

Getting NU Inventions from the Bench to the Market

Technology Transfer Program

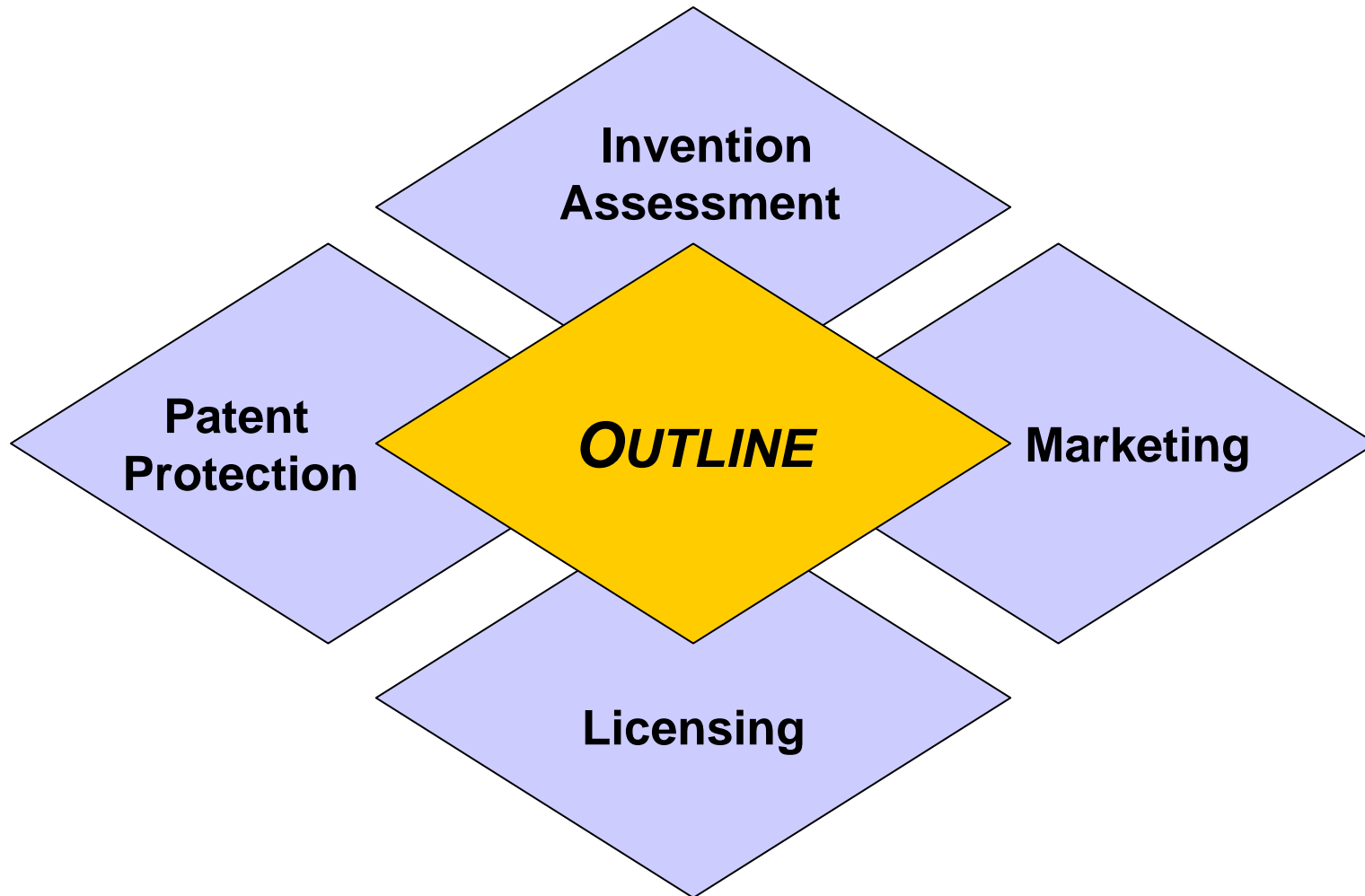


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Tech Transfer at NU





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Tech Transfer Program's Mission

Facilitate commercialization of
NU's innovative technologies
for public use and benefit.

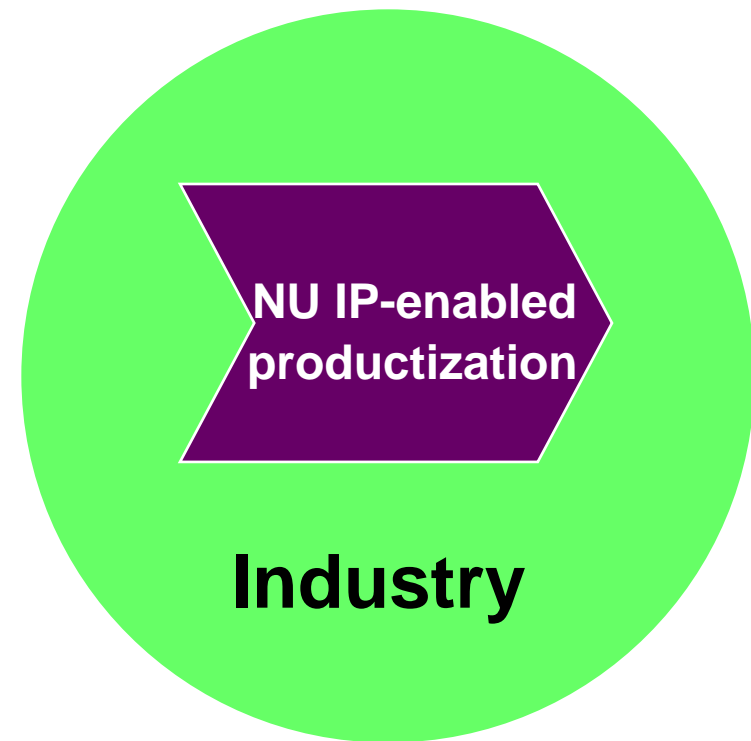
*Acceptance of NU Patent & Invention Policy is
a condition of employment or enrollment at NU*



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Tech Transfer Program's Mission

Facilitate commercialization of NU's discoveries for public use and benefit.

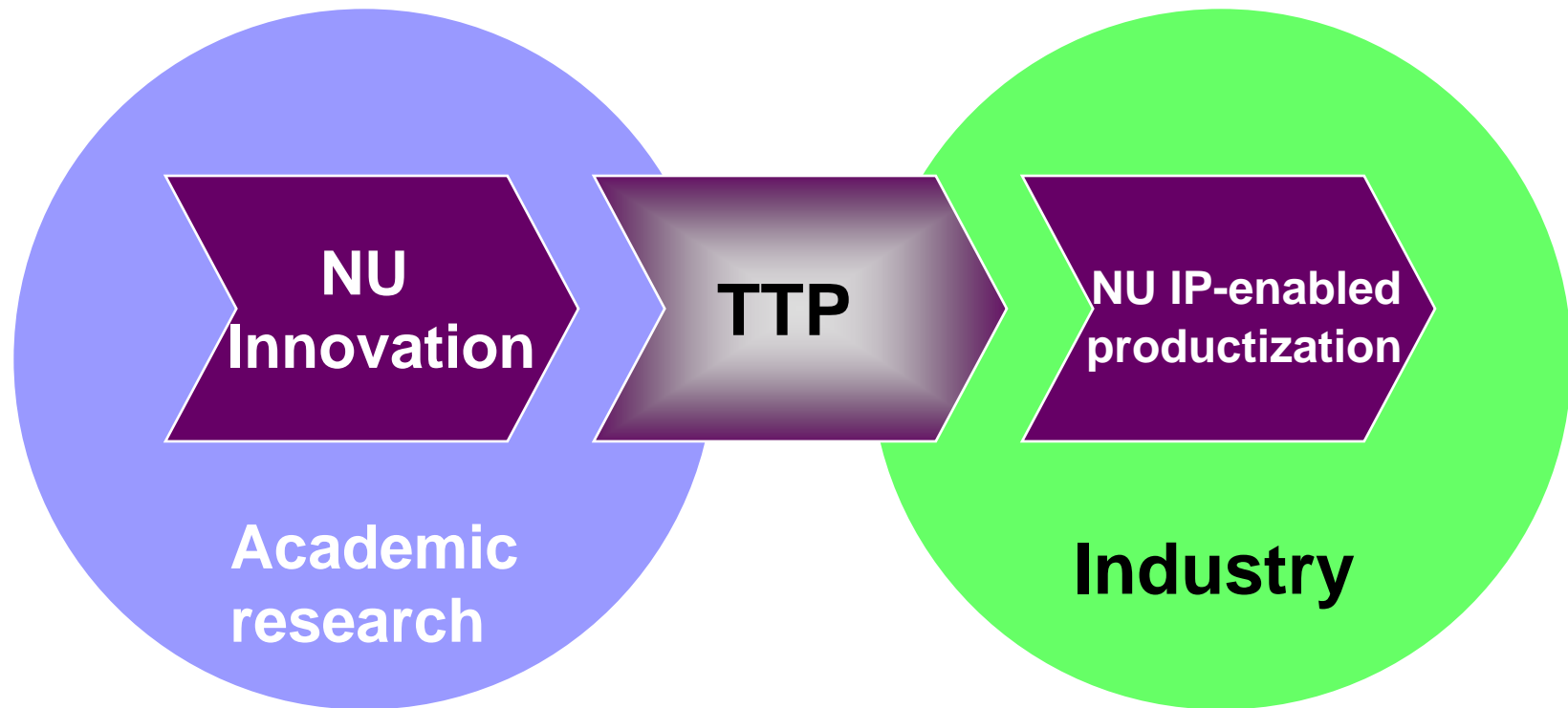




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Tech Transfer Program's Mission

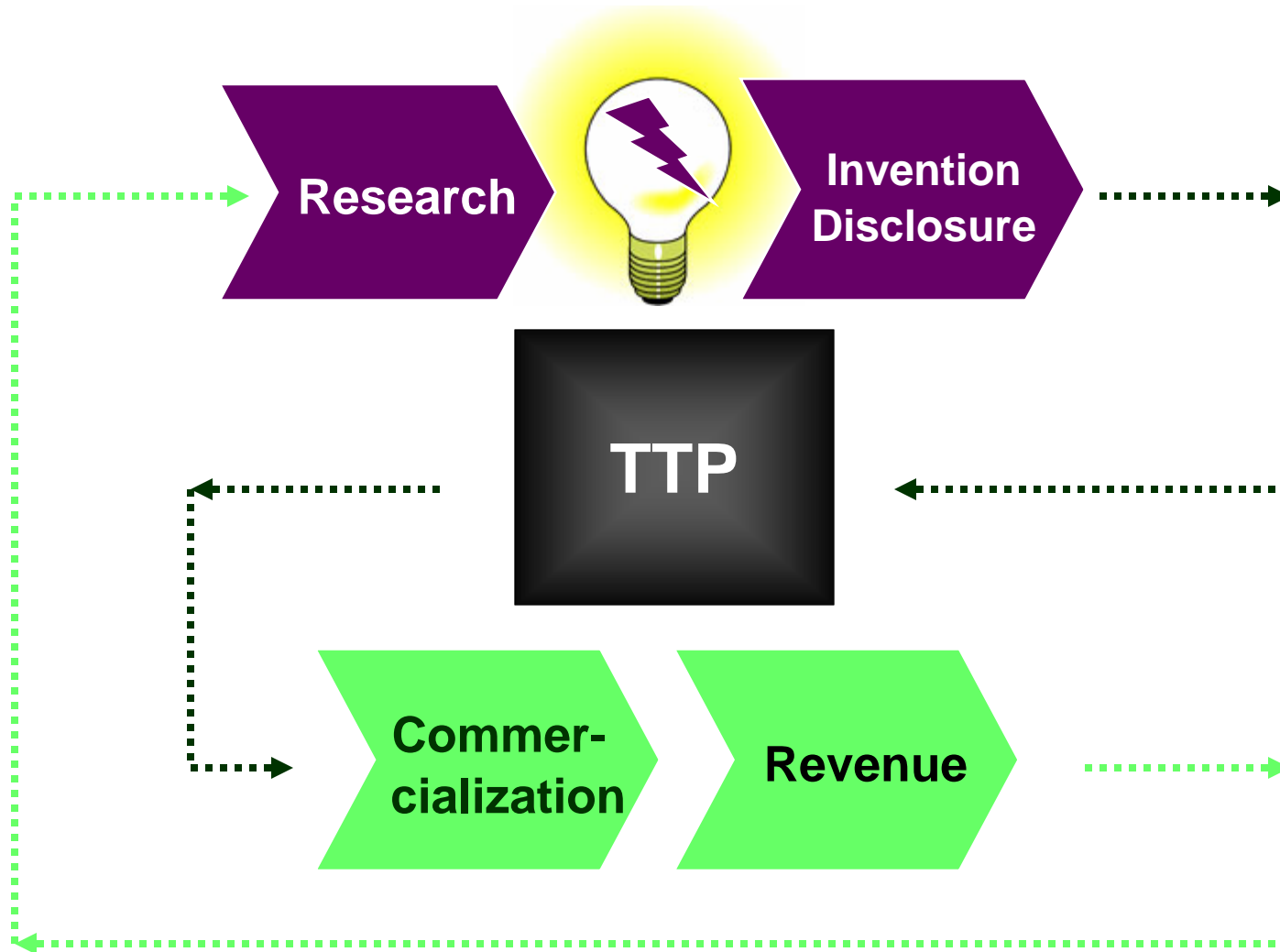
Facilitate commercialization of NU's discoveries for public use and benefit.





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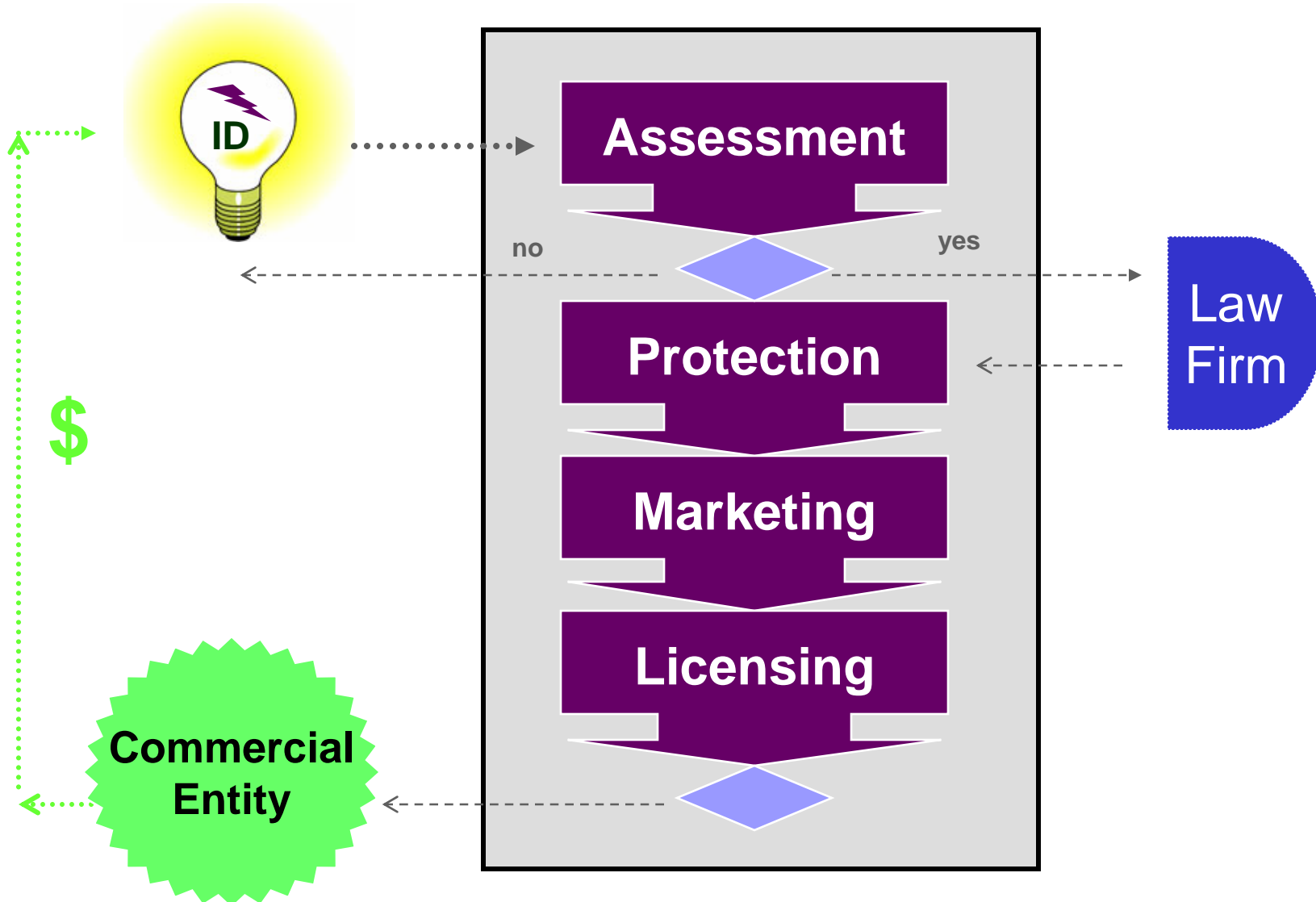
Tech Transfer Program





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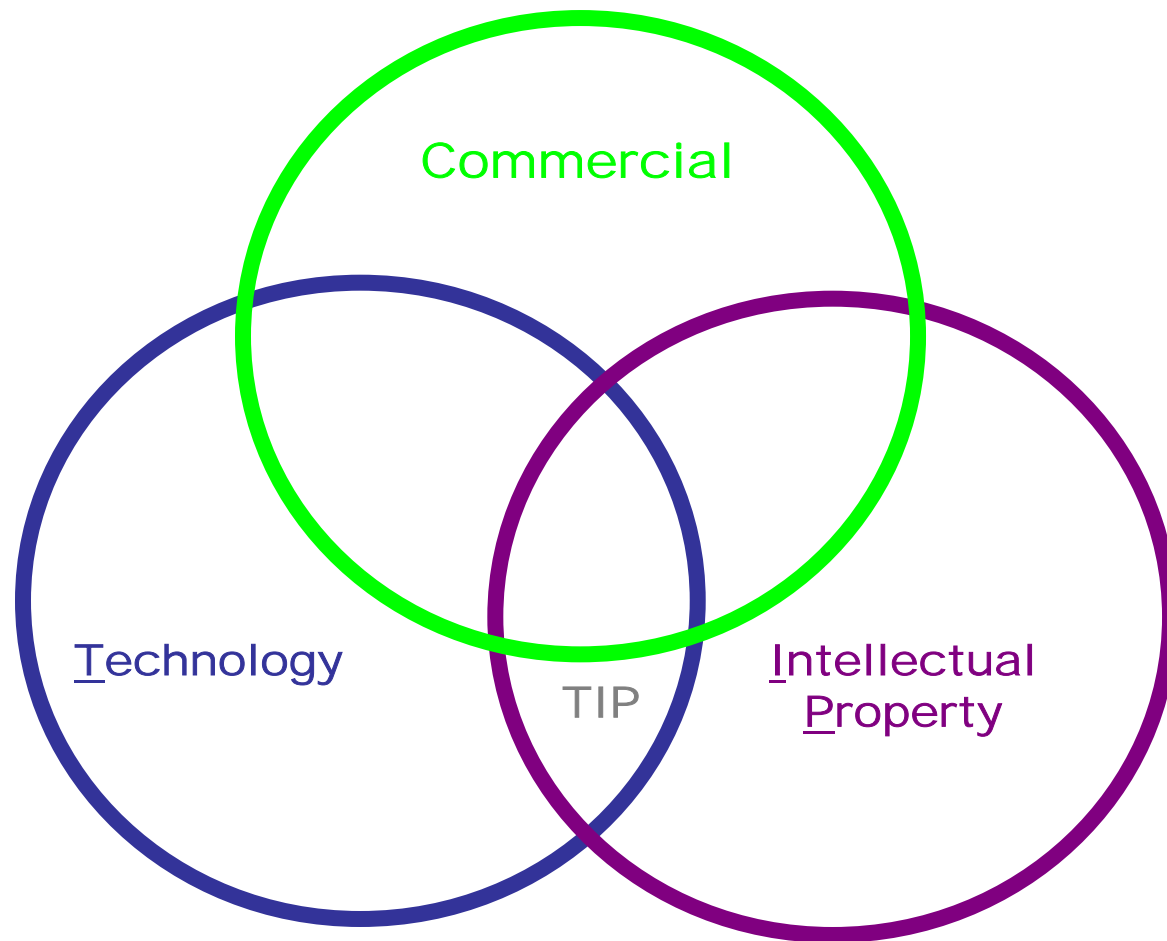
Tech Transfer's "Standard Operating Procedure"





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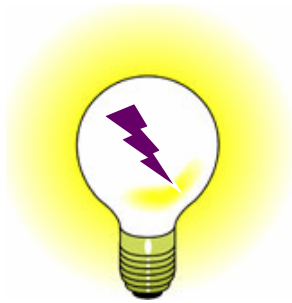
Integrated Approach to Bio-Business-IP Assessment





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Assessment of patentability



To be patentable,
invention must be:

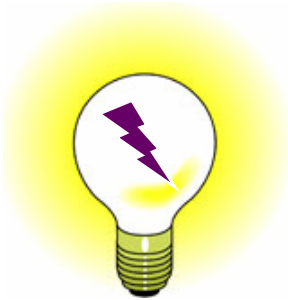
1. novel
2. useful
3. non-obvious

according to a person having “ordinary skill” in the art.



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Assessment of patentability



To be patentable, invention must be:

- novel, non-obvious & useful
- described in sufficient detail to provide a person having “ordinary skill” in the art to be able to replicate the invention



Assessment of patentability

What does the prior art search reveal?



- Is the competitive IP landscape
 - a complex mine field?
 - wide open?
- What is the value of potential patent protection?
 - seminal, broad claims?
 - narrowly-focused claim scope?



Technical questions

- Is the invention disclosure enabling?
 - is an adequate description provided?
 - is a “best mode” described?

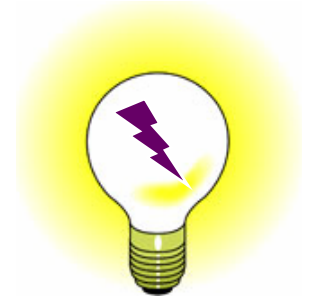
- Where is technology in its developmental life cycle?
 - concept only?
 - reduced to practice?
 - prototype developed?
 - clinical data available?





More technical questions

- Is invention an extension or improvement of known technology?
- Is invention a component or complete system?
- Has testing of prototype, material or process been conducted by third party?



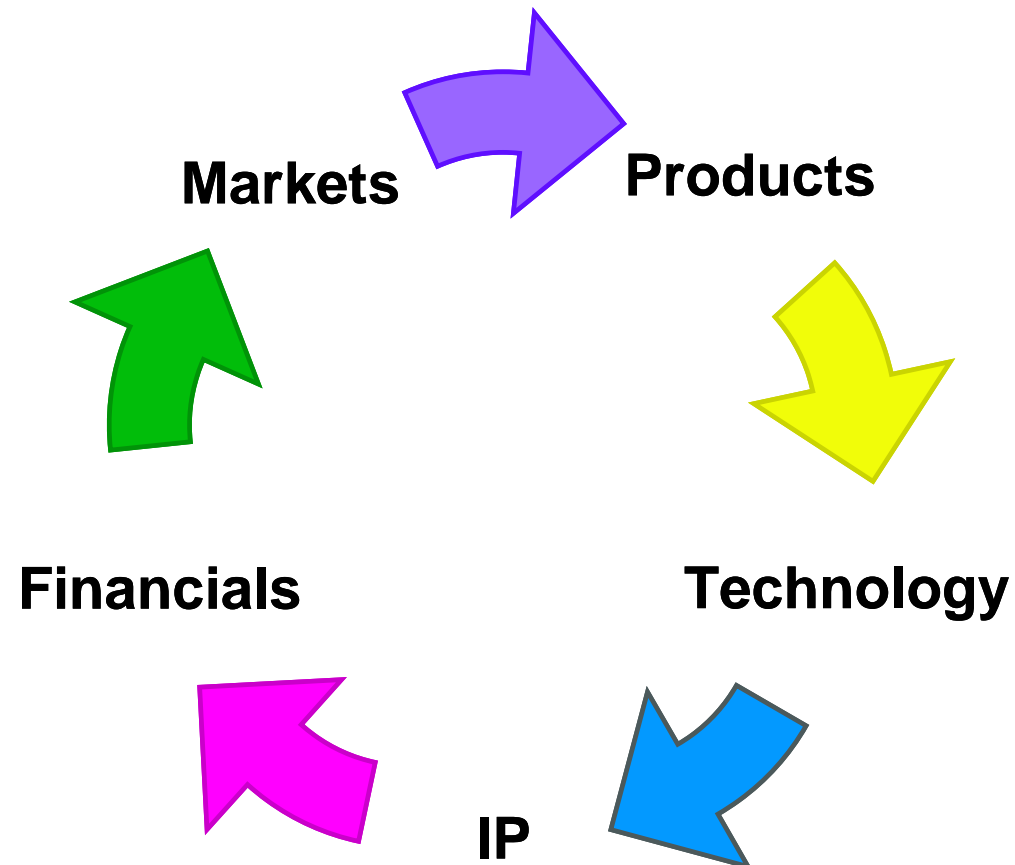


- What are regulatory hurdles or liabilities?
- Are there existing ways to manufacture, market, and sell the productized invention?
- *Bottom line:* how does invention fare on the marketability / profitability scale?



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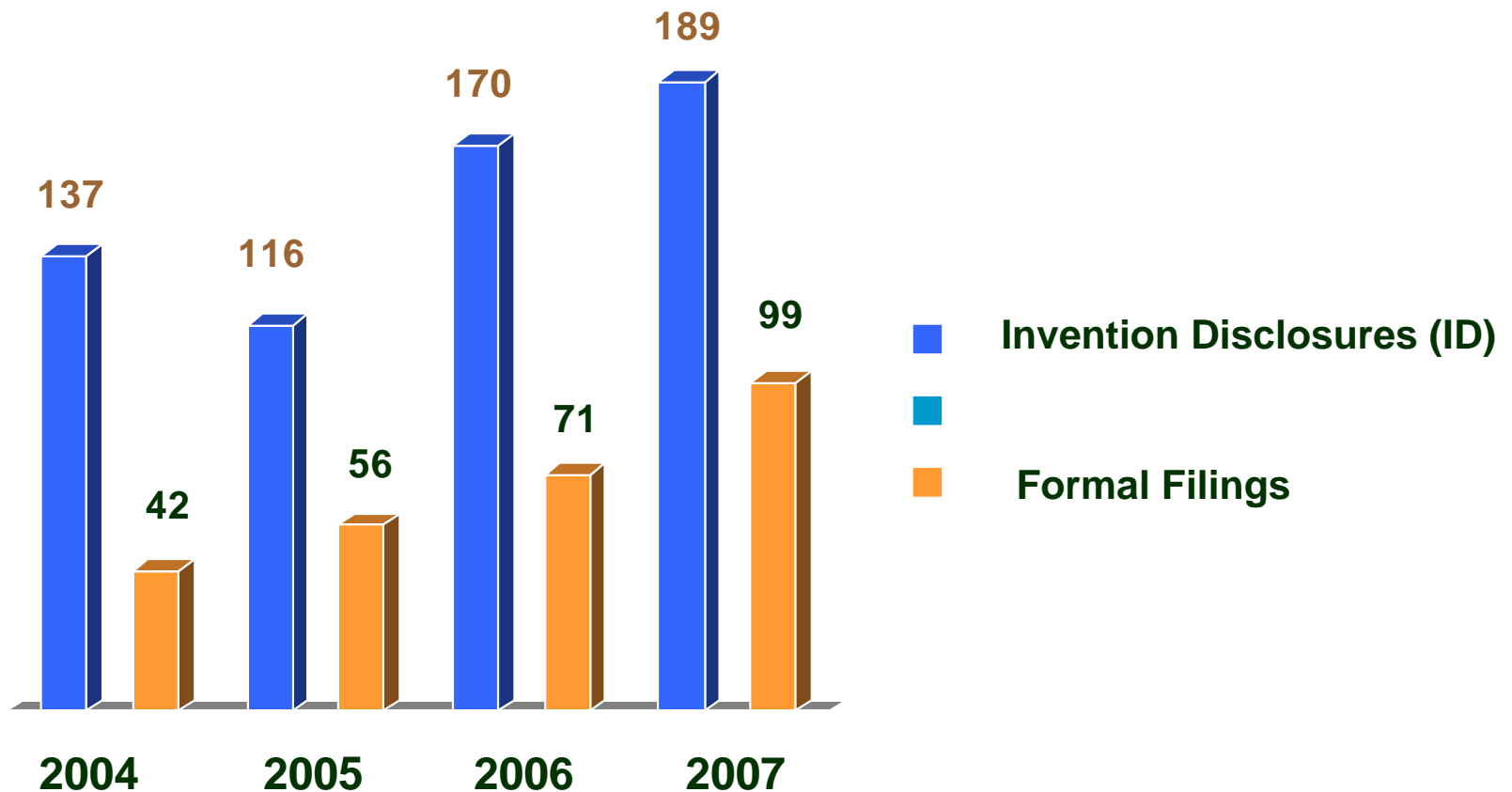
Integrated bio-business-IP gut check





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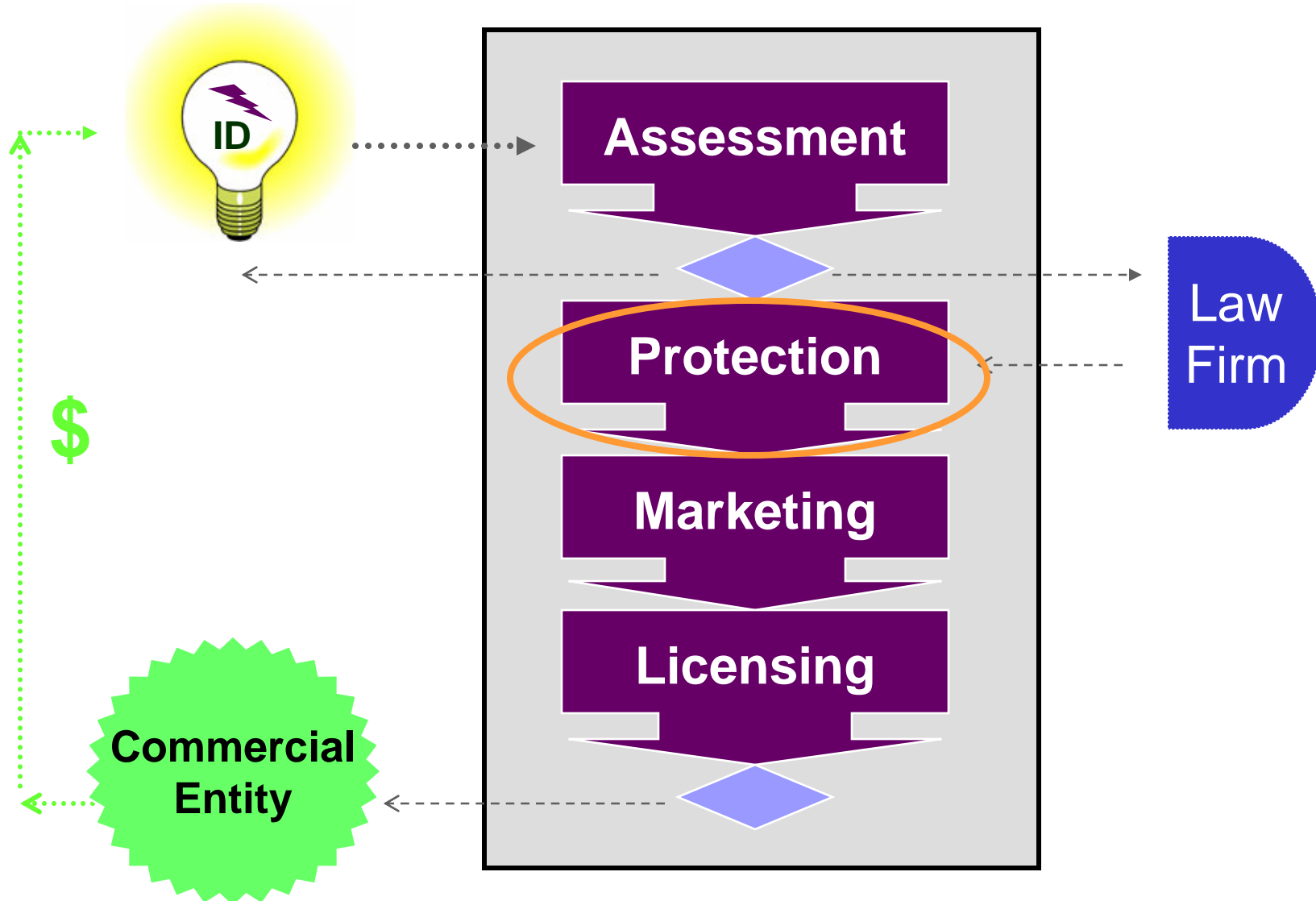
TTP Data: ID & Patent Applications





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Tech Transfer's "Standard Operating Procedure"





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What is a Patent?

- A patent for an invention is the grant of a property right to the assignee, issued by the US PTO
- The right is “to exclude others from making, using, offering for sale, or selling” the invention in the US or “importing” the invention into the US



UNITED STATES PATENT AND TRADEMARK OFFICE

An Agency Of The United States Department Of Commerce



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Proprietary Patent Position

- For worldwide protection, patent application must be filed *before* any public disclosure





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Proprietary Patent Position

- For worldwide protection, patent application must be filed *before* any public disclosure
 - Oral presentation
 - Poster presentation
 - Published article: online or traditional journal
 - Abstracts, if enabling, in conference proceedings
 - Public demonstration of a prototype



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Proprietary Patent Position

- For US patent protection, patent application must be filed within 12 months of public disclosure





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Proprietary Patent Position

- For US patent protection, patent application must be filed within 12 months of public disclosure
 - Oral presentation
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 - Public demonstration of a prototype



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Proprietary Patent Position

- For worldwide protection, patent application must be filed before any public disclosure
- *For US patent protection, patent application must be filed within 12 months of public disclosure*
- Patent term is for 20 years from date of filing



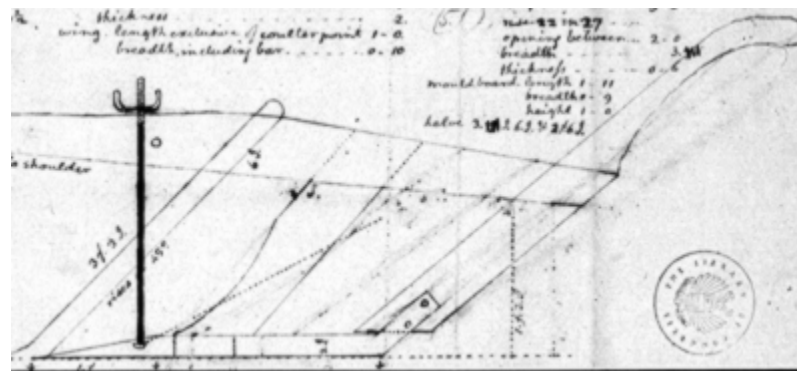
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Thomas Jefferson: Father of US Invention

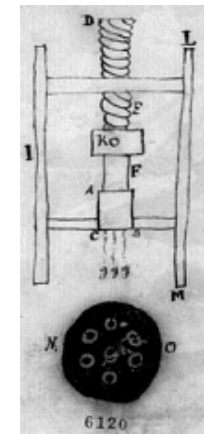


Jefferson's vision of protecting the rights of the inventor* and the common person still remain principles of the US Patent & Trademark Office (PTO) today

**inventorship is a legal determination*



TJ's design for a plow, ca. 1794



Macaroni machine
ca. 1787



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Thomas Jefferson: Father of US Invention



Jefferson's vision of protecting the rights of the inventor* and the common person still remain principles of the US Patent & Trademark Office (PTO) today

**person who made creative contribution to inventive concept*

- In the US, “first-to-invent” rule applies
 - therefore, must document in detail invention process
(*please see TTP’s record-keeping procedures*)
- In the rest of the world, “first-to-file” rule applies

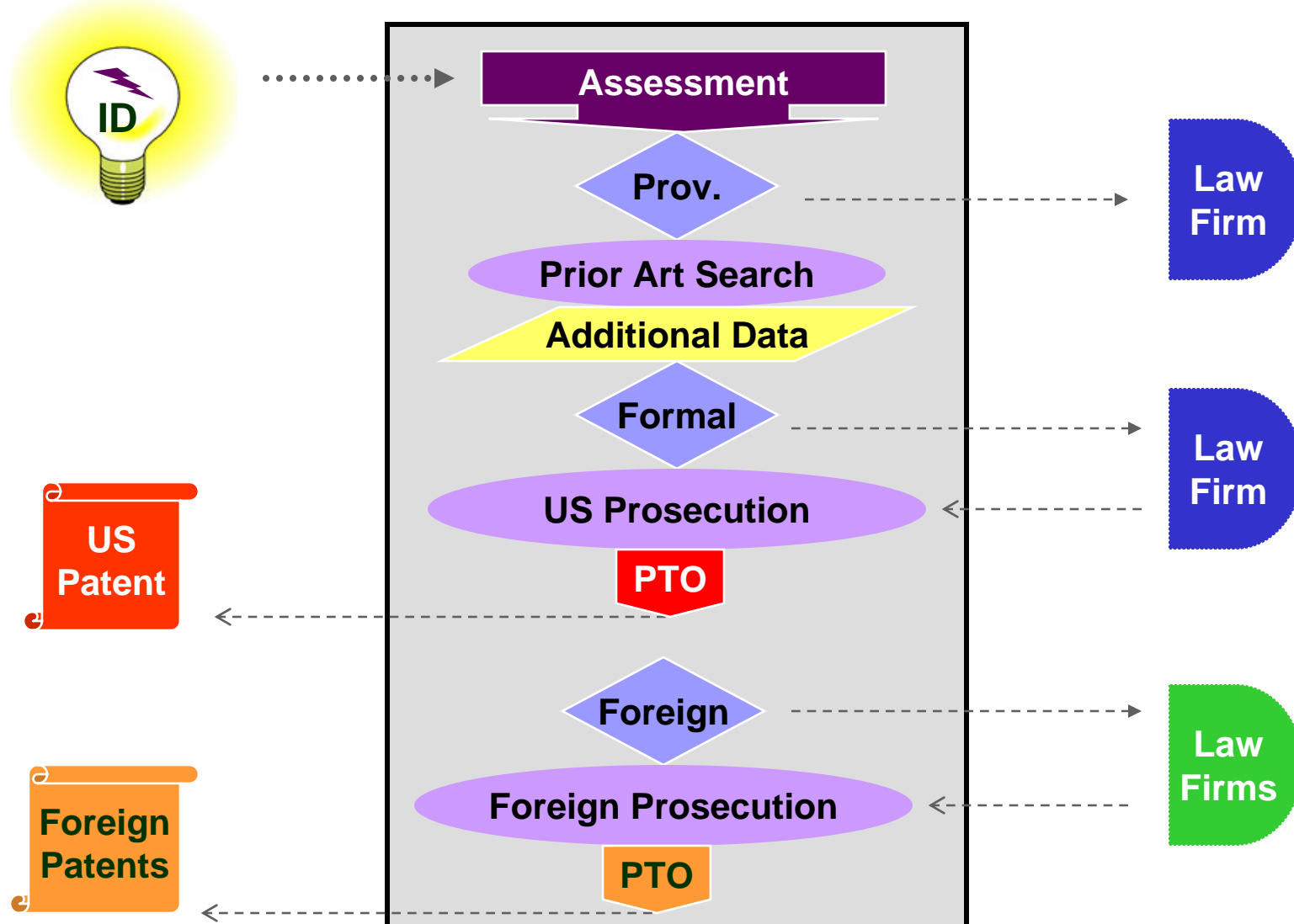


Patent Rights

- Type of patent claims:
 - Composition of matter
 - Process (a.k.a., methods of making)
 - New (methods of) use
 - Design

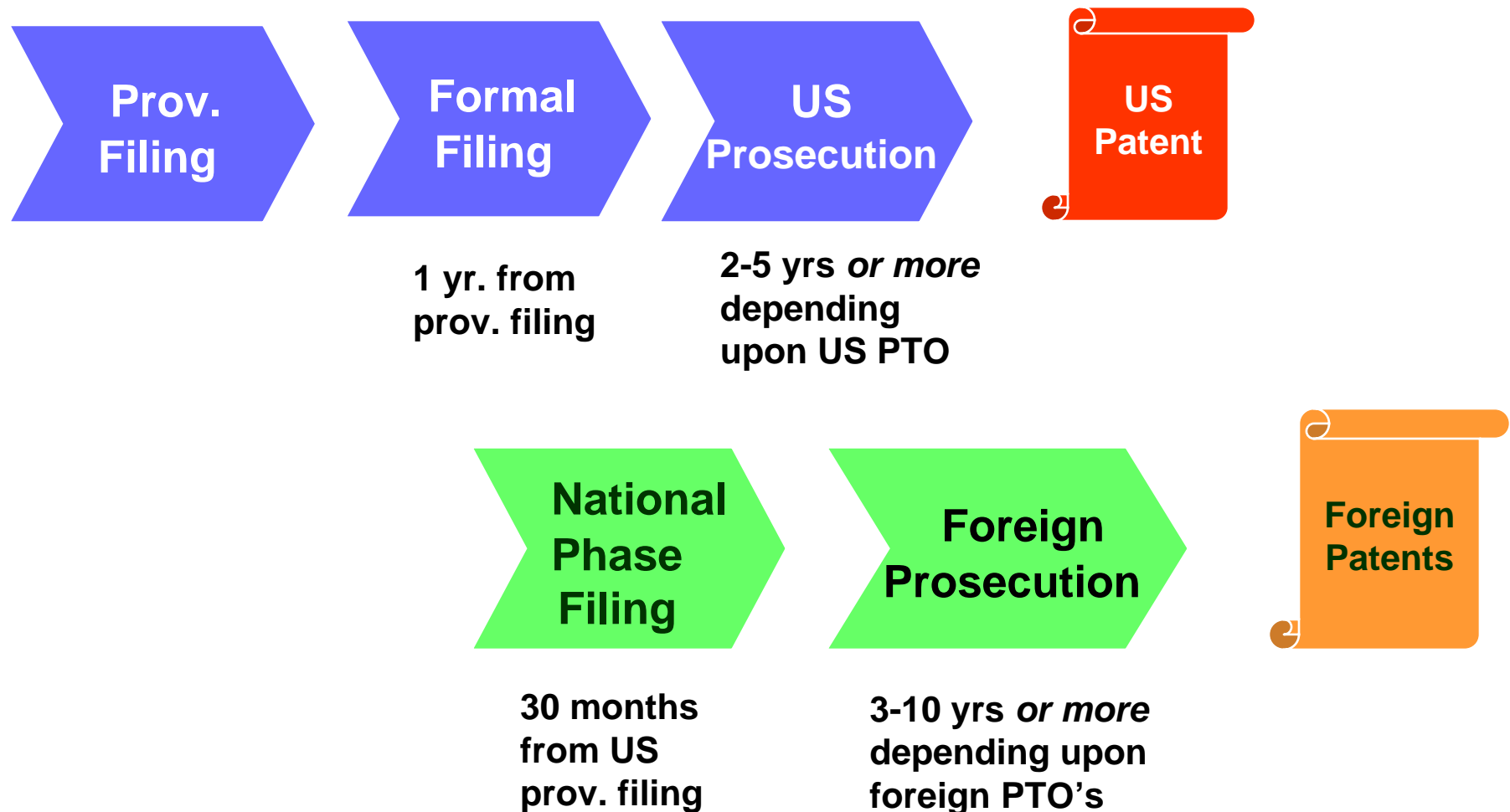


Patent Protection Process





Timeline of a “typical” patent’s progress





Patent Rights

- Patent provides assignee with right to exclude others from practicing the claimed invention
- *Thus, Patentability does NOT mean “Freedom to Operate”*

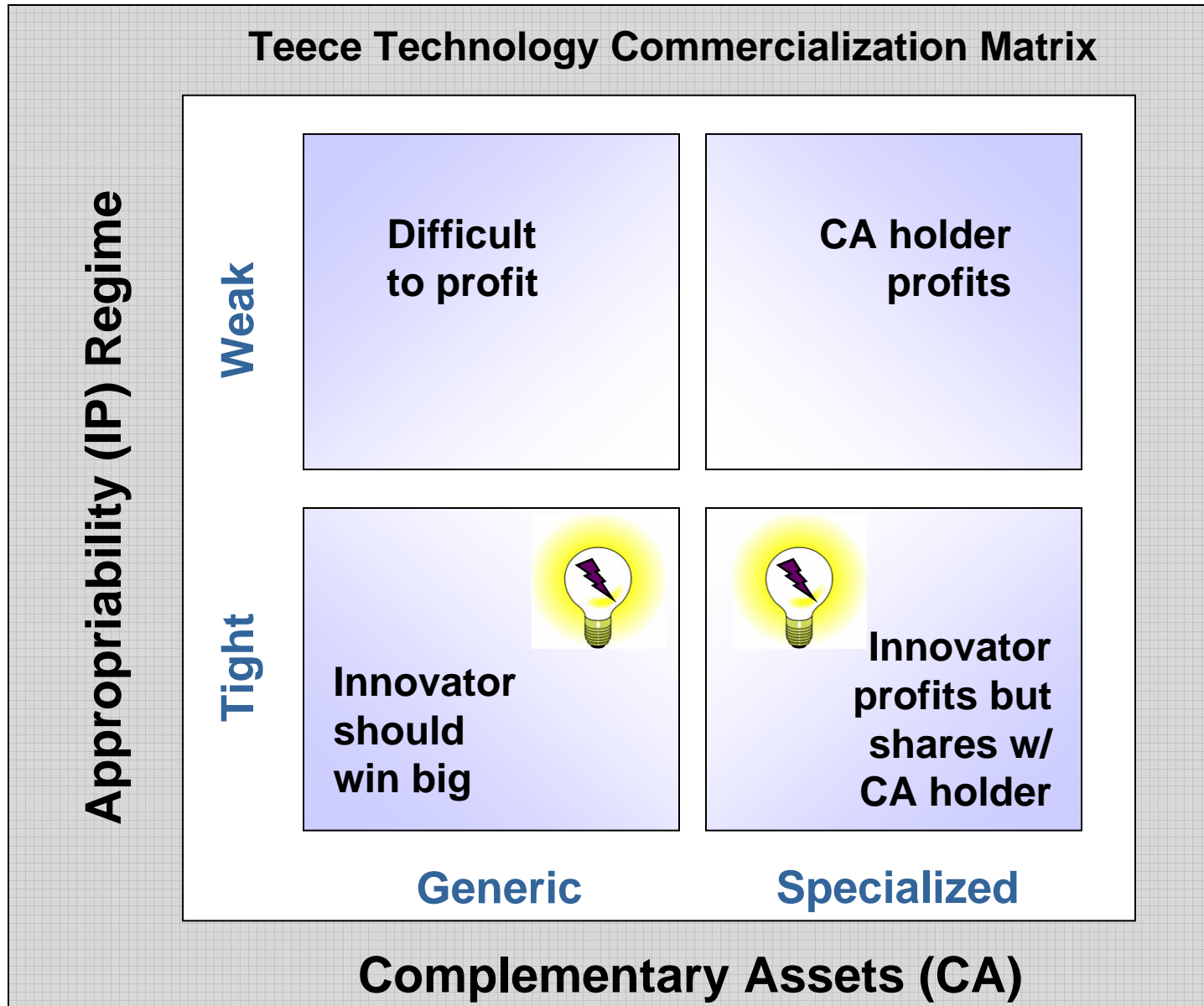


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Enforceability of Patent Rights

- Ability to detect infringement
*(a reason why composition claims
are more valuable than method claims)*
- Ability to withstand litigation

Who makes the \$\$\$ & how much (*why IP matters*)?

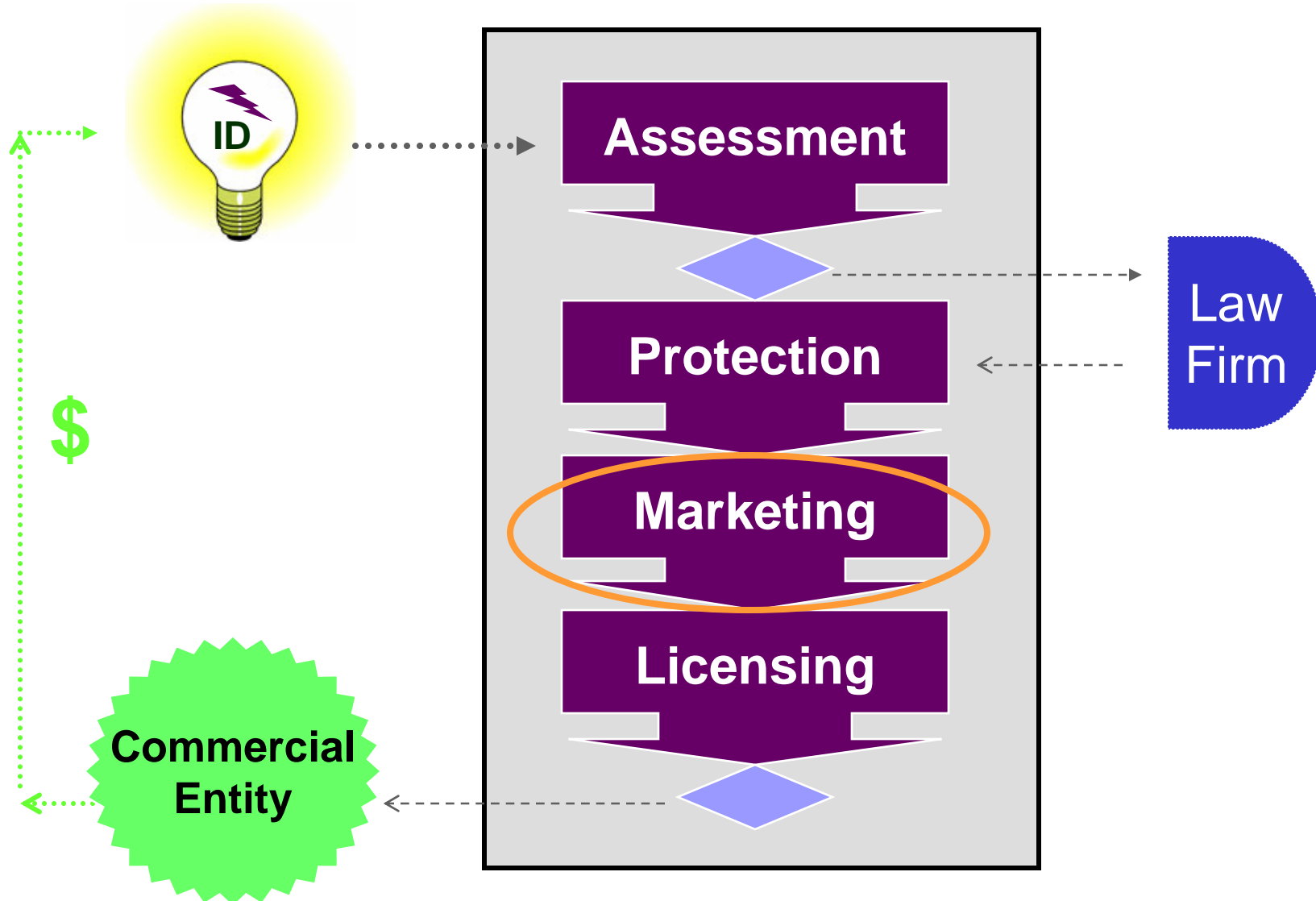




- A sophisticated “inventor” identifies and exploits gaps within competitive IP landscape
(although may not be worthy of scientific publication, can be quite valuable commercially)
- Nobel Prize winning discovery may have limited commercial utility
(scientific noteworthiness does not necessarily correlate with patentability)



Tech Transfer's "Standard Operating Procedure"

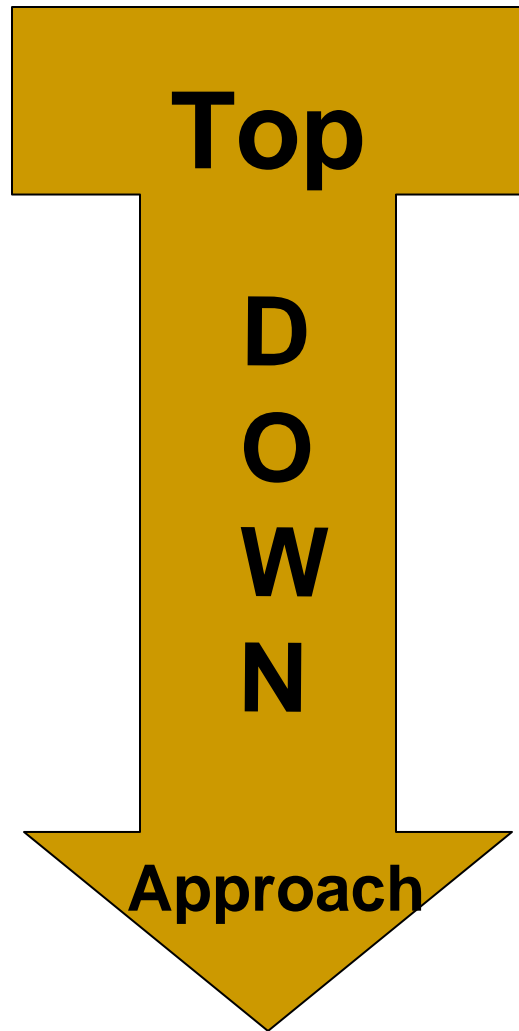




Market Opportunities

- What products / services are offered by technology?
- What problems might be solved by such products?
- How big and where is the market?
- What competition exists or may exist in near future?
- Who is investing in those markets?
- What competitive advantages are offered for manufacturing / marketing?

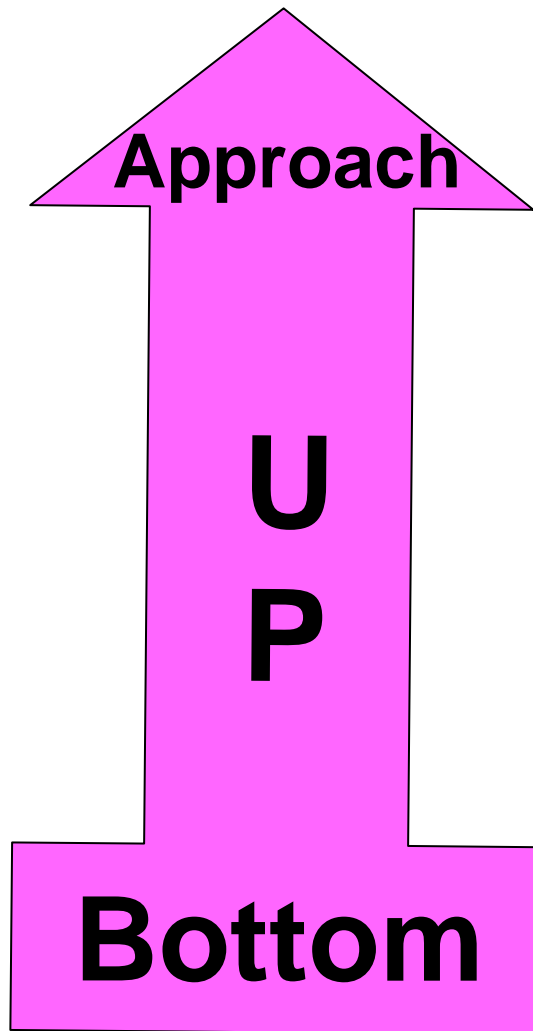
Sales and Marketing



- Mass Mailings
- Calls to Corp. Biz. Dev.
- Industry Trade Shows
- LES, AUTM
- TTP Website

(only after IP filed!)

Sales and Marketing

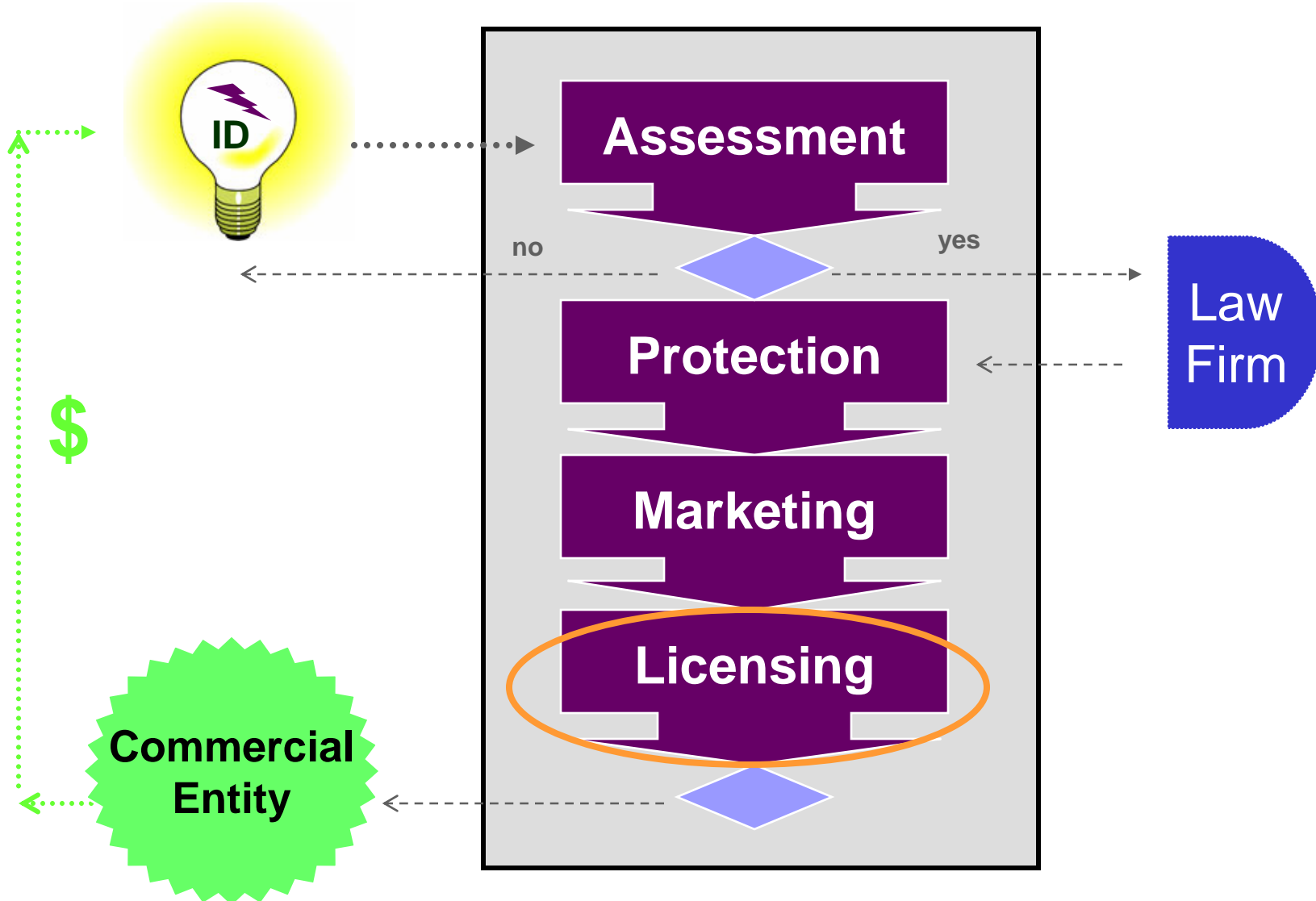


- Publications
- Scientific Conferences
- Professor's Web Site

(only after IP filed!)



Tech Transfer's "Standard Operating Procedure"





Licensing NU Technology / IP

- For the purpose of developing / launching new products for the marketplace, TTP grants rights to NU IP to commercial partners:
 - New spin-off venture
 - Existing company
- License to NU technology / IP may be:
 - Exclusive (e.g., startup or BIG Pharma)
 - Non-exclusive (e.g., Cohen-Boyer patents)



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TTP Licensing Process

- No fixed formula – every deal is different
- Identify suitable partners based on interest, compatibility, resources and willingness to develop products for the market
 - Need to identify internal champion within industry
 - May create new venture for development / commercialization
- Set up collaborative sponsored research at NU alongside development of technology by Licensee



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Deal Breakers

- Restriction on publication of NU research
- Prevention of NU to retain non-exclusive IP rights for research and testing
- Prevention of NU to retain rights to comply with federal guidelines if gov. funds led to invention
- Assignment of patent rights to licensee
- Restriction of research and future development of competing technologies



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TTP's Role & Responsibilities

- Protect NU intellectual property (IP)
- Technical-business-IP opportunity appraisal
- Promote NU innovations to private sector
- New venture creation via NU spin-outs
- Negotiate NU licensing transactions
- Distribute revenue to inventors, departments, schools



Possible Topics for Future Talks

- Startup 101 – new venture creation
 - Valuation / capitalization
 - Tech strategy & business roadmap planning
- Competitive analysis / market assessment
- Patent law 201



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Technology Transfer Program

Contact me @

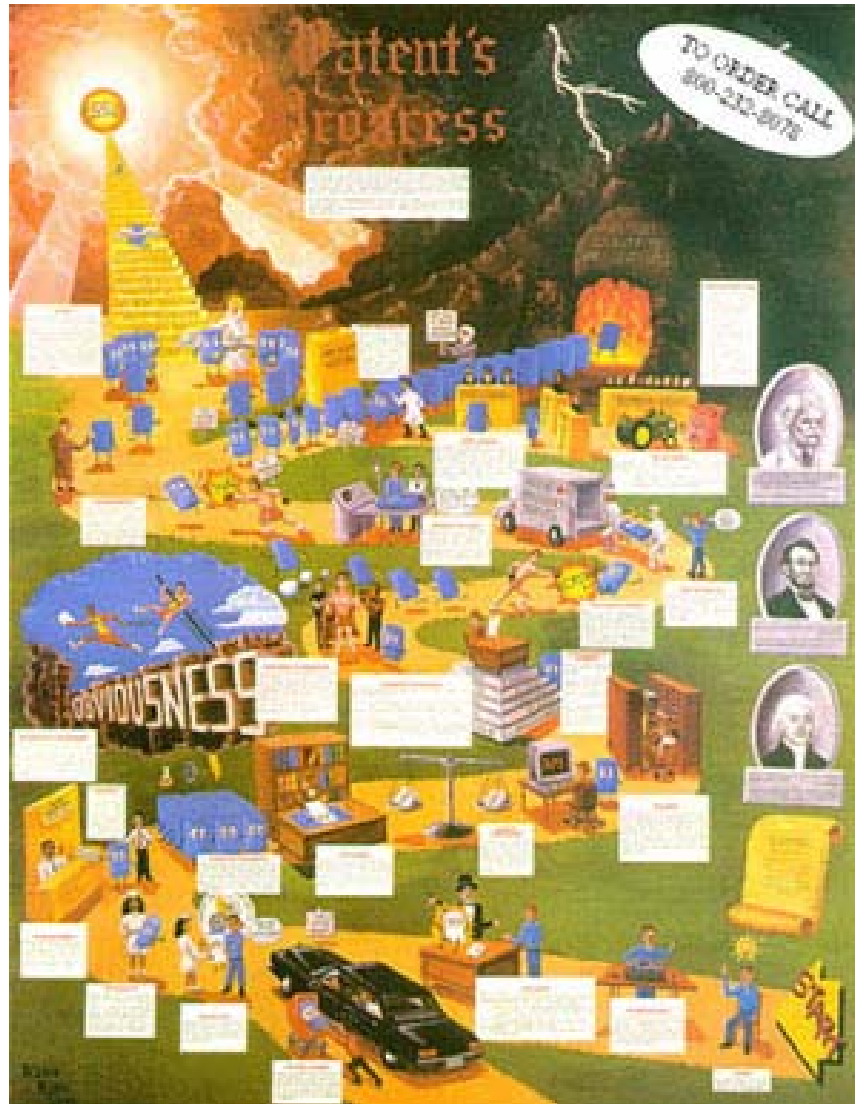
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To entice you to stop by our offices



“Patent's Progress” illustrates the patent issuance process through the use of a clear, colorful and humorous cartoon of a patent's arduous, not always certain, trek.

IP Today's
“Patent's Progress”



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QUESTIONS?

Getting NU Inventions from the Bench to the Market

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