

## Statens Museum for Kunst takes art online with IBM Content Manager and DB2.

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### Overview

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#### ■ **Application**

Fully searchable virtual museum with digitized images of 5,000 works of art

#### ■ **Business Benefits**

Fast and affordable development due to stellar XML support; scalability to dramatically expand number and resolution of online images; potential e-commerce income source

#### ■ **Software**

IBM Content Manager; IBM EIP Client Kit for Content Manager; IBM DB2® Universal Database™ for Windows NT®; Lotus® Domino™

#### ■ **Hardware**

IBM Netfinity® 5500

#### ■ **Services**

IBM Global Services; IBM Software Group

#### ■ **IBM Business Partner**

Semaphor



SMK features Danish and foreign art dating from the 14th century to the present day. A major segment of the older collections is from the art chambers of Danish Kings.

You've heard of life imitating art, and art imitating life. But what about art imitating art? Located in Copenhagen, Statens Museum for Kunst (SMK) is on a mission to share its 400,000 works of art with anyone in the world who wants to see them. As the Danish national gallery, its vast collection includes historic and contemporary paintings, sculpture and works on paper, some dating back to the 14th century. Formerly, some of the art was accessible only to members of the Danish royal family. While that has changed, the museum has space to showcase only a fraction of its inventory at a time—2,000 pieces—and only to those who find their way to Denmark.

*“Only Content Manager combines scalability, intelligent search capabilities and affordability. Without its flexibility and support of XML, implementing our dream would have been impossible.”*

*—Bjarne Bach Østergaard, Deputy Director, Statens Museum for Kunst*



*While virtual visitors to SMK are always in charge of their own tours, those who visit the physical museum can either follow an audio guide or join a free tour offered during the summer months.*

Cognizant of the Internet's power and pervasiveness, museum directors didn't have to stretch their imaginations too far. Why not duplicate SMK's art in digital form, and make the collection accessible to casual visitors, scholars and anyone with Internet access? Having this noble vision of "democratizing" art was one thing; making it happen, quite another. Even some corporate funding wasn't enough to guarantee positive outcomes to key challenges—offering a uniquely rewarding experience to virtual visitors, while assuring the inviolability of the digital images.

The solution came into focus at a chance meeting between the deputy directors of SMK and the IBM office in Copenhagen. SMK had content, IBM had technology, and each organization's interest was sparked. Working with IBM Global Services, the IBM Software Group and IBM Business Partner Semaphore, SMK saw its vision materialize. Today, the museum's third-generation Web site,

[www.smk.dk](http://www.smk.dk), offers virtually unlimited exhibition space, making the museum's art accessible to a vastly wider audience at the click of a mouse. To offer visitors this rich online experience, SMK is using a content and data management solution based on IBM Content Manager, IBM DB2 Universal Database, IBM EIP Client Kit for Content Manager and Lotus Domino. Currently in its first phase, the project is already regarded as very successful: in its third month of operation, the Web site received a phenomenal 500,000 hits, matching the number of visitors to the physical museum in the entire previous year.

"There's nothing comparable to IBM Content Manager and DB2," says Bjarne Bach Østergaard, SMK's deputy director. "Only IBM Content Manager combines scalability, intelligent search capabilities and affordability. Without its flexibility and support of XML, implementing our dream would have been impossible. DB2 completes our solution by providing a price-performance ratio that is exactly what we need."

*"The TextSearch feature of Content Manager has intelligent search capabilities that I haven't seen in any other content management system. It handles plurals and misspelled words, so even casual visitors who may not know a lot about art can search with success."*

*—Bjarne Bach Østergaard*

### **Touring the Danish national gallery— virtually**

Currently, SMK's Web site receives an average of 40,000 hits per week. Virtual gallery-goers can search for art—in Danish and English—by such parameters as title, period and type (e.g., painting, sculpture). For instance, someone wanting to view Matisse's "Madame Matisse," SMK's most famous painting, simply selects "Matisse" on the search form. This returns a list with key information on all items matching the query parameters, plus thumbnail images. One mouse click on the desired image allows viewing at a higher resolution.

In addition to the ability to view 5,000 works (more images will be available in subsequent phases), visitors can educate themselves about art, join the museum or check its exhibition calendar. Basic information is available in nine languages. And, as the virtual collection expands, art that must be displayed only for a limited time to reduce risk of deterioration from light will always be available for viewing from the Web site.



*Dating back to 1896, the original SMK building, designed by architect Wilhelm Dahlerup, was enlarged with an extension built in 1998.*

### **Making the vision real**

IBM Business Partner Semaphor developed the SMK Web site using Lotus Domino and supporting tools for Web content management. IBM Content Manager for Windows NT, V71, residing on an IBM Netfinity 5500 server, takes XML files of art as input, indexes and archives them, and makes them searchable with its TextSearch feature. (SMK has an ongoing program through which it digitizes art and creates an XML file for each piece.) Indexes are stored in the Content Manager Library Server, which uses DB2 as its index database. When a user submits a search form, the Lotus Domino server sends the data using a Java™ servlet through EIP Client Kit to the Content Manager

server, which passes the query to its index function and returns a list of matching items. EIP Client Kit provides a subset of IBM Enterprise Information Portal, including search technologies, content repository connectors and server-based transforms. Firewalls secure the data by preventing unauthorized access.

SMK considered other solutions, but their functionality could not match that of Content Manager. For instance, only Content Manager accepts the XML format of SMK's digitized images. This eliminated the need to modify JPEG pictures, which would have been too time consuming and prohibitively expensive.

"The TextSearch feature of Content Manager has intelligent search capabilities that I haven't seen in any other content management system. It handles plurals and misspelled words, so even casual visitors who may not know a lot about art can search with success," explains Østergaard. He adds, "The fact that Content Manager is scalable and can be easily migrated to other platforms is also very important, because migration to the SMK mainframe is a possibility."

SMK's introduction to Content Manager occurred at a social event, where Østergaard met the deputy director of the IBM office in Copenhagen—who instantly recognized the suitability of Content Manager to manage the museum's digital content. IBM Global Services articulated the scope and developed a phased plan for the ambitious project. The IBM Software Group provided integration services, assuring that implementation was completed as scheduled.

"We had digitized photos, and IBM had the technology to display them over the Internet. It was clearly an advantage for both parties to collaborate," recalls Østergaard. "IBM also understood our vision. We could see their genuine interest in doing this project, and that was important to us."

### Imagining greater possibilities

With continued assistance from IBM, SMK will further enrich its visitors' online experiences. The museum staff's vision, combined with the scalability and support for multimedia files in Content Manager, make for exciting possibilities. These include providing images in still higher resolution and further simplifying search options for visitors with limited art knowledge. The museum envisions offering a zoom feature, allowing viewers to see selected parts of a work of art in greater detail—useful for determining provenance and authentication.

SMK is considering using IBM Hot Media to send visitors on virtual 'walks' around 3D images of sculptures. SMK could also leverage its Web site platform for e-commerce. Today, the site already links to a bookseller that shares revenues with the museum.

Says Østergaard, "In IBM, we have more than a provider of leading technology. We have a partner that shares our vision and is helping us engage more people in art—and in more meaningful ways. With IBM at our side, the possibilities are limitless."

### For more information

Please contact your IBM marketing representative, IBM Business Partner or IBM Direct at: 1 800 IBM-CALL.

For information faxed direct to your location: 1 800 IBM-4FAX.

Visit our Web site at [ibm.com/software/data](http://ibm.com/software/data)

For more information about Statens Museum for Kunst, visit: [www.smk.dk](http://www.smk.dk)



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