CASE STUDY

Effective Information Management Drives Time-To-Market Success

INDUSTRY
High Tech

COUNTRY
USA

Access Sciences

MAKING CONSTRUCTION DRAWING REQUESTS SELF-SERVICE

In one major semiconductor manufacturer's ongoing quest for smaller, faster microprocessors, the outward trend is exactly the opposite: constructing ever-larger, more complex multi-billion dollar fabrication plants (fabs) to support new manufacturing processes. All this while maintaining a steady stream of smaller projects, retrofitting older fabs to accommodate more advanced technologies. At any given time, there are several new or retrofit projects under construction and several more in the design phase.

In support of this massive effort, Access Sciences' on-site team manages a digital library of 40,000 2D CAD drawings and 150 3D BIM models, depicting 105 of the client's buildings, on 13 campuses, in their existing "as-built" conditions. Each new construction project begins with a request for drawings by our team's "customers" including client project staff, AE firms, and specialty subcontractors. And each project ends with customers returning (issuing) drawings of the new or modified facilities – about 6,500 per year. We then incorporate those changes back into the as-built library, and the process starts all over again.

SERVICES DELIVERED:

- Building Information Modeling (BIM)

- Business Process Automation

- Computer Aided Design (CAD)

- Rapid Prototyping and Proof-of-Concept

- Solution Architecture

- System Implementation and Configuration

- Systems Integration

- Testing

ISSUE

Manual construction drawing requests weren't sustainable

When Access Sciences assumed responsibility for this function, we inherited a request fulfillment process that was managed using spreadsheets sent via email. Since there was no truly accurate inventory, customers often had to guess which drawings and models they

needed. Our team then had to interpret these smoke signals, and email back-and-forth for clarification. And because there was no central drawing inventory, every requested drawing required a lengthy research process through a historical backlog going back to the widespread adoption of computer-aided-design in the early 1990s.

In the hyper-competitive semiconductor manufacturing business, where being first to market can translate to billions of dollars in revenue and, by extension, enable the winner to drive market direction for future generations, these inefficiencies could not continue.

STANDARDIZED INTERFACE DRIVES SELF-SUFFICIENCY

Our solution was to develop a system that captures pertinent information about drawing assets, business rules and processes, and physical facilities. The ultimate goal was to present this information in a self-service interface that would allow customers to request drawings and team members to process those requests while eliminating guesswork, clarification back-and-forth, and lengthy research processes.

The first step was to create a central library of new, incoming design drawings, and to then keep it updated starting from "today forward." As time permitted and as necessity dictated, older projects were also catalogued. This provided the team with the basis to know whether a given as-built drawing was truly up-to-date; roughly how much work would be required to update it; where the source material was located; and importantly, whether the work had already been done by someone. This alone saved countless hours, allowing our team to spend less time searching the backlog and more

SOLUTION

☑ Self-service application that automates and standardizes business processes

time reducing it. It also improved estimates and supported more realistic commitments regarding request turnaround times.

The next step was to examine the drawing library, index all pertinent information, and store the data in a relational database. In preparation for this, our team leveraged its deep expertise with the client's work processes and CAD standards, to develop a detailed data model. At the same time the database was being built, we developed a custom application to extract information about each drawing, for indexing. The application decodes the drawing filename according to the CAD standard, and uses the CAD software vendor's application programming interface (API) to extract even more information directly from within the drawing itself.

For the front-end interface, our client chose a web application for its ability to run in any

web browser without installing special software. The application was built over several months in close consultation with the customers and the Access Sciences team members who would be its users.

Suggestions for presentation and functionality were, and continue to be, incorporated iteratively. The application displays complete, up-to-date, and searchable catalogs of each document type available for request. It offers the customer "only correct choices" (which had become a sort of buzz-phrase for the project) so that each request is accurate and clear, and the team response is efficient. It also gives the customer instant feedback on request status, and a history of their requests at a glance. For our team, request assignment, tracking and record keeping are as simple as a few mouse clicks. And it's all done without a single spreadsheet!

BENEFIT

☑ **Self-service drawing request fulfillment has drastically improved accuracy, response times, and contained staff resource levels even as demand has increased**

Access Sciences