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Delivering Fast, Accurate and Credible Information

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– James Blank, Technical Information Specialist, Caterpillar

Business Challenge: Leading industrial company needed reliable, comprehensive source of information to support its R&D and strategic positioning efforts.

Solution: Engineering Village, the premier web-based discovery platform for the engineering community.

Benefits: Ability to conduct fast, accurate and thorough searches for information requests, plus unique ability to solve critical problems through advanced yet easy-to-use search capability that allowed researchers to find similar problems outside its own industry.

CATERPILLAR®

Caterpillar is the world's largest maker of construction and mining equipment, diesel and natural gas engines, and industrial gas turbines. In partnership with its global dealer network, Caterpillar delivers products, services and technologies in three principal lines of business: Machinery, Engines and Financial Products, on every continent. The company takes a leadership role in building the world's infrastructure and in enabling progress for millions of people around the globe.

To help it maintain and grow this leadership, Caterpillar relies on its Technology Strategy and Intelligence Group. This strategic research team helps the company to confirm its technology strategy, identify trends, and manage technology IP.

The Caterpillar Technical Information Center plays a critical role within the group. Here, Technical Information Specialists and Librarians conduct complex information queries and retrieval requests from engineers and PhDs across the company. These queries can range from the strategic open-ended requests – such as identifying the top 3 technology trends in a particular area – to straightforward information searches, such as identifying patents on a specific diesel-powered engine. Core research areas include emissions, adherence to government regulations and diesel engines for both on- and off-road vehicles. The department also interacts with university researchers through Caterpillar's extensive relationships with academic institutions.

Regardless of the request, rapid access to the right information is vital for success. Technical Information Specialists need to identify the right sources for their queries in order to get accurate, insightful information that can help their constituents move projects along more rapidly.

Up until the late 1990s, Caterpillar researchers relied on information from databases burned into CD-ROMs, which were shipped and installed monthly on stand-alone computers. The World Wide Web revolutionized research, opening up new ways to search through tools such as Google to anyone with internet access. While generally useful, however, these new search tools often returned thousands of responses to an inquiry, which took too much time to sift through and verify for accuracy.

Specialized subscription-based research databases were more reliable, although they were concentrated on a few core industries which limited the search information and didn't allow for cross-industry pollination of relevant ideas. The company needed an expansive yet focused search tool, which could increase productivity and support the decision-making process from start to finish.

In 2001, the department piloted the use of Engineering Village, the web-based discovery platform from Elsevier, the world's leading publisher of scientific and health information. Engineering Village features powerful search tools, contextualized for Caterpillar's core industries, an intuitive user interface and comprehensive sources for published

Engineering Village enables Caterpillar to:

- Have confidence in search results from quality sources
- Look at engineering and patent literature simultaneously via Engineering Village's integrated platform
- Mine the literature to find knowledge, not just information
- Leverage information from organizations and associations critical to each search through Compendex's comprehensive coverage
- Create a snapshot of search results to help end users visualize information

industry and patent information. Three databases within Engineering Village - Compendex, Referex and Ei Patents - quickly became Caterpillar's information tools of choice for engineering research.

"The data is really comprehensive, and you have a high degree of confidence that you're finding everything that's out there," explains librarian James Blank. "And it's all quality information. You don't have to go to lots of different sites hosted by various professional organizations to look through their individual, specialized databases and pull it all together and create charts. Engineering Village does it all for you."

This thoroughness has helped Caterpillar to boost new product productivity. Before a new project is funded, the project team must conduct a thorough information analysis in order for management to determine if the project represents a good investment. Using Engineering Village, core teams can rapidly conduct their own literature searches, with confidence that they will uncover the relevant information. This information can include current patent situations, competitive activities, government regulations, and more.

"Engineering Village helps us to know who exactly is playing in a particular field, and then we can see trend lines to identify whether something is an up-and-coming technology," explains Melissa Allen, Technical Information Specialist. "For example, we look to see if a lot

of people are publishing more frequently on one topic, or did that particular technology go away."

In one recent challenge, the Caterpillar Technical Information Center was tasked with an urgent request: to enable Caterpillar to forecast the future of the mining industry in 5, 10 and 20 years. The project involved researching 12 technologies, identifying the major players, and pinpointing emerging or declining trends.

The team turned to Compendex, the definitive bibliographic database on Engineering Village, to quickly identify the most relevant information. By leveraging key features - contextualized content, multi-faceted search capabilities, graphical view of information trends at a glance and more - the team kept the project moving along rapidly as they narrowed down the right information. The EiPatents database was used along the way to identify intellectual property. The team was able to complete the task in eight hours, complete with graphs that made it easy to share the results with Caterpillar management.

"We were able to rely solely on Engineering Village to weed through [the dozen technologies] quickly. The integrated, single platform to search across multiple databases was extremely valuable," says James Blank. In eight hours, the team was able to narrow down the dozen technologies to focus in on the top two.

"The comprehensive of the information in the database is a major benefit. And it's all quality information," notes Melissa Allen. "With Engineering Village, we are able to supply researchers with what they want, quickly."

Engineering Village has also helped Caterpillar to develop solutions to problems by finding similar technologies or like problems in different industries. "Engineering Village is helpful for those times when we would otherwise miss out on a development in some field that we wouldn't even think of," says James Blank. In one instance, a Caterpillar factory had a problem with materials sticking to its manufacturing equipment. Using Engineering Village, the team was able to identify solutions sourced from the food processing industry. "We wouldn't have run across this searching [another industry] database," James noted.

Engineering Village has been a proven productivity tool for Caterpillar. It saves researchers valuable search time through its ability to turn up a selection of abstracts and indexes of information that link directly to full, downloadable text databases. Its easy-to-use capabilities have made Engineering Village popular in other areas of the company. By having researchers conduct their own ongoing searches, the Technology Information Specialists are able to devote more time to other critical, value-add tasks that benefit their specific users and the company in general.

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