

# Entrepreneurship Talks Session II: IP Dos & Don'ts for Early-Stage Business

An Intellectual  
Property Primer

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## Overview

- What is “intellectual property”?
- Patents – what are they, how do we get them?
- IP strategy – what, when and where to patent
- Exactly who is an inventor, anyhow?
- Keeping laboratory notebooks
- Simple steps to protect your valuable intellectual property assets

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## What is “Intellectual Property”?

- Intangible property rights that can be bought and sold
- Typically divided into 4 areas:
  - Patents
  - Trademarks
  - Copyrights
  - Trade secrets

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## What Exactly is a Patent?

- A limited term monopoly
- Granted by individual countries
- 20-year term from filing date (utility)

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## Parts of a Patent Application

- Abstract
- Technical field
- Background
- Summary of invention
- Description of drawings
- Detailed description
- Examples
- Claims – THE CLAIMS ARE THE KEY!

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## Exclusive Patent Rights

- Right to exclude others from making, using, selling or importing the claimed invention
- Virtually no rights in unclaimed subject matter
  - Strategic claim drafting is important
- No automatic right to use patented invention

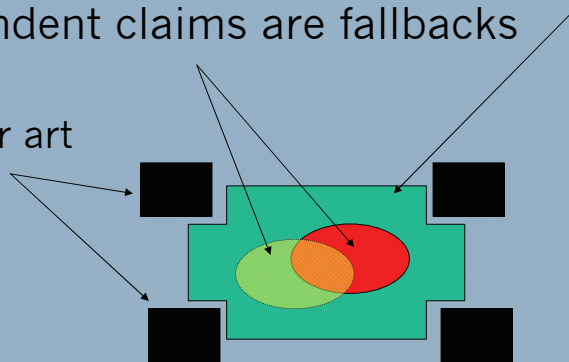
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# Claim Scope

- Independent claims define patent scope
- Dependent claims are fallbacks

– Prior art



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# Patent Process

- Attorney drafts application
- Inventor reviews & revised draft
- Patent attorney sends final draft to inventor
- Inventor provides copies of material prior art to patent attorney
- Inventor signs Assignment and Declaration
  - Assignment signature is notarized
- Patent attorney files application and forms in U.S. Patent and Trademark Office
- Application is examined by Patent Office
- Is that ALL???

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## Patent Process – The Fun Begins

- Office Actions
- Allow/abandon/re-file/appeal
- Horse trading at the Patent Office
- Typically 2-3 years to get patent issued
- Foreign filings

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## Talking the Talk – WHAT DOES IT ALL MEAN?

- Priority
- Provisional
- Utility
- PCT

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## Priority

- The date on which a first patent application on an invention is filed anywhere in the world

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## Provisional Patent Applications

- Kept in secret by patent office
- Automatically abandoned in 12 months
- Do not count towards 20-year patent term
- Possibility of additions or changes when filing utility application within 12 months
- Need to support claimed invention to provide priority rights

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## Types of Patents

- Utility patents are granted on functionally useful inventions, including processes, machines, manufactured products, compositions of matter, etc.
- Design patents are granted on ornamental designs for an article of manufacture  
(14-year patent term from date of grant)

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## Patent Cooperation Treaty (PCT)

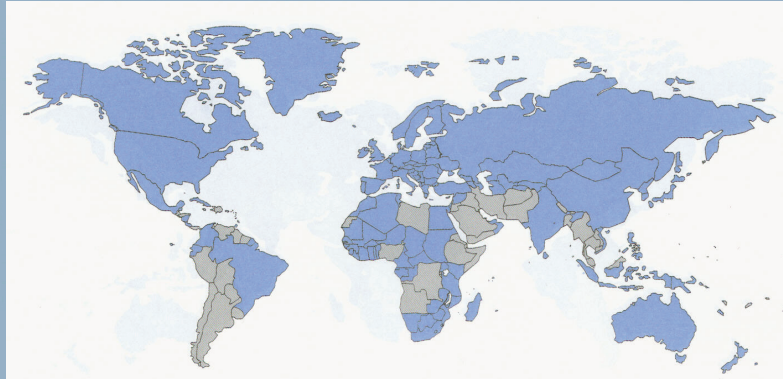
- Is merely a placeholder for up to 30 months (18 months past 1-year anniversary of first U.S. filing)
- A PCT APPLICATION NEVER BECOMES A PATENT
- Can be basic application
- Preserves rights
- Defers costs

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# PCT Contracting States (123 as of 10/03)



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# PCT Member States

|  |  |  |   |                                     |
|--|--|--|---|-------------------------------------|
| AE United Arab Emirates                        | CN China                               | HR Croatia                               | MK The former Yugoslav Republic of Macedonia <sup>1</sup> | SK Slovakia (EP)                    |
| AG Antigua and Barbuda                         | CO Colombia                            | HU Hungary (EP)                          | ML Mali (OA) <sup>2</sup>                                 | SL Sierra Leone (AP)                |
| AL Albania <sup>1</sup>                        | CR Costa Rica                          | ID Indonesia                             | MN Mongolia   | SN Senegal (OA) <sup>2</sup>        |
| AM Armenia (EA)                                | CS Serbia and Montenegro               | IE Ireland (EP) <sup>2</sup>             | MR Mauritania (OA) <sup>2</sup>                           | SY Syrian Arab Republic             |
| AT Austria (EP)                                | CU Cuba                                | IL Israel                                | MW Malawi (AP)  | SZ Swaziland (AP) <sup>2</sup>      |
| AU Australia                                   | CY Cyprus (EP) <sup>2</sup>            | IN India                                 | MX Mexico   | TD Chad (OA) <sup>2</sup>           |
| AZ Azerbaijan (EA)                             | CZ Czech Republic (EP)                 | IS Iceland                               | MZ Mozambique (AP)  | TG Togo (OA) <sup>2</sup>           |
| BA Bosnia and Herzegovina                      | DE Germany (EP)                        | IT Italy (EP) <sup>2</sup>               | <b>NA Namibia</b> (from 1 January 2004)                   | TJ Tajikistan (EA)                  |
| BB Barbados                                    | DK Denmark (EP)                        | JP Japan                                 | NE Niger (OA) <sup>2</sup>                                | TM Turkmenistan (EA)                |
| BE Belgium (EP) <sup>2</sup>                   | DM Dominica                            | KE Kenya (AP)                            | NL Nicaragua  | TN Tunisia                          |
| BF Burkina Faso (OA) <sup>2</sup>              | DZ Algeria                             | KG Kyrgyzstan (EA)                       | NI Netherland (EP) <sup>2</sup>                           | TR Turkey (EP)                      |
| BG Bulgaria (EP)                               | EC Ecuador                             | KP Democratic People's Republic of Korea | NL Netherlands (EP) <sup>2</sup>                          | TT Trinidad and Tobago              |
| BJ Benin (OA) <sup>2</sup>                     | <b>EG Egypt</b>                        | KR Republic of Korea                     | NO Norway   | TZ United Republic of Tanzania (AP) |
| BR Brazil                                      | EE Estonia (EP)                        | KZ Kazakhstan (EA)                       | NZ New Zealand  | UA Ukraine                          |
| <b>BT Botswana (AP)</b> (from 30 October 2003) | ES Spain (EP)                          | LC Saint Lucia                           | OM Oman   | UG Uganda (AP)                      |
| BY Belarus (EA)                                | FI Finland (EP)                        | LI Liechtenstein (EP)                    | PG Papua New Guinea                                       | US United States of America         |
| BZ Belize                                      | FR France (EP) <sup>2</sup>            | LK Sri Lanka                             | PH Philippines  | UZ Uzbekistan                       |
| CA Canada                                      | GA Gabon (OA) <sup>2</sup>             | LR Liberia                               | PL Poland   | VC Saint Vincent and the Grenadines |
| CF Central African Republic (OA) <sup>2</sup>  | GB United Kingdom (EP)                 | LS Lesotho (AP)                          | PT Portugal (EP)  | VN Viet Nam                         |
| CG Congo (OA) <sup>2</sup>                     | GD Grenada                             | LT Lithuania <sup>1</sup>                | RO Romania (EP)   | ZA South Africa                     |
| CH Switzerland (EP)                            | GE Georgia                             | LU Luxembourg (EP)                       | RU Russian Federation (EA)                                | ZM Zambia (AP)                      |
| CI Côte d'Ivoire (OA) <sup>2</sup>             | GH Ghana (AP)                          | LV Latvia <sup>1</sup>                   | SC Seychelles   | ZW Zimbabwe (AP)                    |
| CM Cameroon (OA) <sup>2</sup>                  | GM Gambia (AP) <sup>2</sup>            | MA Morocco                               | SD Sudan (AP)   |                                     |
|  | GN Guinea (OA) <sup>2</sup>            | MC Monaco (EP) <sup>2</sup>              | SE Sweden (EP)  |                                     |
|  | GQ Equatorial Guinea (OA) <sup>2</sup> | MD Republic of Moldova (EA)              | SG Singapore  |                                     |
|  | GR Greece (EP) <sup>2</sup>            | MG Madagascar                            | SI Slovenia (EP) <sup>2</sup>                             |                                     |
|  | GW Guinea-Bissau (OA) <sup>2</sup>     |  |   |                                     |

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## Patentability Considerations

- New – it has not already been discovered by someone else
- Useful – it has some substantial useful purpose
- Non-obvious – it is not already taught or suggested by some pool of existing knowledge, i.e., it's a genuine discovery!
- And, the application must provide a written description of the invention and enable one of skill in the art to make and use the invention

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## When Can You Apply for a Patent?

- Conception
- Reduction to practice

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## When is it Too Late to Apply for a Patent?

- U.S. – right to obtain patent will be lost if patent application is not filed in the U.S. Patent and Trademark Office within one year of date of first public use or offer for sale in the U.S., or publication anywhere in the world [Canada and Australia (publication only) have similar “one year rule”]

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## When is it Too Late to Apply for a Patent? (continued)

- Most foreign countries – absolute novelty requirement – patent rights lost if invention sold or in use in country, or publication anywhere in the world (treaties exist to allow foreign filing within one year of U.S. patent filing and allowing foreign patent application to be treated as if it was filed on the same day as the U.S. patent filing)

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## Bottom Line

- YOU SNOOZE, YOU LOSE!
- May not be able to get a patent if invention has been sold or published before you file patent application [one year grace period in U.S., Australia (publication only) and Canada]
- If you have “new” invention, begin patent process AS SOON AS POSSIBLE

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## What to Patent – Metrics

- Detectability – how hard would it be to detect the invention in a competitor’s product? How would companies detect it?

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## What to Patent – Metrics (continued)

- Is the invention or will the invention be used in company's products? If yes, go to (a), (b) and (c)
  - (a) Which products?
  - (b) How can companies use the benefits of the invention as a marketing tool?  
Is there a cost to using it?
  - (c) How long will the invention be useful to companies or our competitors?

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## What to Patent – Metrics (continued)

- Will competitors be interested in or need this technology?
- Will potential investors be interested in the technology?
- Could the technology be sold or licensed?

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## What to Patent – Metrics (continued)

- Technical Merit (High, Medium, Low ranking)
  - High: a significant advance which allows for very few feasible technological alternatives with the same benefits
  - Medium: a moderate advance which allows for few feasible technological alternatives with the same benefits
  - Low: an advance in technology which allows for few feasible technological alternatives with the same benefits

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## What to Patent – Metrics (continued)

- Strategic Value
  - High: key strategic area
  - Medium: strategic area
  - Low: area of product interest

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## Where To Patent

- Establish Guidelines as to what countries should be considered
  - Review/revise guidelines on regular basis
    - A key factor is business need
    - File and maintain patent protection only in those countries where it makes economic sense to do so

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## Foreign Filing Considerations – Uses of Technology by Companies

- Direct patent utilization by companies
- Joint venture
- Licensing agreements
- Franchising (typically a package of technology licenses, local exclusivity and management assistance)
- Sale of technology
- Interest to investors

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## Other Foreign Filing Considerations

- Cover competitor's home countries or major investment/manufacturing countries
- Cover countries in which the product is likely to be copied
- Cover countries of anticipated future commercial use

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## Who is an Inventor?

- First task is to identify the Invention – only then can the inventor(s) be identified

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## Definition of an Inventor

- An inventor is the person who conceives a fully workable invention
- Muddy metaphysics of patent law

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## Definition of Conception

- Conception is when there is complete enough idea that a person with ordinary skill in the art would be able to reproduce the invention without undue experimentation
- Is reduction to practice necessary?

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## Who is Not an Inventor?

- One who suggests an idea of a result to be accomplished, rather than the means of accomplishing it, is not an inventor

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## Who is Not an Inventor?

(continued)

- Someone who merely follows instructions is not viewed as an inventor
  - Someone who reduces an invention to practice at the direction of another is not an inventor
  - Someone who only does follow-up testing is not an inventor

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## Who Determines Inventorship?

- Inventorship is a question of law
  - Not a mechanism for rewarding co-workers who contributed
  - Not supervisor prerogative
- Attorney preparing the application will make a preliminary assessment of inventorship based on facts provided by “participants”
  - The role of notebook records
- Corroboration

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## Protecting Your Rights

- What happens if someone else files a valid patent application on your invention before you do?
- Even if you were first to conceive of your invention, you will lose your right to patent the invention, unless (U.S. only):
  - You can prove that you were first to “reduce the invention to practice” or
  - You can prove that you diligently worked on the invention from conception until reduction to practice

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## Protecting Your Rights (continued)

- So how can you prove conception, diligence or reduction to practice?
- Keep good records!

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## Keeping Records

- The laboratory notebook
- What to record
- How to record
- Data recording
- Witnessing the records

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## The Laboratory Notebook

- Company-issued bound laboratory notebook
- All entries in ink or other permanent medium
  - Entries identified with respect to the particular project
  - Include all formulae or diagrams of materials or equipment
- Overriding criterion – peer should understand entries

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## What to Record

- For conception:
  - Specific date of idea
  - All elements of invention
- For reduction to practice:
  - Specific date invention made and tested
  - What work was done and by whom
  - What tests were performed
  - Results showing suitable for intended purpose (it is not necessary that operation meet commercial standards)

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## What to Record – General Considerations

- Think before you write
- Avoid conclusory terms/statements
- Don't document problems, document the solution
- E-mails are as powerful as written memo
- Avoid hyperbole and exaggeration
- Balance risk against need to communicate

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“Our invention is an obvious combination  
of these two elements.”

“Of course, if we practice this invention,  
we'll be infringing three patents.”

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## How to Record

- Keep all records in ink and bound
- Record ideas as soon as they occur to you
- Record results of experiments promptly
- Strive for accuracy, clarity, and completeness

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## Data Recording

- Note successful tests or demonstrations
- Record and retain all data in legible form
- Provide detailed descriptions of records

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## Note Successful Tests or Demonstrations

- Remember a test may be “successful” as long as the invention operates or performs in the general manner intended
  - Do not indicate that a test was “unsuccessful” merely because it did not meet the requirements of a particular commercial application
- Record unsuccessful experiments, but avoid unnecessary negative comments in general

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## Record and Retain All Data in Legible Form

- Permanently secure sketches, drawings, photographs, data sheets, and other loose material on blank sheets of the notebook
- Place material which is not readily secured into the notebook in a separate volume and cross-reference to that volume in notebook entries
- Draw a single line through unwanted material; date and initial changes
- Never erase or obliterate entries or remove pages

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## Details and Descriptions

- Do not leave blank spaces or pages which might give the false impression that notes have not been kept chronologically
- If entries extend over several pages, show continuity such as “continued on (Page 29, Notebook 2, etc.)”
- Investigators should maintain individual notebooks

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## Witnessing the Records

- Witness should be someone who understands the invention, but is not a co-inventor
- The witness should sign entry near (preferably under) the inventor’s signature
- The dates of the witness’s signature are generally the critical dates
- Notebook entries and other documents should be witnessed as soon as possible

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## Ten Key Rules of Company's Intellectual Property Program

1. File patent applications as soon as possible
2. Do not disclose any discovery or invention to anyone who is not a company employee without first obtaining a signed, company-approved, non-disclosure agreement or permit any unauthorized access to company facilities

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## Ten Key Rules of Company's Intellectual Property Program (continued)

3. Do not sell or offer to sell to anyone, or publicly use, test, or demonstrate any invention or new product without having first applied for or considered applying for a U.S. patent
4. Do not disclose or describe any invention or new product in any publication or promotional material without having first applied for or considered applying for a U.S. patent

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## Ten Key Rules of Company's Intellectual Property Program (continued)

5. Do not solicit, accept, purchase, possess, duplicate, destroy, or distribute any trade secret or confidential information of another without the consent of the owner
6. Keep accurate and detailed records of all research and development activities
7. Conduct periodic assessments of the intellectual property assets of companies and its competitors

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## Ten Key Rules of Company's Intellectual Property Program (continued)

8. Include on all product labels and promotional materials a trademark notice in the form "TM" or "SM," or, for federally registered marks in the form "®"
9. Mark all products sold in the U.S. with the numbers of all patents covering those products or with the words "patent pending" for products covered by pending patent applications (or appropriate markings in foreign countries)

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## Ten Key Rules of Company's Intellectual Property Program (continued)

10. Include on all confidential written materials the proprietary legend:

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OF COMPANIES**

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## Forms to Protect Your Intellectual Property Interests

- Invention Disclosure Form
- Independent Contractor Confidentiality Agreement
- Non-Disclosure Agreement
- Pre-Hiring Questionnaire
- Entry Interview Form

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## Forms to Protect Your Intellectual Property Interests (continued)

- Employment Agreement
- Exit Interview Form
- Letter Agreement Regarding Unsolicited Idea
- Bilateral Confidential Disclosure Agreement
- Two Separate One Way Confidential Disclosure Agreements
- Laboratory Notebook Practice Memo

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## Conclusion

- Develop core strategy regarding the protection of intellectual property assets
- Make sure protection of intellectual property is routine matter
- Spend wisely, build value

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