

A Vital Source for Automotive Engineers: Electronic delivery of the SAE Technical Papers in PDF format, enabling Nissan engineers with immediate Web access to 17,000+ SAE documents in a single product

More than ever, the need to stay abreast of the most recent developments both technically and for competitive reasons is essential for engineers, designers and researchers in every industry.

This is very true, of course, at Nissan Motor Co. and in the automobile industry. The SAE Technical Papers published by the Society of Automotive Engineers International (SAE) provide the world's most up-to-date technological mobility-related data, and are essential for engineers and research scientists involved in designing and manufacturing automobiles.

The SAE Digital Library service provided through Information Handling Services Inc. (IHS - www.ihs.com), in which the SAE Technical Papers are accessible in full-text PDF and enables their retrieval via computer, is also gaining in popularity. We asked Nissan Motor Co., users of this new service since 2003, about the effect the SAE Digital Library delivers to its business.

Why Digital?

The volume of SAE Technical Papers that have been published thus far is enormous. If you were to file them all in your office it would be necessary to double the space just to sit down, so keeping paper copies of all the SAE Technical Papers in each individual office presents obstacles.

Engineers in companies and offices that do not have the SAE Technical Papers on file are compelled to go to a location where they are available each time they need access to them. Then, more distressing is the task of finding the specific research paper they need among the tremendous volume of data available. Now a service has appeared that digitizes all the SAE Technical Papers and makes it possible to quickly retrieve them with a PC. It's called the SAE Digital Library available through IHS. The SAE Digital Library service makes it possible for Nissan engineers to access all SAE Technical Papers at any time day-or-night from PCs linked to the company's LAN, without having to install any special software.

Nissan engineers now have access to more than 17,000 SAE Technical Papers from their own offices using an Internet browser and the Adobe Acrobat® Reader (available free). The SAE Digital Library enables quicker access to even the most recent SAE Technical Papers because they are added to the Digital Library at the beginning of a SAE Conference, so there's no longer any need for engineers to wait for the printed papers to arrive in the mail.

Digitization of SAE Technical Papers Accelerates Access to Materials and Enables Greater Efficiencies

We heard the following comments at the Nissan Technical Center in Atsugi City, Kanagawa Prefecture, regarding how the SAE Digital Library from IHS is being used in the actual Nissan worksite.

Akihiko Ozawa, chief of the Resource Management Group No. 1 of the Resource Management Headquarters, stated, "When I first heard about the SAE Digital Library, I had a hunch that we would be able to make use of it. I thought that making it possible for many company engineers to immediately access SAE Technical Papers when necessary would contribute to an improvement in the level of technology of the company overall."

The SAE Technical Papers contain the most up-to-date research papers announced by leading automotive engineers at the SAE World Congress, FISITA World Congress, and other international conferences and symposia sponsored by SAE.

"These are valuable materials that let us know about the conditions of development among our competitors. Surveying papers that have been released by other companies is an important task for engineers who want to verify the unique properties of the technology that they have developed themselves," said Katsunori Terasaka, Executive Support and Technology Publicity Group, Resource Management Department, Resource Management Headquarters.

Though the SAE Technical Papers are vitally important, it has not been possible until now for anyone in the company to readily access them. "In the case of Nissan Motor Co., we established a library at the Technical Center and stored the SAE Technical papers in printed forms there. Engineers working at other plants and research facilities had to go to the trouble of traveling to the Technical Center in order to peruse the SAE Technical papers; some people had to set aside an entire day for the trip," added Terasaka.

With the introduction of the SAE Digital Library, however, obstacles like that are a thing of the past. It is now possible for engineers to quickly access SAE Technical Papers via their desktop PCs as they go about their daily work activities.



Akihiko Ozawa



Katsunori Terasaka

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Direct access to primary data using sophisticated search functions

One other major advantage of the SAE Digital Library is eliminating the troublesome task of searching and finding required information. When these papers were only available in printed form, too much effort was wasted to find the precise materials. Engineers were also faced with taking the massive volume of papers written in English and searching through them manually. With the SAE Digital Library from IHS, it is possible to rapidly retrieve the necessary data using its multifunction search system. Information searches can be easily done using keywords such as "engine" or "brake" or "tire." It is also possible to search based on document titles, summary information, author, conference name, organization name, time of publication or many other data fields.

"Due to the considerable burden previously required for making searches, there were more than a few users who searched for papers based on materials that summarized the SAE Technical Papers," said Terasaka. "In other words, that meant making searches using so-called 'secondary data.' Using the SAE Digital Library, you are capable of searching for research papers while accessing the 'primary data' of the original. Not only are you able to eliminate this troublesome task, it has also become possible to obtain an abundance of more reliable data."

The SAE Digital Library is also advantageous in terms of cost. In Nissan's case, due to budget restrictions, 2,500 of the SAE Technical Papers that were thought to be the most important were purchased and stored in print. The price of the SAE Digital Library, which is currently at five Nissan company facilities, is about half the cost of storing the documents in printed form. Considering travel costs for access purposes alone, the loss of work time and other related costs, the time- and cost-savings by using digitized media versus papers in printed form should be even greater.

As initially intended, the level of technology seems to be improving steadily in the company overall due to the introduction of the SAE Digital Library. "Though only about a year has passed since it was first introduced, it has already become a service that we cannot do without," said Terasaka. "Previously there were disparities between offices in the volume of data that was accessible. Thanks to digitization, I feel strongly confident that data has spread uniformly throughout the organization."



Data Search Screen

It is possible to narrow SAE Digital Library searches using various keywords including document title, conference name, summary information, author, organization name and company name.

