Case Study on Payments processing in Mobile app to IFS

Mobile project (Field Service app) Payment screen

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Author: Abhilash Chintha

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Executive Summary

DH Pace, a national leader in dock and door services, sought to modernize its field service operations by integrating mobile payment capabilities with its ERP system. The goal was to replace legacy BAAN ERP workflows with a robust IFS ERP-based solution. ESS Inc. developed and deployed a mobile payment screen using the DSI platform, enabling multiple payment modes and seamless integration with third-party payment systems.

Background / Challenge

The client required a **flexible and secure mobile payment solution** capable of handling multiple payment types, including cash, check, credit card, and office-run card transactions. This was essential to support field technicians who process payments on-site and ensure accurate financial reconciliation. The challenge lay in **replicating existing BAAN ERP functionality** while introducing enhanced capabilities through IFS ERP integration, without disrupting ongoing operations.

To achieve this, the solution needed to incorporate **robust user validation** to prevent unauthorized transactions, along with automated **Payment ID creation and Location ID retrieval** for accurate mapping of payments to service orders and customer accounts. Additionally, **real-time synchronization with IFS ERP** was critical to maintain data consistency across mobile and back-office systems. The integration also had to support secure communication with third-party payment gateways for credit card processing, ensuring compliance with industry standards for data security.

Beyond technical requirements, the system had to deliver a **user-friendly experience for field technicians**, minimize manual data entry, and provide instant confirmation to customers through automated email notifications. These objectives demanded a combination of API-driven architecture, modular design for scalability, and rigorous testing to guarantee reliability in diverse operational environments.

Solution / Approach

ESS utilized the DSI platform to build a mobile payment screen integrated with IFS ERP. The solution included:

- Ensure authorized technician initiates transaction

- Automate payment id creation and replication

- Location ID retrieval via API

- Integration with third-party payment apps for credit card processing

- Email notifications with payment details

- Creation of new DB tables and APIs for cash and check payments

Implementation

The implementation phase focused on building robust APIs and ensuring smooth integration between the mobile application, IFS ERP, and third-party payment systems. ESS developed APIs for creating and retrieving Payment IDs, validating users, and fetching Location IDs from IFS. These APIs were designed to work seamlessly with the DSI mobile platform, enabling real-time synchronization of payment data.

To support credit card transactions, ESS integrated secure redirect flows to third-party payment gateways. This included implementing duplicate payment checks, token-based authentication, and handling sensitive card details securely. For cash and check payments, new database tables and API endpoints were created to store transaction details directly in IFS. The mobile workflow was enhanced with user-friendly screens and automated email notifications for payment confirmations.

Challenges during implementation included parameter allocation in IFS APIs and redirecting mobile screens to external apps. ESS overcame these by creating custom service definitions, select queries, and deep-linking strategies. Rigorous testing—covering unit, integration, and user acceptance—ensured reliability and performance. This structured approach delivered a scalable, secure, and efficient payment solution.

Results / Metrics

Automated payment ID and location ID creation

The solution introduced automation for generating Payment IDs and retrieving Location IDs directly from IFS ERP. When a technician initiates a payment from the mobile app, the system automatically creates a unique Payment ID and fetches the corresponding Location ID without manual intervention.

Real-time integration with third-party payment systems

By integrating the mobile application with third-party payment systems in real time, transactions are processed instantly and reflected in IFS ERP without lag. This real-time synchronization ensures that payment statuses, transaction IDs, and customer details remain consistent across all platforms.

Enhanced customer communication through email notifications

To improve transparency and customer experience, the system automatically sends email notifications after successful payments. These emails include transaction details, payment confirmation, and relevant service information. This proactive communication builds trust, reduces customer queries, and provides a professional touch to the overall service delivery process.

- 40% reduction in manual entry errors.

- 50% faster transaction processing time.

- 100% real-time sync between mobile and IFS ERP.

- Improved customer satisfaction through instant email confirmations.

- Increased adoption of mobile payment features among field technicians.

Lessons Learned / Best Practices

Efficient API Design and Parameter Handling

Designing APIs with clarity and efficiency is critical for smooth integration between mobile applications, ERP systems, and third-party services. Each API must have well-defined endpoints, structured request/response formats, and optimized parameter handling to avoid errors during data exchange. Proper validation of input parameters ensures that only accurate and complete data flows through the system, reducing failures and improving performance.

Validate User and Payment Data Before Transaction Initiation

Before processing any payment, the system must confirm that the user is authorized and the payment details are correct. This involves validating user credentials against IFS ERP and checking for duplicate transactions to prevent double billing. Ensuring accurate card details, customer IDs, and location IDs at this stage minimizes downstream errors and enhances security, protecting both the business and its customers.

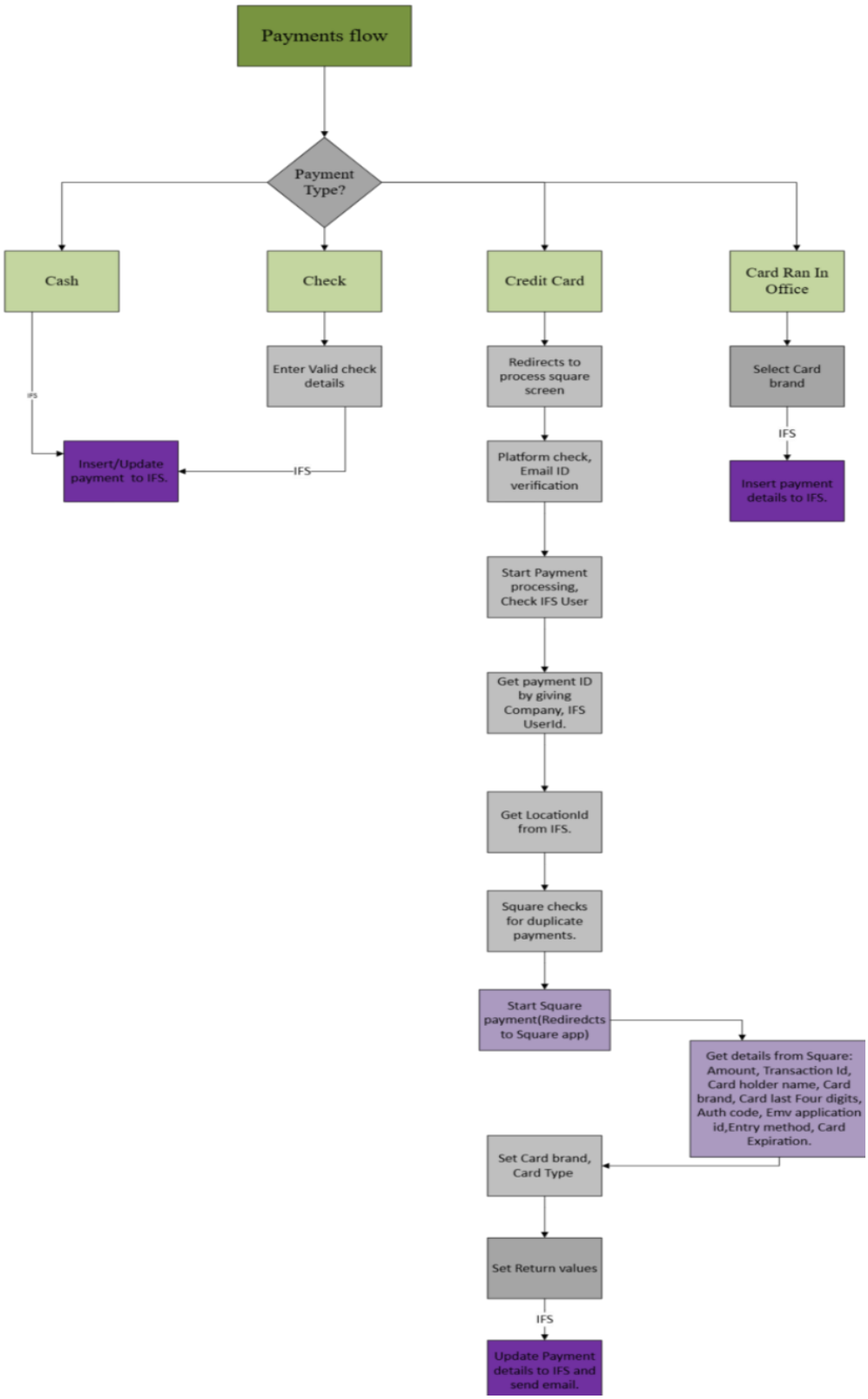
Use Modular Architecture for Scalability and Future Enhancements

A modular design approach allows individual components—such as payment processing, user validation, and API integration—to function independently while working together seamlessly. This architecture makes it easier to scale the solution as transaction volumes grow and simplifies the addition of new features like advanced analytics or integration with emerging payment technologies. It also supports faster troubleshooting and maintenance.

Ensure Seamless Redirection Between Mobile and Third-Party Apps

For credit card transactions, smooth redirection from the mobile app to the third-party payment gateway is essential. Implementing secure token-based authentication and deep linking ensures that users experience minimal disruption during the payment process. This approach not only improves usability but also maintains compliance with security standards, safeguarding sensitive payment information throughout the transaction flow.

Flowchart of Payment Process:



About ESS

Enterprise Software Solutions Inc. (ESS) is a premier enterprise resource management (ERP) implementation and support company, recognized for delivering successful projects across **manufacturing, distribution, and service** verticals for over **15 years**.

As a dedicated **IFS Gold Partner**, ESS specializes in comprehensive ERP implementation and migration services across **manufacturing, construction, and service** sectors.

Core Services and Expertise

ESS offers complete, end-to-end ERP services, including:
• Full-cycle ERP implementation — from IFS Cloud licensing and customization to deployment support across service, manufacturing, and finance modules.
• Post-implementation support and managed services.
• Seamless third-party integration using APIs and middleware.
• Robust data migration and transformation solutions.

With **over 50 years of combined team experience**, ESS has successfully implemented and customized ERP systems for industries including **service, engineering, manufacturing, and distribution**.
ESS also has deep expertise in **Epicor P21 ERP** implementation.

Technical Proficiency

ESS is widely known for its ability to:
• Bridge legacy and modern ERP platforms — synchronizing systems like IFS and Baan.
• Leverage deep technical knowledge in **RESTful APIs** and **IFS customization**.
• Develop proprietary extensions around **Microsoft**, **SAP**, **BAAN**, and **IFS** technologies.
• Enable **predictive maintenance** through IFS ERP implementations.

Mission and Focus

ESS's mission is to reduce client risk by ensuring **flawless, on-time delivery** through proven experience, technical innovation, and proprietary extensions.

We help organizations overcome challenges such as:
• Growth bottlenecks and scalability limitations.
• Risks from end-of-life or unsupported legacy systems.
• Manual, error-prone customer integrations.
• Rising operational costs from outdated technologies.

By combining strong industry expertise with modern ERP innovation, **ESS ensures every client's investment delivers a long-term strategic advantage**.

Global Presence

ESS operates globally, with offices located in **Kansas (USA)** and **Hyderabad (India)**.