

Thiokol's Legal Process Gets a Boost

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Thiokol Corporation is one of the nation's leaders in the development and production of high-technology solid rocket motors for aerospace, defense, and commercial launch applications. As an industry leader, Thiokol realizes the importance of intellectual property—particularly patents—to protect its products, lines of business, and income.

Patent rights can easily be lost. In the U.S., for example, if the invention has been disclosed without restrictions, publicly used, offered for sale, or sold more than one year prior to filing a patent application with the U.S. Patent and Trademark Office, all U.S. patent rights are lost. On the foreign market, most countries provide no grace period and the moment any of the above acts occur, all foreign patent rights are lost. This is referred to as a "statutory bar" and could cost Thiokol millions of dollars in lost revenue.

A short time ago, Thiokol assigned me to work in the Thiokol Intellectual Property Law Department. This new assignment presented me with the task of finding a solution to delays in processing inventions and acquiring patents. Since our patent acquisition process involves several departments, many possible outcomes, and enormous variability, I chose to apply a process simulation tool.

Having worked with simulation before, I selected ProcessModel to simulate Thiokol's legal process. The simulation helped our Intellectual Property Law Department identify process bottlenecks and staffing problems which could result in statutory bars.

Changes to the intellectual property process were evaluated using ProcessModel to ensure the new processes minimized the risk of statutory bars and lost patent rights.

The Problem

The process of obtaining a patent crossed so many organizational boundaries that certain, unusual patent cases set up a chain of events which could exceed the statutory bar. Not being able to see the entire process interact made it difficult to spot potential problems.

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The Current Process

Suppose, for example, a Thiokol propellant research chemist develops a more energetic polymer. After preparing the formulation, the



chemist prepares an invention disclosure and submits it to the management of the research laboratories. After approval, the disclosure moves on to the Thiokol patent board.

If the patent board determines that the invention is valuable, the invention disclosure continues on to the intellectual property department. From there, a patentability search is conducted in the U.S. Patent and Trademark Office and an evaluation

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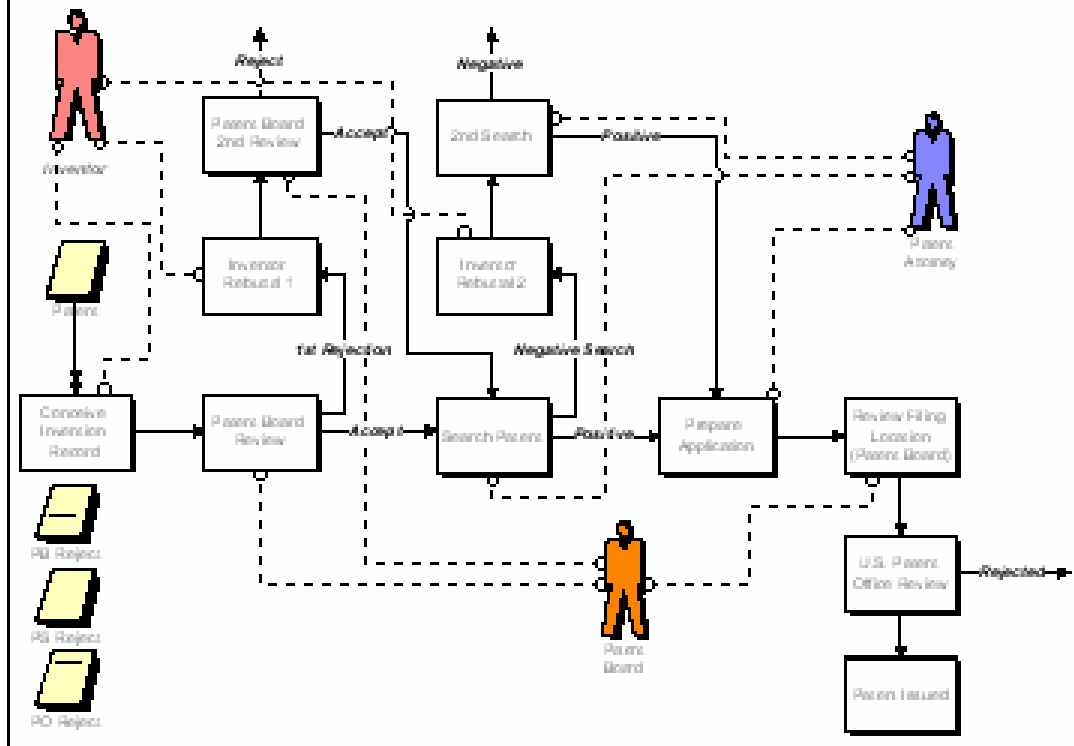
Solution: Collected information about the entire intellectual property process and constructed a process simulation model using ProcessModel. This allowed me to model our current process and evaluate how implementing changes to it would affect the system over time.

Results: The model's strength was its use of live animation. The model allowed the intellectual property department and management to see the problems and the solutions. As a result, we will increase the frequency of the patent board meetings and outsource patent searches and other time consuming legal processes. We believe these changes will shorten the time required to process each invention disclosure and patent application significantly. Unusual process flows that could cause us to lose a patent or invention were identified and will be corrected.

Intellectual Property

Process Flow Analysis

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outsource patent searches and other time consuming legal processes. This not only will alleviate the amount of work placed on the in-house patent attorney and paralegal staff, it will shorten the time required to process each invention disclosure and patent application significantly. Of greater importance, the unusual

is made regarding whether or not the invention is patentable. If the patent board rejects the invention, the inventor has the opportunity to rebut the rejection and resubmit the invention disclosure to the patent board with comments and additional information. If the patent board approves the invention and determines that it is patentable, the intellectual property department instructs an outside patent attorney to prepare and file a patent application. Often, this process can exceed the one-year statutory bar limit.

The Solution

With information in hand, I constructed a process simulation model using ProcessModel. This allowed me to model our current process and evaluate how implementing changes to it would affect the system over time. When you physically participate in a process, it is difficult and often impossible to identify the real problems. Creating the simulation allowed the intellectual property

department to see the entire process running in compressed time, revealing process bottlenecks and staffing difficulties. Any changes made to the process model reflected how the system would really behave, allowing us to find the solutions to improve our invention disclosure and patent application process.

The Results

While the flowcharting approach worked well, perhaps the model's greatest strength was its use of live animation. Using graphics to represent invention disclosures, patent applications, patents, patent attorneys, paralegal personnel, and the patent board, the model successfully identified bottlenecks that delayed or interrupted the process. The visual capabilities of the model allowed the intellectual property department and management to easily see both the problems and the solutions.

As part of the solution, Thiokol will increase the frequency of the patent board meetings and

process flows that could cause us to lose a patent or invention were identified and corrected.

Future Applications

Using the existing model, Thiokol's intellectual property department will continue to test and evaluate new system strategies electronically. This will ensure that they implement only the system changes that will enhance Thiokol's intellectual property processes.

FIND OUT MORE

About the Author: James Ekstrom has used statistical analysis techniques and principles in design, manufacturing, and production of NASA, DoD, and commercial products for 15 years. An ASQC Certified Reliability Engineer and Certified Quality Engineer, Jim holds a masters degree from the U.S. Army School of Engineering and Logistics and an MBA from the University of Phoenix.

Contact: If you have any questions about ProcessModel, please contact the ProcessModel team at 1-801-356-7165 or e-mail to sales@processmodel.com