

# US Provisional and Utility Patents: Protecting Your Startup's Intellectual Property

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The Boston Entrepreneurs' Network  
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**FISH.**  
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# Agenda

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- **What are provisional and utility patents?**
- **What protections do each of these types of patents offer to a company, its investors, and shareholders?**
- **What are the tradeoffs between investing in IP, product development, and getting to market?**
- **What are the technology and market differences in the timing of investing in IP?**
- **When do investors care about IP?**
- **What does it cost for US and foreign patent prosecution?**
- **When and where should companies consider protecting IP in foreign countries?**

# What are Provisional Patents?

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- **Provisional Patents**

- Convenient way to get an invention on file without starting the clock on a patent's 20 year term
- Are NOT examined and NOT published
- Do NOT need claims (**but should file with claims in my view**)
- Expire **12 months** after the filing date, by when applicant must file a US and/or foreign application to get priority of provisional
- Filed by applicants when the invention is not fully developed
- Filed by applicants who will do more research in next year
- Filed by applicants who think this is cheap way to get protection

- **X – NOT a good idea (in my view)**

- ***New Railhead Mfg., LLC. v. Vermeer Mfg. Co.*, 298 F. 3d 1290 (Fed. Cir., July 30, 2002)**
  - Provisional applications must meet statutory disclosure requirements to provide effective priority

# What are Provisional Patents?

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- **What protections do provisional patents offer to a company, its investors, and shareholders?**
  - Good way to get an early filing date
  - Can be filed quickly to predate public disclosure of invention to preserve foreign filing rights
  - Cost somewhat less than utility patent application
  - Give inventors a year to see how the invention develops
  - Give inventors time for more experimentation
  - Give startups something to show to investors
  - Investors understand a provisional is a “stake in the sand” that needs to have follow up
  - Shows investors that startup is serious about starting an IP portfolio
  - **CANNOT be asserted against anyone**

# What are Utility Patents?

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- **Utility Patents**

- Must provide sufficient details to allow others to make and use the invention
- Must include claims that cover the key aspects of invention
- Are examined, but can take several years to get the first comments from the USPTO unless expedited
- Once started, examination can take years and depends significantly on the USPTO Examiner you happen to get
- Are published at 18 months from the provisional priority date
  - Unless you request non-publication and do not file any foreign equivalents
- Have a 20 year life that starts from the filing date (not the provisional filing date, and not from the issue date)

# What are Utility Patents?

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- **What protections do utility patents offer to a company, its investors, and shareholders?**
  - Once issued, can be asserted in legal proceeding to try to prevent others from making, using, selling, importing, and advertising the claimed invention
    - But, patents can be invalidated in litigation or post-grant proceedings
  - A single patent can be useful, but a portfolio of patents covering different aspects of your commercial product(s) and/or method(s) can provide much better protection, because in general each patent must be attacked separately
  - A patent portfolio can be a startup's most valuable asset for attracting new investors and/or potential acquirers
  - But **NOT** a free pass to practice your invention
    - **You still have to worry about patents of others**
  - Patents can be used as bargaining chips against others

## What are the tradeoffs between investing in IP, product development, and getting to market?

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- **For software apps or consumer products that may have a short period of relevance**
  - The race to be first to market is often key
  - Developing your product to the point of commercial utility is paramount
  - IP protection may, in some circumstances, take a second seat, but some investors may want to see at least some patent application filing

## What are the technology and market differences in the timing of investing in IP?

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- **File on your key inventions as soon as you have reduced the invention to practice**
  - And as soon as you have adequate funding
  - The America Invents Act introduced a “first inventor to file” patent regime (which some have called a “first to disclose” system)
- **File before any public disclosures if you want to protect foreign patent rights**
  - This is true for all areas of technology

## What are the technology and market differences in the timing of investing in IP?

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- **Only for products that may become obsolete before a patent issues, might you consider forgoing patent protection**
  - For some software
  - Certain consumer goods
- **Do you want to grow and enter the market yourself, or be acquired?**
  - First case, focus on keeping out competitors for your key products
  - Second case, focus on building as large a portfolio as you can afford, as that may be the most valuable asset you have after your team

## What are the technology and market differences in the timing of investing in IP?

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- **File on your key inventions before seeking investment**
  - Your idea and IP may be your only asset when you start seeking angel investor and “friends and family” funding
- **Get all of your IP “ducks in a row” before a major new investment or before an acquisition**
- **For many types of products, you may have an early IP investment phase, and then an IP maintenance phase**
  - in therapeutics, keep in mind how long it takes to get to market vs. 20 year lifetime of a patent
  - think of new formulations, new modes of delivery, or new dosage regimens, to protect your market once initial patents on drug expire
- **Once you have commercialized your product, another phase of IP protection might arise: patent litigation, which requires a huge investment of time and money**

## When do investors care about IP?

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- **Investment in building a strong patent portfolio can yield several advantages:**
  - Exclude Competitors
  - Increase Revenue - Licensing
  - Defensive Advantage – Cross Licensing
  - Build Tangible Assets Reflecting Value of R&D
  - Legitimacy / Marketing Benefits
- **Investors know this is generally true, but does this vary depending on the underlying technology?**

## When do investors care about IP?

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- **Always protect your inventions in healthcare**
  - Medical devices need patent protection
  - Medical therapies absolutely need patent protection because of the long time horizon before getting to market
    - **Patents on improvements and new methods of administration can be critical to maintain long term protection for a major drug**
- **Typically in mechanical inventions**
  - Unless the first to market advantage is sufficient for a quick return

## When do investors care about IP?

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- **In software, it depends on the particular application, market, and expected lifetime of the software**
  - The software may become obsolete before a patent issues
  - Trade secret protection may work if the software is kept in-house and used to provide a service and cannot be easily reverse engineered or recreated, but some inventors may want to see at least some patent application filing
  - Patent offices and courts around the globe are making it more difficult to obtain patent protection for software; **however**, patents are still being granted on software-based inventions

## What does it cost for US patent prosecution?

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- **Legal costs for drafting US quality application can range from \$5,000-\$20,000 or more**
- **Initial Official Fees**
  - US provisional \$300/\$150 (large/small entity)
  - US utility \$1500/\$830 (large/small entity, no extras)
- **During prosecution of US application and Patent**
  - Responding to each Office Action ~\$2,000-\$15,000
  - Issue Fee \$1200/\$600 (large/small entity)
  - Maintenance Fees after Issuance (small entity) – 3.5 years (\$1,000); 7.5 years (\$1,880); 11.5 years (\$3,850)(double for large entity)

## What does it cost for foreign patent prosecution?

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- **Costs – Patent Cooperation Treaty (PCT) ~ \$3,000 (small entity, 50 pages, US search authority)**
- **PCT National Stage**
- **What would filing **one** patent in 15 countries cost?**
  - Translation costs – almost \$35,000
  - Annuities – although spread out over 20 years, you will still be spending almost \$175,000 to maintain all patents for 20 years
  - Prosecution can cost \$5,000 to \$20,000 per country, or more, e.g., if appeals are required
- **Total is \$300K-400K over the life of the patent to file, prosecute, and maintain one family outside the US in 15 top countries**

# Foreign Filing Costs

## Costs – PCT National Stage - Details

Country	Official Fees	Translation	Misc.	Associate	In-house Fees	Annuities	Total
AR	\$416	\$3,219	\$76	\$7,748	\$600	\$10,661	\$22,449
AU	\$1,084	N/A	\$76	\$4,678	\$600	\$15,171	\$21,609
BR	\$607	\$2,925	\$76	\$4,595	\$600	\$14,433	\$23,236
CA	\$1,076	N/A	\$76	\$3,704	\$600	\$10,969	\$16,425
CN	\$1,152	\$4,405	\$76	\$3,135	\$600	\$16,966	\$26,335
EP	\$8,295	N/A	\$0	\$7,464	\$500	\$1,986	\$18,245
IL	\$1,022	N/A	\$76	\$5,663	\$600	\$7,325	\$14,686
IN	\$901	N/A	\$76	\$4,153	\$600	\$10,868	\$16,598
JP	\$2,563	\$7,316	\$76	\$5,281	\$600	\$17,813	\$33,649
KR	\$1,893	\$5,280	\$76	\$3,275	\$600	\$20,507	\$31,631
MX	\$667	\$2,842	\$76	\$5,493	\$600	\$2,567	\$12,295
NZ	\$767	N/A	\$76	\$3,724	\$600	\$11,976	\$17,143
RU	\$332	\$4,680	\$76	\$3,746	\$600	\$8,944	\$18,378
SG	\$1,494	N/A	\$76	\$3,785	\$600	\$13,386	\$19,341
TW	\$850	\$3,418	\$76	\$3,080	\$600	\$11,413	\$19,437
<b>TOTALS</b>	<b>\$23,119</b>	<b>\$34,085</b>	<b>\$1,064</b>	<b>\$69,524</b>	<b>\$8,900</b>	<b>\$174,985</b>	<b>\$311,457</b>

Using Global IP Estimate; assuming 50 pages, no drawings, 25 total claims (with 3 independent claims), large entity

### Costs – EP regional stage

- **Regional examination can be cost effective – different regions include EP, Eurasian, ARIPO and OAPI**
  - Regionalization costs for the same application in 10 of the top EP countries can cost over \$150,000 over the life of the patents
- **Added to the foreign filings from the previous slide, this takes us to over \$450,000-\$550,000**

# Foreign Filing Costs

## Costs – EP regional stage - details

Country	Official Fees	Translation	Misc.	Associate	In-house Fees	Annuities	Total
BE	\$0	0	\$0	\$705	\$0	\$10,852	\$11,557
CH	\$0	\$0	\$0	\$724	\$0	\$13,961	\$14,685
DE	\$65	\$0	\$0	\$710	\$0	\$20,921	\$21,696
ES	\$629	\$3,147	\$0	\$887	\$0	\$11,816	\$16,479
FI	\$434	\$0	\$0	\$1,361	\$0	\$14,922	\$16,717
FR	\$0	\$0	\$0	\$629	\$0	\$12,596	\$13,225
GB	\$0	\$0	\$0	\$558	\$0	\$11,434	\$11,992
IT	\$0	\$3,581	\$0	\$705	\$0	\$13,096	\$17,382
NE	\$27	\$0	\$0	\$699	\$0	\$16,254	\$16,980
SE	\$0	\$0	\$0	\$892	\$0	\$12,498	\$13,390
<b>TOTALS</b>	<b>\$1,155</b>	<b>\$6,728</b>	<b>\$0</b>	<b>\$7,870</b>	<b>\$0</b>	<b>\$138,350</b>	<b>\$154,103</b>

Using Global IP Estimate; assuming 50 pages, no drawings, 25 total claims (with 3 independent claims), large entity

# Foreign Filing Costs and Strategies

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- **How do you balance a desire to protect as broadly as possible with the required expense?**
- **You need to ask / answer several questions**
  - Company's goals and profile
    - **What kind of company are you (size / technology / global presence – footprint – activities?)**
  - Company's resources to be devoted to patent protection
    - **What will your IP budget support?**
    - **A strategy that lets you file broadly but does not give you adequate funding to do additional patenting / FTOs / enforcement is far from ideal**
  - Where and how big are my present markets for the invention? Who is the customer? Who is my competition? Where are my business partners located?
  - Where will the product be manufactured? Where will product be used? Where would my competition manufacture its product?

## Foreign Filing Costs and Strategies

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- **You need to ask / answer several questions:**
  - Where would your investors file? Consider filing in markets the investors are likely to value (e.g., China).
  - Where are your emerging markets where future protection may become important?
  - Where does your IP reside (literally) ... where could an employee or partner walk out the door with your know-how and start competing with you?
  - Where is your competition located – manufacturing and/or nerve centers?
  - Where are strategic venues for enforcement? Consider shipping hubs or countries like Germany where you can get quick relief.

- **Where to file?**
  - Technology neutral strategy:
    - **EPO (almost always)**
    - **Huge markets and economies (China, Japan, South Korea, and India)**
    - **Large markets and economies (Brazil, Russia, Taiwan, and Mexico)**
    - **“No translation required” markets (Canada, Australia, New Zealand, and South Africa – but these markets are quite small)**
    - **“Proximity to the US” markets (Canada and Mexico)**

- **Where to file?**
  - Technology specific strategy:
    - **Software** – EP, AU, CA, CN, IN, JP, KR
    - **Energy** – EP, CA, CN, GCC/SA, MY, MX, NO, RU, UK
    - **Semiconductors/photonics** – EP, AU, CA, CN, IL, JP, KR, TW
    - **Life sciences** – EP, AU, BR, CA, CN, IN, JP, KR, MX, SG, TW
    - **Industrial chemicals** – EP, AU, CA, CN, JP, KR
    - **Medical devices** – EP, CN, CA, JP, AU, IL

- **Where to file?**
  - Filing in non-PCT countries:
    - **Taiwan – expensive translations, but patents typically enforceable**
    - **Argentina – examination very slow, no real procedures for accelerating exam; enforcement questionable**
    - **Venezuela - examination very slow; enforcement questionable especially for US held patents**

# Foreign Filing Strategies

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- **Where NOT to file?**
  - Avoid countries with export regulations
    - Export Administration Regulations (EAR)
    - International Traffic in Arms Regulations (ITAR)
  - Avoid: Crimea, Cuba, Iran, North Korea, Sudan, Syria
  - See, for example, <https://www.tradecompliance.pitt.edu/embargoed-and-sanctioned-countries>

# Thank you!

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With well over 30 years of experience, Peter's practice emphasizes client counseling and patent prosecution in a wide variety of technologies, with an emphasis on healthcare, medical devices, and other biological and medical fields as well as various "green" technologies.

Peter helps clients from start-ups to multinationals to develop competitive worldwide patent strategies and to establish solid and defensible patent portfolios. He performs competitive patent analyses, identifies third-party patent risks, and provides patentability and freedom-to-operate opinions. Peter also has experience in opposing and defending patents before the European Patent Office and in U.S. litigation and post-grant proceedings.

Peter has experience in medical therapeutics, diagnostics, devices, and imaging, microfluidic systems, liquid biopsy, nucleic acid sequence analysis systems and software, cell culturing and bioprocessing, molecular biology, complex biomedical systems, optics, machine tools, and lasers.

Specific applications include, e.g., cancer antibodies, RNAi and CRISPR therapeutics, engineered AAV systems, microfluidic analysis of circulating tumor and fetal cells, cell-free DNA analysis, next generation sequence analysis, dendritic cell- and DNA- based vaccines, nanoparticle and vector-based delivery of therapeutic agents, automated blood analysis systems, nucleic acid probes, tissue engineering, infusion pumps, biochips, laser systems, cellulose processing for ethanol production, implantable drug delivery devices and microcapsules, ultrasound probes, wind and solar power, and diagnostic and therapeutic methods for, e.g., AIDS, cancer, autism, diabetes, psoriasis, and arthritis.