



SAP Innovation Awards 2019 Entry Pitch Deck

Enabling Real-time Global MRO Work Process with SAP
Cloud Platform & Mobility
Dow Chemical Company

THE BEST RUN



About Dow

The Dow Chemical Company, commonly referred to as **Dow**, is an American multinational chemical corporation headquartered in [Midland, Michigan](#), United States, and the predecessor of the merged company [DowDuPont](#). As of February 2019, it is the third-largest chemical company in the world by market capitalization.

For more than 120 years, Dow has strived to create value through its diversified, market-driven portfolio of specialty chemicals, advanced materials, agrosiences and plastics businesses.

Dow is committed to advancing science and innovation in response to the world's most pressing challenges – enhancing the quality of life for current and future generations, while creating long-term sustainable value for the Company, its customers and its shareholders.

Dow delivers differentiated solutions that address these challenges and unmet market needs by leveraging cost advantage, scale and geographic presence, customer collaboration and industry-leading R&D expertise.

Enabling Real-time Global MRO Work Process with SAP Cloud Platform and Mobility

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“Quote”

“It’s obvious this was developed by folks that know and understand our MRO processes.”

Glenn Brady,
Dow MRO Material
Activity Coordinator

Challenge

Manual, paper-based MRO (maintenance, repair and operations) process was slow, error-prone, and did not provide real-time visibility of materials available around the globe. This led to either excess or lack of inventory of required parts needed on hand for critical equipment. To avoid downtime or disruption during operations, it was critical to have necessary parts/resources available for maintaining/repairing major equipment at any time.

Solution

With the flexibility to run in a web browser application or on an Android-based bar-code scanner, the mobile application interface effectively brings enterprise transactional capability to the plant floor and enables real time data integration with ECC (ERP Central Component). Key features include Android hybrid application, camera integration, QR code scanning and offline processing when Wi-Fi is not available.

Outcome

Paper-based batch processes are now a thing of the past with the development of a mobile application on SAP Cloud Platform, which enables the digital receipt of MRO materials in real-time. An agile team comprised of cross functional resources, collaborated to deliver real time SAP integration in support of the mobile solution. The solution will enable adoption of one MRO work process across the company.

80 %

Reduction in time it takes to process receipt of goods with new real-time warehouse automation application

From 3 days to Real-time

Reduced inventory transaction posting plus data availability from 3 days to instantaneous

Inventory Errors Near 0

~100% inventory accuracy in real time & elimination of manual inventory counting



Business Challenge & Objectives

The business challenges included:

- Manual and paper based approach which led to delays in posting to SAP ECC (in 1-3 days depending on holidays). The work was tedious and non-value add, often leading to fatigue of employees and introduction of errors during data entry.
- Using different solutions and work processes in various locations around the world resulted in inefficiencies, discrepancies and inability to reconcile the data across the company.
- Inability to track packages, notification and print labels in MRO warehouse operations resulted in loss of productivity.
- Inaccurate inventory resulted in lack of trust in the systems of record by businesses.
- Proliferation of multiple point commercial solutions as adopted by various entities to suit their limited needs without understanding the depth and complexity of backend system integration.

Objectives:

- Develop a global work process and mobile solution for MRO Warehouse Management that will deliver real-time data integration with ECC.
- Utilize Human Centered Design and an Agile project methodology throughout the life of the project to enable quick application delivery and ensuring high user adoption.
- Improve employee experience and customer experience while delivering at the speed of business in alignment with key corporate strategies.
- Reduce IT footprint and TCO by providing one solution for MRO processes across the company.



Project / Use Case Details

Functionality:

- The mobile solution is available on the shop floor and in receiving, enabling the warehouse personnel to scan all received packages, and track packages in real-time with instant email notification to users of parts arrival and inventory availability.
- Improved data accuracy of inventory data, which enabled the business to be confident and make trusted business decisions in real time.

Design and Development:

- Developed mock UI which enabled the project team to work directly with end users and to walk them through the new global work process, highlighting the new features and improvements. This was key turnaround point.
- Continuously prioritized & re-prioritized application features to ensure critical functionalities are delivered on time.
- Aligned IT and functional teams to use one common solution and one common global work process.

Deployment:

- Worked with SAP team to architect and deploy mobile solution. The team developed solution to handle shared devices, connectivity availability and multi-lingual needs.
- Developed support mechanisms to ensure that the team could support the end-users in using the solution effectively, and to shorten the learning curve
- Application deployment rolled out in stages for effective change management.



Benefits and Outcomes

Business / Social

- Real time warehouse automation resulted in 80% reduction in Goods Receipt Processing time.
- Became Green with progress towards paperless environment.
- Improved productivity with full traceability and tracking of package from receipt to delivery.
- Continuous inventory verification for trusted accurate inventory data and elimination of tedious manual counting process.
- Prioritized delivery of critical functionalities in partnership with business users.

IT

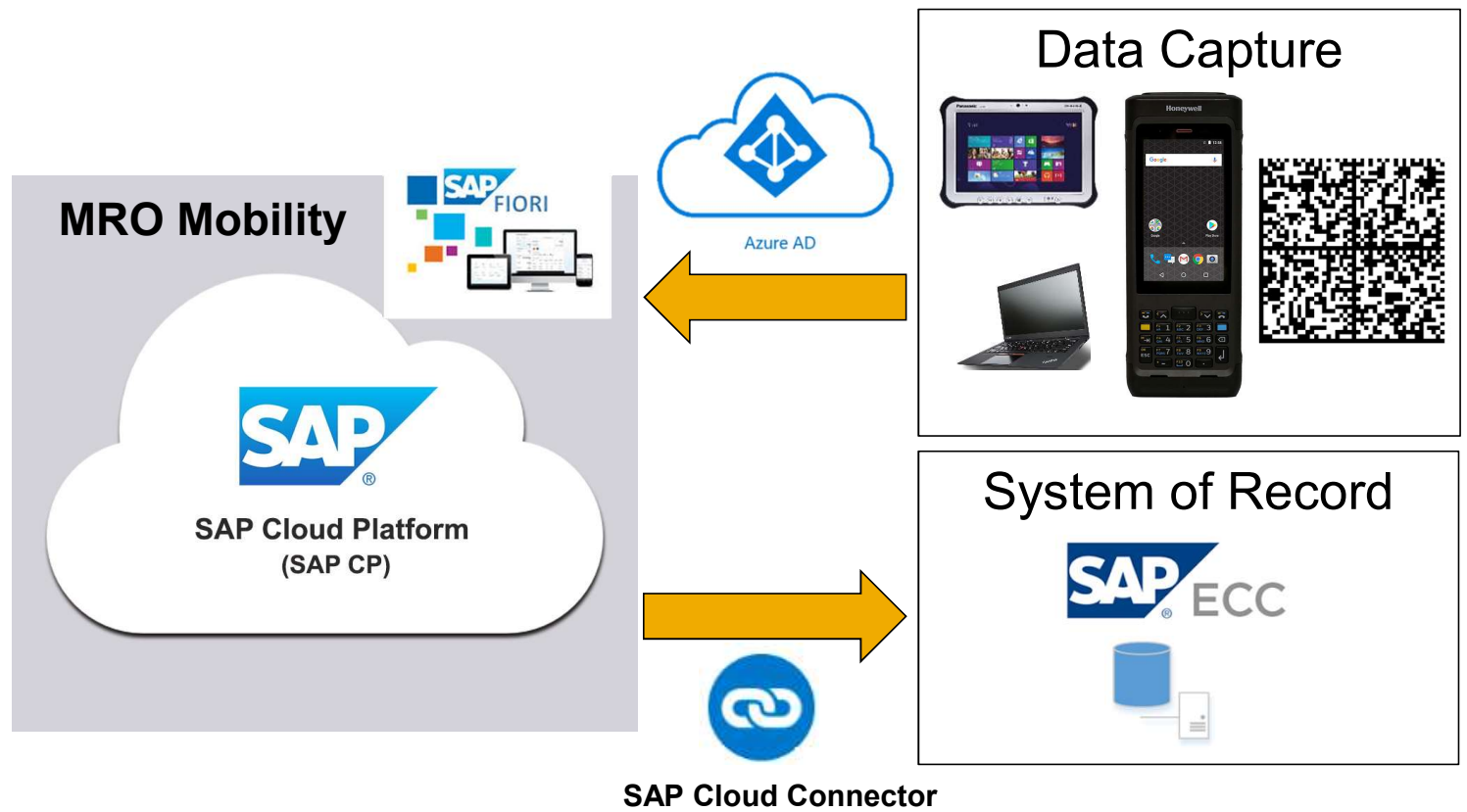
- One platform and one code base for the solution enabled rapid development. Core capabilities were deployed within 3 months using Fiori UI5 and SAP Cloud Platform.
- Cloud native solution integrating with on premise ECC.
- Principle propagation enabled full end user traceability.
- Developed offline capabilities utilizing the Mobile Services offline framework in SAP Cloud Platform.
- Utilized Human Centered Design to develop UI and engaged end users early to ensure adoption.
- Use of ruggedized mobile devices in a warehouse environment.

Human Empowerment

- Eliminated non-value added work such as manual data entry and tedious counting from daily work.
- Enabled field technicians with access to the material to close their repair work orders quicker.
- High level of ownership between project team and end users.
- Early end user participation enabled successful deployment with high adoption and usability.
- The solution is enabling planners, schedulers and maintenance technicians to do their jobs more effectively.



Architecture





Deployment

Date of Deployment or POC: June, 2018

Number of live users: 1 Pilot Site in 2018, 2-5 Warehouses in 2019 impacting Planners, Field Workers, Warehouse Workers

SAP Technologies Used:

SAP Cloud Platform & Mobile Services	In Production
SAP Fiori	In Production
Cordova Plug-in	In Production
SAP Cloud Connector	In Production
SAP ECC 6.0	In Production

Server Processor: SAP Cloud Platform (PaaS)

Linux Distribution: N/A



Emerging Technologies and Use Cases

The following Emerging Technologies and use-cases are part of the project and describe the contribution

	Technology or Use Case	Yes/No	Contribution to Project
1.	Machine Learning / Artificial Intelligence	No	
2.	IoT	No	
3.	3D printing	No	
4.	Blockchain	No	
5.	API Economy / Integrate the Intelligent Enterprise	Yes	Developed OData to interface with ECC on premise.
6.	Cloud Native / Event Based Architectures	Yes	Enabled lightweight and scalable solution for global user base.
7.	Extending the digital core with SAP CP / ABAP in SAP CP	No	
8.	SAP Leonardo Application (extending SAP application, using Industry Innovation Kits or result of Design Thinking workshop)	No	