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Preparing a Patent Application

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Typically, the more inventors participate in preparing patent applications for their own inventions, the better the results – the broader and more accurate the claims and protection, and the more powerful the IP portfolio. So the more inventors know about the patent application and development process, and how to work with in-house and external legal counsel, the better.

Who is the real audience for the patent application?

Although patent examiners with the U.S. Patent and Trademark Office (USPTO) are an important initial audience, you should consider the ultimate audience to be the court, which typically means a judge and/or a jury.

The audience, whether in the USPTO or court, is unlikely to have much technical expertise that relates to your patent application. They might need more explanation than a colleague would.

What are the parts of a patent application?

Background – What is the problem that this invention helps to solve?

Summary – In short, what is the invention?

Detailed description – How does the invention solve the problem? How is the invention made and used?

Claims – What are the key elements of the invention?

Drawings – What does the invention look like?

Prior art – The USPTO requires inventors to disclose any “material prior art” the inventor knows about. What qualifies as “material prior art” requires careful determination. It’s best to consult an attorney.

Note that the written portions are often referred to as the “specification.”

What is the purpose?

Enablement. The specification and drawings must enable someone skilled in the art to construct and implement the invention. Think of someone with knowledge and experience that is comparable to yours, but with no specific knowledge of the invention.

Would the patent application be enough for such a person to figure out how to implement the invention? What is the best way to make and use the invention?

What information should be included in each section?

Overall, the specification should be couched in simple language. A white paper can serve as a starting point for drafting the patent application, but usually a little more detail is needed. Each section should include only the information required of that section. For example, the background should describe the problem the invention is designed to solve; it should not describe how to solve the problem. (Of course, you can describe other prior solutions and why they failed to solve the problem properly.) The drawings should be easily readable with ample margin space and reference numbers that correlate to the text. The drawings ultimately should be professionally prepared, but hand-generated drawings can serve as a good starting point. Your attorney will know the other important requirements.

Background – Explain the problem the invention solves. Don't start by describing the solution, or even hinting at the solution, because doing so can be held against you.

Summary – Great care is needed in drafting this high-level overview of your invention. The USPTO and courts can use this portion to limit application claims and the patent's scope.

Detailed description of the invention – This is the heart of your application, the portion that a judge and/or jury would rely on to understand your invention and make a decision. Describe the components that make up the invention, how the components fit together and function, and how the invention operates. You can include any test results along with examples of the invention.

Describe how the invention helps to solve the problem, along with instructions on how to make and use the invention. If necessary, restate or elaborate on the problem. This can be communicated in technical or non-technical language and in any format, as long as the text is easily understandable. An inventor's description can be used, if easily understandable.

All the notes, sketches, etc. collected during the invention process can provide the foundation.

A big question in the software arena is whether to include source code here. Since a patent protects an idea, typically source code is not needed. Include it only if it is useful or necessary to explain how the invention works. Your attorney will know how to help make this decision. Similarly, you might focus on a particular implementation (e.g., choice of programming language) if the reason for the choice is important.

You can include operating system information, especially describing how the software operates within the system, and whether the invention is useful in one world or more.

Claims – This is the most important core of your application: the brain, if you will. The claims define the invention with detail and care.

The rest of the patent application needs to support the claims. Some attorneys prefer to write the claims first, to ensure that everything else matches it. One word included or omitted can completely change a claim, and can affect whether a particular aspect is actually considered part of your invention. In other words, if it's not in the claims, it's not a protected part of your invention.

Claims are written in a format that may seem unusual and esoteric, but which your attorney will know.

Detailed drawings – Provide as many drawings as necessary to thoroughly represent the invention and ensure the reviewers' understanding. For instance:

- A high-level drawing that shows the invention in context. Details that would clutter the high-level drawing can be shown in other drawings.
- Data structure design, if pertinent.
- Flowcharts or state diagrams of the steps the software carries out.
- Interface design showing the modules, how they interact, and how data travels to create the specific results.
- Depiction of how the software interfaces with the hardware. In particular, if your invention has both software and hardware applications, you may be able to secure broader claims.

The more you know about the patent application process, the more you can help ensure that you're leveraging and protecting your innovations – the lifeblood of your business and Oregon's economy.

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