

Business Value Case Study of WRENCH Enterprise Deployment at Khatib & Alami: Integrated I.T. infrastructure across multiple design centers.

Sponsored by: WRENCH Solutions
August 2007



OVERVIEW

Customer: Khatib & Alami, UAE

Industry: Architecture
Engineering and Infrastructure
projects.

Business Need: To manage
projects and project information
across multiple locations.

Solution: WRENCH Enterprise.

Benefits: Online data sharing/
exchange between all projects
shareholders, real-time project
monitoring across locations and
time-zones, 100% data security,
quality process enforced
automatically, design cycle time
reduced by 40%.

INTRODUCTION

Khatib & Alami (K&A) is one of the biggest architectural engineering and project management companies in the middle east region. In recent years, K&A has earned a reputation for building some of the largest and most unique buildings in the world, including the very prestigious Jeballi Airport (one of the largest cargo airports), the third and fourth tallest towers, and many more.

K&A is a true 'global' project management company, with offices

Jordan, Palestine, Syria, Iraq, Algeria, Egypt, Morocco, Libya, Tunisia, Sudan, Kazakhstan, Tajikistan, Turkmenistan, Belgium and USA.

K&A undertakes projects in the field of infrastructure, district and city waste management system, transportation (roads, bridges, airports), oil and gas engineering in collaboration with ARAMCO (Saudi Arabia), and GIS.

“For the past 15 years, we have been looking for a solution that could monitor our projects, ensure compliance, manage engineering and other data and keep all project stake holders on the same page. WRENCH was the only solution that offered all the above”.

Mr. Ala Hasooun Head – IT department, Khatib & Alami

in Lebanon, Saudi Arabia, United Arab Emirates, Sultanate of Oman, State of Qatar, State of Kuwait, Kingdom of Bahrain, Yemen,

K&A has greatly expanded its operations over the past few years, and today has a very strong presence all over South East Asia.

BACKGROUND

In recent years, the middle-east has become the world's largest construction market. Multi-billion dollar investments have flooded in to develop cutting-edge infrastructure and futuristic architecture, which in turn has resulted in the rapid growth of EPC and turnkey projects companies like Khatib & Alami, who design and construct mega-projects for international clients.

Apart from having a reputation for turning out architectural marvels, K&A is also known for its ability to complete projects on time – a much-valued ability in this time-driven market. In fact, due to this, K&A today has the distinction of being the 'preferred company' of its international clientele.

THE SITUATION

Competition = Deadlines vs. quality.

The construction boom brought in large multinational firms (from USA, UK, China, Korea, Japan) who set up shop locally and began bidding aggressively for projects. This intensified the competition and encouraged clients to bargain for ever-shorter cycle times - but of course without compromising on quality or budget. Today, project completion time is the main differentiator while bidding for a project.

The 'time' factor: 'manual' working culture cause of major delays

K&A had set up large multi-disciplinary engineering and project management teams in several countries which could use local talent and thus provide faster service and on-the-ground support to local clients. However:

K&A's overall working methodology was manually driven and manually enforced, and therefore had many inherent problems and bottlenecks.

Example: K&A relied on on their 'document controllers' for sharing and updating files - that is, uploading and downloading files from a common FTP server. A manual and effort-intensive process, this was a very unreliable and unsatisfactory arrangement, especially for project managers who could not be sure of getting deliverables (from designers), could not easily trace the status of a deliverable – whether it was pending, and if pending, where in the system it was stuck, who was the concerned party and so on.

Bottom line: Lot of time wasted in manual followup, firefighting, double-checking etc.

Quality: how to monitor project deliverables and documentation?

Each deliverable goes through multiple departments before being approved.

Example: An architectural drawing goes to the 'checker' in the architecture department, then to the checker in the civil department, then to the structural department and only after being cleared by all three is it sent to the project manager. The project manager, if satisfied, submits it to the client (or municipality) for approval. A change/comment means the whole process is repeated again.

Bottom line: A typical project involves 500 to 700 documents/ drawings. K&A generally has around 50 projects running simultaneously – plus 100 'old' projects i.e. in different stages of lifecycle. Keeping track of this volume of tasks and activities manually was a VERY big challenge for the organization.

Summary: K&A's business growth was impeded by the lack of a system to manage each project's processes, documents, resources and information.

THE CHALLENGE

Project teams relied entirely on FTP, courier or email to communicate and share data. This system, or rather lack of a system, was extremely inefficient, resulting in large wastage of time and resources.

K&A was maintaining all its files and documents on a central server, which required a very high internet bandwidth. With the high cost of

bandwidth in the middle-east, the only viable bandwidth available was 512 Kbps, which was not enough for smooth and fast file uploads/downloads. Also project design functions were generally assigned to whichever engineering office happened to be closest to the worksite, rather than the one was best equipped. This overloaded some of K&A's engineering offices, while in others there was spare capacity going to waste.

THE SOLUTION

I.T. solutions – value vs. hype
K&A's I.T. department was commissioned to either find a suitable I.T. solution, or to develop such a system inhouse. This system would need to handle a rapidly increasing number of projects, and help senior managers balance the need for shorter cycle time against the need to meet stringent quality standards and budgetary considerations.

K&A I.T. infrastructure at the time included: MsExchange-based integrated mailing system, AutoCAD, Microstation, 3D software, Primavera, Microsoft Project, a time-sheet system, and HRM software

"Trial and Error": K&A's IT department first opted for a solution called Project Wise™ (after evaluating major EDMS like Documentum™, Laserfiche™) and a Project Wise™ pilot was deployed on

one live project. However, results were less than satisfactory, with users reporting a time-spend of 10-15 minutes per drawing upload (average size 10mb). Designers also had to spend similar amounts of time to access the files for editing (each file had to be downloaded from the server every time.)

A second round of evaluation began, where WRENCH Enterprise was finally chosen over brands like Documentum (+Mcclaren) and BuildACT.

THE RESULTS

User feedback after WRENCH Enterprise™ implementation:

- *Time to upload/download files dropped to less than 30 seconds* (even for files of 20-30Mb). (WRENCH Enterprise EPC uses a satellite server architecture where the file is maintained locally and then replicated during non-peak hours (i.e. nighttime) to the central server.)
- *Easy and efficient project/work monitoring:*. Due to automated updates and progress data. Eg. when the project schedule was released by the project manager, each user was notified automatically, and a task list was sent to his desktop by the system.
- *Round the clock access to latest information:* Managers said they were able to monitor project deliverables in realtime, 24X7.

- *Easy to use* – WRENCH Enterprise is designed exclusively for engineering/construction organizations, and mimics the typical day-to-day work routine of each level of user. Thus it was very easy to use even for non I.T-savvy users at K&A.

Manpower-shortage problem

solved! Another major benefit was that the new system also eased the perennial skilled-manpower shortage that plagues the EPC industry. K&A, due to its growth spurt, was very seriously implicated by the severe shortage of experienced project managers and engineers.

Overall, the K&A project team reported a 40% faster engineering cycle time, plus a new-found confidence in their ability to ensure compliance.

“WRENCH Enterprise has revolutionized the way we work. We can now easily manage even the biggest projects remotely without delay or confusion.” .

Mr. Ala Hasooun Head – IT department, Khatib & Alami

THE BENEFITS

- **Fast and efficient information sharing:**
Communicating and sharing project data is now much much faster and practically effortless - even though the size of the data is very large (5-10 Mb). Files are copied to a local server and replicated to the central server and site server on demand during low-traffic hours and are thus made available at the point of use without any human intervention.
- **Online monitoring:** Project schedules and projects task can be scheduled and monitored online, which has enabled K&A's project managers to have total control of all project resources and monitor work accurately without depending on reports or followups.
- **A seamless 'virtual' project team that works a single unit - from anywhere in the world:** Distributed Project teams from various locations can now work as a single online team in real-time. They all have access to latest data without depending on various individuals...for example, a consultant in London need not wait for an engineer working in India to update a file and save

it on the server, because the WRENCH system automatically does this after every change.

- **Efficient and error-free change management:** When a change is made in the master data, WRENCH ensures that it is automatically replicated to all locations. An automatic watermark on the printed document\drawing ensures that the end user is using only the latest revision. This ensured that there is no confusion about which is the latest version, no unnecessary duplication, and no error i.e. 100% quality.

For a complete list of WRENCH benefits or WRENCH functionality, mail us at info@wrenchsolutions.com

NEXT STEPS

K&A plans to implement WRENCH Enterprise across all its projects as soon as possible.

At the time of writing, WRENCH Enterprise is being rolled out across all the ther office locations and all projects handled by K&A. WRENCH Enterprise is also being implemented in all K&A business units, including Infrastructure, Oil and Gas, Transportation and GIS.

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