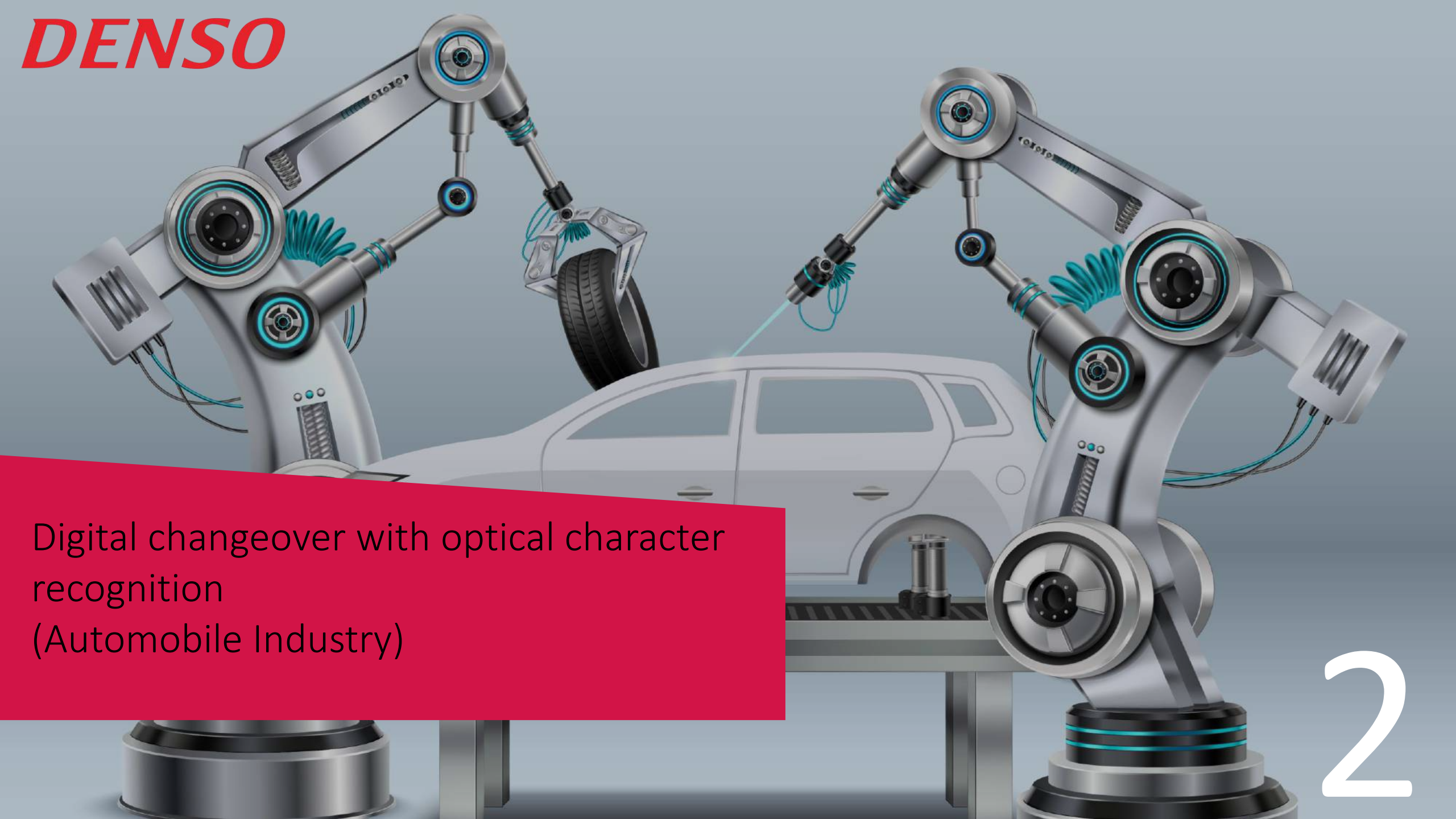


Digital Transformation – Case Study



DENSO

Digital changeover with optical character
recognition
(Automobile Industry)



Background

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The client is a global company focused on advanced mobility that positively changes how the world moves and contributes to greater well-being. They provide automotive service parts and are leading global supplier to all major automakers in India.

The client owns an Automobile manufacturing facility. The client's customers include Tata and Toyota among others.

The client has a set of machinery that they want to monitor from a centralized dashboard and database machine change over data logging.

Therefore, a solution is proposed where they can line-wise monitor machine models (Model name, quantity, and person performing changeover) with monthly reports.

Engagement Journey

Started With



Extended To



Ongoing Support



OS Relationship with Client

On a day-to-day basis, the whole manufacturing process requires a lot of time and effort and continuous monitoring.

The task of manufacturing is done with the help of a set of machines.

This whole task requires continuous manual monitoring at the location which makes the whole process very tedious.

Therefore, the idea is to develop a centralized dashboard and database machine change over data logging.



Challenges

The machines and the spare parts need continuous monitoring and previously the software that client was using was not an effective one.

Therefore, this whole system needs to be modified to smoothen the whole process of manufacturing where analytics, centralized database, and alert system are developed into the software in order to get notified about the critical aspects in the facility.

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Solution

Centralized database and dashboard for data logging and data monitoring for a change-over sheet of machines

1. Centralized database

- Maintaining **data history**.
- **Log-In** credentials for users.
- **Hierarchy-based** reading and writing permissions.
- Storing idle or required images or text in a database for all different machines and their specific programs.
- Storing **digital signatures**

2. Web application using OCR for ease of access

- **Authentication** and **authorization**-based login for all users.
- Production line selection.
- **Kanban scanning** for the machine.
- Change over sheet display of the scanned machine.
- Scanning the code shown in the machine using the tablet present at the specific production line.
- Program conversion into text/numbers using **OCR** technology.
- Comparison of the converted text/number/image with the existing stored ideal text/number/image of the selected program for a specific machine.
- Displaying comparison results on the tablet screen.

Solution

- Changeover sheet submission after **uploading digital signature**.
- Storing the timestamp for change over sheet activities (e.g., Time, date, and name of the operator or TM).
- Reset data option if required, by accessing it through authorized user password.
- **Approval notifications** to managers for any required upgradation.
- **Document uploading** in PDF/.xls format.

3. Email, message, and notification

- **Notification** to operator and engineer/manager after completion of upgradation of change over sheet with model number and quantity.
- Generate notifications if input/scanned data doesn't match with the database values.
- Sheet assigning, sheet completion.

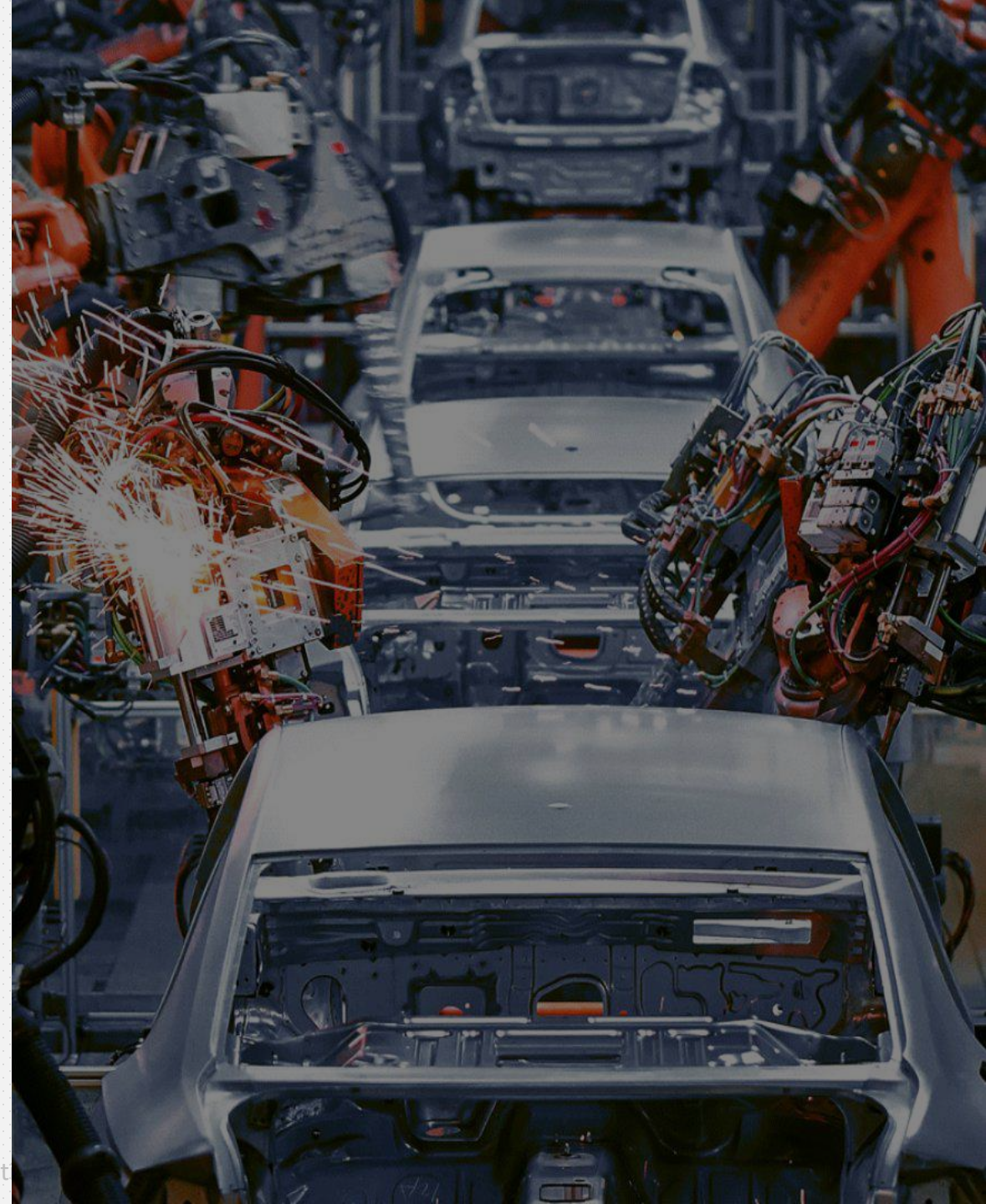
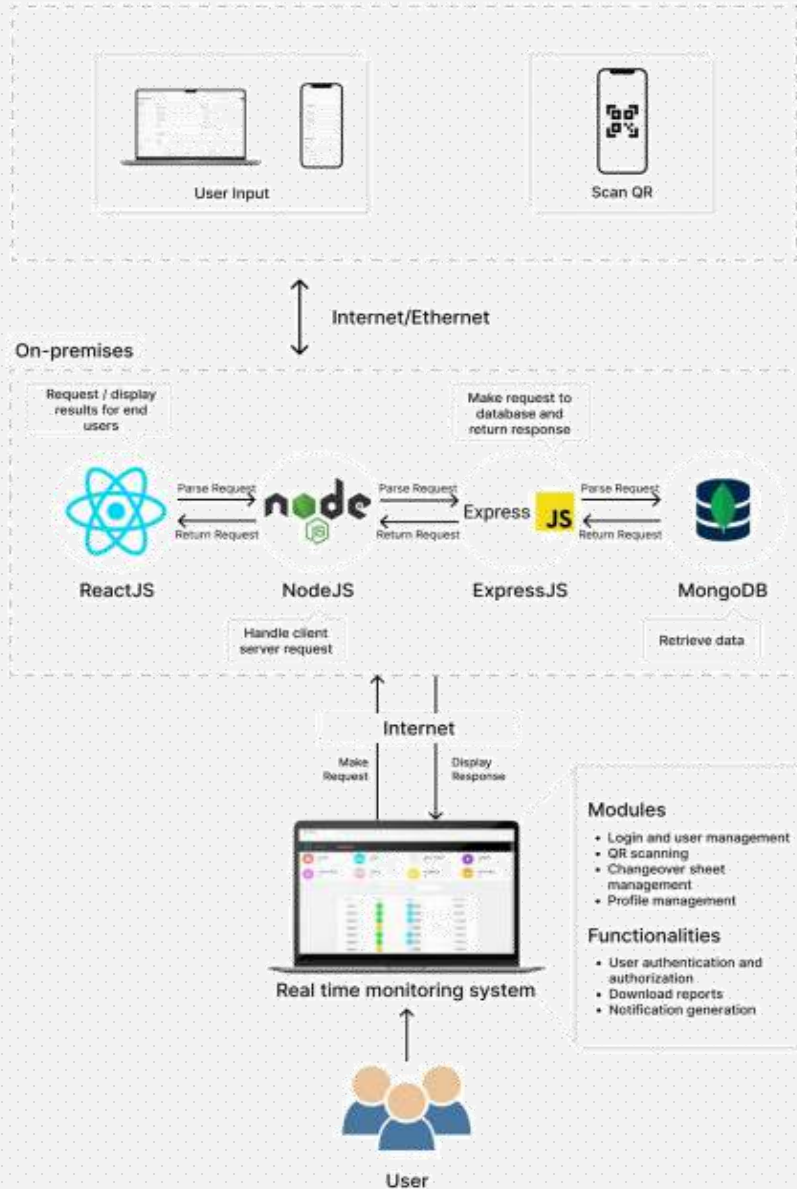
Solution

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4. Hierarchy-based operations, permissions, and features

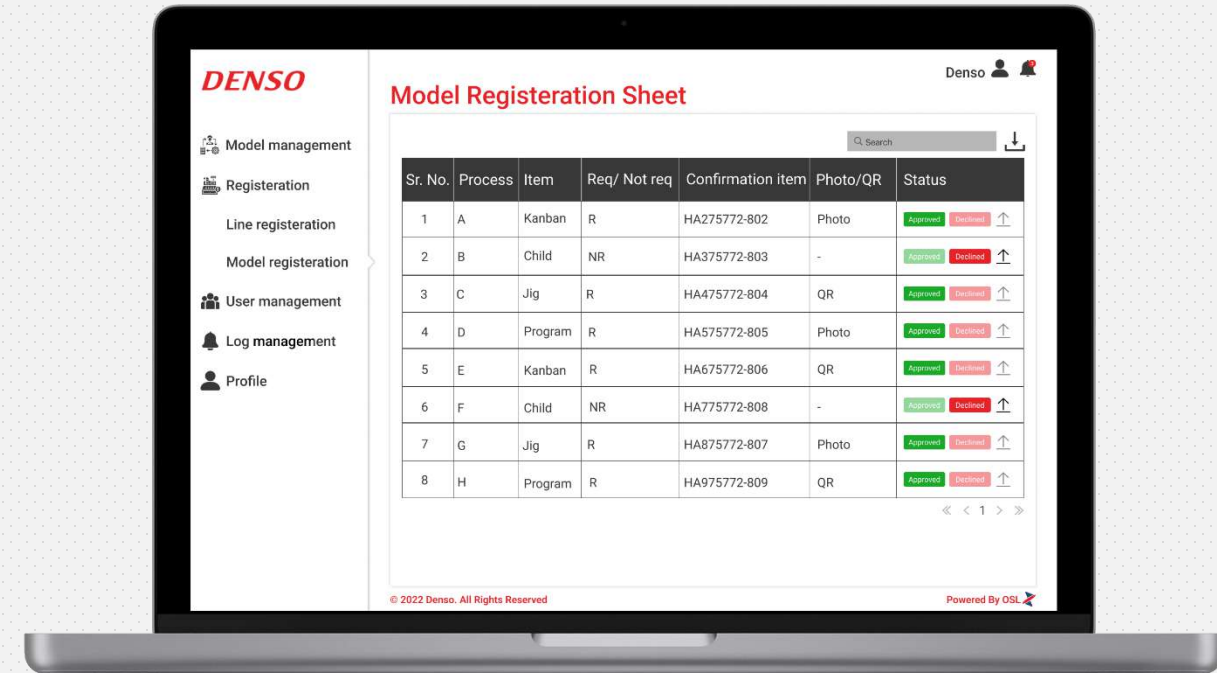
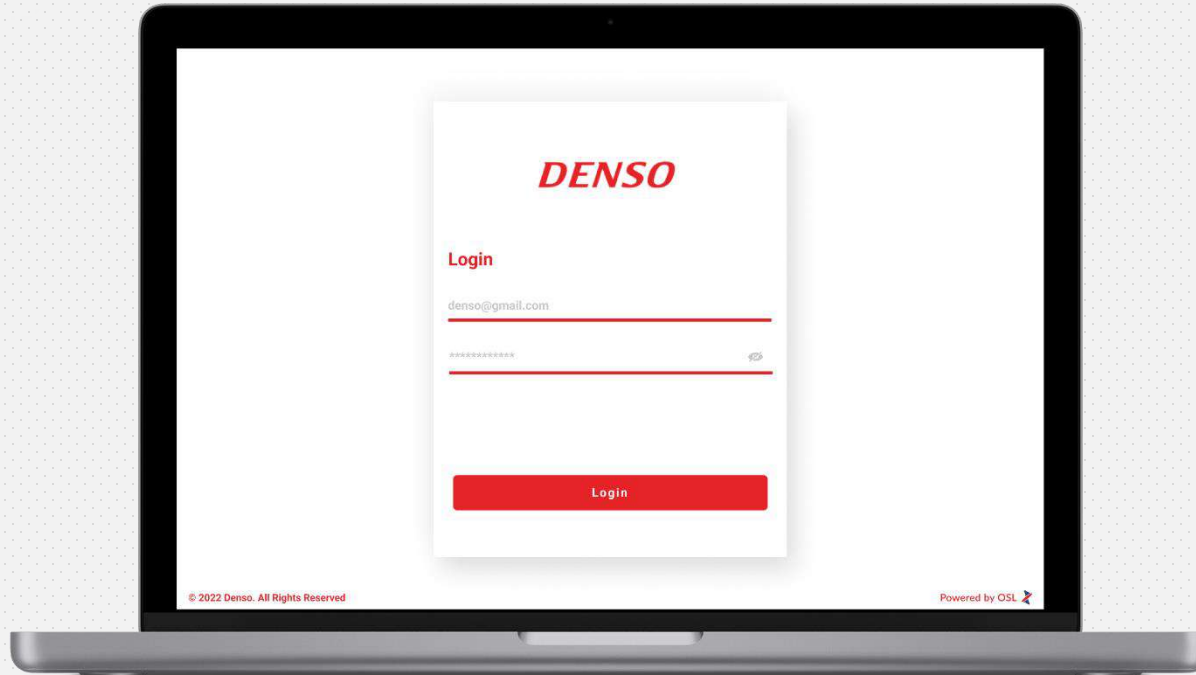
- Add/Delete production lines
- Add/Delete machines of the production line
- Add/Delete the image of the program that needs to be stored in the database
- Sheet upgradation of new machines or models.
- 3 - type of users
 - Manager
 - Engineer
 - Operator/TM

Solution Technical Architecture



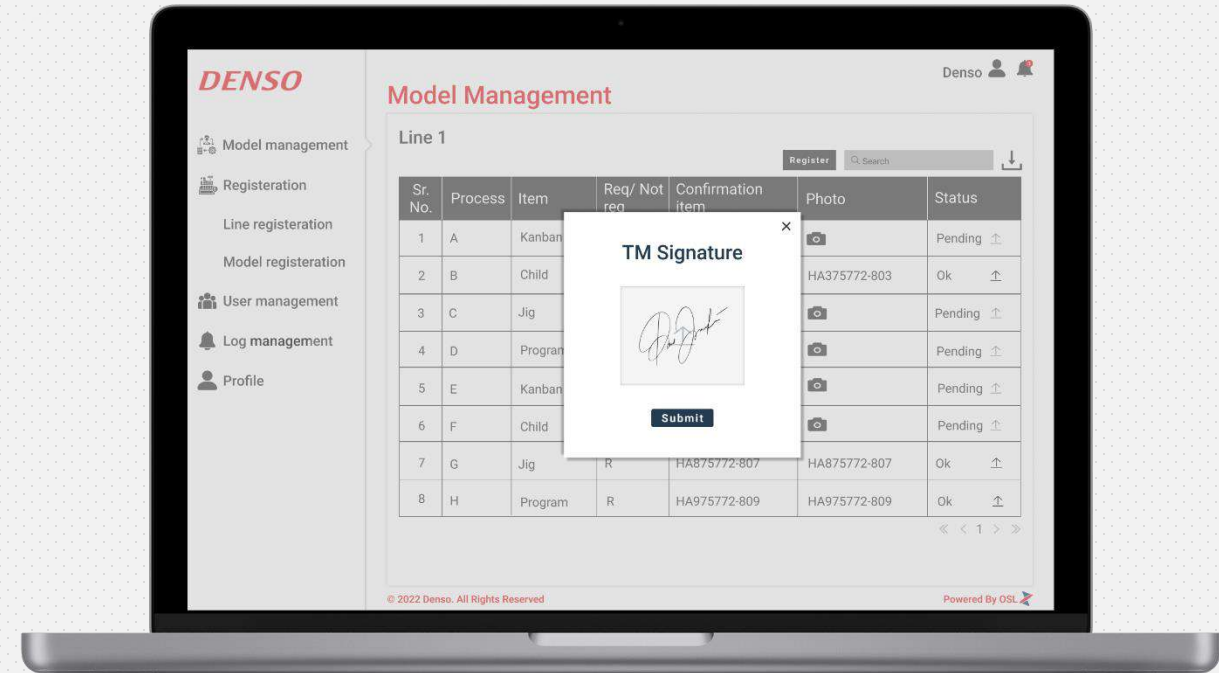
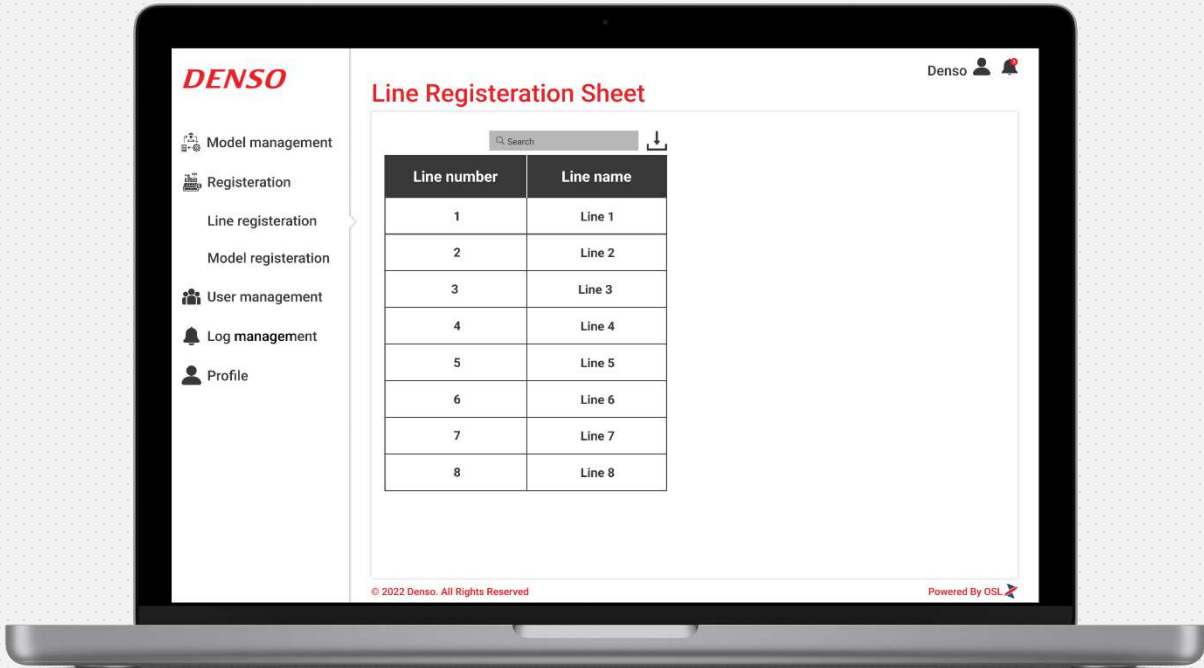
Solution – Web Interface

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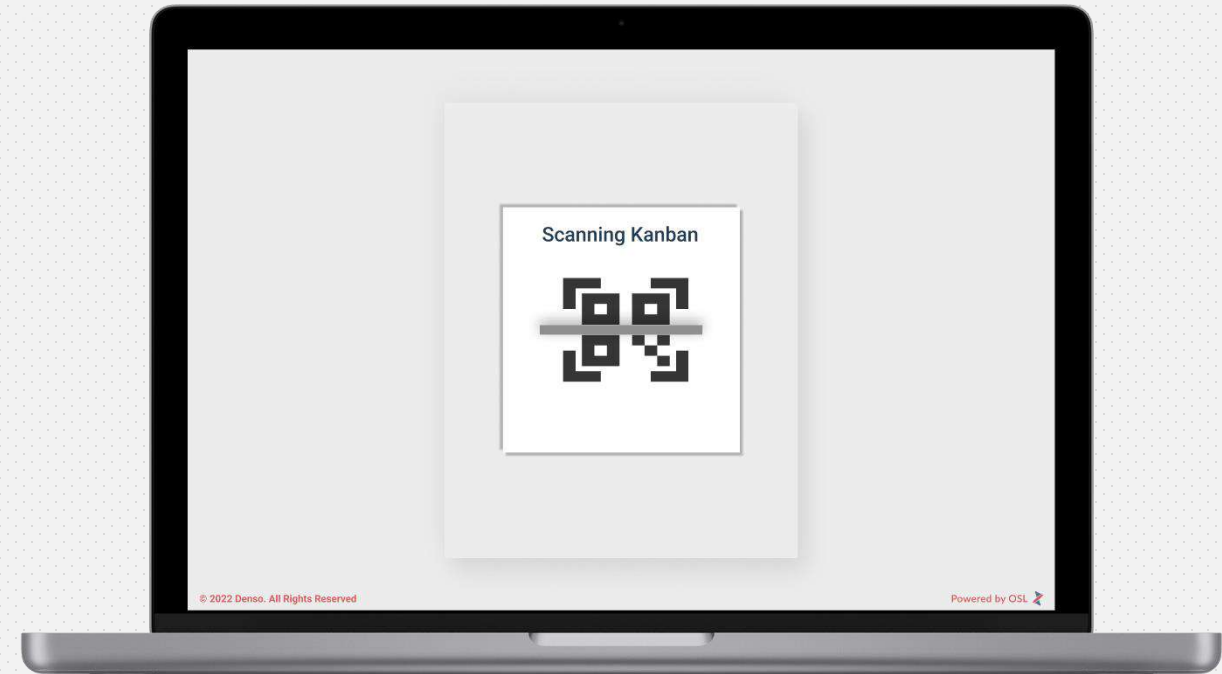
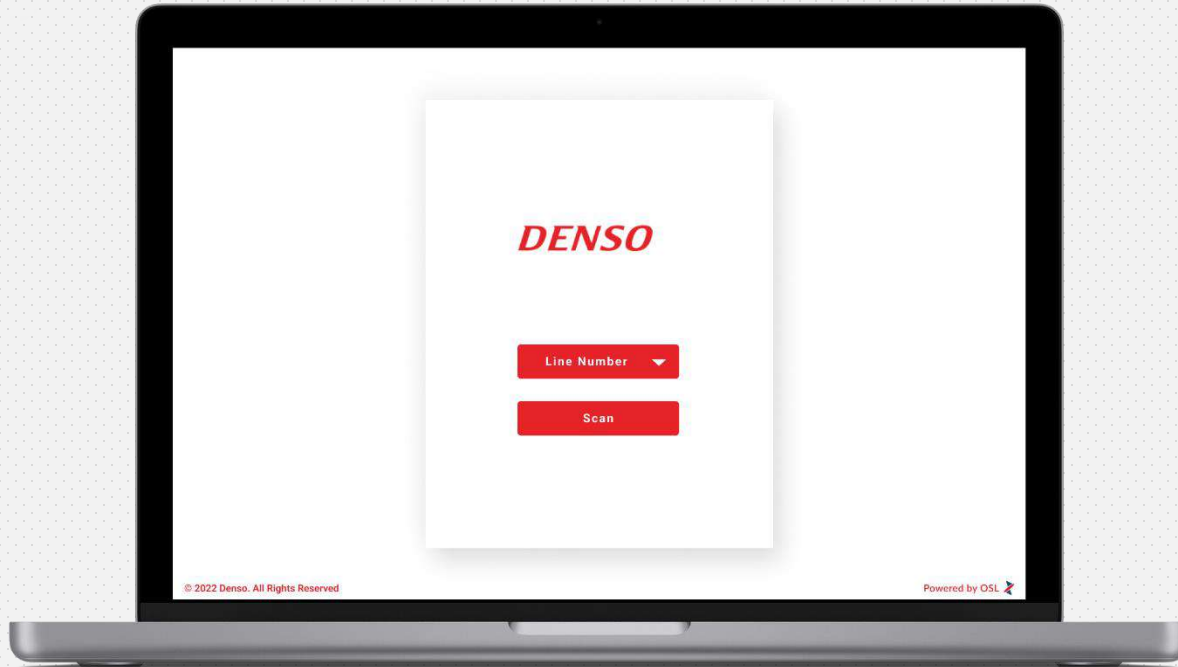
Solution – Web Interface

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Solution – Web Interface

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Value Proposition

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Optimized Solutions has provided a system with the help of customized cloud, and Mobile application software that can handle and validate the functionalities of change-over data logging on a digital dashboard.

By transforming the whole process digitally, the entire functionality of change over data logging has been simplified hence allowing the users to effectively monitor and analyze the whole process.

Thank You

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