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Unreasonable Royalties

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A Case Study:

Bayer AG v. Sony Electronics Inc., Sony Corporation, Inc. and Dowa Mining Co.

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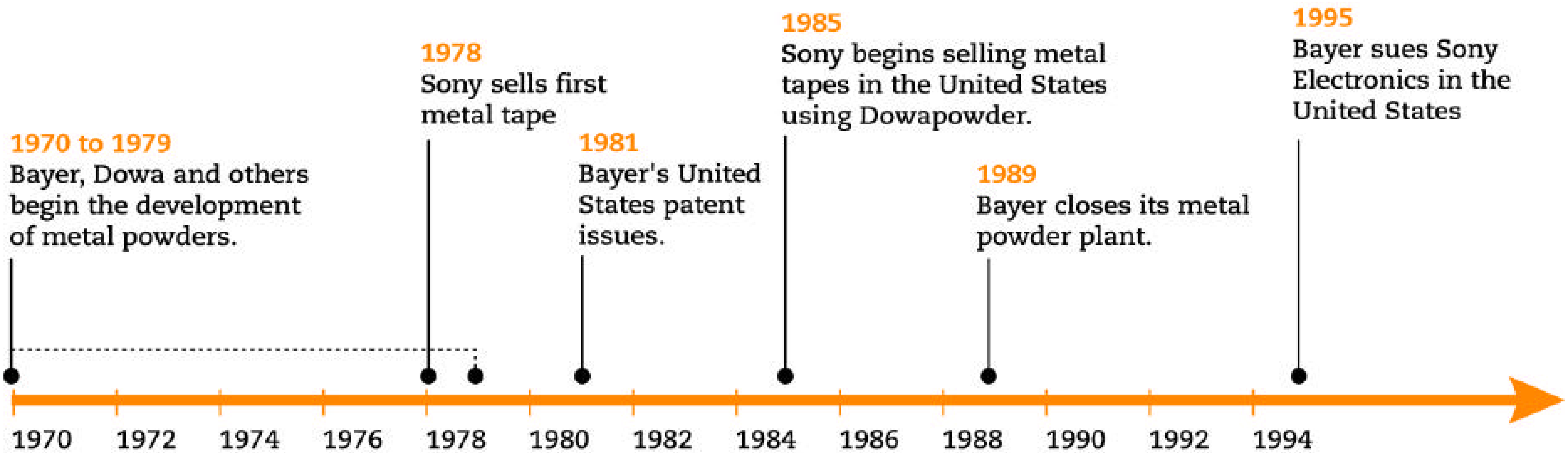
Case Background

- **The ‘799 patent relates to a metal pigment for magnetic recording purposes which consists essentially of iron.**
- **The invention allows the production of a metal powder for use in magnetic recording material without requiring the addition of nickel or cobalt**
- **Dowa’s powders, which it sold to Sony for use in Sony’s audio and video cassette tapes are accused of infringing the ‘799 patent**

Timeline of Events



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Royalty Determination in Practice:

Bayer AG v. Sony Electronics Inc., Sony Corporation, Inc. and Dowa Mining Co.

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How Royalty Determination Actually Takes Place

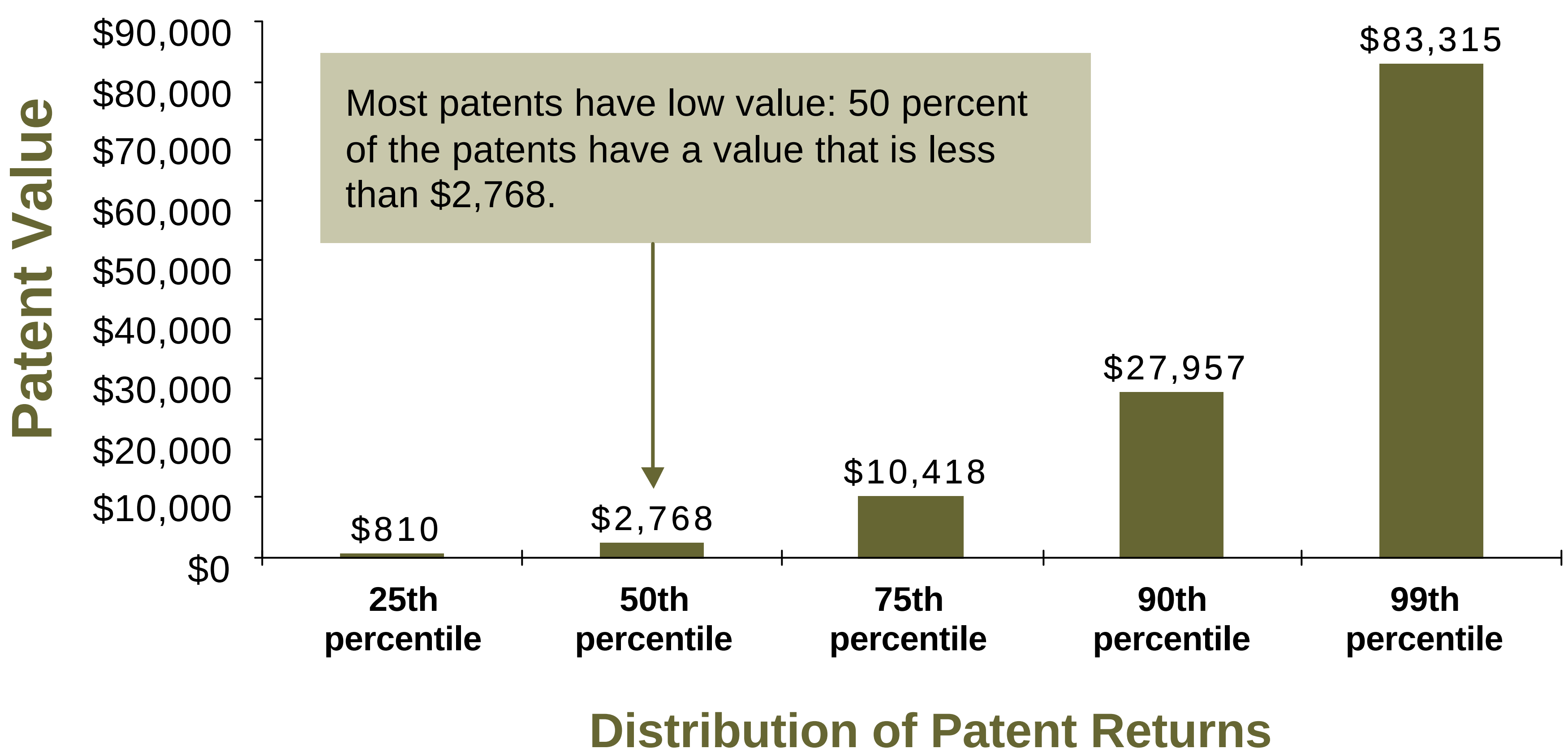
- **Royalty rates are negotiated in markets**
- **They are the outcome of a bargain between the patent holder and the licensee**

Both Sides Win

Ways in Which Analysts Try To Imitate The Royalty Bargain:

1. **Market Based**	Reasonable
2. **Use of Comparables**	Can Be Reasonable
3. **Industry Rules of Thumb**	Reasonable Only With Luck
4. **25% Rule/ Standard Profit Split**	Unreasonable

What is Wrong With Using Industry Averages?



Methods Used by Plaintiff's Expert to Determine a Reasonable Royalty

	IMPLIED ROYALTY
Method 1: 25% of SEL's profits on allegedly infringing products	3.22 %
Method 2: 25% of SEL's average consolidated operating profit	1.85 %
Method 3: Difference in profit margin between accused (metal particle) and non-accused (iron oxide) products	-10 % to 12.5 %
Method 4: 25% of the historical industry operating margins for the SIC 3695 code (Magnetic and Optical Recording Media)	1.57 %

What is Wrong With These Methods of Royalty Determination?

- **They are arbitrary**
- **They don’t measure the value of the ‘799 patent to either Bayer or Dowa/Sony**
- **They don’t consider whether there are less costly non-infringing alternatives**

Method Used by NERA to Determine a Reasonable Royalty

- **Determined the minimum that Bayer would be willing to accept**
- **Determined the maximum Dowa/Sony would be willing to pay based on the cost of switching to the next-best alternative**
- **Considered other factors enumerated in the Georgia-Pacific decision to evaluate bargaining power**

The Minimum of the Bargaining Range

The minimum royalty rate that Bayer would accept depends on the profits that it would have expected to lose from licensing the '799 patent to Dowa/Sony.

Bayer Would Not Have Lost Any Profits by Licensing its '799 Patent to Dowa/Sony

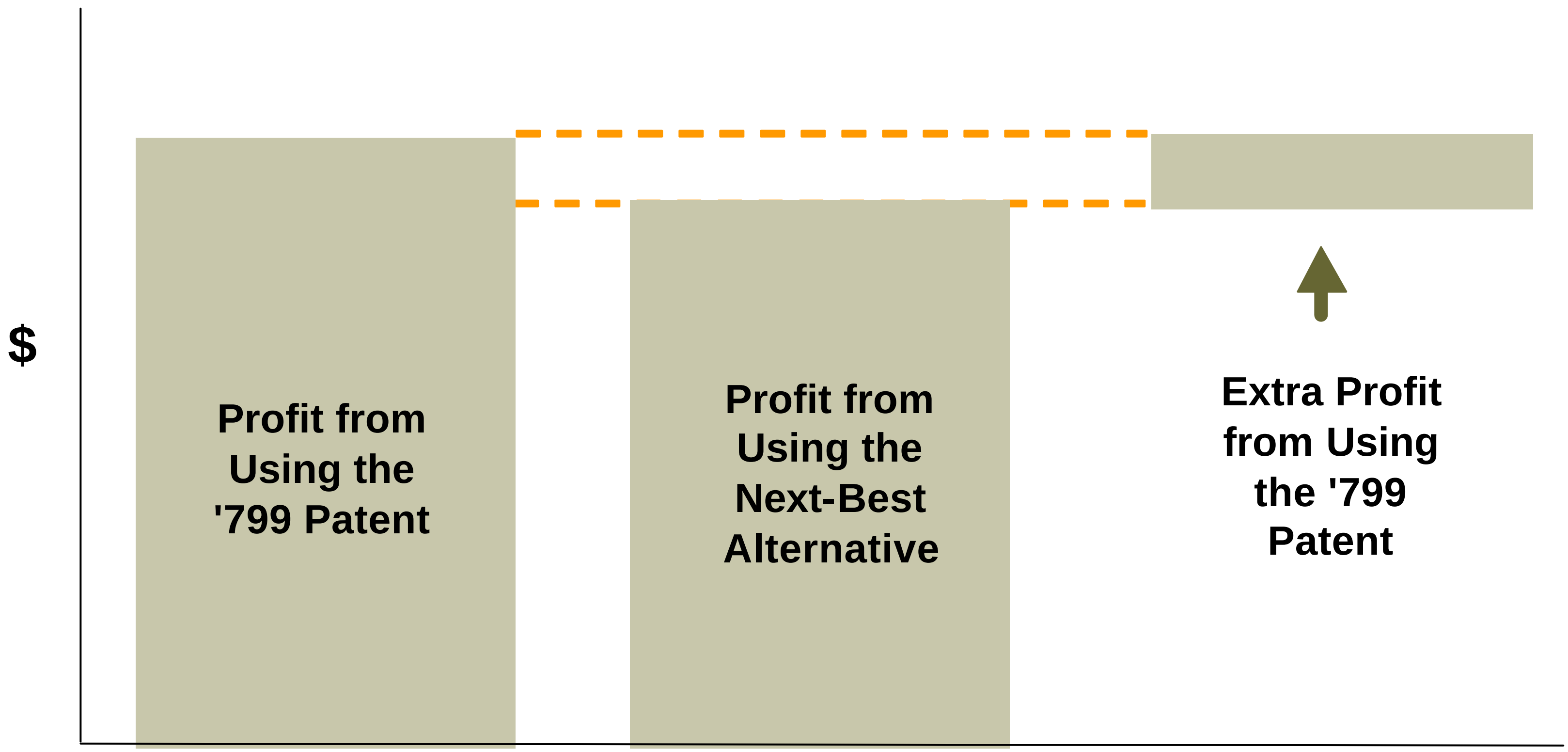
- **Bayer could not manufacture a metal powder that was acceptable to Sony.**
- **Bayer was not Sony's next-best alternative metal powder supplier.**
- **Thus, the only profitable use that Bayer could have made of the '799 patent was to license it.**

Bayer's minimum willingness to accept is zero

The Maximum of the Bargaining Range

The maximum royalty rate that Dowa/Sony would accept depends on the costs of switching to the next-best alternative.

Dowa/Sony's Maximum Willingness to Pay



Non-Infringing Alternatives

- **A Nickel/Cobalt Metal Powder Formulation Produced by Dowa**
- **Metal Powders Produced by KDK**
- **Metal Evaporated Tape**

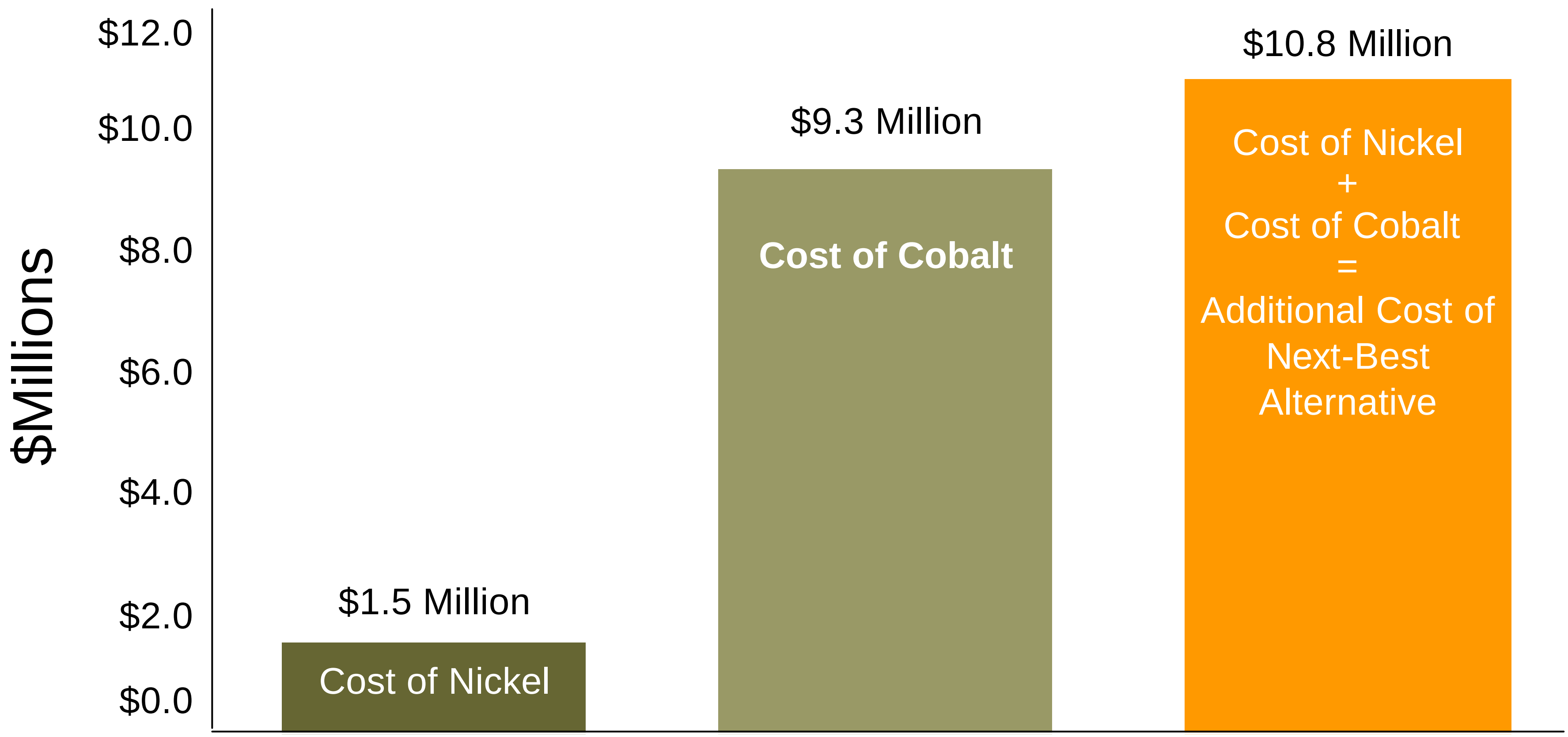
The Next-Best Alternative

A metal powder formulation containing 5% nickel and 5% cobalt.

We understand that this formulation would:

- **Not use the ‘799 patent**
- **Be functionally equivalent to the metal powders that Dowa actually sold to Sony**
- **Allow Dowa to maintain all of its sales to Sony**
- **Leave Sony’s profits unchanged**

Dowa/Sony's Maximum Willingness to Pay Depends on the Additional Cost of Producing the Next-Best Alternative



Calculating Sony's Maximum Willingness to Pay

The Additional Cost of the Next-Best Alternative ÷ SEL's Sales of Alleged Infringing Metal Tapes = Sony's Maximum Willingness to Pay

$$\frac{\$10.8 \text{ million}}{\$2{,}044 \text{ million}} = 0.53\%$$

The Bargaining Range

The Reasonable Royalty Rate Based on SEL's Sales Would Be Within the Bargaining Range

Minimum Royalty Rate Bayer Is Willing to Accept: 0%

Maximum Royalty Rate Sony Is Willing to Pay: 0.53%

The Georgia-Pacific Factors: Determining Bargaining Power

1. Royalties received for the patent tending to prove an established royalty
2. Rates paid for comparable patents
3. Nature and scope of the license
4. Licensor's established policy and marketing program
5. Commercial relationship between the licensor and licensee
6. Effect on sales of other products of the licensee
7. Duration of the patent and term of the license
8. Established profitability of the products made under the patent
9. Advantages of the patent over old modes or devices
10. Benefits of the patent to users
11. Infringer's use of the patent
12. Customary profit split
13. Portion of the profit credited to the patented invention
14. The opinion of qualified experts
15. The amount that would be agreed upon by a willing licensor and a willing licensee

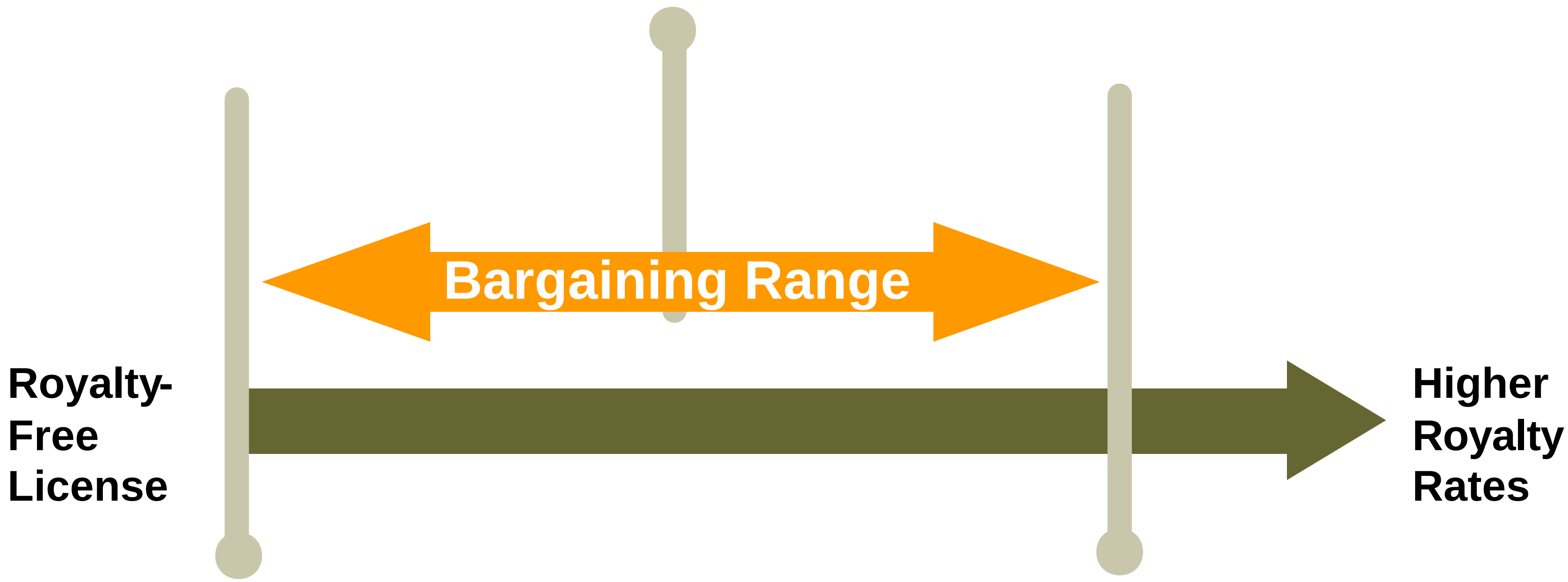
Determining the Outcome of the Hypothetical Negotiation

- **Primary factors that raise the royalty rate**
  - **The success and profitability of the accused products compared with the uncertainty associated with the unproven alternative.**

- **Primary factors that lower the royalty rate**
  - **Sony's and Dowa's significant contributions to the final product combined with Bayer's inability to produce a powder that was acceptable to Sony.**

The Outcome of the Hypothetical Negotiation

The Reasonable Royalty Rate Based on SEL's Sales Would Be at the Midpoint of the Bargaining Range: 0.26%



Minimum Royalty Rate Bayer Is Willing to Accept: 0%

Maximum Royalty Rate Sony Is Willing to Pay: 0.53%

Conclusion: What Makes a Royalty Reasonable?

A royalty is unreasonable if:

- There is no link between the royalty and the value of the patent
- There is no consideration of non-infringing alternatives
- There is no consideration of work-around alternatives

A royalty is reasonable if:

- It is market based
- It considers the value of the patent to both parties to the negotiation
- It takes into account the availability of non-infringing alternatives

Where To Learn More About NERA

For more information on NERA's Intellectual Property Practice, please contact:

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