



Case Study

FUELING AGILITY WITH LOW-CODE

From simple applications to complex portals, to core systems, Pertamina uses WaveMaker low-code to bring maturity into application development with agility.



150 +

Applications migrated

5

Developers

6

Months rapid app development

Scrum + Low-code

Agile development culture

Independent

Self-serving IT team

“

From simple applications to complex, mature apps, Pertamina has navigated the low-code journey with ease using WaveMaker. The low-code platform is the best fit for our agile methodology of development. The onboarding was seamless and our team can now work almost independently with minimum help.

”

Pak Rudi Wicaksono,
Pertamina, ICT Assistant Manager



The Company
Pertamina

Industry
Energy and petrochemicals

Location
Jakarta, Indonesia

No of Employees
13000+

SNAPSHOT

The Challenges

- 150+ applications on Lotus Notes faced imminent redundancy with a license due to expire in 6 months
- Existing forms were complex with fine-grained role-based controls
- Pertamina lacked resources and tools to bring a quick turnaround
- Pertamina needed to transform its IT team from .NET developers to low-code developers while practicing agile methodology



The Solution

- Solecode, WaveMaker's trusted partner from Indonesia collaborated with Pertamina to inculcate best practices of Scrum along with the low-code platform
- A new database was built from scratch using Excel extract of the Lotus Notes database
- Complex applications with role-based controls were consolidated into single applications
- Third-party services were integrated into the applications
- Web-based /mobile applications using Lotus Notes as a reference was built using WaveMaker while integrating with new database



The Benefits

- **150+ Lotus Notes applications** were migrated and consolidated as **20 effective multi-tenant, multiregional** applications in a record time of **6 months**
- Digital Absence application (mobile) is being used by 7000+ users
- Minimum Viable Product (MVP) was created in 5 days using WaveMaker
- Pertamina channel is being used as a one-stop portal for all employees across Indonesia
- Complex workflows converted into web and mobile applications
- An MVP was released every two sprints
- The Pertamina IT team is now able to work independently with low-code while using the best practices of Scrum effectively
- Pertamina's journey with low-code matured from building simple apps to developing core systems



Pertamina is one of the largest oil and natural gas corporations based in Jakarta, Indonesia. With around 13000 employees, Pertamina needed a robust internal digital process system to maintain workflows. Solecode services, based in Indonesia is a trusted WaveMaker partner who collaborated with the Pertamina IT team to migrate their Lotus Notes applications.

THE CHALLENGE

Migration of 150+ applications before Lotus Notes license expires.

Pertamina had around 150 internal workflow process applications built on IBM Lotus Notes. They needed to migrate these workflows to modern applications urgently due to these reasons:

- ◆ Most of the internal workflows were developed using Lotus Notes which faced an uncertain future as the Lotus Notes license was due to expire in 6 months
- ◆ Existing Lotus Notes forms were extremely complex with numerous controls and role-based access
- ◆ Pertamina IT did not have sufficient manpower and tools to redevelop these applications rapidly
- ◆ They wanted to transform the development team into an agile team by adopting the principles of Scrum along with a suitable platform



THE SOLUTION

Agile + Low-code = Effective Migration

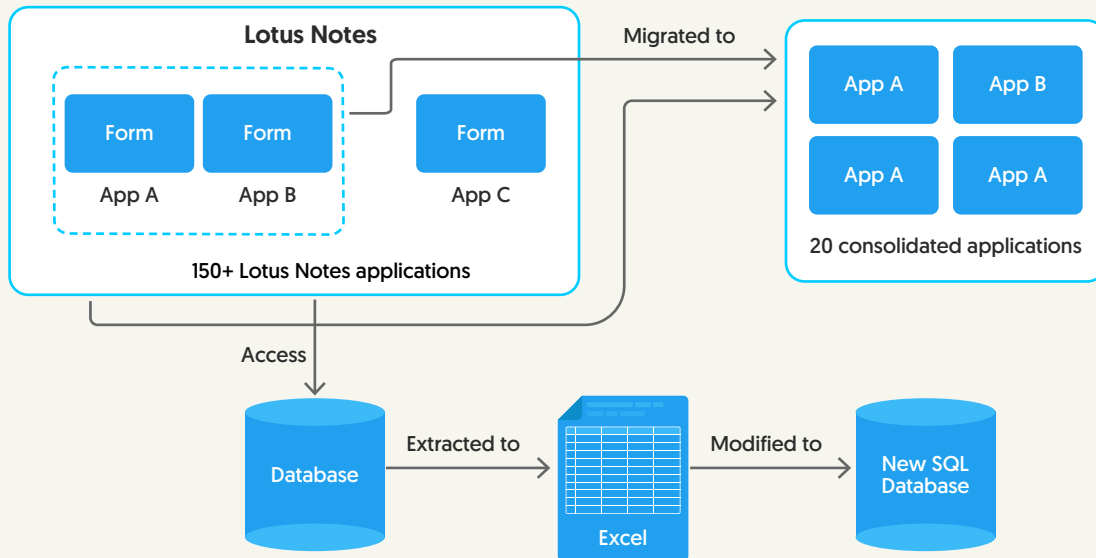
Pertamina, after extensive research, found that low-code was the answer for a rapid turnaround. Being Microsoft enthusiasts, Pertamina evaluated various low-code platforms like Powerapps, Outsystems, and WaveMaker and finally zeroed in on WaveMaker.

They chose WaveMaker for four reasons:

- ◆ WaveMaker-built applications can be deployed anywhere
- ◆ Source code can be extended
- ◆ No vendor lock-in
- ◆ Licensing model based on developer-seats

Solecode, a WaveMaker partner based in Jakarta stepped in to take up this mammoth challenge by collaborating with Pertamina in transforming these applications. Pertamina understood the importance of agile methodologies and wanted their team to adopt Scrum. Solecode believed that low-code and Scrum would perfectly complement each other. This culture was ingrained into Pertamina's IT development team in effective collaboration with Solecode.

Migration of Lotus Notes applications to modern responsive apps



As shown above, using Excel sheets extracted from legacy databases, the IT team redesigned the new database on SQL Server. Lotus Notes UI screens were used as a reference to build the new interfaces with custom logic to rewrite the workflow as well as form validations.

Third-party services such as compression of files, cropping of images, and Google-captcha were easily integrated into the application owing to WaveMaker's API-first approach. Applications were made secure using Single Sign On (SSO) using OpenID and Keycloak.

All applications were deployed on-premise using Ubuntu and Tomcat as the server.

THE RESULTS

150+ Lotus Notes applications transformed into 20 modern web-based applications.

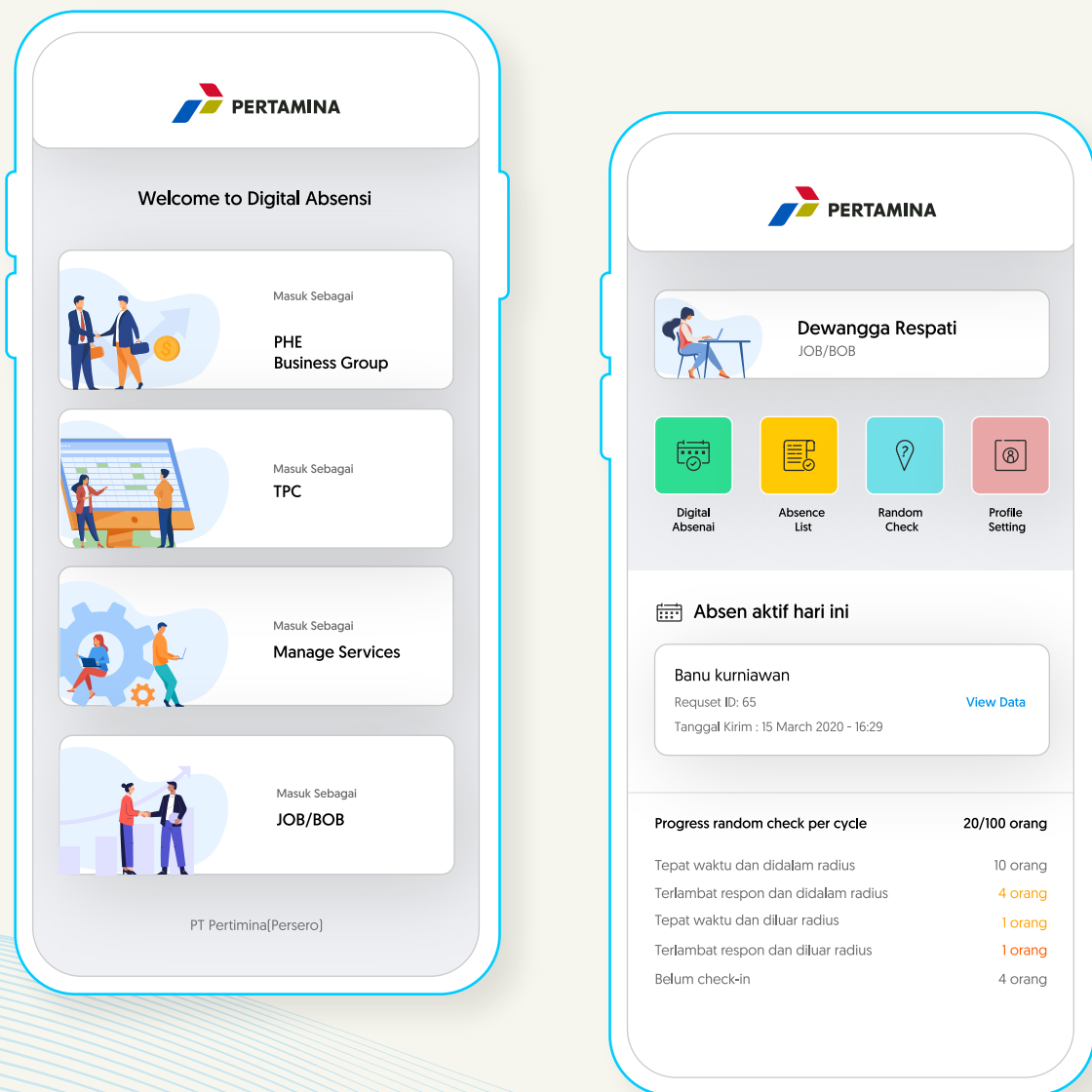
Solecode successfully helped Pertamina migrate 150 applications and consolidate them into 20 multitenant applications using the WaveMaker low-code platform in as little as 6 months using agile methodologies. An MVP was released every two sprints.

- ✓ The Lotus Notes applications were terminated and the new applications were brought onboard seamlessly without any disruption to the ongoing business
- ✓ WaveMaker helped Pertamina to build both web-based and mobile applications that in addition to having complex workflow had fine-grained role-based controls
- ✓ These applications capture data as well as app history, support file attachments, and have unique features such as email notification with OAS
- ✓ Applications are supported both in English as well as Indonesian
- ✓ These applications are multitenant and multiregional spanning 5 business regions

Two kinds of mobile applications were built:

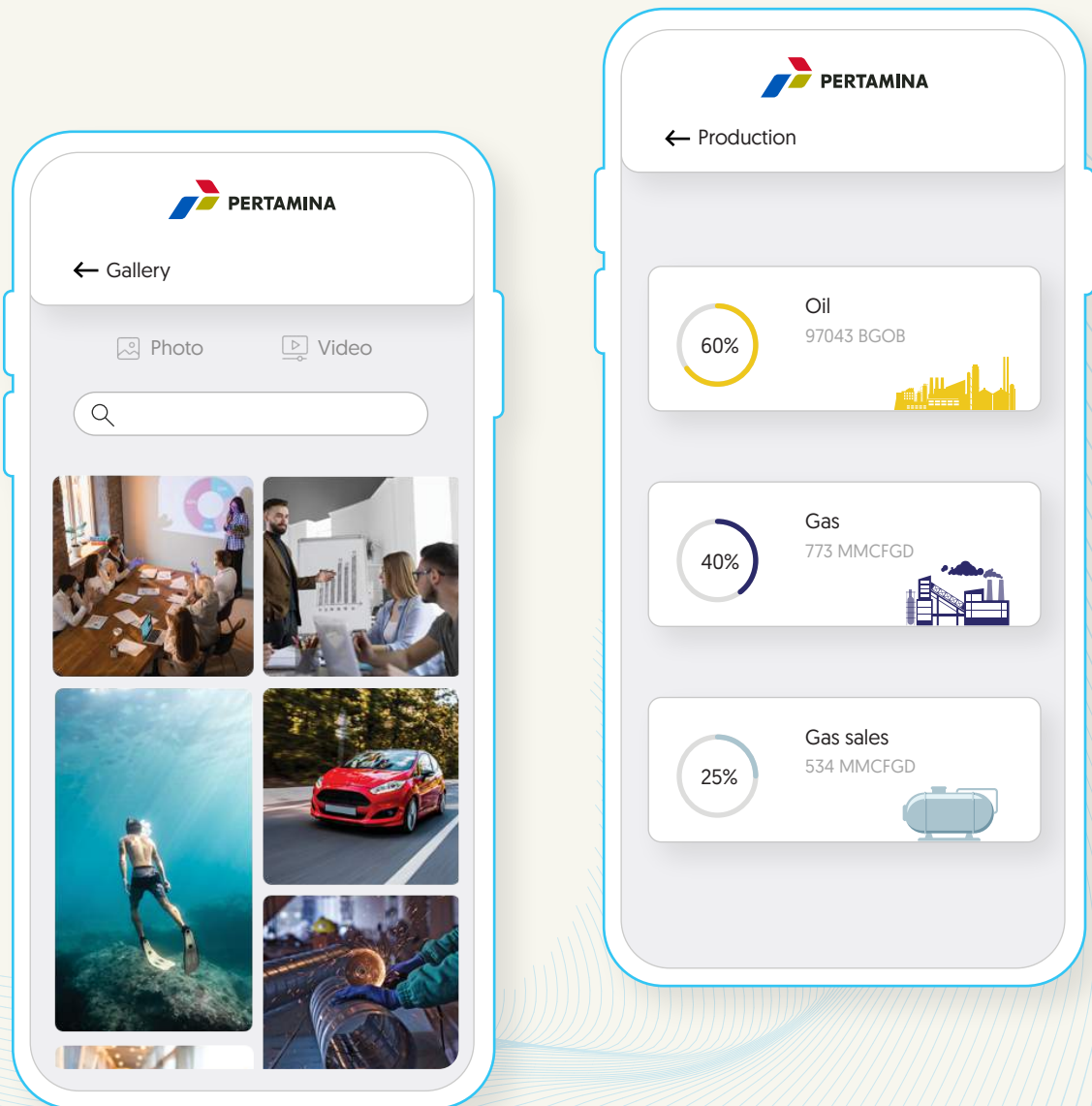
A Digital Absence

The application was built as a result of the Covid-19 pandemic and caters to more than 7000 employees across Indonesia who are working from home. **The Minimum Viable Product (MVP) was created in merely 5 days** proving that low-code is the way for a rapid turnaround. Digital Absence application uniquely captures employee attendance using technically advanced solutions such as anti-fake GPS using Cordova plug-in and Geo-location tagging for check-in and check-out. The performance of the application is monitored using JMeter for 500 users concurrently which helps in tuning the application as well as the Tomcat server. The application has a unique UI/UX consistent with a “startup” style.

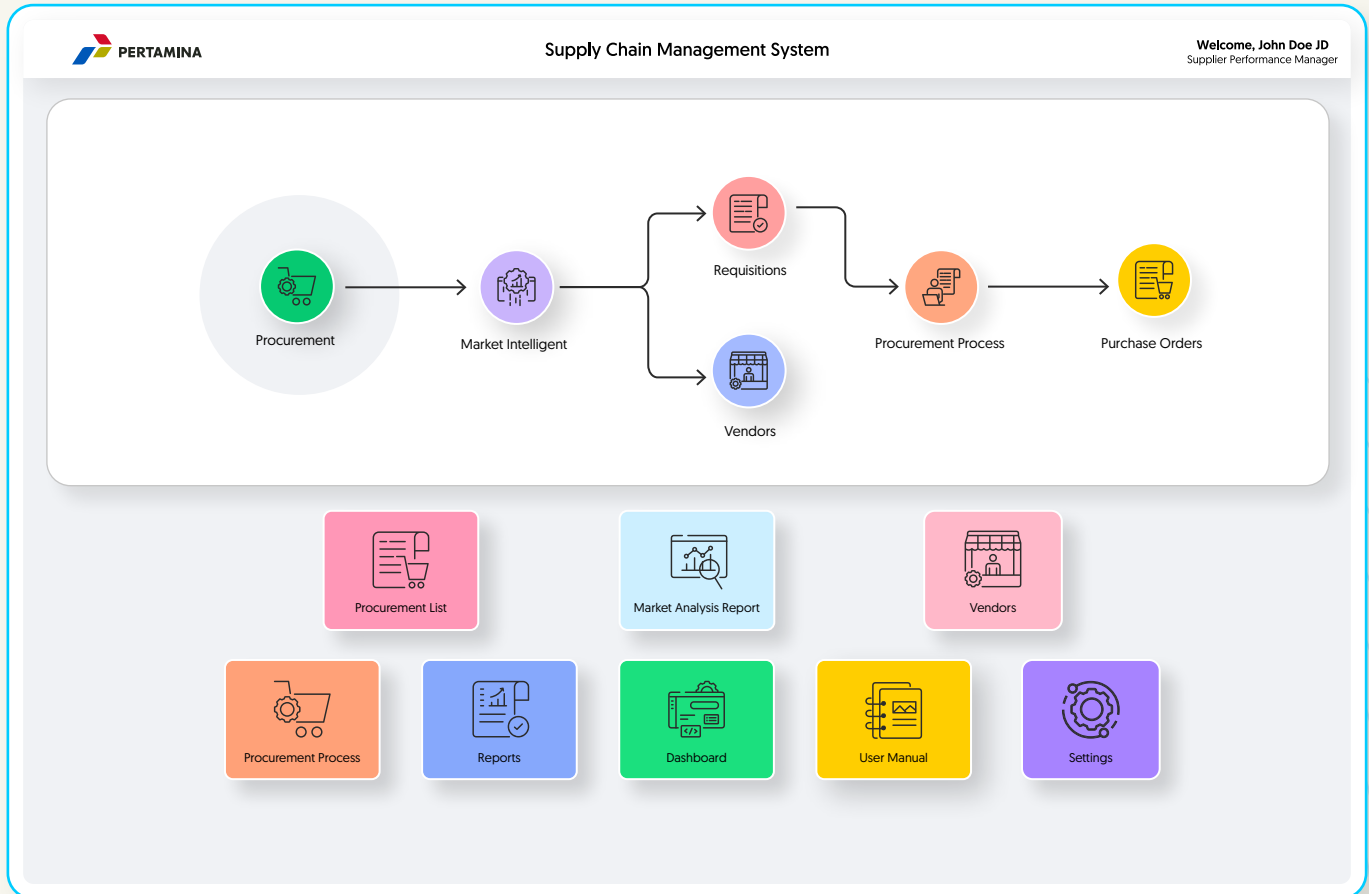


B Pertamina Channel

This application serves as an internal communications mobile portal where employees can perform several operations such as view the latest Pertamina information, approve expenses, travel, and task inbox. The portal can handle diverse media like video and pdfs and also integrate with as well as trigger workflows (task approvals). The portal has been created with a simple and clean UI/UX, simplifying the user journey on a very complex process.

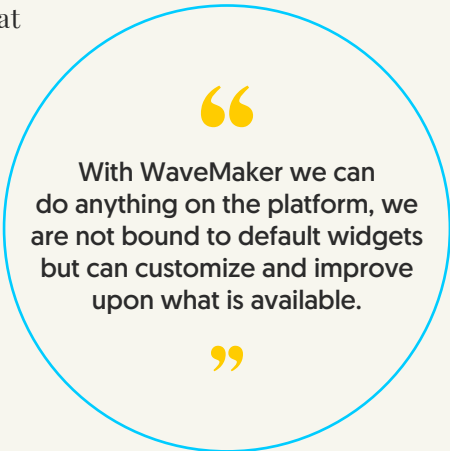


Supply Chain Management Channel is a web application that handles the pre-procurement process from budgeting to procurement execution preparation in Pertamina. The application is integrated with Pertamina SAP to effectively manage the procurement process. This application is not just meant for internal employees but is also used by vendors and third-party users.

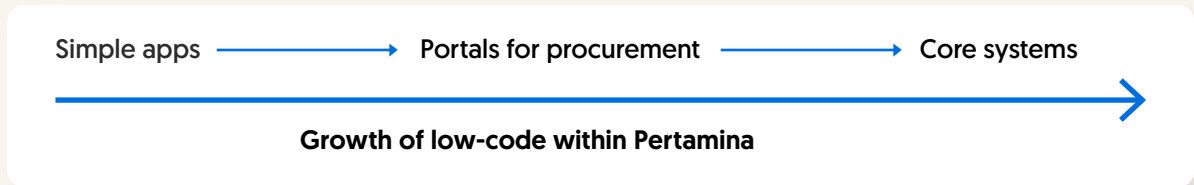


Most of the applications catered to internal employees and vendors/partners for registrations, vendor onboarding, purchasing, and process workflows. WaveMaker being an open-standards platform allows developers to bring in their designs and themes with rich customizations. Developers at Solecode leveraged this feature to create great-looking UIs for their applications.

With effective guidance from our partners, The Pertamina IT team (consisting of 5 developers, 4 business analysts, and 1 scrum master) can now independently develop applications using best practices of scrum and low-code. They have a fully independent agile team and a scrum master, who are extremely comfortable with using the WaveMaker platform to develop applications rapidly and independently.



Pertamina’s journey with low-code has been remarkable. From using low-code to developing simple individual applications, Pertamina has now matured to developing its core systems using low-code.



SUMMARY

Using WaveMaker low-code platform, Pertamina in collaboration with Solecode was able to convert a huge number of applications from Lotus Notes to modern mobile-based and web-based applications with no disruption to the business. From developing simple applications, the Pertamina IT team has matured into a self-sufficient agile development team that can now deliver complex and functional applications. That of course is the success story.

However, what is most remarkable is that Pertamina was able to imbibe the culture of agile and scrum into their product development process with able guidance from WaveMaker partners. In fact according to Dewangga Respati (Chief Executive Officer) from Solecode:

“Low-code without scrum is not fast enough and scrum without low-code is not agile enough.”

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