

Case Study

Larsen & Toubro: New Delhi International Airport Expansion

Fast-tracked project collaboration to meet an aggressive schedule

Client

Larsen & Toubro Limited (L&T) is India's largest and most respected construction and engineering conglomerate. With a strong customer focus and a commitment to the highest quality of work, L&T has been the leader in all areas of its business for decades. Founded in 1938, L&T is a US\$7 billion company that has 30 offices worldwide and services some of the world's largest PPP developments.

Project

The new Terminal 3 at New Delhi's Indira Gandhi International Airport will be the world's second largest airport terminal. Due for completion by mid-2010, in time for the city's hosting of the Commonwealth Games, the US\$2 billion development will occupy 520,000m² and be able to accommodate 34 million passengers each year. The terminal, approximately three kilometers in length, will feature 160 check-in counters, 78 aerobridges and 85 aircraft stands.

In addition to Terminal 3, the expansion project includes a new runway. At 4,430 meters, it will be Asia's second longest runway and be able to accommodate the world's largest aircraft, including the Airbus A380.



To ensure the project is completed in time for the Commonwealth Games, the construction timetable has been compressed to just 39 months. Compared to the timeline of other new airport terminals, this is highly ambitious. Completion of the new terminal at Changi Airport in Singapore, for example, took 76 months and delivery of London Heathrow Airport's T5 and Beijing's Terminal 3 each took 60 months.

Project team

L&T is the engineering, procurement and construction consultant on the project. They are delivering the project in association with the Delhi International Airport Limited (DIAL) joint venture consortium, which comprises the GMR Group, Airports Authority of India, Fraport & Eraman Malaysia and IDF. Along with project managers Parsons Brinckerhoff, L&T is responsible for bringing the project to completion on behalf of DIAL.

Challenges in managing information

With the aggressive schedule in place, making sure the right people see the right information at the right time is an important component of keeping the project on track. This challenge is made greater by the size and complexity of the project team. In addition to the joint venture parties, thousands of participants from more than 70 organizations are engaged on the project, 45 of these firms are based outside of India, in locations as far apart as London, Dubai, Singapore and Sydney.

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For the first few months of the project, the team used a combination of FTP systems, hard copies and email to communicate. However, with thousands of documents and correspondence items being exchanged, the team was experiencing bottlenecks and difficulties in meeting their turnaround targets. Factors such as file size restrictions on email accounts meant that drawings sent to external stakeholders were bouncing back and slowing down the review cycle. L&T identified that these issues would only escalate as the project ramped up.

Solution

Following an extensive review of available solutions, L&T implemented the Aconex online collaboration system to control information and link the project team. Aconex is a web-based platform that enables all internal and external project participants to view, distribute and track their documents and correspondence in real time through one central system.

Because Aconex is web-based, all authorized project participants can log in to the system and have full access to the information their organization has created and been sent. Aconex is entirely responsible for delivering product enhancements and meeting the required security, reliability and performance standards, meaning minimal IT resources were required for implementation and ongoing maintenance.

Results

Since implementing Aconex in early 2007, companies on the New Delhi Airport development have used the system to manage more than 300,000 documents and one million mail items – sometimes up to 100,000 items in a single month.

Finding and retrieving information

For all project members, Aconex provides a secure, central repository for documents and correspondence, ensuring that information is easily available and not sitting within an individual's personal computer or mailbox. Regardless of where project participants are located, they can log in to the system and instantly access the files or mails they require.

For fast retrieval of items such as drawings, RFIs and other files and mails, Aconex provides advanced searching capabilities. Users can perform search-engine style keyword searches and/or filter using pre-defined attributes, date ranges, mail and document types, sender details and other criteria.



Mr Shankar Narayannan, Head of Project Controls at Larsen & Toubro on the DIAL Project, supervises overall project planning, control and coordination with the developer and oversaw the implementation of Aconex. He said, "Aconex is now an indispensable element of the project. Every document and mail distribution is searchable and accessible from remote locations. If I'm going from Delhi to Mumbai, for example, I can pick up documents whenever I need them.

"So much time is saved searching for information. The keyword search capabilities are powerful so people can instantly bring up what they need. The time saved in locating documents is very important on this project and it's something we can do extremely quickly with Aconex."

Faster flow of information

When a document is stored on Aconex it can be instantly transmitted to other project members for review or approval. Delivery of information is immediate and certain and the system maintains an audit trail detailing 'who did what and when'. Any change to a document is clearly recorded and outstanding and overdue actions (such as RFIs that haven't been responded to) are highlighted to identify bottlenecks and promote accountability.

"Due to our timeline we have very strict review cycles and so the distribution of documents between parties has to be fast. We have a wide team of stakeholders, often about 1,200 engineers engaged on the project, and so distributing the right files to these people is a complex task. Previously, when reviewing and corresponding using email, we'd get bounce-backs and there would be no record of what was sent and received. When information is sent on Aconex, we know it's reached the recipient and will be responded to," said Mr. Shankar.

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"I receive between 400-500 mail and document actions a day, so it's crucial that I stay on top of this. With Aconex, I receive notification of new items and can browse my tasks and actions in one place," he added. "The fact that contractual correspondence is well documented and can be traced is of great value to us."

Implementation, training & support

Initially, because other tools had been used in the early stages of the project, Aconex and L&T worked together to ensure that all existing documentation was uploaded onto the Aconex system. From then onwards, Aconex was the default tool for managing all documents and mails.

“There were challenges in initial implementation, as loading all our documents onto the system was a considerable task. The fact that Aconex was a new, project-wide system meant that we had to get team members using it instead of FTP and email. However the training by Aconex was excellent and project members quickly got into the routine of using it,” said Mr. Shankar.

To ensure that project members are adept at using the system, Aconex runs customized training modules for all participants and supplements these with unlimited helpdesk and online support. A dedicated Aconex Account Manager was appointed to manage and coordinate the implementation, support and, where required, advanced training.

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Mr Shankar commented, “The quality of the customer service and training facilities that Aconex provides is striking. Being able to provide local training to our entire global project team was a very strong advantage and a key reason why we selected them. New participants are quickly comfortable using the system and there is a helpline for when you need to speak to someone.” He added, “At one stage, we even had an Aconex representative sitting in our office to help us out. The service is first-rate.”