

Technology Information Systems and Industrial Visit

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Group 1

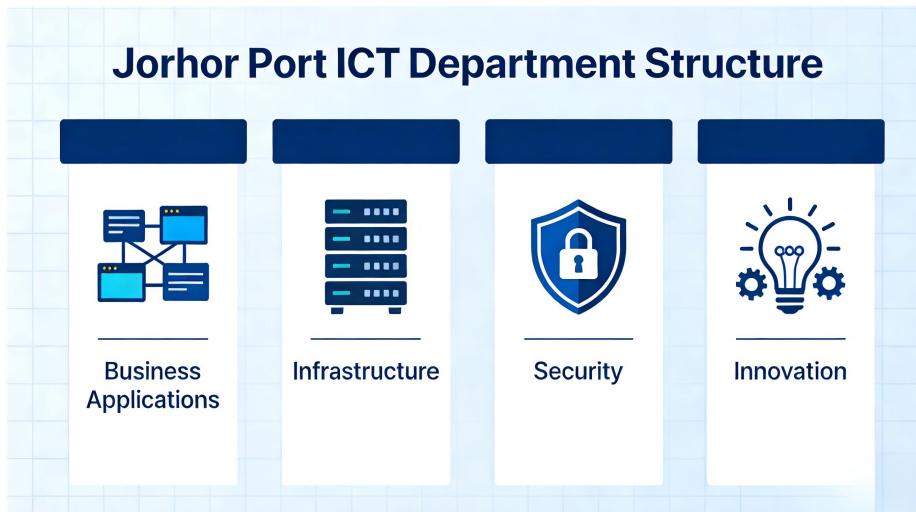
I. Visit Summary

On January 17, 2026, this industrial visit centered on the ICT Department of Johor Port Berhad—a leading logistics port in Malaysia. The agenda spanned five core segments: port overview, ICT department introduction, business applications, infrastructure, and a Q&A session.

Johor Port's ICT Department isn't a typical technical support team—it's the central engine powering port operations. On-site briefings highlighted that ICT plays two pivotal roles in port logistics: it reliably meets or exceeds customer requirements, and unifies the planning and execution of daily operational and management tasks, serving as a foundational tool for the port's smooth, efficient workflow.

II. Technologies Covered in the Visit

Within the ICT Department's "Four Pillars" framework, the visit focused on key tools across business applications and infrastructure:



Core Business Applications

1. JPBi e-Community Portal System

As the main gateway to Johor Port's strategic systems (covering container terminals, bulk/bulk operations, and marine services), this portal enables real-time information sharing across endpoints (e.g., operational vehicles and control rooms). Operators can sync tasks and track process progress via the platform, reducing delays caused by manual coordination.

2. ERP RAMCO Enterprise Resource Planning System

This system integrates HR, supply chain, and financial tools at the port. On-site explanations noted it unifies cross-departmental resource scheduling—for example, freight vehicle dispatch syncs directly with financial settlement, avoiding bottlenecks from siloed information.

PAMS Port Access Management System

This online tool controls access, permits, and security for port-entry personnel and vehicles. It replaces manual registration: users submit applications digitally and complete on-site verification quickly, boosting security accuracy while cutting wait times.

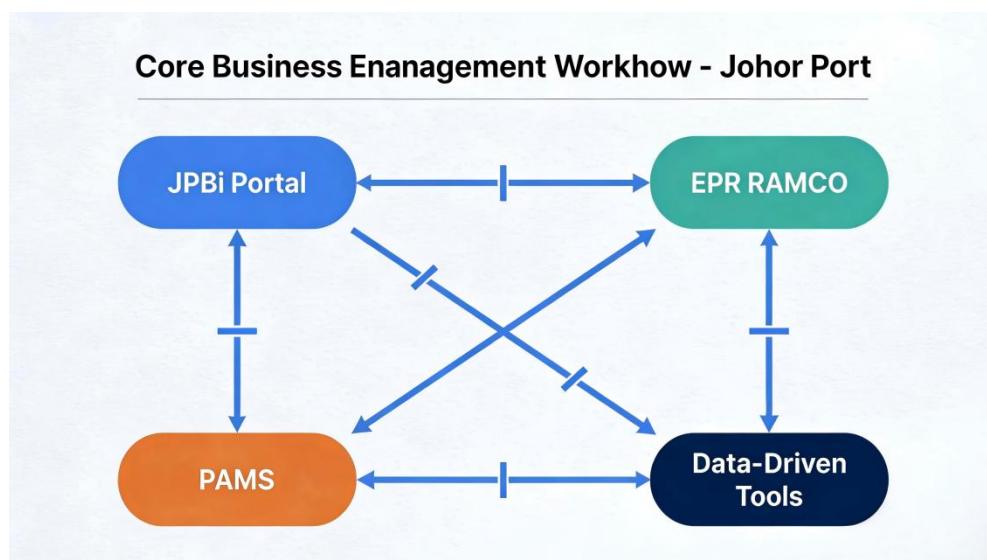
3. Dual-Mode Application Development

Johor Port uses two approaches:

- Low-code platforms (e.g., Bee Bug System in the App Center) for fast, flexible internal workflow apps, lowering barriers for non-technical staff to build tools;
- Traditional programming for core backend systems, ensuring depth for complex business scenarios.

4. Data-Driven Decision-Making

Tools like Power BI and Python convert raw operational data (e.g., truck terminal wait times) into visual dashboards. For instance, analyzing truck waiting times has optimized terminal scheduling, reducing resource idle time and boosting overall efficiency.



III. Infrastructure Details

The ICT department's infrastructure underpins stable port operations, with key highlights:

1. MetroCluster Solution

- Built to ensure continuous data access for mission-critical applications, its key features include:
- Zero unplanned downtime (via transparent failover to mitigate hardware/network failures);
- Non-disruptive upgrades (no business pauses for storage or software updates);
- A 50km port-wide fiber network (guaranteeing stable data transmission).

2. Infrastructure Architecture

- Network: Dual-ISP redundancy, split DC (Data Center)/DRC (Disaster Recovery Center) DMZ security zones, connected via campus core switches;
- Servers & Storage: VMware clusters paired with Oracle RAC databases and MetroCluster storage, balancing physical/virtual resources for performance and efficiency.

3. Coverage & Security

- Full-port 4G LTE + WiFi (supporting real-time communication for mobile operational terminals);
- Security: 24/7 SOC monitoring and regular vulnerability testing; data backup (on-premise + cloud) to prevent loss.

IV. Personal Reflection

This visit shifted my perception of technology as "merely an industry tool"—I now recognize ICT innovation as the bridge connecting industrial efficiency to everyday life:

- **Daily convenience:** Cutting truck waiting times by 7 minutes means imported fresh produce (e.g., Southeast Asian durians) reaches shelves 1 day fresher, and cross-border parcels arrive 2 – 3 days faster (easing delivery anxiety).
- **Frontline empowerment:** Low-code platforms let non-programmer staff (e.g., terminal dispatchers) build small tools (like shift-conflict checkers) to solve their own work pain points—making tech accessible beyond experts.
- **Sustainability:** Reducing equipment idleness cuts daily emissions (equivalent to removing 100+ cars from roads), gradually improving urban air quality.

Technological innovation isn't just a lab concept—it's the small, practical tweaks in port systems and frontline tools that make daily life more vibrant, easy, and livable.

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