IBM

The sky's the limit

Airport maintenance efficiency takes
off in Saudi Arabia

by Hollie Rogin

5-minute read

Sometimes, the first step on a journey is the most important one.

Riyadh Airports Company (RAC) is set to transform Riyadh's King Khalid International Airport (KKIA) into an Internet of Things (IoT)-enabled, show-stopping gateway to Saudi Arabia. The Kingdom's Vision 2030 initiative weaves its nation's strengths into a bold plan for a vibrant society, a thriving economy and an ambitious nation. This includes privatization of previously state-owned assets such as airports; RAC now manages KKIA operations and maintenance.

The first step in this transformation: addressing day-to-day airside and landside operations—including complex maintenance systems that ensure critical assets such as security equipment, escalators and air conditioning are working smoothly. KKIA maintenance operations personnel were tracking more than 50,000 individual assets with multiple siloed maintenance and inventory systems. And existing workflows dated back to 1980.

More than a dozen contractors work at KKIA, and the airport's manual processes led to costly and frustrating communications challenges. "Someone would raise an issue through email, and the person managing the shift wouldn't see it," says Muhammad Al-Qurashi, Maintenance and Operations Center Manager and System Product Manager at RAC. "Many emails would be sent regarding a single issue, and the issue remained unresolved."

Prioritizing work orders was equally problematic. Individuals—who had varying degrees of knowledge and expertise—were making sometimes ill-advised decisions about which work orders were most urgent.

The onboarding process for new contractors was time-consuming, taking 10 days from start to finish because the process required multiple phone calls and in-person meetings. Perhaps most importantly, there was no 10,000-foot view of the big asset-management picture at the airport, so planning for the future was difficult.

It was time to turn asset maintenance from an expense to an investment. It was time for a powerful platform that could provide more efficiency, full control, real-time visibility and a solid plan for the smart airport of the future.

Maintenance paperwork

80%

eliminated

Insights through real-time
dashboards across all
contractors improved

50%

using IBM® Maximo® and IBM Cognos® Analytics

"You should think broadly, keeping your vision in mind. And you should know what Maximo technology can do for that vision."

Muhammad Al-Qurashi, Maintenance Operations Center Manager and System Product Manager, Riyadh Airports Company

"Maximo was more than a tool; it helped us understand RAC's vision and work together with them on a clear roadmap toward a smart data-driven airport. It helped in reshaping the maintenance strategy and regime."

Rami Karaki, Project Manager, IBM Business Partner eSolutions

A foundation for the future

After in-depth research, the RAC team chose the Maximo solution as the foundation for the airport's modernized maintenance operations. RAC found that Maximo can enable complete oversight and maximize asset performance. IBM Business Partner eSolutions was ready to shepherd RAC through implementation and training.

First, RAC collected and validated system data through all stakeholders where possible across every single asset at KKIA, ranging from air conditioning units to escalators. The company then replaced multiple outdated legacy systems with Maximo and Cognos Analytics solutions; introduced a mobile application to take the place of maintenance-related emails; and established service-level agreements (SLAs) with all contractors.

After configuring the new system, the team trained more than 400 users in just three weeks. Also, the dedicated RAC and eSolutions teams completed the entire project two months faster than they anticipated. Instead of nine months, the implementation took just seven.

Those seven months were not without challenges. Change can be difficult, and maintenance workers were concerned that they would be replaced by the new systems, or that Maximo would be used to evaluate their performance.

But according to Rami Karaki, Project Manager at eSolutions, resistance to

change is inevitable in any project. Yet that resistance was transformed into support after employees were introduced to the Maximo benefits and features and how it would make their jobs easier.
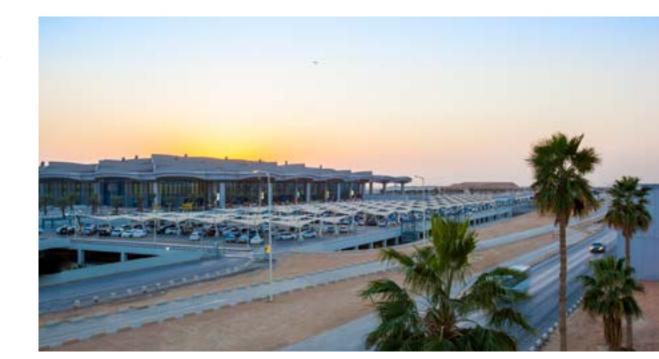
He elaborates: "RAC wanted to automate the life cycle cost analysis and allow maintenance management to determine

easily which assets need to be replaced and which ones require more attention while maintaining them. RAC achieved this by tracking at the level of work order the labor and material cost for each asset.'"

Training, which proved to be a complex undertaking, required role-based instruction. Trainees had to clearly understand their specific responsibilities. This, however, became an opportunity to teach them industry best practices.

Another unforeseen opportunity was in overall timing; because of COVID-19-related travel slowdowns, more resources were available and brought to bear on t he project. As a result, the team was able to complete system enhancements such as adding dashboards and creating new reports.

Clear skies ahead for RAC

The numbers tell just one part of the story. There has been a 50% improvement in insights through real-time dashboards across all contractors using Maximo and Cognos Analytics. Contractor onboarding that once took 10 days now takes two or three because approvals can be issued from mobile devices. The system has eliminated more than 80% of maintenance paperwork. And inspector productivity alone has increased by at least 40%.

Because the system—and not individuals—prioritizes maintenance issues based on predefined criteria, there are fewer mistakes. With the available systematic preventive maintenance plan, the information gathered from Maximo helped RAC to avoid unplanned downtime by performing the proper maintenance at the right time before equipment failure, which, according to Al-Qurashi, will save money and efforts. "For an asset-intensive organization such as RAC, creating a healthy and solid preventative maintenance plan in an EAM system is crucial to track and analyze asset history and condition, which will help the management in their decisions. Our target now is to work on an entire ecosystem to establish a predictive maintenance program," he says.

In the future, RAC anticipates opportunities to extend the Maximo solution into other areas such as supply chain, security, engineering, projects and more. But for now, the RAC team is enjoying being viewed by other Saudi airport operators as a leader in creating the smart airport of the future. And they're thrilled that they're contributing to achieving Saudi's Vision 2030 goals.

About Riyadh Airports Company

RAC (external link) manages and operates King Khalid International Airport (KKIA) as part of Saudi Arabia's aviation privatization program. Currently, the company is upgrading the KKIA infrastructure while expanding the airport's services and facilities, including Terminal 6, which could be the largest terminal in the Middle East.

RAC team:
- **Hamad Al-Rasheed** - General Manager of Maintenance Division, Riyadh Airports Company
- **Mohammed Al-Qurashi** - Maintenance Operations Center Manager and System Product Manager, Riyadh Airports Company
- **Sultan Al-Nakouzi** - Enterprise Asset Management Consultant and Project Manager, Morganti KSA - Riyadh Airports Company FM Consultant

Solution components

- IBM® Cognos® Analytics
- IBM Maximo®

About eSolutions

IBM Business Partner eSolutions (external link) was founded in 1996 and has operations spanning the Middle East. It's a leading provider of cost-effective strategic asset and service management solutions and is considered one of the top asset management companies in the United Arab Emirates and the Kingdom of Saudi Arabia.

eSolutions team:
- **Rami Karaki** - Principal Consultant and Project Manager, IBM Business Partner eSolutions