

UTM NEWSLETTER

Johor Port Berhad (2025).

Johor Port: Insights from an Industrial Talk

ICT Main Pillars

■ Infrastructure:

- Network
- Firewall
- Server
- Database
- Cybersecurity
- Office & Operation
- Automation

■ Business Application:

- Strategic Application (JPBi, CATOS, MSIS)
- Backend Application (ERP-RAMCO, PAMS)
- Application Development (Low-code development, Traditional programming)
- Data Analysis (Python, Power BI, etc)

■ Project & Governance:

- Project Management & Governance
- Information Security Management System (ISO/IEC)

■ Admin & Helpdesk:

- ICT Administration (office, staff, documentation, etc)
- ICT Helpdesk (one stop information and help contact center)

Summary

On a recent bright afternoon, students and lecturers from Universiti Teknologi Malaysia (UTM) were given an expansive, ground-level view of Johor Port's digital operations. The talk was delivered by Ts. Mohamad Taufik Abdul Razak, the IT Manager of the Infrastructure Department within the ICT Division, who was accompanied by his colleagues. The session carried a notable personal touch when Mr.Taufik revealed that key figures in the leadership team, including the Head of the ICT Department and his own direct superior, are alumni of UTM. This connection established an immediate rapport with the visiting students.

The presenters framed the port's technology function around four principal departments: Infrastructure, Business Applications, Project & Governance, and Admin & Helpdesk. They described how each contributes distinct yet interdependent capabilities that keep the port operating 24 hours a day, 7 days a week. Under the leadership of the Head of Infrastructure, Mr. Badrul, the team emphasized that their role is central to the port's vision. They noted that without robust ICT support, the organization would suffer significant losses in both productivity and profit. What emerged from the session was a clear picture: modern port management is no longer just about cranes and trucks. It is a complex information system that must be fast, resilient, and secure.



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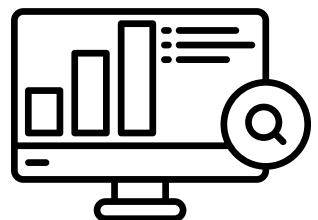
Infrastructure Department



Serving as the invisible engine behind Johor Port's daily success, the Infrastructure Department works tirelessly to ensure the resilience of our office and operation environments. We manage a "zero downtime" ecosystem anchored by two active-active data centers and a massive network featuring over 50 kilometers of fiber. A standout highlight of our setup is the Metrocluster solution, a high-availability technology that ensures our critical Oracle databases and virtualized servers keep running seamlessly, even in the face of disruption. While we vigorously protect the port's data with multi-layered firewalls and robust cybersecurity protocols, we are also paving the way for future automation by transitioning toward cloud-like architectures. Even when facing unique challenges like signal interference from neighboring borders, our team is dedicated to maintaining steadfast connectivity through a smart mix of 4G and Wi-Fi, ensuring that the port's physical and virtual pulse never skips a beat.

Business Application Department

Johor Port's digital ecosystem is anchored by JPBI, a terminal operating system from Total Soft Bank that orchestrates container logistics, supported by Ramco ERP for enterprise integration and the Port Access Management System (PAMS) for digitized security. To accelerate innovation, the department employs a hybrid development strategy—blending traditional Java with low-code platforms—that successfully launched over ten new internal applications in the past year. This agility is fortified by ISO/IEC-certified security standards and a dedicated data analytics function that transforms raw operational metrics into actionable business insights. Despite challenges like legacy technical debt and complex industrial Wi-Fi interference, the team ensures continuous resilience through active-active data centers and Oracle clustering, while progressively adopting AI to maintain a competitive edge against regional giants like Singapore and PTP.



Project & Governance Department

This department serves as the strategic guardian of the port's digital landscape. This term not only ensures that all technical projects meet rigorous management standards and quality, but is also maintaining the port's defense posture. To protect the organization from evolving internal and external threats, they strictly implement the ISO/IEC Information Security Management System (ISMS) and conduct regular penetration tests. Additionally, they work alongside a 24/7 security operations center to drive cybersecurity awareness programs for all staff.



Admin & Helpdesk Department

The Admin & Helpdesk Department is essential to ensuring smooth company continuity because it acts as the division's operational foundation. By effectively handling the required paperwork, employee issues, and office administration, this team simplifies the ICT Division's everyday operations and frees up technical teams to concentrate solely on innovation. The department also serves as the organization's "One-Stop Information and Help Contact Center" by serving as a primary point of contact. They guarantee that the link between complex ICT resources and end-user requirements stays strong and effective by offering effective support for all questions and technical assistance.

DARREN CHUA BOON YEE

After I visit the Johor Port Berhad, I realized the power of low-code platforms. By utilizing "drag-and-drop" interfaces, the ICT team successfully developed over ten applications in a single year, faster than traditional coding. This innovation directly improves human life by shifting the focus from complex syntax to practical problem-solving. For instance, creating rapid-response apps for faster permit approvals or gate verification reduces the daily wait times and stress for truck drivers and port staff. Ultimately, low-code technology democratizes innovation, allowing even students to contribute to high-impact projects that make massive industrial operations faster, safer, and more user-friendly for everyone involved.

PON XUEN LIN

Attending this industrial visit to Johor Port Berhad gave me a holistic view of the ICT ecosystem. I realized that proactive security governance (ISO/IEC) and a solid operational foundation are important for the success of technical innovation. This experience highlighted that true digital resilience is built on the synergy between management and technology. This insight prompted me to expand my focus from purely technical skills to a balanced way of thinking that mixes my tech skills with practical operational knowledge.

TAN IRENE

After visiting Johor Port Berhad, I realized how ICT systems play an important role in improving daily operations. The use of digital monitoring and data systems helps workers manage cargo movement and traffic flow more efficiently. This reduces delays, workload, and safety risks for port staff and drivers. I learned that innovation in technology not only increases productivity but also improves working conditions and reduces stress. This visit motivated me to see how technology can support human work and create a safer, more organized industrial environment.

CHEW JIAN HUI

This visit broadened my horizon on what innovation actually achieves. It is fundamentally about making daily life easier and safer for the people on the ground. It was fascinating to see how IT workers use "low-code" platforms not just to be trendy, but to quickly build tools that actually help staffs do their jobs without the frustration of long waiting times. All in all, I realised that the best technology acts as a silent partner, handling the repetitive, tedious tasks so that the human workforce can operate with less stress and greater efficiency.

TAN YU KAI

My visit to Johor Port Berhad was a truly eye-opening experience. I realized how a strong digital ecosystem is essential for a reliable supply chain and our community's well-being. Seeing the ICT division's commitment to "zero downtime" through fiber networks and advanced software showed me the importance of technical stability. This experience taught me that technology and security are the backbones of a steady economy. Now, I feel more motivated to develop digital systems that help keep essential goods accessible for everyone.



Author's own photograph, Johor Port Berhad Industrial Visit, 2025.