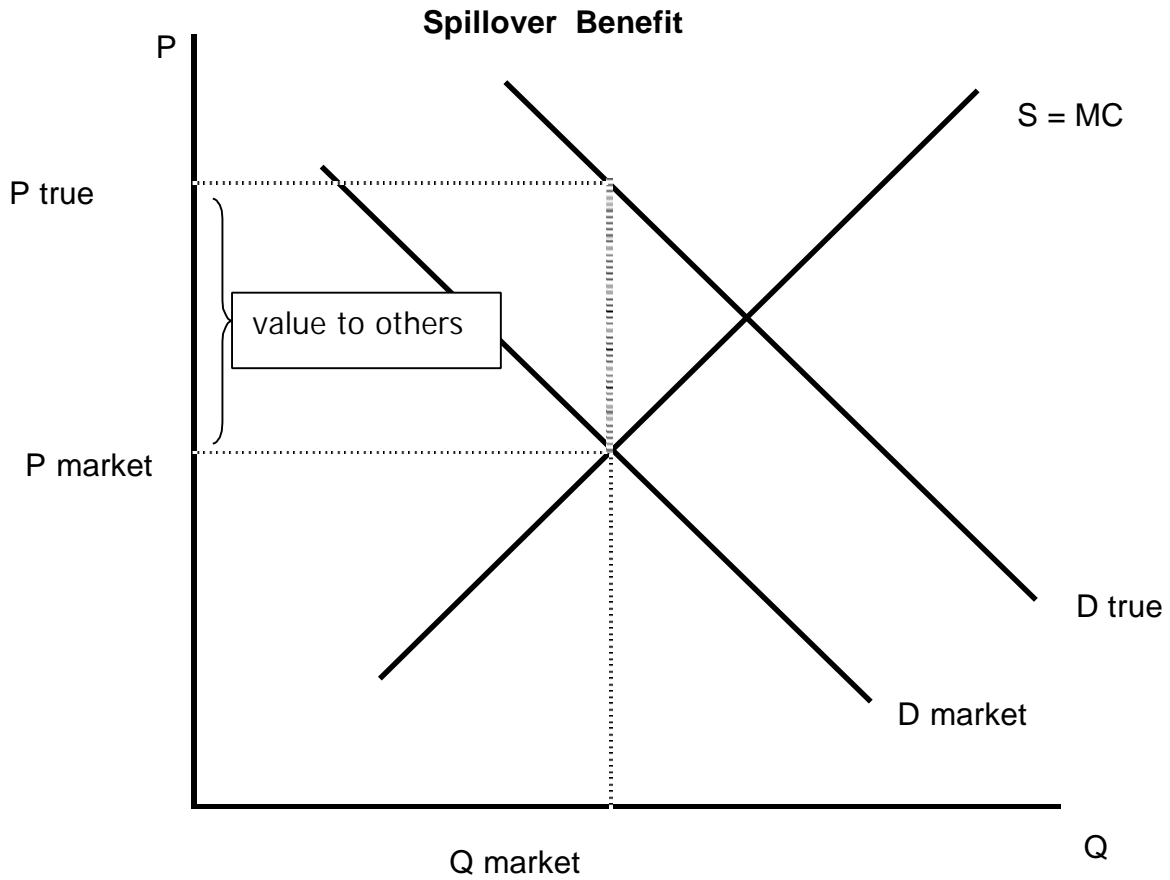
prices of related goods  
substitutes (A or B)  
compliments (A and B)

tastes

expectations

Unless the buyer is **WILLING AND ABLE** to pay the purchase price there is no demand (e.g., poor people have no demand for food).

Unless the seller is **WILLING AND ABLE** to sell at the purchase price there is no supply (e.g., there is no supply of clean air).



**All firms seek PROFIT MAXIMIZATION.**

"Profit" is  $TR - TC$ .

$$TR = P \cdot Q$$

$$TC = FC + VC$$

The definition of TC varies by field of study: econ. v. acct. v. finance: LONG RUN Profit max at  $MR = MC$ .

**SHUT DOWN RULE**

If  $TR < TC$  and  $TR < VC$ , then shut down (i.e.,  $Q = 0$ ) so losses limited to FC.

If  $TR < TC$  but  $TR > VC$ , then operate (i.e.,  $Q > 0$ ) so losses less than FC.

**DESTRUCTIVE COMPETITION**

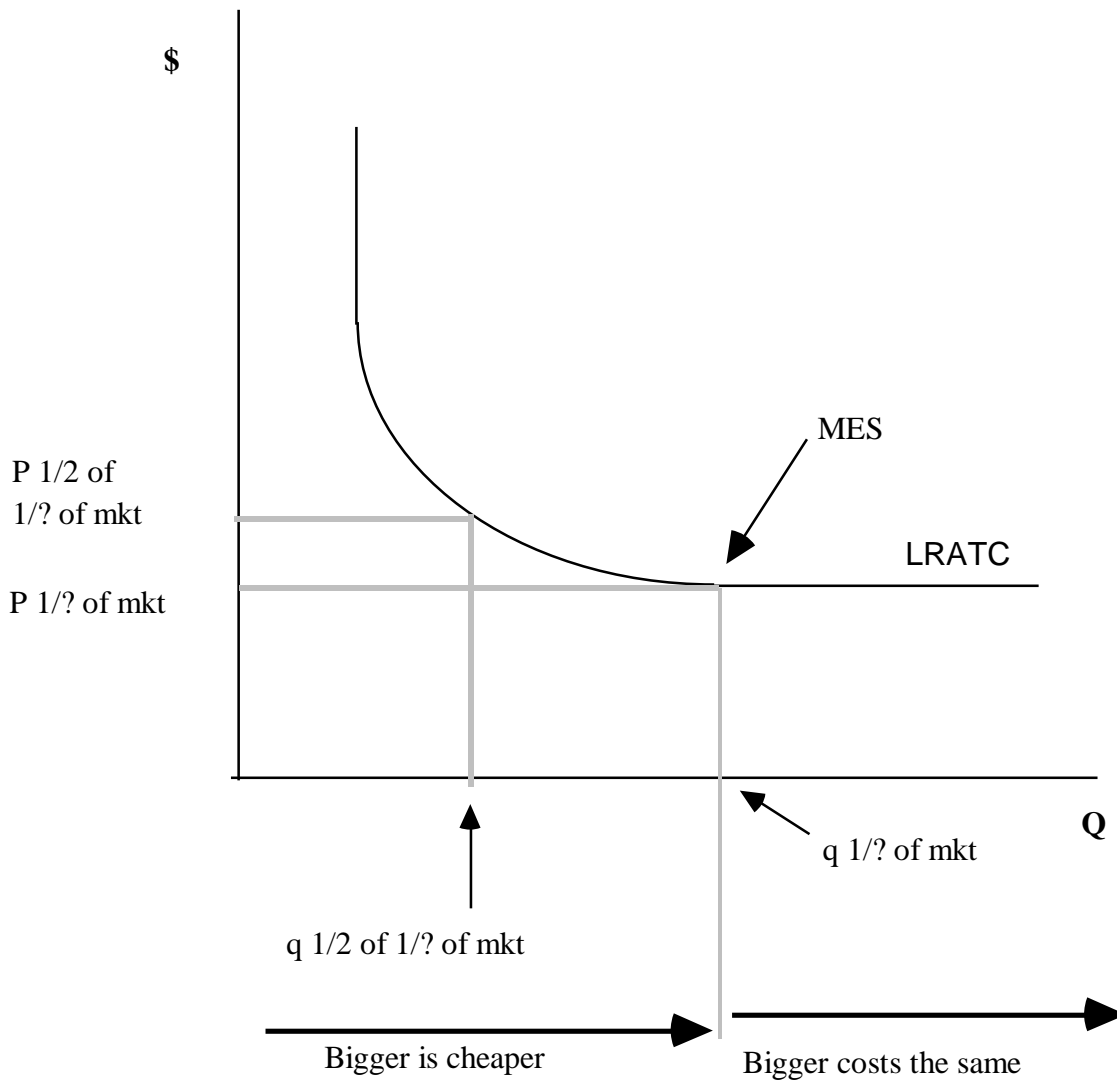
If  $TR < TC$  but  $TR > VC$ , *persistently*, then the firm and/or industry is in destructive competition.

<u>ELEMENTS</u>	CAPITALISM and	<u>FUNCTIONS</u>
private property		<b>embody self interest</b> * subjective made objective
prices		<b>measure</b> self interest * voluntary transactions
markets		<b>coordinate</b> self interest * information
competition * "large" # of buyers <b>and</b> sellers  * free entry <b>and</b> exit		<b>regulate</b> self interest * alternatives
government public sector failure no profit motive  special interests  vote trading  clear benefits <b>and</b> hidden costs		<b>facilitates p.p., p., m. &amp; c.</b> * define rights property  contract  torts  criminal * transaction costs

## HISTORY OF CAPITALISM

pre 1500	<b>PRE-CAPITALISM (FEUDALISM)</b> labor tied to land no markets self sufficient manor
1500 - 1800	<b>MERCANTILISM</b> self sufficient nation king-granted monopolies colonization separation in place and time
1750 - 1890	<b>FREE CAPITALISM</b> self sufficient individual (Family?) mythical core of the U.S. small MES (Minimum Efficient Size) absolute <b>and</b> relative
1860 - 1920	<b>INDUSTRIAL CAPITALISM</b> self sufficient firm mass production and mass distribution * increasing MES * railroads erosion of social relationships * victims <b>technology is an intangible asset</b> <b>idea plus physical embodiment</b>
1890 - 1930	<b>FINANCIAL CAPITALISM</b> self sufficient industry concentration of "ownership" via leveraging rapidly increasing MES <b>new technology is adopted faster than scheduled depreciation</b> ATC new < AVC old versus ATC new < ATC old
1915 -	<b>RESPONSIVE CAPITALISM</b> social responsibility <b>AND</b> profit maximization * person, as well as system, responsible for cost minimization * private decision maker, but public impact * incentive to be irresponsible
1930 -	<b>REGULATED CAPITALISM</b> substitution of government for the individual decision maker * group impact = group decision ? inefficient regulation

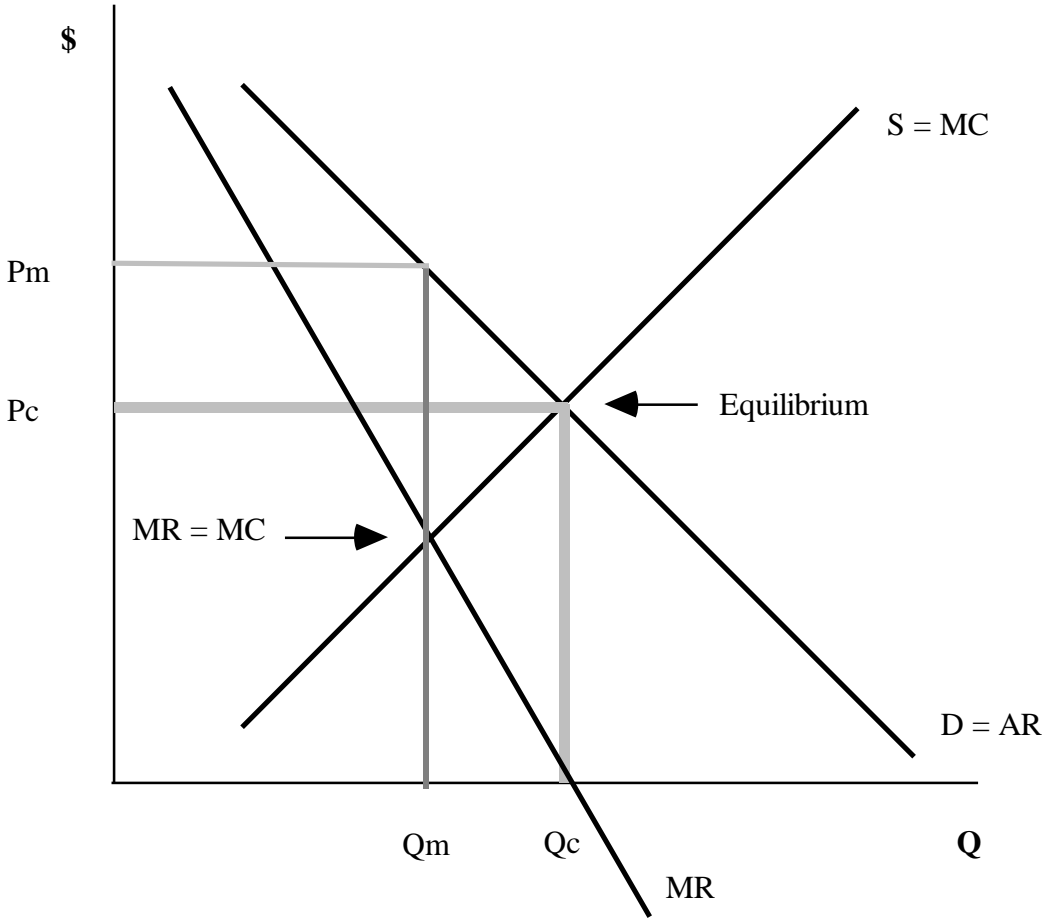
**Minimum Efficient Size**



Principally due to better use of lumpy costs, the Long Run Average Total Cost curve first declines steeply and then levels out as total output increases. The total output where the LRATC curve is at a minimum is the firm size that is the Minimum Efficient Size. Competition will drive all firms to MES.

When market demand and supply conditions force all but one firm from the market, that firm is said to be a Natural Monopoly and then the "n" equals one.

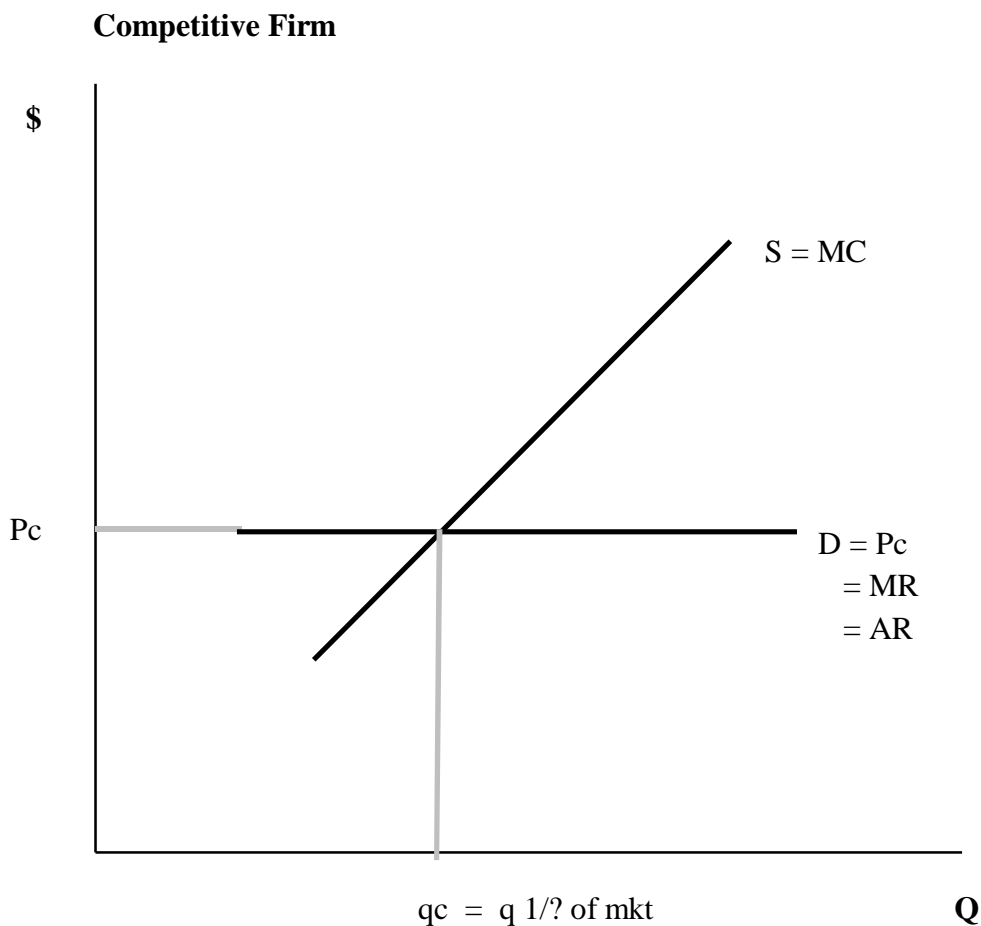
**Monopoly Industry and Monopoly Firm;  
and  
Competitive Industry**



All firms profit maximize at the quantity below where Marginal Revenue equals Marginal Cost.

Monopoly firms have the power to set the industry output to  $Q_m$ , where  $MR = MC$ .

The competitive industry, and each competitive firm, must sell at the market clearing price, the equilibrium price of  $P_c$ , and thus in total produce at  $Q_c$ .



All competitive firms will sell at the market clearing price,  $Pc$ , so they can profit maximize.

No competitive firm CAN sell above  $Pc$  since all buyers would move to other sellers (fungible goods).

No competitive firm WILL sell below  $Pc$  since all of seller's total output (due to a small relative MES) can be sold at  $Pc$ ; and since to sell at a lower price would reduce revenue faster than it reduces costs, thus reducing profits.

## Introduction to Intellectual Property

### TYPES OF PROTECTION

PATENTS	protect ideas reduced to practice
COPYRIGHTS	protect expressions of ideas
TRADEMARKS	protect marks that identify a source of goods or services
TRADE SECRETS	protect commercially valuable confidential information

Once created, intellectual property is transferable via the ordinary law of contracts and personal property.

### FEDERAL versus STATE

*Patents and copyrights are federal.*

In the U.S. Constitution, the States gave Congress the power

"To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." Art. I, Sec. 8, cl. 8

*Trademarks are creatures of federal, State, and common law.*

*Trade secrets are creatures of state and common law.* In late 1996, Congress passed a criminal statute dealing with international industrial espionage.

## PATENTS

There are three types of patents:

- UTILITY PATENTS
  - useful and functional aspects of technology
  - this is typically what is meant by "patent"
- DESIGN PATENTS
  - original appearance or ornamental aspects of useful article, but not functional aspects
- PLANT PATENTS
  - invent or discover a new variety of plant, and asexually reproduce

To obtain a patent you must disclose your invention in your application. The **society makes a trade** with you: in exchange for you **disclosing** your invention the government grants you a legal **monopoly** on your idea for a limited term. Your patent application must disclose your idea so clearly that a person of ordinary skill:

- is enabled to practice the invention, and
- is shown the best way to practice the invention.

## TO OBTAIN A PATENT

### GENUINENESS

- only the true inventor may sign the patent application
- only a human can invent
- typically, the employee or independent contractor is the true inventor

### USEFULNESS

- very easy to satisfy

### PATENTABLE SUBJECT MATTER

**INCLUDES**: process, machinery, manufacture, or composition of matter

**EXCLUDES**: laws of nature, physical phenomena, abstract ideas, or printed

### NOVELTY

- view novelty as a bar to patent
- look for a lack of novelty
- show not novel by . . .
- printed publication anywhere in the world
- public use in USA
- on sale in USA

### NON - OBVIOUS

Must be not obvious, to a person of ordinary skill in the art, in light of current technology. More than novel.

### RIGHTS OF PATENTS

A patent is a legal monopoly.

You may **EXCLUDE OTHERS** from:

- MAKING,
- USING,
- SELLING, and
- IMPORTING.

### DURATION OF PATENTS

A patent is a legal monopoly for twenty (20) years from the date of application.

Prior to GATT, the USA used a 17 year term from the date of grant.

Prior to GATT, the 17 year term could be extended to compensate for regulatory review by the F.D.A.

The 20-year term will be cut short unless the patent owner pays "maintenance fees" at 3 1/2 years, at 7 1/2 years, and at 11 1/2 years.

**REVERSE ENGINEERING** does not strip the patent owner of any rights. Recall disclosure of best practice in application. *Contra*, trade secrets.

## **COPYRIGHT**

- protection of the **expression** of an idea, rather than the idea
- exclusive ownership right to expression
- ORIGINAL works of authorship
- FIXED in a TANGIBLE MEDIUM of expression from which works may be PERCEIVED, REPRODUCED, or otherwise COMMUNICATED.

### **COPYRIGHT SUBJECT MATTER**

- literary (e.g., computer program)
- musical
- dramatic
- choreographic
- pictorial & sculptured
- motion picture
- sound recording
- architectural work
- compilations of data
  - \* major international fight in late 1996: is "sweat of the brow" equal to originality?
- computer chip masks

Old copyright law (i.e., pre - 1989) was formalistic.  
It was easy to lose a copyright.

As of 1989, new copyright law is simplified.

- AUTOMATIC COPYRIGHT
- REGISTRATION IS NOT NECESSARY, *but registration must precede filing a copyright infringement suit and to get statutory damages.*
- NO FORFEITURE FOR LACK OF © WITHIN ONE YEAR.

### **RIGHTS OF COPYRIGHTS**

#### **EXCLUSIVE RIGHT TO:**

- COPY,
- prepare DERIVATIVE works,
- DISTRIBUTE,
- PERFORM works in public, and
- DISPLAY works in public.

**COPYRIGHT EXCLUSIVE RIGHTS LIMITED BY:**

- **FAIR USE** (a major limitation),
  1. purpose of copy  
non-profit in-class educational use
  2. nature of the work  
books get more protection than data
  3. substantiality of the copying  
small portions versus wholeand
  4. extent of the market  
portion of the potential market for copies
  
- **DURATION**

author's life	+	70 years,	)	20 years added in 1998
creation	+	100 years,	)	
publication	+	75 years	)	
  
- **EXPRESSION, not idea**
  
- **WORK - MADE - FOR - HIRE**
  - signed contract prior to creation*
  - distinguish* employee within the scope of employment
  - distinguish* independent contractor's commissioned work

**TRADE SECRETS**

Trade secret law is found in each State's common and statutory law. In late 1996, Congress adopted a federal criminal statute on international industrial espionage.

There is a wide variation by State.

Over 40 States, have adopted the Uniform Trade Secrets Act (UTSA).

The elements of the UTSA definition of "trade secret" are:

- INFORMATION
- independent ECONOMIC VALUE from secrecy
- REASONABLE EFFORTS TO MAINTAIN SECRECY

Trade secrets can offer protection that patents and copyrights cannot.

Subject matter nearly unlimited.

Duration: protection as long as the secret stays generally not known.

Trade secrets need not be exclusive.

Protection against improper taking:

- unlawful
- improper under the circumstances

**REVERSE ENGINEERING** is a proper taking. *Contra*, patents.

## TRADE MARKS

Exclusive right to use on a specific **MARK** on a product or service to **IDENTIFY a SOURCE**: e.g., manufacturer or seller by **AFFIXING** the mark.

Federal protection is national. Whereas, State protection is limited to area in the State where the mark has been used. A *prior federal* registration of a mark *PREEMPTS subsequent State* trademark rights. **BUT** *prior State use* or registration is *not preempted* by subsequent federal registration.

For federal protection, must use or intend to use (e.g., investment in marketing plan) in interstate commerce.

Trademarks are for products; while Service Marks are for services.

**Marks are to aid the consumer, rather than serve the interests of business.**

Under the **Lanham Act**, federal registration with the Patent and Trademark Office (PTO) establishes **priority and scope** of protection: more than one source may have the right to use a mark. Marks are **not permitted** which create a **REASONABLE LIKELIHOOD OF CONFUSION** as to the source.

Marks are valid as long as they are used.

### **PROTECTABLE MARKS:**

The source, not the name of the item (e.g., Frisbee, thermos, aspirin)

- fanciful words,  
personal or geographic names,  
symbols,  
slogans,  
shapes,  
colors, or  
scents.

- **DISTINCTIVENESS**

**inherently distinctive**

fanciful  
arbitrary  
suggestive

not inherently distinctive = **descriptive**  
descriptive is protectable if secondary meaning

not distinctive  
**generic**