

Intellectual Property, Valuation, and Licensing

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The Economics of Innovation and Intellectual Property

- Patents are a determinant of innovation
 - One of several appropriability mechanisms
 - Others: secrecy, lead time to market, *etc.*
 - Important for appropriability in some industries
 - E.g., medical equipment and pharmaceuticals, computers and auto parts
 - Between 1983 and 1994, patents have become more important as a device to capture value
 - Carnegie survey: Cohen, Nelson and Walsh (2000)

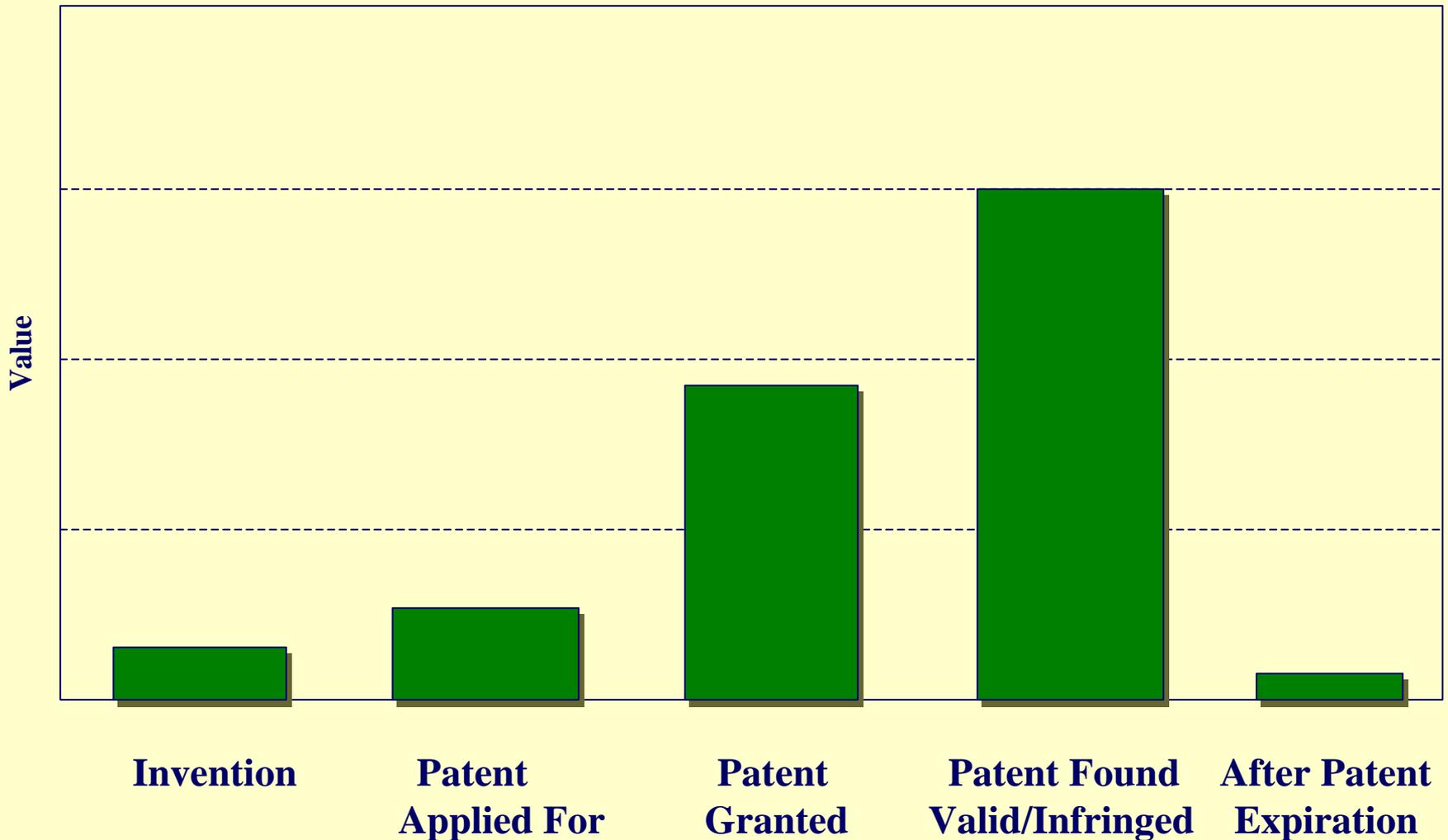
Calibrating the Strength of Patent Protection

- Length: how much time left to run?
- Breadth: range of products covered?
- Validity: likelihood of being upheld if challenged?
- Exclusionary power: can the owner refuse to license without raising antitrust or other issues?
- Available remedies if patent infringed

The Uncertain Nature Of IP Rights

- “Fuzzy boundaries”
 - unclear how claims will be interpreted in practice
 - “inadvertent” infringement can occur
 - unclear boundaries “fouls up” workings of the Coase Theorem
 - disputes over value are not uncommon
 - IP “discounted” in the marketplace as a consequence

Value and Stages of Patent Life



Other Elements of Appropriability Regimes

- Other IP (trade secrets, copyright)
- Complementary assets
- Lead time to market (first mover)
- Learning curve cost advantage

Complementary IP And the Fallacy of “One Patent, One Product” Thinking

- All innovators “stand on the shoulders” of others
- Important distinctions between:
 - complex *vs.* discrete technology
 - systemic *vs.* autonomous innovation
 - complex/systemic usually comprised of numerous separately patentable elements
 - discrete/autonomous may have just one patentable element

Importance of Bulk Licensing and Cross-Licensing

- Bulk/package licensing and/or cross-licensing are important (and justified) when innovation is systemic
 - too costly to license patents one at a time
 - cannot test all patents against all products
 - not practical to condition royalties on a product-by-product, patent-by-patent basis
 - achieves design freedom and freedom to operate

Some Implications

- Some legal concerns are often beside the point
 - Examples: paying royalties “beyond the expiration of the patent” or on “products that do not practice the patent”
- Licenses that call for payment of royalties on total sales, whether or not all of those sales infringe, are appropriate and necessary
 - Law allows this if it is “for the convenience of the parties”