

Building and Construction Authority Provides Better Service to Public Through e-Submission

novaSPRINT and Sun set up first-of-its-kind G2B infrastructure in Singapore

HIGHLIGHTS

Company
Building & Construction Authority of Singapore (BCA)

Industry
Construction

Applications/Solutions

- J2EE compliant electronic submission product designed by novaSPRINT
- Oracle DBMS
- EJB's (Enterprise JavaBeans) and JSPs/Servlets running on application server
- Oracle DBMS running on the Sun database server
- CheckPoint firewall software running on the Sun firewall server
- Veritas NetBackup running on the database server.

Products/Technologies

- Sun Ultra™10s
- Sun Enterprise™E250s
- Sun Enterprise™420
- Sun Enterprise™3500
- Sun StorEdge™L1000 Tape Backup
- Sun StorEdge™A3500FC

Key Business Challenges

- Long life-cycle of submission and approval process
- Time-consuming & cumbersome process of submitting multiple documents
- Construction professionals need to make frequent trips to respective agencies
- BCA need to coordinate approval process with multiple agencies

Key Business Solutions

- A one-stop, non-stop point for industry players to submit documents via the Internet to the various regulatory authorities for processing
- Construction professionals now make less frequent trips to agencies for submissions
- Status of approval of submissions can be monitored and tracked online from the convenience of their office or home.
- Faster turnaround time for approval and increased productivity
- Robust and reliable, mission-critical

Alliance

- novaSPRINT

"The electronic submission product designed by novaSPRINT and the infrastructure platform provided by Sun allow us to manage the processing of electronic plans and documents effectively", said Mr Cheng Tai Fatt, project manager of the CORENET e-Submission system. "Efficient management of project information also provides for better coordination amongst the agencies and enables us to respond to our customers in a timely manner."

Building and Construction Authority (BCA) of Singapore wanted to improve its services rendered to professionals in the construction and building industry. Submission had been done manually with hundreds of applications received on a monthly basis. These in turn had to be processed manually, involving coordination and approval with more than 10 regulatory bodies. The solution was to provide a one-stop, non-stop submission infrastructure to enable industry professionals to submit plans electronically from the comfort of their offices or homes. The supporting infrastructure and G2B (Government to Business) e-Submission workflow solution were provided by Sun Microsystems and its iForce partner, novaSPRINT – an e-government solutions provider respectively. The system was successfully implemented at end 2001. The solution for BCA is the first of its kind in Singapore, which allows virtually every building submission type to be made electronically via the Internet from businesses to government agencies. There would be significant savings in terms of materials and time as public need not make multiple hardcopies of drawings and need not make frequent trips to agencies for submission.

Transforming the Construction Industry

In 1991, the Singapore government in its IT2000 Master Plan aimed to bring information technology to all walks of life and businesses by the year 2000. The construction and building industry was one of the sectors targeted to benefit from IT. S\$44 million was set aside for CORENET (Construction and Real Estate Network) by the government for the construction industry to embrace IT. CORENET, aims to re-engineer the industry's business processes through the use

of IT with the ambitious goal of achieving a quantum leap in turnaround time, productivity and service quality.

One of the projects identified in the initiative was to automate the entire lifecycle of the submission process involving industry professionals who submit project-related plans and documents such as temporary occupation permit, building and structural plans to regulatory authorities for approval. The project was awarded to novaSPRINT and Sun which were responsible to put an e-Submission workflow system and the supporting infrastructure in place.

Submission and Approval: the manual way

Under the manual submission system, construction professionals had to produce multiple hard copies for submission. The hassle was because the entire process of approval involved more than 10 agencies including the Building and Construction Authority, Urban Redevelopment Authority, Land Transport Authority, Housing and Development Board, and the Fire Safety and Shelter Bureau.

To add to this hassle, these professionals had to make frequent trips, often during office hours, to the respective agencies to submit their plans and applications, as there was no single point of submission. This was because a single plan had to be approved by multiple agencies. In addition, both the applicants and recipients had to set aside significant office space for storage of these documents as well as monitor the progress.

Putting in place the e-Submission System

After a detailed audit and study of the entire lifecycle of the submission and approval process, novaSPRINT proceeded to develop the back-end applications using J2EE as the application architecture of choice for the development of mission critical applications such as the workflow engine, which is the nerve center of the system. It determined that the best deployment platform for this was to use the Solaris operating system and Sun servers because it needed a secure and highly scalable system architecture.

The major part of the project was to design an e-submission data center that would handle and process the various transactions. It was decided that the data center be powered by Sun servers, deemed to be more secure, stable and scalable. The platform enabled novaSPRINT to eventually deploy a range of Web and application servers available on the market and not be tied down to a proprietary server.

In addition to the Workflow engine, the EJBs (Enterprise Java Beans) and JSP (Java Server Scripts) provided the critical business logic and rendering of information back to the client applications. In summary, Sun servers form the core of the CORENET e-Submission System and are used to:

- Provide security to the infrastructure via the firewall servers (from Checkpoint)
- Provide mission critical services through the applications deployed on the applications servers
- Ensure reliable database management system and database server running Oracle DBMS.

The Sun systems, which mainly consisted of Sun Enterprise 3500 and 450 servers, were installed in two main phases. The first phase, which was completed in end 2000, involved the installation of the Sun machines in a test environment with many trial tests conducted by novaSPRINT with the various participating government agencies. The objective was to simulate the actual environment for development and testing purposes.

After immense testing, simulations and training sessions by novaSPRINT, with support from Sun, the actual production system was officially commissioned on 9th November 2001 and launched on 20th November 2001 during BAUCON Asia 2001.

Benefits of Electronic Submission

With the completion of the system, BCA has significantly overhauled its submission process with the Internet as the main medium of information dissemination, as opposed to manual and physical means of submission.

Today, professionals need only register and log in to the CORENET e-Submission Web site, fill in the respective approval forms, attach the necessary documentation and submit them online. Form submission is made secure through the use of digital signatures. They can also track the progress and approval status of their submission online.

At the recipient end, the relevant regulatory agencies need only download the respective submitted documents, update the relevant information and finally, handle the necessary correspondence. The entire workflow cycle is automatically tracked and managed.

iForce Solutions Partner: novaSPRINT

novaSPRINT is a developer and implementor of innovative, industry-focused e-business solutions for governments, local councils and healthcare providers.

It has a proven track record of delivering end-to-end services and solutions to leading agencies and companies through a sustained presence in Singapore, Malaysia, Indonesia, HongKong and South Africa.

novaSPRINT is committed to maintaining its innovative edge through a programme of continuous R&D and further expanding its customer services through a network of strong industry partners. For more information, visit: www.novasprint.com

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