



## Bristol-Myers Squibb Relies on OSSI's Storage Solutions for Data Availability and Integrity

Bristol-Myers Squibb is a diversified worldwide health and personal care company. Its principal businesses are pharmaceuticals, consumer medicines, beauty care products, nutritionals, and medical devices. The company is a leading maker of innovative therapies for cardiovascular, metabolic and infectious diseases, central nervous system and dermatological disorders, and cancer. They are also a leader in over-the-counter medications, orthopaedic devices, ostomy care, wound management, nutritional supplements, infant formulas, and hair and skin care products.

Bristol-Myers worldwide sales in 1998 were \$18.3 billion. The Medicines Group accounts for 69% of sales, and is comprised of both Pharmaceuticals and Consumer Medicines.

### *Information Systems are the Heartbeat of PRI*

Technology plays a key role in virtually all business and scientific activities of the Pharmaceutical Research Institute (PRI) within Bristol-Myers Squibb. The information technology applications used by the PRI are provided internally by the Systems Informatics Division. Systems Informatics supports many applications used by PRI scientists for drug discovery, pharmaceutical development, clinical research, and regulatory affairs. These applications capture enormous amounts of scientific and laboratory data, much of it required for submission to the rigorous approval reviews conducted by the Food and Drug Administration (FDA) and foreign regulatory bodies. All of this information must be summarized, organized, and stored for access by scientists and administrators throughout Bristol-Myers Squibb's worldwide laboratories and research centers.

### *Islands of Information*

According to Richard Shaginaw, Associate Director of Advanced Technology Services at Bristol-Myers Squibb, a 1993 review of information needs and workflow throughout the vast reaches of PRI turned up some serious issues in the way PRI was storing, managing, and retrieving data and documents.

"In our business, bringing new products to market quickly is critical. Every month we delay can literally cost Bristol-Myers Squibb hundreds of millions of dollars in lost revenue opportunities," says Shaginaw. "Drug development is heavily dependent

on information. Just satisfying the documentation requirements of worldwide regulatory agencies is enough to make the most seasoned IT veteran quake in their boots, let alone all the internal information gathered from laboratory and clinical research work."

Chemists, biologists, physicians, and clinical researchers were spending too much time looking for information. Sometimes what they needed was located on a departmental server, other times, it was on "Dr. Brown's" workstation. Or, perhaps, it was located on a distant file server in one of the three main PRI facilities in New Jersey and Connecticut, or at another of the PRI's worldwide sites.

The internal workflow review also pointed out the fact that different kinds of data within PRI requires different storage and access strategies, such as how many copies to create, or whether to keep a copy in a remote data repository.

### *Central Repository Solution Mapped Out*

Shaginaw's group concluded that the best way to address the diverse information needs of PRI was to build what he calls a centralized "Information Lazy Susan". The objective was to create a repository for all the mission critical documents, files, and databases that PRI needed to create and access to bring drugs to market. What he wanted was a combination of high availability, high reliability RAID disk storage, robust DLTape™ mass storage, optical jukeboxes, and a Hierarchical Storage Management system that could be configured to accurately and flexibly manage short-term and long-term data archiving.

"Unfortunately, we had to wait until the hardware and software for this repository was reliable enough to proceed," noted Shaginaw. Finally, in 1997, Shaginaw was satisfied that the technology he needed was ready, and that's when he called on Open Systems Solutions, Inc. (OSSI), specialists in data storage technology.

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*-Richard Shaginaw  
Bristol-Myers Squibb*

## *OSSI Key to Storage System Design and Integration*

Bristol-Myers Squibb met with OSSI to develop their storage strategy. The picture they presented to OSSI was a wide range of existing hardware, such as SGI, Sun, and Cray computers, geographically distributed throughout their facilities. Together, they created a plan to bring in the necessary hardware and software to build the central repository. The key, they knew, would be integrating all the pieces properly so that PRI users would have access to "a logically infinite repository of data".

OSSI storage experts installed and configured a similar arrangement of storage components at each of the three PRI research facilities. Each repository consists of a 400-500GB MetaStor RAID array, running off a dual processor Sun Ultra Enterprise 450 server. DLTtape™ units from Mountaingate and ATL Products, along with HP 320 SureStore optical jukeboxes, provide 10-12 terabytes of backup and archival storage. The configuration also includes LSC's SAM-FS Hierarchical Storage Management software, which moves files from one storage medium to another based on a number of configurable criteria, such as data age, last access date, frequency of access, and capacity limits.

Mike Rouch, Technical Product Manager at OSSI noted, "The PRI project was a good fit for our capabilities. Because of the massive amounts of data and the varying access and storage requirements, we had to pay a lot of attention to performance tuning as well as integration of all the elements. It's exciting to see the PRI's needs being met, providing end users the information they need, when they need it."

Because the US pharmaceutical industry is closely monitored and audited by the FDA, a filing of operational and installation qualifications is required for all new information systems. OSSI's storage component, along with all other elements of Shaginaw's PRI information system passed the FDA review without incident.

## *Data Integrity, Security, Accessibility & Longevity*

"In the past, people would say you need these four key ingredients to have an information system that works," says Shaginaw, "except most vendors could only offer you two or three of the four. OSSI was critical to implementing all four 'pillars' of our storage solution and making it work seamlessly."

Today, PRI's storage system supports over 40 different Oracle databases in a 24x7 environment. It supports the critical Documentum document management system, including the full text search indexes. Upwards of 4,000 users move documents and access various databases throughout the day. The system is also robust and scalable enough to handle the government requirement for long-term file retention—65 years. And, Shaginaw says, more and more business functions are being implemented on this system every day.

"We've been able to clearly demonstrate at least a 20% improvement in productivity with our new repository architecture. That number validates all of our decisions, including our choice of a storage solutions systems integrator. We'll recoup the costs of this project in very short order," notes Shaginaw.

## *OSSI Support Exceeds Expectations*

Now that the core of PRI's storage system is in place and functioning properly, OSSI continues to assist and consult. "I never hesitate to call them when we run up against a problem that doesn't have an obvious solution. OSSI has always responded promptly and professionally to our requests. They understand the equipment and software and how it works together," says Shaginaw. "If their technical people can't resolve the problem—usually they can—they can get us access to vendor engineers and support people that I would not ordinarily be able to contact directly."

As PRI's needs expand, Shaginaw expects his storage system will need to grow too. "I look forward to keeping OSSI involved," he says. "They've proven that they understand all facets of storage management."

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