Patents 101 – A Primer

• Background
• Myths about patents
• Types of US patent applications
• The PCT route
• Anatomy of an application
• What is patentable?
• The patenting process (“prosecution”)
• How long does the patent last?
• Inventorship
What is a Patent?

A document that provides to the patent owner the right to prevent others from making, using, offering to sell, selling or importing the invention(s) claimed in the patent.

A “ticket to court”
What is a Patent? (cont.)

Negative right — gives its owner the right to prevent others from using his invention. However, it does not give its owner the right to make, use, sell, or offer to sell his invention.

Territorial — must obtain patent in every country where protection is desired

Personal property — can be bought, sold, licensed, bequeathed, etc.
Purposes of the Patent System

To reward inventors and thereby encourage innovation

To make it economically feasible to invest money in research and development

To provide a technology “database” available to all; e.g., to discourage accumulation and hoarding of trade secrets
Quid Pro Quo

The Bargain:

The patentee gets the right to exclude others for a fixed length of time

The public gets full disclosure of the inventor’s best ideas about how to make and use the invention
Benefits of a Patent Portfolio

Generation of revenue by way of royalty payments

Exclude competitors from best products or most efficient processes

Increase competitors’ risk and levels of uncertainty

Bargaining chips to exchange with other companies for use of their intellectual property

Gain entry into domestic or foreign markets that would otherwise be unavailable to the company
MYTH #1

“My patent gives me the right to make, use and sell the invention.”

In fact, a patent is just a right to block others from making, using and selling the invention.

It is not an affirmative right to practice the invention.

--The invention may be illegal to use (a bomb?) or to sell (an unapproved drug?).

--Others may own patents that also cover some aspect of your invention.
Example: the Chair

Adam invents and claims a chair:

A chair comprising a seating surface, four legs, and a back.
Example: the Chair (cont.)

Bea discovers that adding arms to the chair makes it more comfortable, so claims:

A chair comprising a seating surface, four legs, a back, and two arms.

Bea can’t make or sell her new armchair without infringing Adam’s patent.
MYTH #2

“Merely having a patent will stop others from copying my patented product.”

A patent does not automatically stop anyone from doing anything. It is just a “ticket to court.” You must enforce the patent in court to hold others accountable for infringing behavior.

Fear of liability for infringement may stop some competitors.
MYTH #3

“We don’t copy anyone’s product, so we don’t infringe anyone’s patents.”

Lots of inventions are patented but not on the market

Whether you know about a patent or not, you can be liable for infringing it

Before investing in a new product, do a “freedom to operate” analysis
MYTH #4

“I’ve never seen this product on the market, so it must be patentable.”

To qualify for patent protection, the invention must be new, useful, and non-obvious.

Whether or not a similar product is “on the market” is not the test.
MYTH #5

“To get a patent, all I need to do is fill out a form and send it to the Government.”

Claims must be carefully drafted to encompass the invention both broadly and narrowly, yet to exclude the prior art.

Specification must disclose how to make and use the invention and provide explicit support for the claims as originally written and as they may be amended in the future.

After filing, years of back-and-forth with the USPTO examiner.
Types of US applications

Provisional application
Utility application
Continuing applications

Continuation application
» Same specification and general invention; same priority date

Divisional application
» Same specification but different invention; same priority date

Continuation-in-part application
» Added material to application; priority date depends on when subject matter of claim first disclosed

Patent Cooperation Treaty (PCT) application
Provisional Application

Never examined

Never will issue as a patent

Automatically expires in 12 months

Think “place holder” for priority date

Provides 12 months to further refine the invention

Must be “re-filed” as a utility or PCT application within 12 months of filing date to maintain priority date
Utility Application

This is the document that is examined by the Patent Office

This is the text that may ultimately be granted as a patent (after possible amendments to claims)
PCT Application

International clearing house (World Intellectual Property Office, “WIPO”); does not issue patents

“Place holder” for priority date

Preliminary search for prior art and review of claims; results then communicated to various national patent offices

Applicant can choose whether to proceed with filings in countries of interest
Example of Filing Timeline without PCT

**January 2010** - Provisional patent application filed in U.S.

**January 2011** – US utility application filed; any desired foreign applications filed directly in the foreign countries (all get benefit of January 2010 priority date).
Example of Filing Timeline with PCT

January 2010 - Provisional patent application filed in U.S.

January 2011 - PCT application filed

July 2012 - National phase (US utility and foreign) applications filed; get benefit of January 2010 priority date
Why Use PCT?

Advantages of the PCT route:

- Defers expenses while preserving priority date for up to 30 months
- Allows more time to assess marketability
- An International Search Report and International Preliminary Report on Patentability are provided

Disadvantages of the PCT route:

- Additional cost of filing the PCT application
- Delays start of prosecution up to 18 months, so may delay issuance of patents
Anatomy of the Application

Claims

Specification

Written description of the invention
How to make and use
Can contain figures (important for devices)
Abstract (short summary)

Executed oath or declaration of the inventors
Patent Claims

Most important part of the application: they define what is being claimed as the invention.

Purpose of the rest of the application is to support the claims.

Claims must be clear enough so that one skilled in the art could determine whether a given process/product would infringe.

Claims must define an invention that does not overlap with the prior art.

Claim language is arcane – drafting is an art.
Examples of Claims

Composition claim: Claim 1 of U.S. Patent No. 3,156,523

1. Element 95.
Examples of Claims

Apparatus claim: Claim 1 of U.S. Patent No. 8,000,000

1. A visual prosthesis apparatus comprising:

a camera for capturing a video image;

a video processing unit associated with the camera, the video processing unit configured to convert the video image to stimulation patterns, the video processing unit is configured to stop transmitting the stimulation patterns to the retinal stimulation system when the retinal stimulation system does not transmit valid back telemetry data; and

a retinal stimulation system configured to stop stimulating neural tissue in a subject's eye, and return an error signal to the video processing unit, based on the stimulation patterns when an error is detected in a forward telemetry received from the video processing unit.
Examples of Claims

Method claim: Claim 1 of U.S. Patent No. 6,633,564

1. A method to interrupt an existing packet in transmission for transmitting an interrupting packet in a communication system where packets are each transmitted in the form of physical layer blocks, the physical layer blocks of each packet containing fields for previously defined purposes and being designed to be consecutively transmitted without interruption, the method comprising:

transmitting one or more physical layer blocks for the existing packet;

before completing the transmission of the existing packet, transmitting at least one physical layer block for the interrupting packet;

denoting the presence of the interrupting packet in the physical layer block for the interrupting packet by using a value or combination of values in one or more existing fields located therein in a manner such that these fields are not used for the defined purposes; and

resuming transmission of the existing packet.
What is Patentable?

Must meet the following criteria to receive a patent:

- Statutory Subject Matter
- The Utility Requirement
- The Novelty Requirement
- The Nonobviousness Requirement
- The Written Description Requirement
- The Enablement Requirement
- The Best Mode Requirement
Statutory Subject Matter

Requires that the invention fall into a category that Congress has designed the patent laws to protect. 35 USC 101 specifies four categories of patent-eligible subject matter:

- process
- machine
- manufacture
- composition of matter
Statutory Subject Matter (cont.)

Supreme Court has defined three exceptions to those four categories:

- Laws of Nature
- Natural Phenomena
- Abstract Ideas

A claim that is nothing more than an attempt to patent something within one of those exceptions is not valid.
Statutory Subject Matter (cont.)

Example: can’t patent fire *per se* (a physical phenomenon), and thereby preempt all uses of it, even if you were the first to discover it

But, CAN patent a specific new application of fire: e.g., use of fire in a method of tempering glass
Statutory Subject Matter (cont.)

Example: can’t patent a method of hedging risk in commodity trading if all steps could be carried out by merely thinking (so is merely an abstract idea).

But, CAN potentially patent such a method if the claim explicitly requires use of a computer.
The Utility Requirement

Requires that the invention be “useful”

Use must be specific, substantial, and credible.
The Utility Requirement (cont.)

Generally an easy standard to meet, but a problem for:

-- new genes or proteins with no known biological function
-- new compounds with no apparent use
-- methods of accomplishing some “impossible” goal (e.g., reversing ageing, time travel)

-- machines that violate laws of thermodynamics
The Novelty Requirement

Requires that the invention not be in the public domain prior to the filing of the patent application, e.g., by way of:

- Domestic or foreign patenting of the invention
- Domestic or foreign publication of the invention
- Domestic public use of the invention
- Domestic sale or offer for sale of the invention
The Novelty Requirement (cont.)

Applicant has a one-year grace period to file an application in the US (but not most other countries)

To protect foreign filing rights, file priority application before any public disclosure or use or sale or offer for sale ("bar dates")
The Novelty Requirement (cont.)

Typical bar date triggers:

- Journal articles
- Product release brochures
- Conference presentations, abstracts
- Disclosures not protected by NDA
- Website postings
- Selling/Offering for sale (even under a secrecy agreement)
If information about a new product or process trickles out of the company in any way, consider whether a bar date is being triggered.

Keep track of dates and events

Coordinate with legal department
The Nonobviousness Requirement

Even if novel, invention is not patentable if it differs from the prior art only by way of an “obvious” modification

“Obvious” means obvious to a person of ordinary skill in the art at the time the invention was made

Highly subjective
The Written Description Requirement

Requires the specification to describe the invention in full, clear, concise, and exact terms to prove the inventor was in possession of the full scope of the invention.

Can be more difficult to satisfy for inventions in unpredictable fields (e.g., medicine, biotechnology).
The Enablement Requirement

Requires the specification to teach one of skill in the art how to make and use the invention.

Frequently an issue for the “unpredictable arts” (biology and chemistry), especially for unproven methods of treatment.
The Best Mode Requirement

Must describe the best way of performing the invention.

Public entitled to the best way you know of at the time of filing – quid pro quo.
Prosecution of US Applications

(1) File application and complete any formalities, including filing an Information Disclosure Statement disclosing all pertinent prior art of which the applicant is aware.

(2) Examiner may insist on splitting multiple inventions into separate applications (divisional applications) before examining each.
Prosecution of US Applications (cont.)

(3) First Office action nearly always rejects the claims on various grounds

(At any point after the first Office action, either the examiner or the applicant can request a telephone or in-person interview to discuss and resolve the issues.)
Prosecution of US Applications (cont.)

(4) Applicant responds to each ground of rejection with arguments, factual evidence, and/or amendments, as appropriate.

(5) If examiner was not fully satisfied by Applicant’s response, she will send a second Office action, most likely final, explaining what issues remain.
(6) Various options after final action, including appeal

(7) Eventually prosecution concludes with either an allowance of all claims still in the case, or abandonment

(8) After allowance, applicant pays the issue fee and the patent issues.
What is the Life of a US Patent?

More complicated to determine than one would expect.

Patents issued from US applications filed before June 8, 1995, have the longer of

(a) a 17 year term, measured from the date of issuance; or
(b) a 20 year term, measured from earliest US priority date (provisional application’s filing date does not count).

Patents issued from US applications filed after June 8, 1995, have the 20 year term described in (b) above.

But wait, that’s not all...
What is the Life of a US Patent? (cont.)

The term of a patent may be shortened if the applicant was required to file a “terminal disclaimer” during prosecution.

The term of a patent may be lengthened if the patent qualifies for

“patent term adjustment” due to USPTO delays during prosecution, and/or

“patent term extension” due to FDA delays during the FDA approval process for a claimed drug
What is the Life of a US Patent? (cont.)

And of course, maintenance fees must be paid when due (@ 3.5, 7.5, and 11.5 years after issuance) or the patent will expire prematurely.
Inventorship

Only the inventor(s) (not an organization) may apply for a US patent—even if the company owns the invention.

Getting inventorship right is important and complicated in the US.

Can’t be over-inclusive or under-inclusive in listing inventors.
Inventorship (cont.)

Good-faith errors can be corrected after the fact, but that can be difficult to do, e.g., if an inventor has left the company.

Errors made with an intent to deceive cannot be fixed, and can be deadly to the entire patent.
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