

Patent Valuation – Practical Perspective

Venture Center's Only One Theme Awareness
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IP Valuation – The Why

Realizing the power of science – commercialization enables socio-economic outcomes



Long drawn effort
Relay with emphasis on passing the baton



Define partnership terms when baton is passed

When the baton is passed – Possible Events & Structures

Possible recipients / co-creators of value – research institutions, young venture, large company, consortiums/PDP

Research institution

Co-development partnership:
co-creation or creation
foreground IP, application
focused optimization, validation
et al.

Young venture

- Licensing to startups**
 - **Raise capital to advance IP**
 - **License/exit to large company or remain commercial champion**

Large Company

Licensing from institution or young venture

- **Acquire venture to get access to technology**

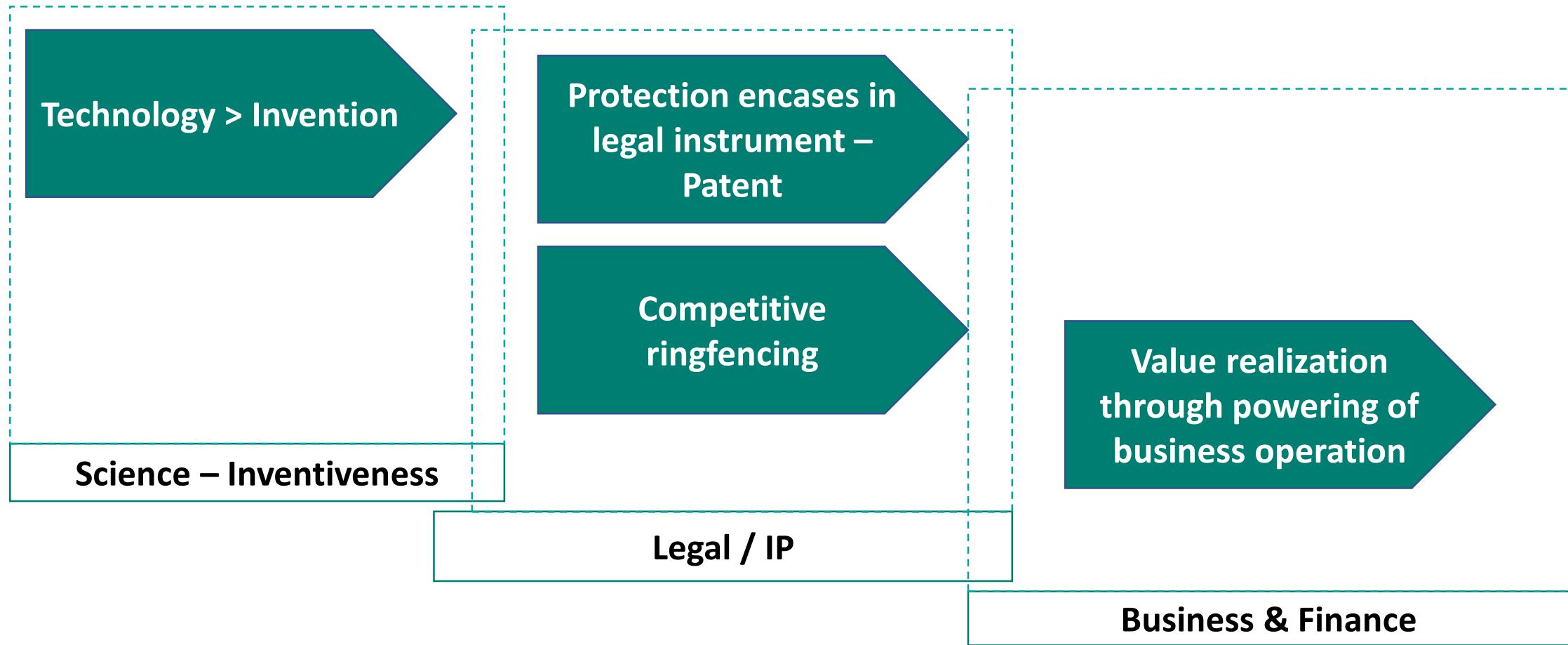
Structures:

Licensing – participatory model – sharing in risk that progressively reduces, reward that becomes more tangible

Outright acquisition / monetization – passing on entire risk – consideration benchmark progressively improves

IP Valuation – Three Inseparable Components

- Fundamental valuation principles are common across asset types – tangible or intangible
- However, patents have unique contextual complexity:



Starting at the core – assessing inventiveness

Superiority vs current commercial products?
Vs pipeline products?

Improved outcome
Lower cost
Value proposition – why adopt vs state of the current?

Examples:

Improved formulation of drug – lowers toxicity / enhances efficacy
Expression system – improves yield / lowers cost of production
PoC antibiotic sensitivity testing – addresses unmet need – enables improved health outcomes with targeted therapy

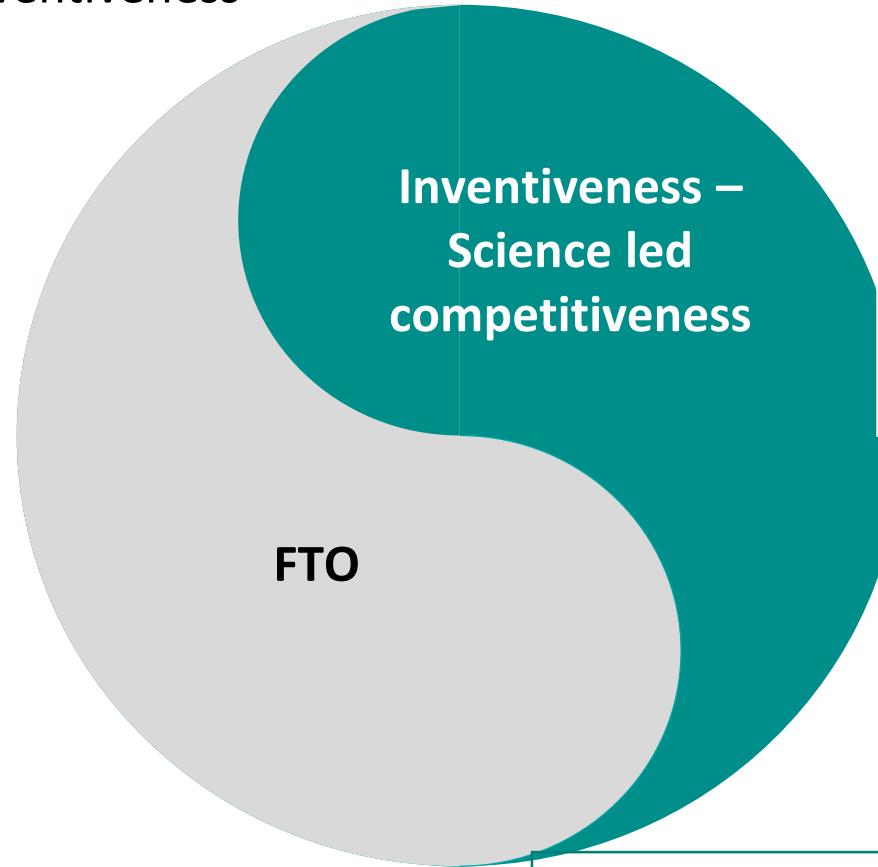
Connecting the dots:
Qualitative assessment to quantitate assumptions

Translating inventiveness to IP protected competitiveness

Important to separate FTO from inventiveness

Can practice claims without worrying about infringing others IP.

Important to commercialize inventions but does not create competitiveness



Patentability – Strength of Patent Claims
Geography specific (eg: algal portfolio)

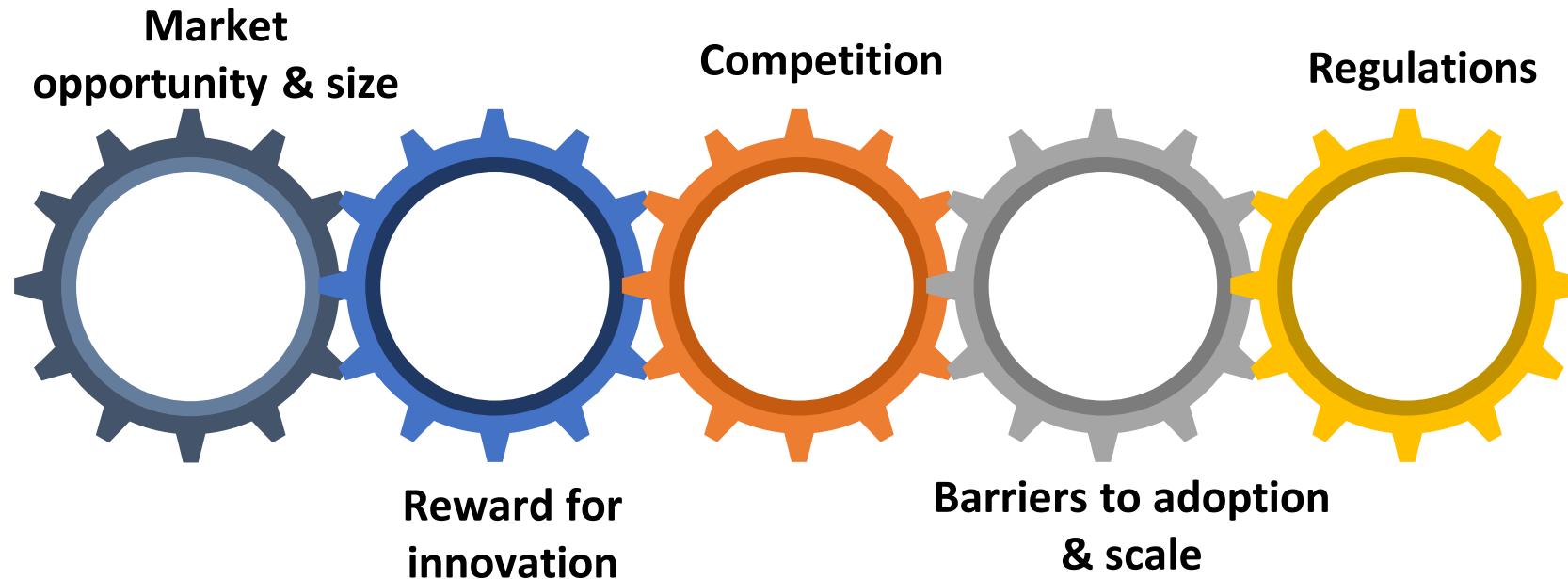
Inventiveness – patentability
Differentiation that can provide competitive advantage vs current & pipeline solutions

Patentability - Pre-empt others from practicing during life of IP.

Science led competitiveness

Deriving economic value

- Translating inventiveness – IP protection – business value that can be realized
- Multi-dimensional evaluation – opportunity for realizing perceived competitiveness



Examples:

- Algal platform for DHA – opportunity in infant nutrition vs rest of market (price competitiveness, regulations)
- Antimicrobial coated catheter – payor driven vs OOP market

Commercial Opportunity assessment

Example

Recombinant CRM197 protein for conjugated vaccines

- Global vaccine mkt is \$6Bn – good. But only for framing.
- Quantify bottom up
- Which vaccines can it be used for – PCV, TCV
- Who is developing / at what stage / internal product / alternative / value proposition – is there an opportunity to target adoption
- Global PCV market vs targetable customers volume requirement
- Pricing and quantification

Commercial Opportunity assessment

Example

Validate value proposition & implications for adoption

- Improved version of blockbuster oncology drug doxil
- Value proposition – lower PPE side effect
- Three indications for which doxil is approved
- No licensing interest – clinical benefit not substantial enough to justify higher reimbursement & clinical development investments
- Re-positioned specifically for ovarian cancer – dose limiting side effect
- Clinical benefit clearer – health-economic benefit – reimbursement – justification for investment – industry appetite – licensing market size

Deriving economic value

- Fundamental valuation principles are common across asset types – tangible or intangible



Cost Method:

When design around is relatively easy, with same utility

Less relevant in several licensing transactions – Negotiations session (not the basis)

IP – Valuation Approaches preferred

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Market Method:

When there are several “comparable” transactions

When there are similarly situated IP users

Income Method:

When reliable projections are made or makeable

When IP represents substantial amount of product

Valuation

- Reflective of potential – derived therefrom
- Relevant when you are at a transaction milestone
- Easy way to think about methodology:
 - Market benchmarks
 - Discounted current value of future potential

The practical exercise of connecting technology – business – monetary value

Context is key – qualitative and quantitative insights with high subjectivity.

Business application: Opportunity addressed, geographies, operating model

Financial modeling

Discounting

Key questions:

What is the application

Business context and business model,

Competition and patent led competitive advantage,

Capex and operating costs

Net cashflows

Considerations for period of modelling:

Relative Useful Life of Patent

Technology landscape & duration of competitive merit

Commercial considerations for value realization

Regulations?

Value attributable to IP

Discussing in context: Case examples

Global portfolio of waste to energy /
Algal platform for food ingredients

Large corporate

Portfolio in multiple countries – substantial difference in one geography in strength of patent assessment

Sum of parts with differential assumptions

High level of operating risk and operational modelling – business viability and maturity different in US / India.

Algal platform – complex element – establishing what is a good comparable

Incremental innovation: long shelf life tomato

Incremental benefit to end user

How does the IP owner (or potential acquiror) participate in value created

Incremental cash flows (expanded business scope due to IP led powering of competitiveness) – value creation attributable to IP vs total cashflows

Discussing in context: Case examples

Simple back of the envelope approach – veterinary diagnostic

Diagnostic for cattle – Institutional IP, PoC

No. of cows in India

Incidence of target condition

Possible penetration

Pricing

GM / Profitability

Fragmented nature of industry landscape – market share

Implications for licensee

Implications for institution

Model transaction based on historical benchmarks – but derive comfort and confidence to negotiate with industry

The perennial dilemma – uncertainty & risk

Technology Risk

Progressive de-risking
Very common in pre-commercial stage patents (could be defrayed at differential pace by geography)

Reflect in projections
Probability adjusted cashflows

Business Risk Operational Risk

Intrinsic to exercise of business projections / financial modelling
Molecular genomics – market nascent in Asia vs US (pricing, volume et al.)
Tomato – level of participation in value creation – pricing vs market share
Waste to energy – aggregation of waste fundamental to operational viability

Macro-economic

Domicile and source of funding impacts Cost of capital and discount rate

Staging of projections – e.g. global fuel prices in waste to energy patent portfolio

Additional adjustments on share of value attributable to IP

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