What Is That Patent Really Worth? Courts Take a Hard Look at the "Reasonable Royalty" Calculation

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Complex Products Embody Many Features

Features Earn Profits In Many Forms
Not Just IP

Apportioning Profit Among Features

- "… the portion of the realizable profit that should be credited to the invention, as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer."

-- *Georgia-Pacific* factor 13

Some notable jury awards

- *Lucent*
  - Accused sales: $ 8 billion
  - Plaintiff demand: $562 million (7% of sales)
  - Jury award: $358 million (4.5% of sales)
- *Uniloc*
  - Accused sales: $ 19 billion
  - Plaintiff demand: $565 million (3% of sales)
  - Jury award: $388 million (2% of sales)

Lucent and *Uniloc* on appeal

- ***Lucent***

  We find it inconceivable to conclude … that the use of one small feature … constitutes a substantial portion of the value of Outlook… the only reasonable conclusion is that most of the realizable profit must be credited to [other] elements, such as "the manufacturing process, business risks, or significant features or improvements added by [Microsoft]."

- ***Uniloc***

  Evidence relying on the 25 percent rule of thumb [to determine profit shares] is thus inadmissible … because it fails to tie a reasonable royalty base to the facts of the case

The Void Left By *Uniloc*

- Generic fact pattern
  - Complex device (smartphone, processor, …) embodies 100s or 1000s of patents
  - A "small" number of asserted patents
  - But everything else is "large"
    - Accused sales
    - Current profits
    - Switching costs
    - → Plaintiff damages demand

- With no 25 Percent Rule, is there any "rule" for determining one patent's share of profit?

A Better "Rule" For Determining One Patent's Share Of The Profit

- If you know
  - the size of the profit to be divided
- and you can
  - count the number of relevant patents
  - rank the patents in order
- then you can
  - divide the profit shares among the patents, so that
  - the sum of shares adds up to 100%

So Is This Just Another "Rule"?

- No
- The value depends on a patent's rank
  - Rankings are often fact-intensive and case-specific
  - Must identify all "peers" in the same product and compare to them – control for market conditions
- Assume that the "count" (number of patents) and "rank" steps have already been carried out
- Focus on the "divide" step – each patent's share

Steps To Obtaining Reliable Profit Shares

- Find the right distribution family
- Find the right member of the family
- Derive formula for shares from choice of member
- Assess sensitivity of shares to the assumptions
- Determine variability of shares in small portfolios
- Etc. (what you pay an economist for …)

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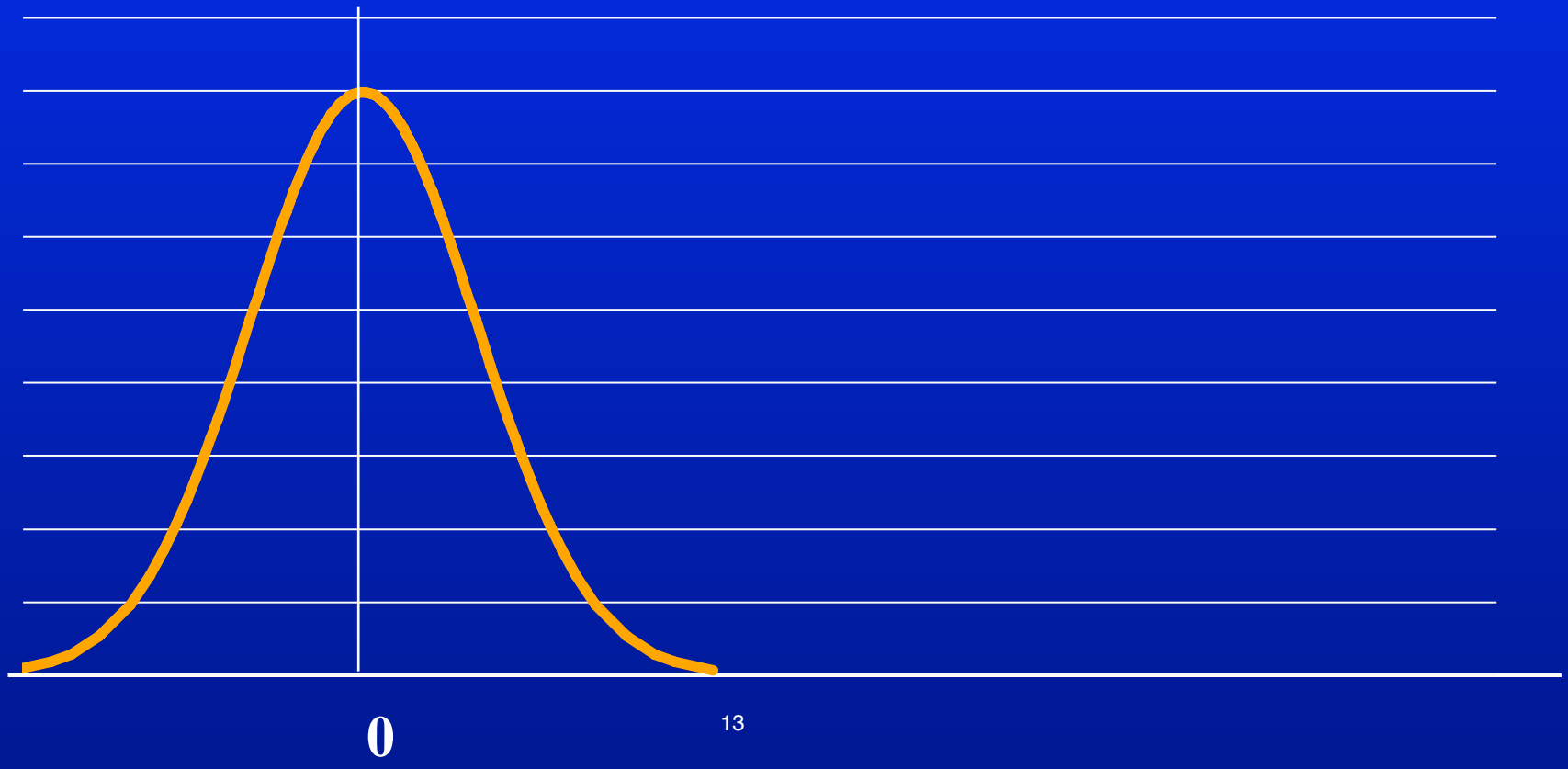
Where Does Each Patent's Share Come From?

- For 25 years, economists have studied the distribution of patent values in large samples
  - Value distributions arise from patentee decisions
    - where to patent
    - when to patent / maintain the patent
  - Various methods, countries, technologies, models
- Basic results
  - Values highly skewed (many low values, few highs)
  - Patent values vary greatly by country, tech field, etc.
  - Aggregate value of patent rights is 15 – 25% of R&D

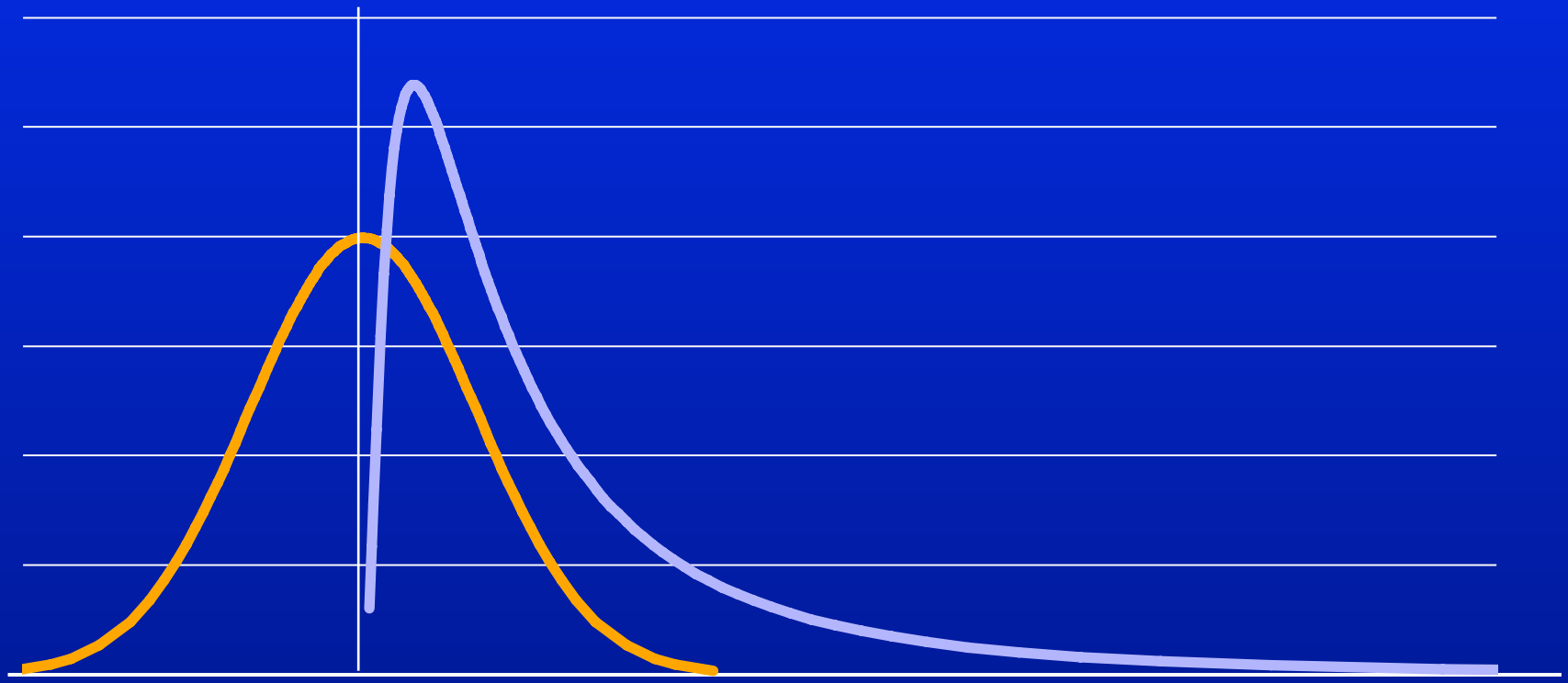
Distributions 101 – The "Bell Curve"

Normal distribution:
positive and negative values, symmetric



Patent Values Do Not Fit The “Bell Curve”

Log-normal distribution:
positive values, skewed to the right



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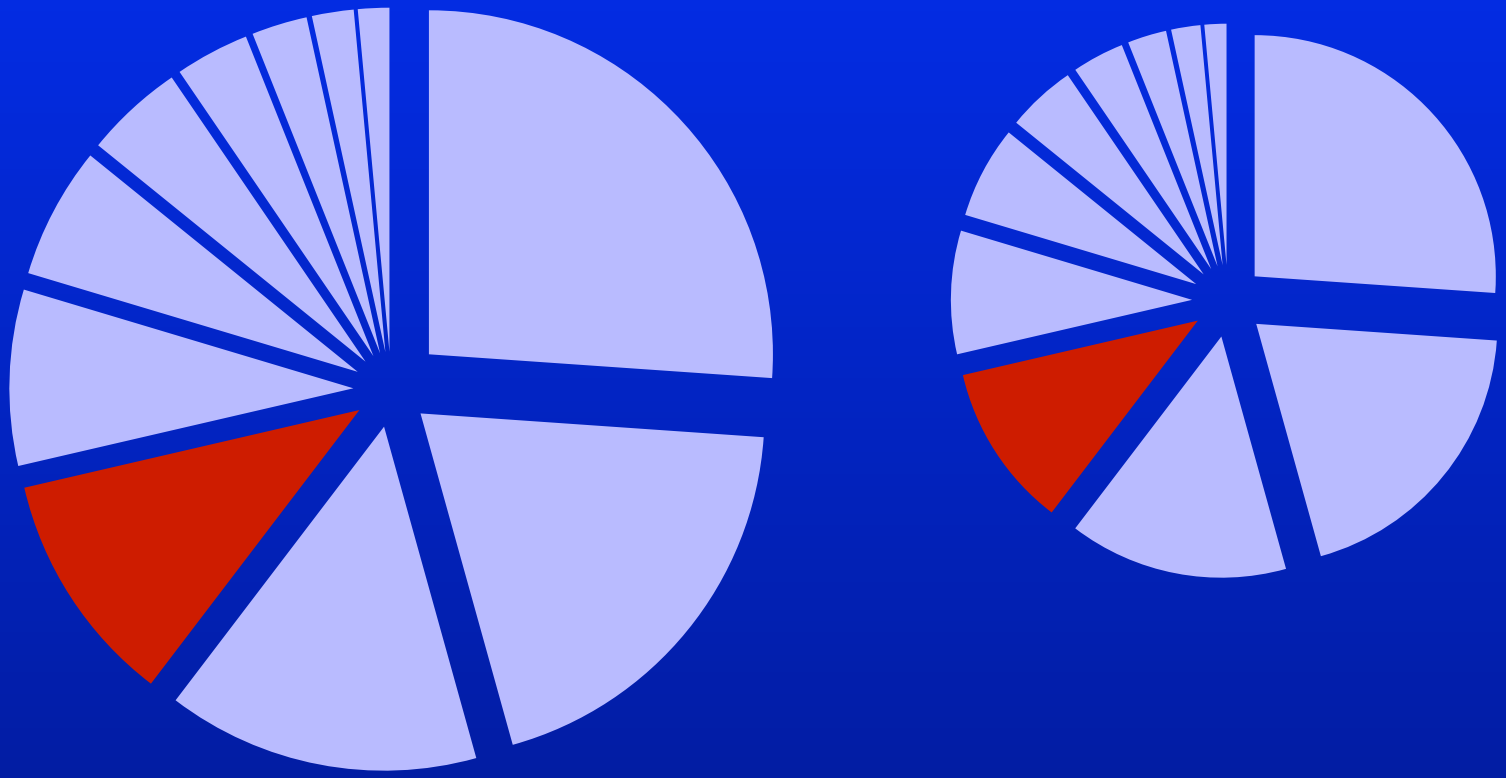
Expected shares do not vary as the pie varies



The Output

- Determine each patent's ratio to the average patent's share (0.1% in 1000-patent portfolio)
- Some exemplary ratios:

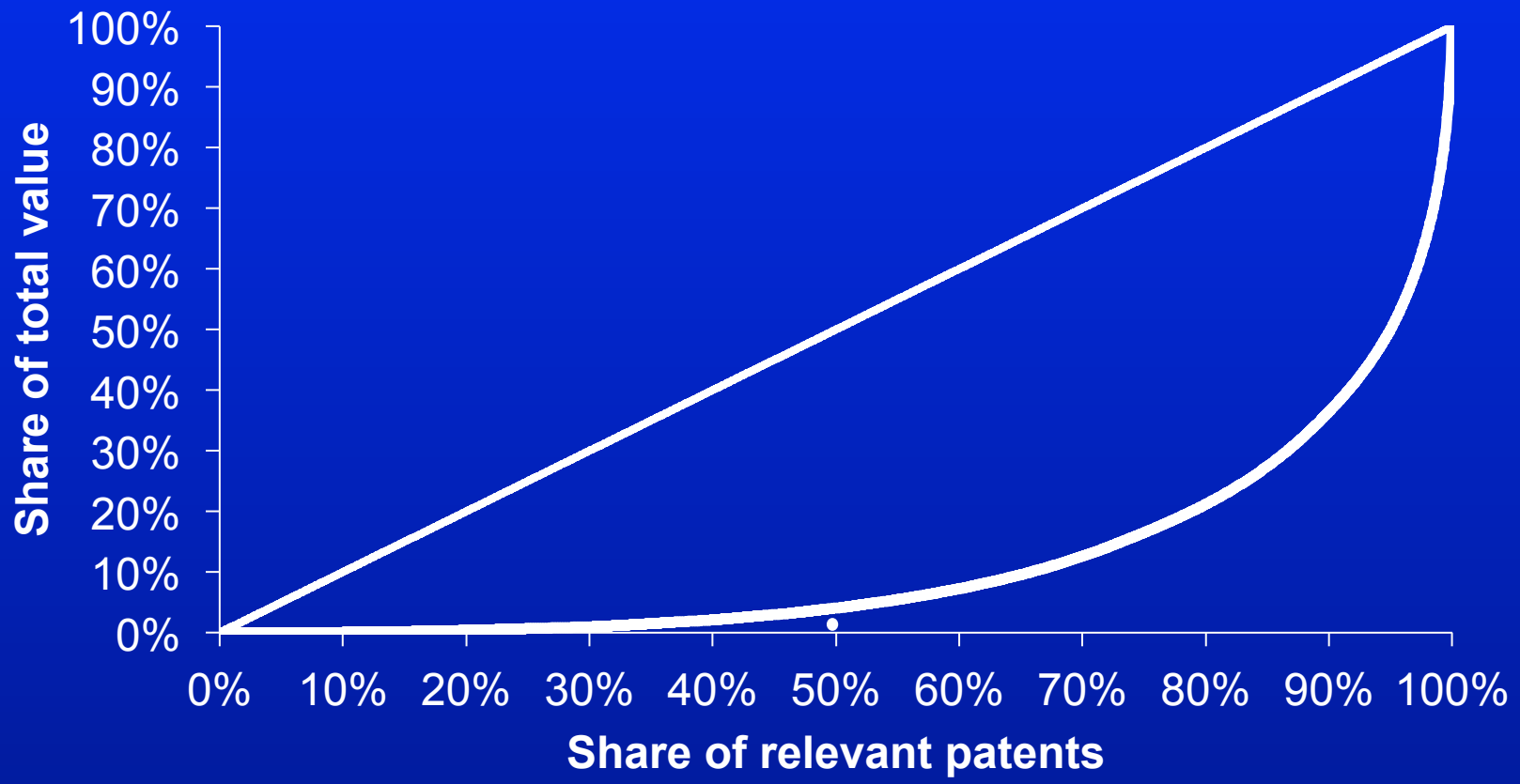
Percentile	Ratio	Share of 1000-patent portfolio
50th	0.2	0.02%
75th	0.9	0.09%
90th	2.1	0.21%
95th	3.7	0.37%

Example

- Suppose an accused product
  - generates $5 billion in sales
  - yields $1 billion in profit (20% margin – all patents)
  - embodies 1,000 patents
    - ➔ average profit per patent is $1 million
    - ➔ then the expected values are approximately

Percentile	Share	Value
50th	0.02%	$ 200,000
95th	0.37%	$3,700,000

Lorenz graph – patents ordered low to high



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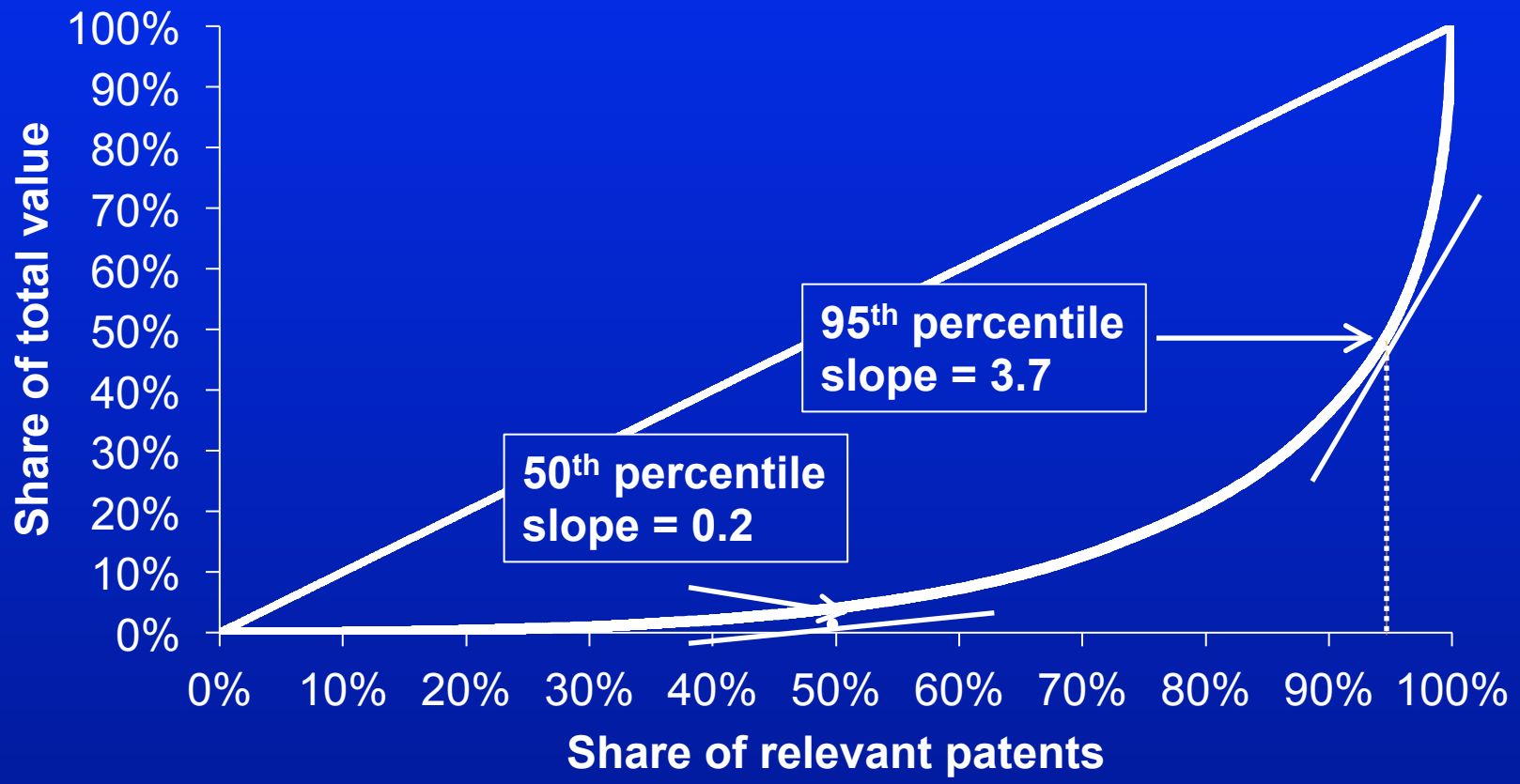


Revisiting Lucent's $562 million demand

- Suppose
  - Lucent's patent ranked in the 95th percentile among Microsoft patents
  - Therefore, the patent is expected to be worth 3.7 times the value of the average Microsoft patent
  - Therefore, the average Microsoft patent must be:

$562 million
÷ 3.7 multiplier for a 95th percentile patent
= $152 million average MSFT patent value

Revisiting Lucent's $562 million demand

- Suppose
  - 95th percentile rank among MSFT patents
  - ➔ 3.7 times the value of the average MSFT patent
  - ➔ average MSFT patent worth $562M ÷ 3.7 = $152M
  - ➔ 18,000 MSFT U.S. patents @ $152M = $2.7 trillion
  - MSFT market capitalization: $270 billion
  - Recent transactions
    - MSFT – AOL: $1.1M per patent
    - Facebook – MSFT: $0.9M per patent
    - Others (Novell, Nortel, Motorola, …): $0.5 - $2.0M per patent

Revisiting Lucent's $562 million demand

- What is a better guess for the value of the patent?
- Suppose
  - $8.0 billion accused sales
  - x 40% profit margin
  - = $3.2 billion profit (too high – all patents)
  - ÷ 500 Outlook patents
  - = $6.4 million profit per patent (too high – $2M?)
  - x 3.7 multiplier for a 95th percentile patent
  - = $23.7 million*

* JMOL: $26.3 million

Oracle v. Google

- **Frame the damages claim first – before trial**

  "What share of the hypothetical license would have been accounted for by an Oracle patent?"

- **"Therefore, Dr. Cockburn can opine that the 569 patents that would have been included in the 2006 license bundle had a value-distribution curve similar to that observed in the three cited studies three of the patents in suit, [and] were among the 22 most valuable patents in the bundle (top 4%), but cannot opine that those three patents were the most valuable of the 569 patents (top 0.5%)"**

ORDER GRANTING IN PART AND DENYING IN PART GOOGLE'S *DAUBERT* MOTION TO EXCLUDE DR. COCKBURN'S THIRD REPORT
http://www.groklaw.net/pdf3/OraGoogle-785.pdf

Oracle v. Google

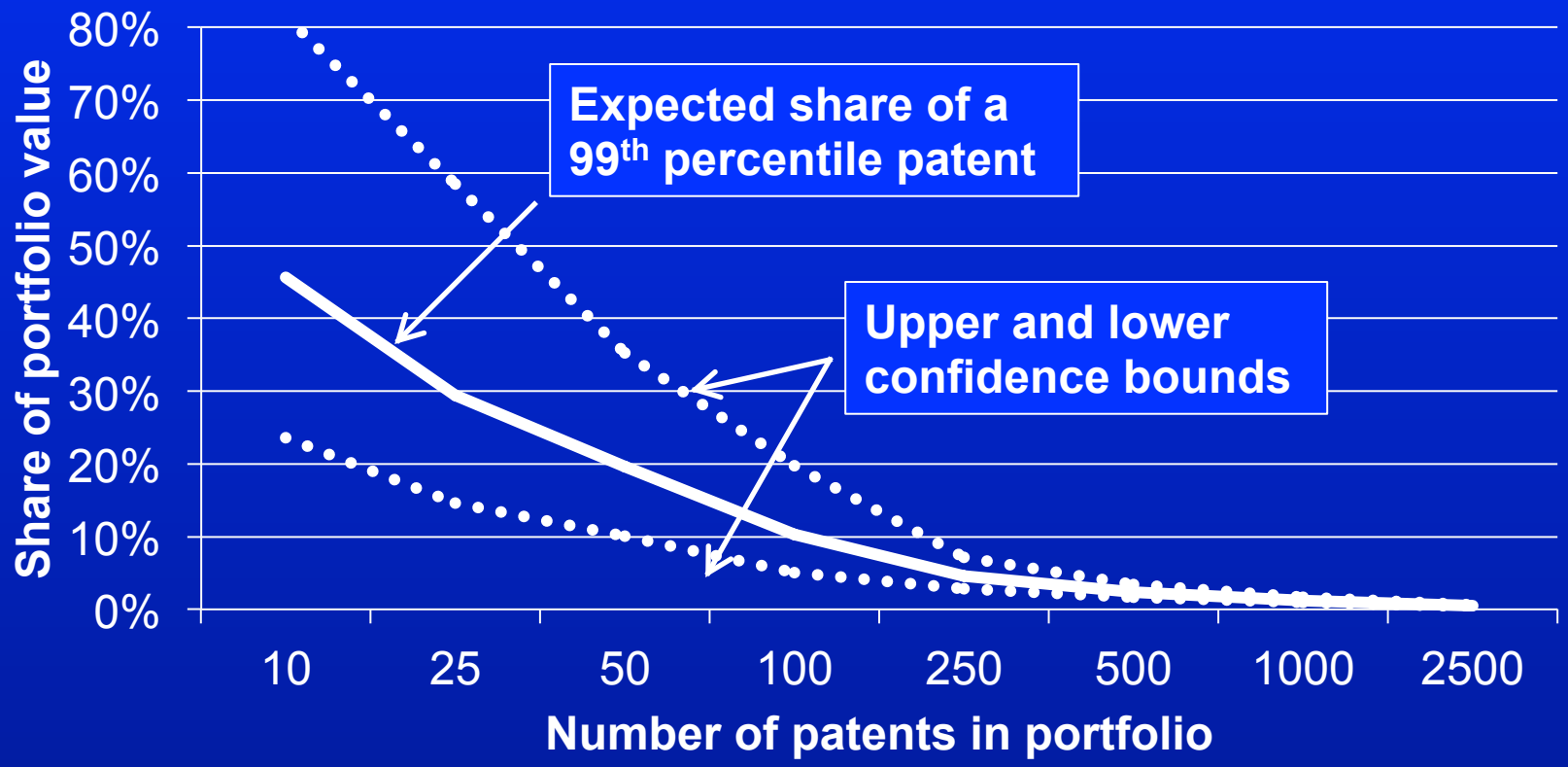
- Frame the damages claim first – before trial:

  "*What share of the hypothetical license is attributable to an Oracle patent?*"

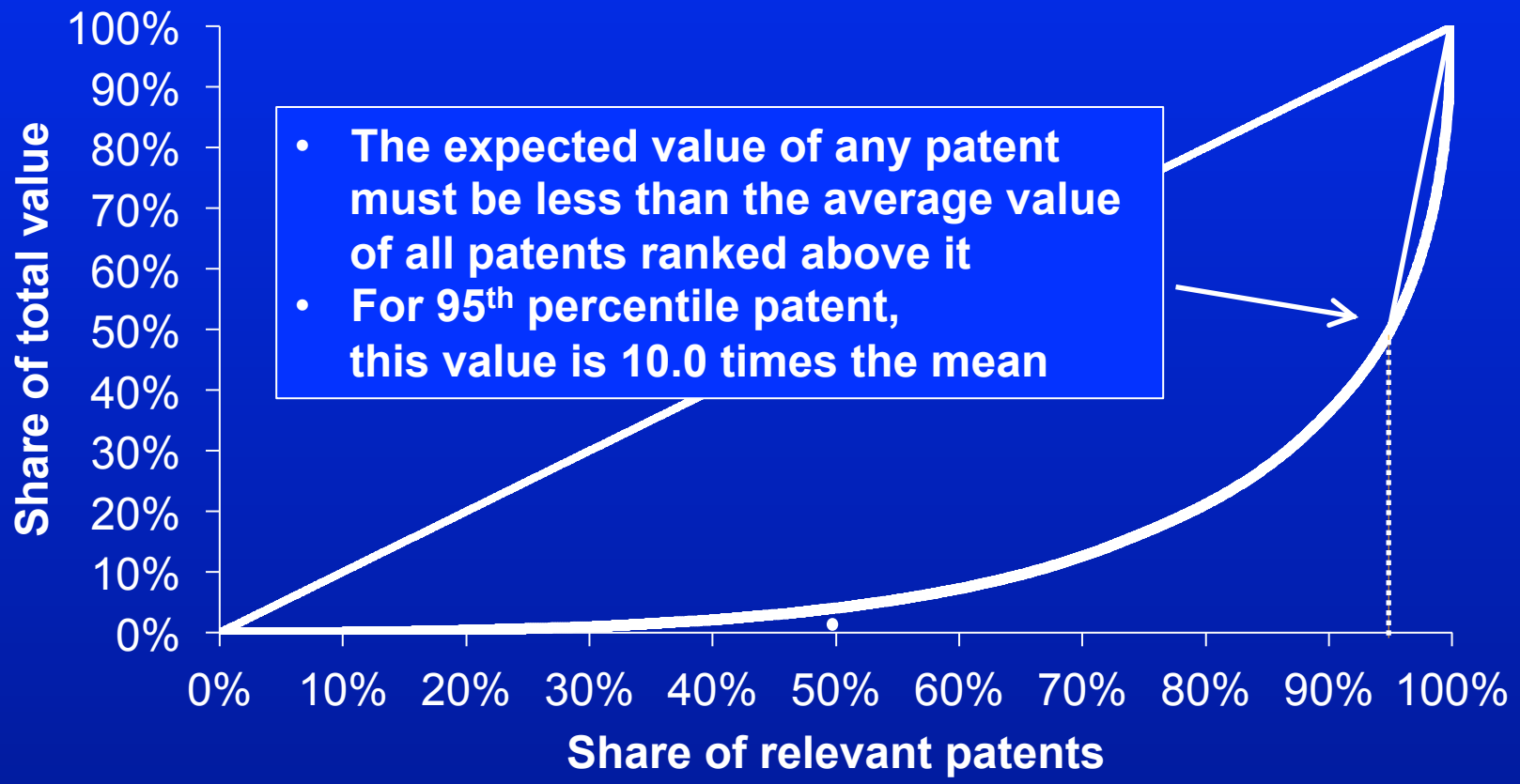
- Total Oracle patents 569 Count
  Asserted patents' place Top 22 Rank
  What is their share?

Oracle	77%	
Google	?	Divide
Court expert	53%	

Confidence intervals in finite samples



Ruling Out Inconsistent Claims



How Has "Count, Rank & Divide" Fared In Court?

- "… the Court finds [the] methodology to be credible and consistent with Federal Circuit case law and the *Georgia Pacific* factors ….

  "With AUO's aggregate claim against LGD assessed, Dr. Putnam then used a method described as "count, rank, and divide" to determine the portion of the claim attributable to the four asserted patents. This method takes into account *Georgia Pacific* factors 9-11.

  "Based on the value share of each patent in AUO's portfolio and based on the assumption that these patents are in the top 5% of AUO's portfolio, Dr. Putnam determined that AUO's damages for infringement of all four patents would total $305,399 …"

  -- *LG Display v. AU Optronics et al.,* Civ. Ac. No. 06-726 (D.Del. 2009) (Farnan, J.)

How Has "Count, Rank & Divide" Fared In Court?

- **Admitted at trial (over *Daubert* challenge)**

  ***Energy Transportation Group v. Sonic Innovations et al.* (D. Del. 2008) (Sleet, J.)**

- **Cited by Oracle in support of expert testimony**

  ORACLE AMERICA, INC.'S OPPOSITION TO GOOGLE'S MOTION TO STRIKE PORTIONS OF THIRD EXPERT REPORT BY IAIN COCKBURN AND EXPERT REPORT BY STEVEN SHUGAN, Feb. 24, 2012 (Dkt. No. 737)

FAQs

- Does this method work for every product?
- What is the right definition of “profit”?
- How do you determine the number of “relevant patents”? And what if you’re wrong?
- How do you rank patents? What if you’re wrong?
- What about non-patent sources of profit (like copyrights or trade secrets or …)?

More FAQs

- Does your method assume that the asserted patent is valid and infringed?
- Your method is based on patents from a different firm / country / technology / time period – does it still apply to my case?
- Is this the only way to apportion profits?
- How much “wiggle room” is there in your calculations?

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* The foregoing presentation is an incomplete description of one method of apportioning profits. It does not and cannot substitute for a complete economic analysis of patent damages, which must be tied to the facts of a particular case.