

Seagate Technology—

Implementing a

Virtual

Design Center
with Metaphase



The Goal:

Reduce time to market through the development of a Virtual Design Center that leverages Seagate's geographically dispersed expertise—around the clock—in a virtually co-located environment.

The Challenge:

Develop an information infrastructure that makes all product data instantly accessible, regardless of the user's location.

Metaphase Solution:

Metaphase® will be the central component in the Virtual Design Center's information infrastructure. Metaphase will provide:

- A single source of secure product information
- Integrated change management, configuration management, workflow control
- Integration with authoring tools

Key Results:

- Secured enterprise-wide commitment throughout implementation by aligning project with business goals
- Reduced time to market on an ongoing basis
- Dramatically cut time to access product information worldwide from many days to minutes
- Reduced access / notification of change from weeks to one day
- Minimized errors within change process and significantly reduced manual processing and other non-value-added activities

Using technology as a time-to-market

advantage

In the highly competitive disc drive industry, the first company to introduce a new, reliable technology generally gains the greatest market share. Seagate Technology, Inc., the world's largest manufacturer of disc drives, magnetic discs and read-write heads, has long relied on technology for a time-to-market advantage.

In 1993, the company replaced five existing CAD systems with I-DEAS® software, making it the corporate standard, and beginning what would become a long-term relationship with SDRC to help Seagate get its products to market faster. Using I-DEAS, Seagate developed practices such as co-design (having engineers from different centers work together on a project) and leveraged design (using existing designs to create future ones) that few other companies were attempting at the time. The result of these practices was a significant reduction in time to market.

Today Seagate has a new initiative called the Virtual Design Center, aimed at even further reductions in time to market. Through the Center, the company is making geography irrelevant, and in so doing, working to compress the development cycle by a factor of two. To achieve this vision, Seagate extended its relationship with SDRC to include Metaphase product data management solutions. Metaphase provides the information infrastructure for the Virtual Design Center.

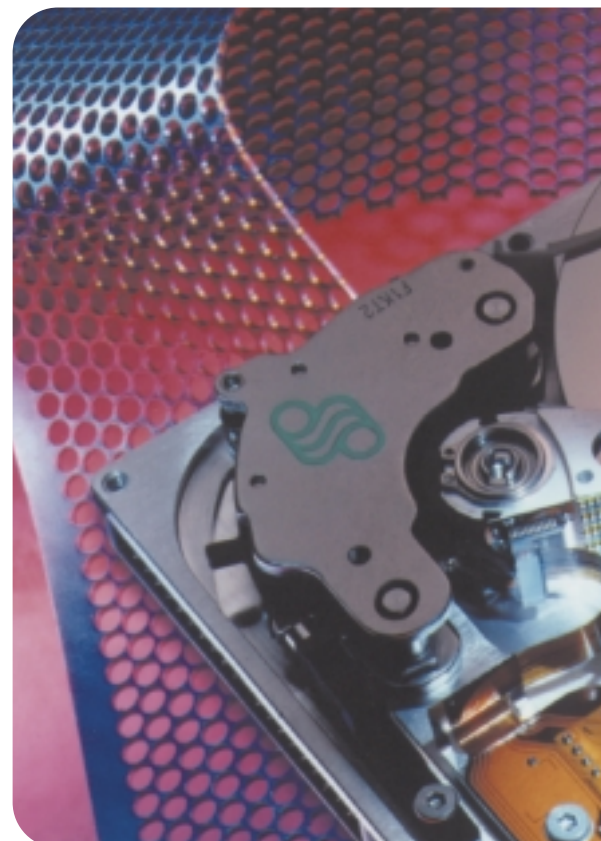
"Our goal with the Virtual Design Center is to use computer technology to virtually co-locate people," explains Doug Speidel, senior director, Engineering Information Systems at Seagate. "With a Virtual Design Center, people from around the world work together, sharing information and leveraging each other's ideas, just as if they sat next to each other."

The Virtual Design Center expands on the ideas of co-design and leveraged design to include the entire product development team, not just those involved in mechanical design. And it embraces all information related to product development—mechanical solid models, printed-circuit board designs, product

specifications, and so on. The underlying concept is that every bit of product information will be accessible instantly, regardless of where a Seagate employee is located. With this geographically independent system in place, notification of changes will happen immediately.

Seagate says this approach speeds time to market in several ways. With product development teams composed of members from all over the world, Seagate is able to leverage the expertise of its employees far more effectively than it has in the past. The most experienced enclosure designer can be assigned to a product, for example, to ensure that that component doesn't delay the project. Another benefit of the Virtual Design Center is that it will permit a greater degree of concurrent engineering than previously practiced, allowing an engineer in Singapore to design tooling, for example, while the geometry of a disc drive is being fine-tuned in the United States.

"With a Virtual Design Center, people from around the world work together, sharing information and leveraging each others' ideas, just as if they sat next to each other."



PDM

infrastructure

Seagate's use of SDRC's Metaphase product data management technology plays a key role in enabling the development of the Virtual Design Center. As the repository for all product data, the Metaphase information portal will be the means by which the company makes information available to employees around the globe, 24 hours a day, 7 days a week. In addition to serving as the single, logical source for all product data, Metaphase will handle change management, configuration management, workflow control, and security.

Seagate began its phased Metaphase implementation plan in 1998, utilizing both a top-down and a bottom-up approach that takes into consideration local cultures and processes. While the implementation plan itself was designed and developed centrally, it is being implemented and supported locally. "We aligned our plan with the company's business goals, and ensured that the entire team and extended team understood the alignment.

Then we made sure that the system, its implementation, and related processes are flexible," says Speidel, explaining some of the factors critical to the program's success.

Even though it's still relatively early in the implementation, the benefits are already becoming apparent. "Not only are we dramatically reducing the time it takes to access product information and change notices, we're significantly improving the quality of our documents by ensuring the proper version and boosting our operational efficiency by eliminating microfilming, file cabinets, and big copiers," says Speidel. Seagate is also reaping process improvements as well since Metaphase will help minimize errors within the change processes and linked systems, and reduce manual processing of documents and other non-value-added activities.

"Metaphase makes the transfer and re-use of engineering data fast and easy," Speidel says. "It provides a common user interface across the company, and links information systems within Seagate."

As part of establishing the Virtual Design Center, Seagate established a number of standard authoring tools that populate the Metaphase environment. In addition to having I-DEAS as the standard authoring tool for mechanical CAD/CAM, Seagate has established Mentor Graphics (ECAD), Framemaker (documentation), and Microsoft Office (office productivity) as other standard authoring tools.

There are now more than 500,000 files in the Metaphase environment, and more than 20,000 documents are accessed each month. For I-DEAS solid models, Seagate currently creates image files and installs them into Metaphase. In the future, instead of neutral image files, users will put native I-DEAS data directly into Metaphase instead. "That way, all the information about the design, not just the image, will be available through the Virtual Design Center," says Speidel.



Close, working relationship

Seagate and SDRC have a close working relationship based on a shared vision of Seagate's plans for its CAD/CAM/CAE and PDM systems. The relationship dates back to Seagate's installation of I-DEAS, which involved a migration from CADAM on a main-frame and a supply of legacy data that exceeded 100,000 drawings. The transition was accomplished on time and under budget, in large part due to

the support Seagate got from SDRC. Seagate expects no less in the future.

Speidel says, "What SDRC has going for it is its people. They have always come through in the past, and I'm confident that will continue to be the case as we move forward with our Virtual Design Center."



SDRC Headquarters

Cincinnati, Ohio
+1-513-576-2400
+1-513-576-2135 fax

Metaphase Division

St. Paul, Minnesota
+1-651-482-4219
+1-651-482-2215 fax

SDRC Europe

London, England
+44-1462-440222
+44-1462-440522 fax

SDRC Asia/ Pacific

Tokyo, Japan
+81-3-5354-6700
+81-3-5354-6780 fax

www.sdrc.com

SDRC

Metaphase®