

# Patent Law

Prof. Roger Ford  
Monday, November 27, 2017  
Class 24 – Remedies: Damages

# Recap

# Recap

- Remedies background
- Preliminary injunctions
- Permanent injunctions

**Today's agenda**

# Today's agenda

- Midterm results
- Damages framework
- Lost profits
- Reasonable royalty

**Midterm results**

# Midterm results

- Midterm exams have been graded
- They are available for pickup from the Registrar's office

# Midterm results

- Graded out of 40 points
- Average: ~~23.9~~ 24.3 points
- Median: ~~24~~ 24.5 points
- Maximum score: 34 points
- More about substance next time

# Damages framework

## What's at stake

Chart 2c. Top ten largest initial adjudicated damages awards: 1995–2012

Year	Plaintiff	Defendant	Technology	Award (in MM)
2009	Centocor Ortho Biotech Inc.	Abbott Laboratories	Arthritis drugs	\$1,848
2007	Lucent Technologies Inc.	Microsoft Corp.	MP3 technology	\$1,538
2012	Carnegie Mellon University	Marvell Technology Group	Noise reduction technology on integrated circuits for disk drives	\$1,169
2012	Apple Inc.	Samsung Electronics Co.	Smartphone software	\$1,049
2012	Monsanto Company	E.I. Dupont De Nemours and Company	Genetically modified soybean seeds	\$1,000
2010	Mirror Worlds LLC	Apple Inc.	Operating system	\$626
2011	Bruce N. Saffran M.D.	Jonhson & Johnson	Drug-eluting stents	\$593
2003	Eolas Technologies Inc.	Microsoft Corp.	Internet browser	\$521
2008	Bruce N. Saffran M.D.	Boston Scientific Corp.	Drug-eluting stents	\$432
2009	Uniloc USA Inc.	Microsoft Corp.	Software activation technology	\$388

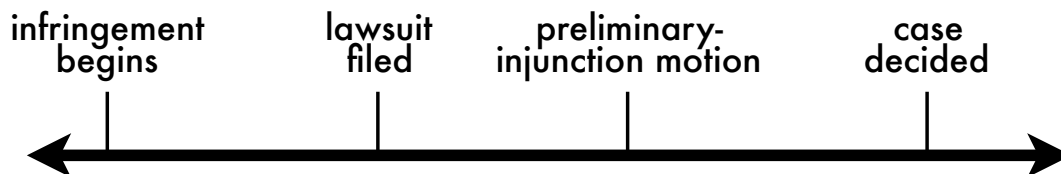
Source: 2013 PwC Patent Litigation Study

# What's at stake

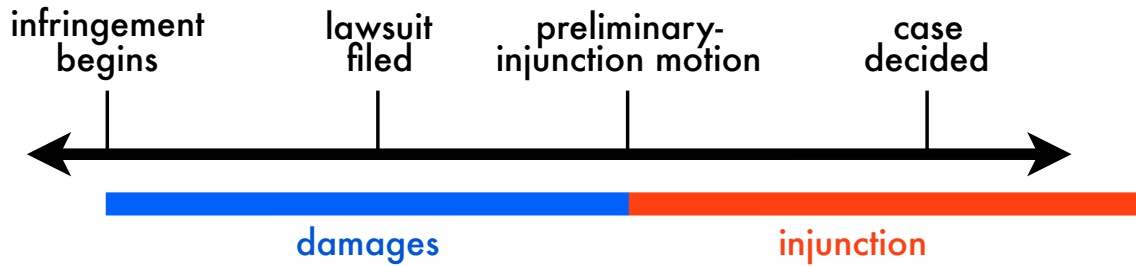
- “It is important to note that the awards reflected in Chart 2c are those identified during initial adjudication; **most of these awards have since been vacated, remanded, or reduced**, while some remain in the appellate process. In fact, by mid-2013, two of the three blockbusters from 2012 were significantly reduced or settled, with the other still pending appeals.”

Source: 2013 PwC Patent Litigation Study

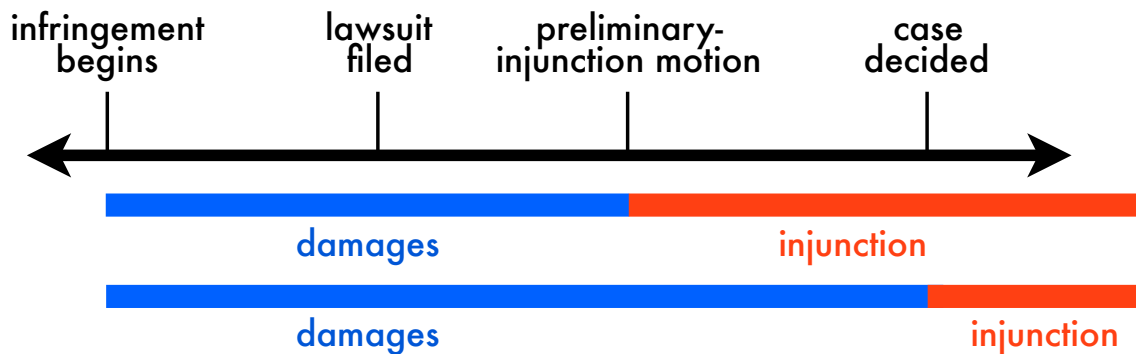
# Damages framework



# Damages framework



# Damages framework







# Damages framework

- Two measures of damages
  - Lost profits
  - Reasonable royalty
- The basic principle:
  - Damages are to compensate the patent holder, not punish the infringer
- The fundamental question:
  - What would have happened if the defendant never infringed the patent?

# Damages framework

- So what could have happened if the defendant never infringed the patent?

# Damages framework

→ So what could have happened if the defendant never infringed the patent?

- Patent holder would have had a monopoly and made lots of money
- Patent holder and defendant would have agreed to a reasonable royalty
- Defendant would have made something else
- Defendant would have been out of the market, but other competitors would have filled in the gaps

# Damages framework

→ If you were a patent holder, would you prefer lost-profit damages or a reasonable royalty?

# Damages framework

- If you were a patent holder, would you prefer lost-profit damages or a reasonable royalty?
- Whichever would be higher!
  - If the patent holder practices the invention, it will usually prefer lost profits
  - Absent infringement, a patent holder has the option to license or not
  - Patent holders will refuse to license if they expect profits from monopoly to exceed royalties

# Damages framework

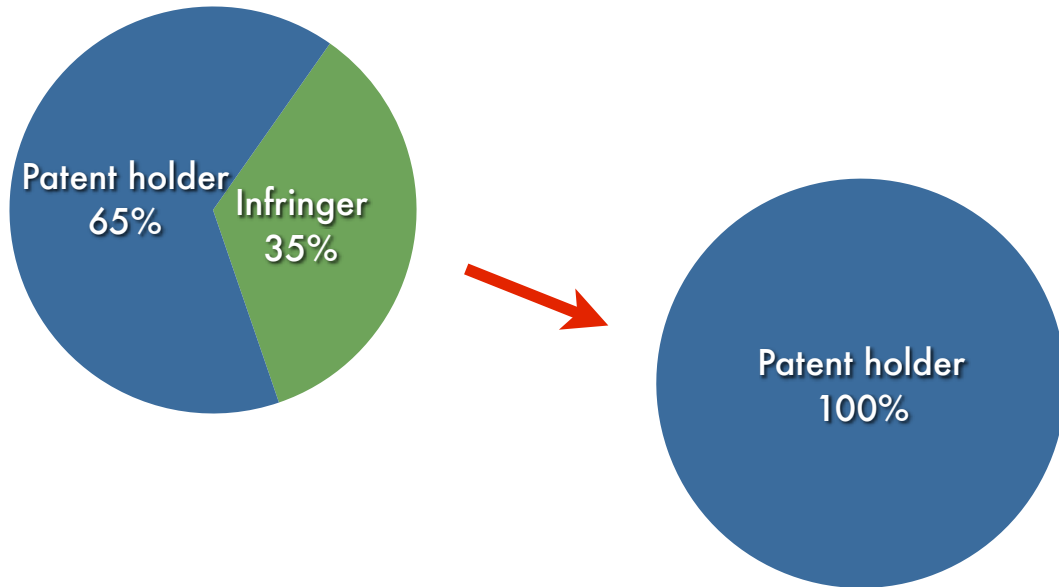
- In cases between competitors, then, the central dispute for damages is often whether the plaintiff can get lost profits or not at all

# Lost profits

## Lost-profits theory

- Patent holder's theory:
  - If the infringer hadn't sold illegal infringing articles, I would have made more sales and profits

# Lost-profits theory

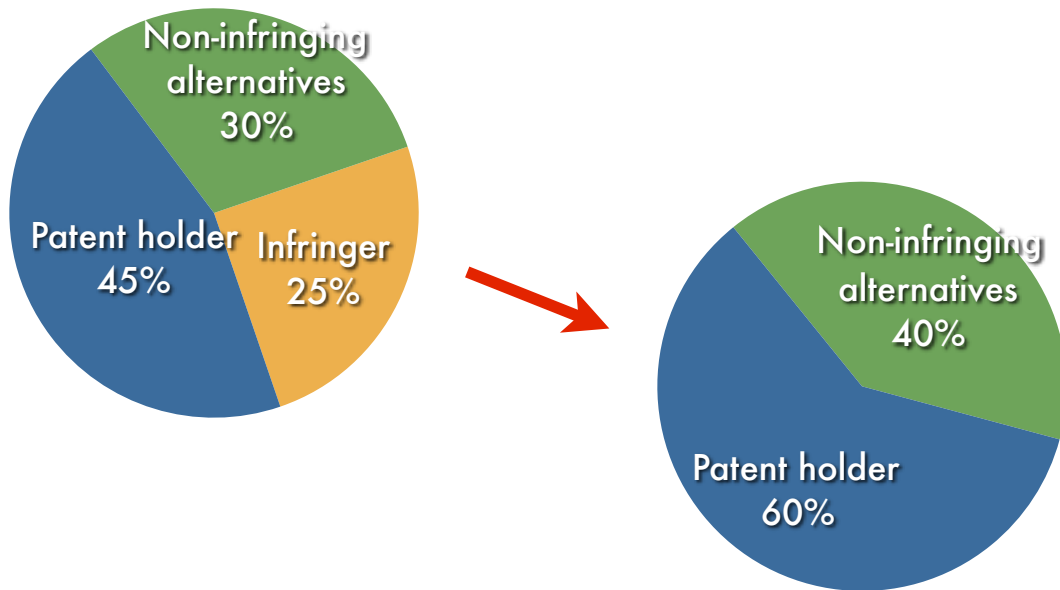


# Lost-profits theory

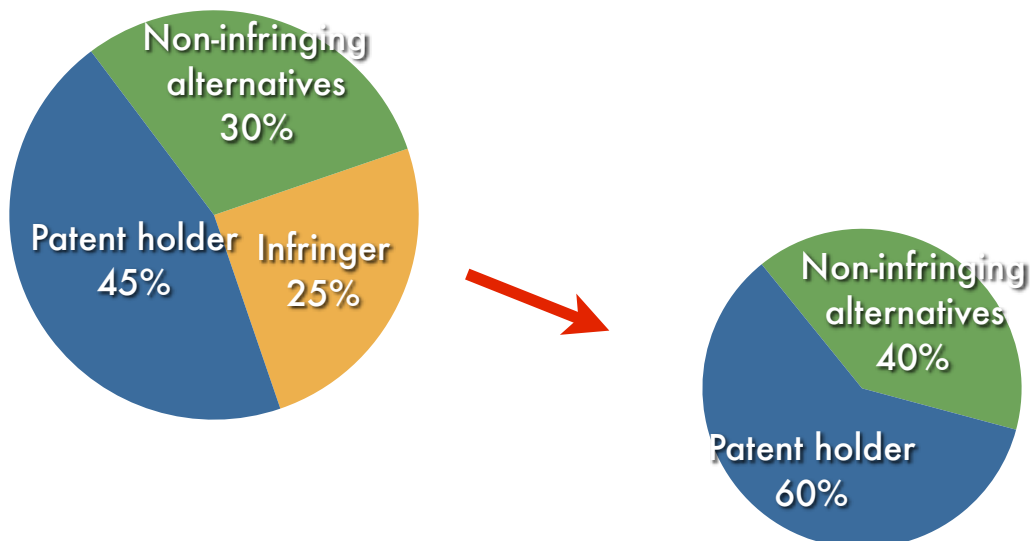
→ Reality:

- If the infringer hadn't sold infringing articles, some customers would have bought from the patent holder – but some wouldn't have
- Some would buy from others
- Some would no longer buy at all

# Lost-profits theory



# Lost-profits theory



# Rite-Hite Corp. v. Kelley Co.

→ Tech: Devices to secure truck to loading dock to prevent gaps



Device	Practices '847 patent?	Cost?
Rite-Hite MDL-55 (manual)	Yes	\$900 to \$1375
Rite-Hite ADL-100 (automatic)	<u>No</u>	\$2500 to \$3000
Kelley Truk-Stop (automatic)	Yes (infringing)	\$2300 to \$2800

Device	Practices '847 patent?	Cost?
Rite-Hite MDL-55 (manual)	Yes	\$900 to \$1375
Rite-Hite ADL-100 (automatic)	<u>No</u>	\$2500 to \$3000
Kelley Truk-Stop (automatic)	Yes (infringing)	\$2300 to \$2800

## *Rite-Hite Corp. v. Kelley Co.*

- Issue: Can Rite-Hite get lost-profits damages for lost ADL-100 sales?
- MDL-55 sales are undisputed
  - But the ADL-100 doesn't practice the patented invention



**(post-AIA) 35 U.S.C. § 284 — Damages**

Upon finding for the claimant the court shall award the claimant **damages adequate to compensate for the infringement**, but in no event less than a **reasonable royalty** for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

When the damages are not found by a jury, the court shall assess them. In either event the court **may increase the damages up to three times the amount found** or assessed. Increased damages under this paragraph shall not apply to provisional rights under section 154(d).

The court may receive **expert testimony** as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.

## ***Rite-Hite Corp. v. Kelley Co.***

→ Majority's argument?

# *Rite-Hite Corp. v. Kelley Co.*

→ Majority's argument?

- Causation in fact: Lost ADL-100 sales were caused by Kelley's infringement
- Proximate causation: The lost sales were foreseeable
- The market for a patented good is not necessarily the same as the market for the patent

# *Rite-Hite Corp. v. Kelley Co.*

→ Should we care that Rite-Hite is enforcing a patent it doesn't itself practice?

# *Rite-Hite Corp. v. Kelley Co.*

- Should we care that Rite-Hite is enforcing a patent it doesn't itself practice?
  - If we care about disclosure, no
  - If we care about getting new products, maybe?
  - We will talk more about this next time

# *Rite-Hite Corp. v. Kelley Co.*

- Dissent's argument?

# *Rite-Hite Corp. v. Kelley Co.*

## → Dissent's argument?

- This expands the scope of the patent rights: it legally privileges Rite-Hite selling something not within the patent
- Question is whether "the asserted injury is a type which is legally compensable for the wrong"
- So the relevant market is the patent

## *Panduit factors*

### → Question: Is the patent holder entitled to lost profits at all?

- Would it have earned marginal profits?
- Can it prove the amount of those profits?

# *Panduit factors*

→ *Panduit Corp. v Stahl Bros. Fibre Works, Inc.* (6th Cir. 1978):

- Demand for the patented product
- Absence of noninfringing substitutes
- Patent holder's manufacturing and marketing capability
- Amount of profits that would have been made

# *Panduit factors*

→ Demand for the patented product?

# *Panduit* factors

- Demand for the patented product?
  - Patent holder can only make additional profits if there would have been additional sales

# *Panduit* factors

- Absence of noninfringing substitutes?

# *Panduit* factors

- Absence of noninfringing substitutes?
  - If there were noninfringing substitutes, then consumers may have switched to those instead of the patent holder's product

# *Panduit* factors

- Patent holder's manufacturing and marketing capability?

# *Panduit* factors

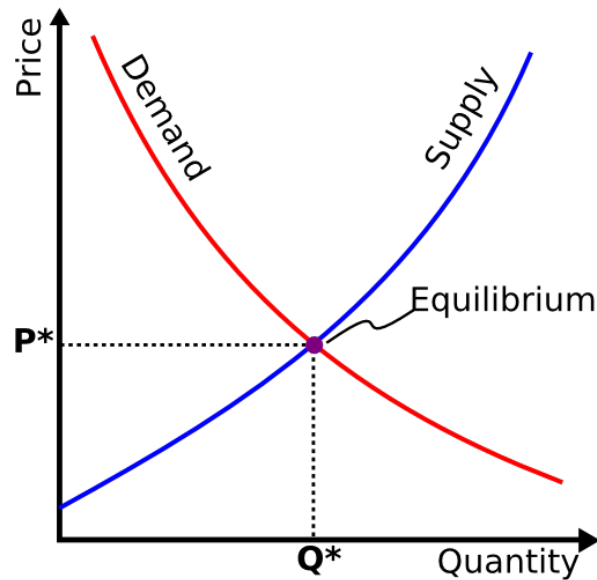
- Patent holder's manufacturing and marketing capability?
  - Patent holder would not have made additional sales if it couldn't have fulfilled the orders

# *Panduit* factors

- Amount of profits that would have been made?
  - Economics is hard!
  - Patent holder could have raised prices if the infringer wasn't in the market...
  - ...but then fewer people would have bought the product



# *Panduit* factors

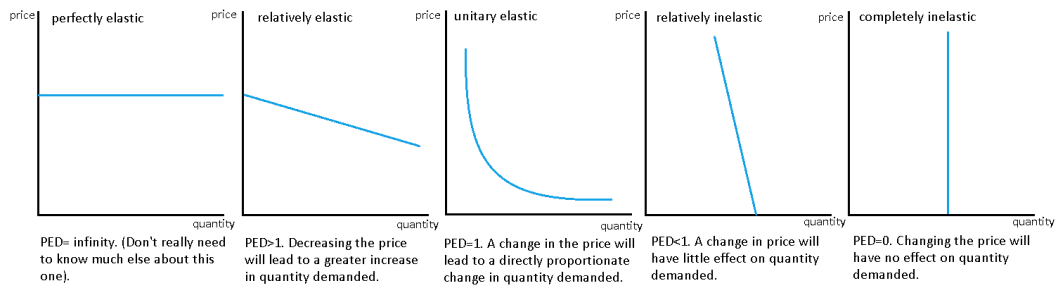


# *Panduit* factors

- Elasticity of demand:
- How much demand would be lost from the patented product for every dollar increase in its price?
  - Candy; cars; Windows computers: high price elasticity of demand
  - Unique drugs; gasoline: low price elasticity of demand

# *Panduit* factors

Elasticities of Demand



# *Panduit* factors

→ ...more on this next time

# Grain Processing

- Product: Lo-Dex 10, a maltodextrin food additive
- Produced by four methods
  - Processes I, II, and III infringed
  - Process IV did not infringe
  - Customers did not care about the differences

<b>United States Patent</b> [19]		[11] <b>3,849,194</b>
Armbruster et al.		[45] Nov. 19, 1974
[54] <b>LOW D.E. STARCH CONVERSION PRODUCTS</b>	Wallerstein Company, Data Sheet, No. 242, (Jan., 1965).	
[75] Inventors: Frederick C. Armbruster; Earl R. Kool, both of La Grange, Ill.	<i>Primary Examiner</i> —Lionel M. Shapiro <i>Attorney, Agent, or Firm</i> —Albert P. Halluin; Frank E. Robbins	
[73] Assignee: CPC International Inc., Engelwood Cliffs, N.J.		
[22] Filed: Sept. 17, 1971	[57] <b>ABSTRACT</b>	
[21] Appl. No.: 181,566	The present invention provides a process for preparing low D.E. waxy starch hydrolysates and low D.E. waxy starch conversion syrup products which are both liquid and solid. Waxy starch is treated with bacterial alpha amylase at a temperature above 85°C to liquify the waxy starch, then cool the liquified waxy starch to about 80°C, then convert the liquified waxy starch with bacterial alpha amylase to a D.E. from about 5 to about 25. By concentration from the resulting hydrolysate, a non-hazing syrup is obtained. Non-hygroscopic water-soluble solids are also obtained by further drying to a moisture content of less than about 15 percent.	
Related U.S. Application Data		
[63] Continuation of Ser. No. 602,563, Dec. 19, 1966, abandoned.		
[52] U.S. Cl. .... 127/29, 195/31 R		
[51] Int. Cl. .... C12b 1/00, C13k 1/06		
[58] Field of Search..... 195/31 R; 127/29		
[56] <b>References Cited</b>		
<b>OTHER PUBLICATIONS</b>		
Wallerstein Company, Technical Bulletin, No. 236, (Apr. 1964).		
14 Claims, No Drawings		

## U.S. Patent No. 3,849,194

→ "Low D.E.  
Starch  
Conversion  
Products"

<b>United States Patent</b> (19)		(11) <b>3,849,194</b>	<b>U.S. Patent</b> <b>No. 3,849,194</b>
Armbruster et al.		(45) Nov. 19, 1974	
[54]	<b>LOW D.E. STARCH CONVERSION PRODUCTS</b>	Wallerstein Company, Data Sheet, No. 242, (Jan., 1965).	
[75]	Inventors:	Frederick C. Armbruster, Fred D.	
[73]	Assignee:		
[22]	Filed:		
[21]	Appl. No.		
	Rela		
[63]	Continuat		
	abandoned		
[52]	U.S. Cl. ...		
[51]	Int. Cl. ...		
[58]	Field of St		
[56]	OR		
	Wallerstein Cor		
	(Apr. 1964).		

**We claim:**

**1. A process for producing a waxy starch hydrolysate which comprises treating in a first step an aqueous slurry of waxy starch with a bacterial alpha-amylase enzyme at a temperature above about 85°C. to liquefy the waxy starch and to provide an aqueous solution containing a liquefied waxy starch, then subsequently in a second step, at reduced temperatures below about 85°C, treating said liquefied waxy starch with a bacterial alpha-amylase enzyme to saccharify the waxy starch and to achieve a waxy starch hydrolysate having a dextrose equivalent value from about 5 to about 25, stopping the saccharification reaction and recovering the waxy starch hydrolysate so produced.**

## *Grain Processing*

- Grain Processing: we lost sales due to the infringing product
- Court: what would have happened absent the infringement?

# *Grain Processing*

- Let's look to the *Panduit* factors!
- Demand for the patented product
  - Absence of noninfringing substitutes
  - Patent holder's manufacturing and marketing capability
  - Amount of profits that would have been made

# *Grain Processing*

- Let's look to the *Panduit* factors!
- Demand for the patented product
  - Absence of noninfringing substitutes
  - Patent holder's manufacturing and marketing capability
  - Amount of profits that would have been made

# *Grain Processing*

- Court: a noninfringing substitute may be available even if it's not currently being used
  - American Maize switched to Process IV in two weeks – “practically instantaneous”
  - American Maize “did not have to ‘invent around’ the patent”

# *Grain Processing*

- Note: Not all cases are this economically enlightened
  - *Zygo Corp. v. Wyko Corp.* (Fed. Cir. 1996): “It is axiomatic [ ] that if a device is not available for purchase, a defendant cannot argue that the device is an acceptable non infringing alternative for the purposes of avoiding a lost profits award.” (M&D 969)

# *Grain Processing*

→ But what about the fact that Process IV cost more?

# *Grain Processing*

→ But what about the fact that Process IV cost more?

- Process IV was “not prohibitively expensive”
- Profit margins were high enough to absorb the 2.3% cost increase
- Probably this would have mattered in a license negotiation

# Reasonable royalty

## Reasonable-royalty theory

- Sometimes the patent holder wouldn't earn any additional profits
- **Why not?**



# Reasonable-royalty theory

- Sometimes the patent holder wouldn't earn any additional profits
- **Why not?**
  - The patent holder doesn't sell the product
  - The accused infringer would design around the patent and sell just as many products

# Reasonable-royalty theory

- **What do we think would have happened in these cases absent infringement?**

# Reasonable-royalty theory

- What do we think would have happened in these cases absent infringement?
  - Hard to know for sure, but a reasonable guess is the parties would have negotiated a license
  - Thus, the reasonable royalty

## *Trio Process Corp.*

- Tech: process for removing insulation from copper wire to salvage the wire
- Trio: licensed the patent and sold furnaces used in its implementation
  - This will complicate the royalty analysis

# *Trio Process Corp.*

- **The goal:** figure out what royalty the parties would have agreed to in a hypothetical negotiation before the infringement?

# *Georgia-Pacific factors*

- *Georgia-Pacific Corp. v. US Plywood Corp.* (SDNY 1970):
- 1. Royalties received by patent holder
  - 2. Royalties paid by licensee for similar patents
  - 3. Nature and scope of the license
  - 4. Patent holder's licensing practices and policies
  - 5. Commercial relationship between parties
  - 6. Effect of patent on patent holder's products
  - 7. Duration of the patent term and license term
  - 8. Profitability and success of patent product

# Georgia-Pacific factors

→ *Georgia-Pacific Corp. v. US Plywood Corp.*  
(SDNY 1970):

- 9. Advantages of patent product over others
- 10. Nature of patented invention
- 11. Extent to which infringer used invention
- 12. Portion of profit or selling price customarily allowed for use of the invention
- 13. Portion of profit attributable to the invention
- 14. Opinion testimony of qualified experts
- 15. Outcome from hypothetical negotiation

## *Trio Process Corp.*

→ What's the maximum a company would pay for a license?

# *Trio Process Corp.*

→ **What's the maximum a company would pay for a license?**

- Whatever the tech is worth to them
- Savings, if it saves them money over a competing technology
- Marginal profit, if it lets them make more money
- All their (economic) profit, if it's the only way they can sell a product

# *Trio Process Corp.*

→ **What's the minimum a company would accept for a license?**

# *Trio Process Corp.*

- What's the minimum a company would accept for a license?
- Depends on lots of factors
  - Once the patent is obtained, it's a sunk cost, so any revenue is good
  - But it sets a precedent that other licensees might be able to use
  - In the long run, you want to earn back your R&D costs

# *Trio Process Corp.*

- So if Goldstein saved \$52,791 per furnace-year, why is \$7,800 to \$15,000 per furnace-year an unreasonable royalty?

# *Trio Process Corp.*

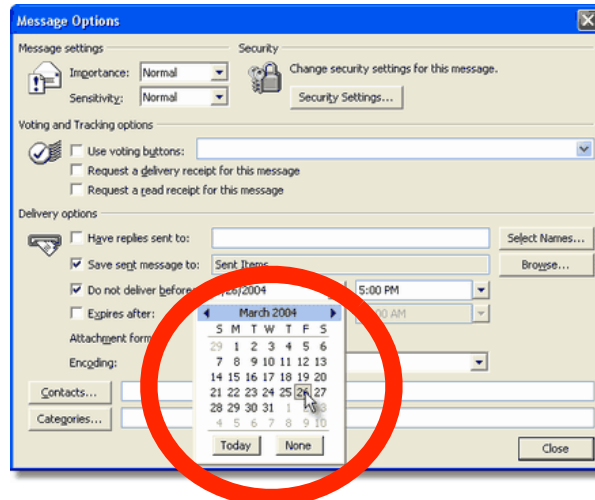
- So if Goldstein saved \$52,791 per furnace-year, why is \$7,800 to \$15,000 per furnace-year an unreasonable royalty?
  - Because we have good evidence Trio wouldn't have demanded that much
  - It charged everyone else in the market \$2,600 per furnace-year

# *Trio Process Corp.*

- Other licenses aren't perfect or mandatory evidence
  - Sometimes the patent isn't widely licensed
  - Sometimes there are different volumes or different terms or different bargaining power
- But they can be strong evidence

# Lucent v. Microsoft

→ Tech: date picker (again)



# Lucent v. Microsoft

→ Why no lost profits here?



# *Lucent v. Microsoft*

## → Why no lost profits here?

- Lucent made no competing product  
– no profits to be lost
- Microsoft could easily have designed around the patent

# *Lucent v. Microsoft*

## → Lump-sum license v. running royalty

- Lump-sum: easier to track; puts risk of under-performing product on licensee
- Running royalty: harder to track; puts risk of out-performing product on licensee

# *Lucent v. Microsoft*

→ What was wrong with the jury verdict?

# *Lucent v. Microsoft*

→ What was wrong with the jury verdict?

- Other licenses not comparable
- Other licenses not proved relevant
- License for a tiny feature can't be based on the full value of Outlook
- Microsoft would never have agreed to a \$350 million lump sum for a tiny feature

# *Lucent v. Microsoft*

- Four lump-sum licenses:
  - \$290MM Dell/IBM
  - \$80MM Microsoft/HP
  - \$93MM Microsoft/Apple
  - \$100MM Microsoft/Inprise
- Problems:
  - Multiple patents
  - Cross licenses
  - Inadequate explanation of patents

# *Lucent v. Microsoft*

- Entire-market-value rule
  - Patent holder can't use the entire market value of the infringing product as the royalty base unless it can show that the patented feature is the **basis for consumer demand**
  - Royalty base: amount multiplied by the royalty rate

# *Lucent v. Microsoft*

## → Entire-market-value rule

- Here, Lucent's expert violated this rule by increasing his royalty rate from 1% to 8% once the base was reduced

# *Lucent v. Microsoft*

## → Example 1:

- Entire product is a Windows PC costing \$1000
- Court orders 1% royalty
- So the royalty on each PC is  $\$1000 \times 1\% = \$10$

# *Lucent v. Microsoft*

## → Example 2:

- Entire product is a Windows PC costing \$1000
- But the patented component is a \$10 video card
- Court orders 5% royalty
- So the royalty on each PC is  $\$10 \times 5\% = \$0.50$

# *Lucent v. Microsoft*

## → Example 3:

- Entire product is a Windows PC costing \$1000, or maybe Outlook costing \$50
- But the patented component is a tiny feature
- Court orders 5% royalty
- So the royalty on each PC is  $\$????? \times 5\% = \$?????$

# *Lucent v. Microsoft*

- Problem: The royalty is variable, so the base doesn't matter that much, economically
- It'd be fine to start with the value of the computer if the royalty was, say, 0.01% (10¢ for a \$1000 computer)
  - But in practice royalties are often in a narrow band of ~0.25% to 5%

**Next time**

# Next time

→ Remedies:

- the economics of damages
- attorney fees
- increased damages for willfulness

→ Midterm feedback