SAP Innovation Awards 2019 Entry Pitch Deck

Transforming Auto Manufacturer into the Highest Quality Brand in Pakistan with S/4HANA

Indus Motor Company

THE BEST RUN SAP®

Indus & SAP Overview Video

https://tinyurl.com/Indus-SAP

Transforming Auto Manufacturer into the Highest Quality Brand in Pakistan with S/4HANA

Indus Motor Company

"Quote"

"With the built-in, real-time analytics capabilities of SAP S/4HANA, we are reducing defects throughout our processes and driving improvements across the value chain.

We are pleased to showcase our S/4HANA implementation as the first ever submission from the world's 6th largest country- Pakistan."

Faizan Mustafa, CIO

Indus Motor Company

Challenge

As Indus grew from producing 20 vehicles/day to 250/day, it needed a solution that could forecast accurately, provide better insights & real-time analytics, & improve operations costs over the entire production & sales cycle.

Solution

Working with IBM Global Business Services, together they deployed the SAP S/4HANA Enterprise Management solution, enabling materials management, planning production, and better finance controls

Outcome

Results are up across the "three Vs" of Supply Chain: *Volume* as production is up at all facilities, *Velocity* as data now traverses through supply chain almost instantly, and *Visibility* refers to S/4HANA receiving real time data that's improving decision making.

95% faster material requirements planning

10% improvement in sales order accuracy

20% reduction in defects per unit

Partner Information - IBM

To drive the implementation process, Indus Motor Company decided to mix the IBM Ascendant methodology with the SAP Activate framework—combining the structure of traditional waterfall-based processes with the responsiveness of agile development. IBM products and services included IBM PowerVM for IBM PowerLinux, IBM Spectrum Protect, IBM Power System S824L, IBM Storwize V5000, IBM TS3200 Tape Library and IBM Global Business Services.

"After we totaled up the scores, IBM Global Business Services was the clear leader of the quadrant for the quality of their work, expertise and global reach. We knew that our transformation effort was an envelope-pushing project, and we determined that the IBM team possessed the skills we needed to move to the new way of working successfully. Now, thanks to our IBM and SAP solutions, we are achieving the digital transformation that will help us strengthen our competitiveness in a fast-moving marketplace."

Faizan Mustafa, CIO Indus Motor Company

Business Challenge & Objectives

To compete with a surge of foreign entrants to Pakistan's auto market, Indus (the leading manufacturer of Toyota vehicles in Pakistan) needed a reliable system that could meet rigorous standards for materials management, planning production, and finance controls. Indus Motors' business challenges included:

- **Stale Data-** Decisions were based on historical rather than real-time data.
- **History of customization**- Which made following the upgrade path difficult.
- **Regulatory controls**- As a public company, they needed reporting controls in place.
- **Inefficient processes-** As an auto manufacturer, Indus has dozens of suppliers and needed better ways to perform root cause analysis of defects in the supply chain, the production floor as well as in dealer service centers months or years after purchase.

Project Objectives included:

- Refine business processes & streamline operations with a modern ERP system
- Data centralization- Indus wanted to build a consolidated view of the business
- Real time data analysis- The solution needed in memory computing and reporting
- Improve manufacturing processes- Indus leadership believed partnering with vendor experienced in automotive manufacturing could improve their overall processes.
- Friendly user interface- A new system current users could easily use & would deliver graphical, real-time, and actionable insights to workers on the production floor.
- improve customer experience by rapidly delivering high-quality vehicles at low cost.

Project / Use Case Details

Indus Motor Company knew they wanted to have a more agile business processes and faster service delivery to customers. With new legislation introduced in Pakistan to encourage greater auto industry competition, Indus decided to build on its success with SAP solutions by seamlessly integrating its entire value chain using SAP S/4HANA.

The company's legacy system was on traditional Relational Database Management technology which didn't lend itself to analytical processing. Indus was one of the earlier SAP customer in Pakistan and decided to build on that experience with S/4HANA to combine transactional data processing and analytical capability through in-memory data management technology. SAP S/4HANA became the nervous system to collect and analyze data from across the business and transforms that data into actionable insight.

To drive the implementation process, Indus combined IBM's Ascendant methodology with the SAP Activate framework to get the structure of traditional waterfall-based processes with the responsiveness of agile development. Indus' SAP S/4HANA environment is based on IBM Power System S824L servers connected to IBM Storwize V5000 storage arrays. Indus is running SUSE Linux Enterprise Server for SAP applications. Indus' SAP S/4HANA applications include: *Materials Management, Production Planning, Materials Requirement Planning, Finance and Controlling, Project Management* and *Quality Assurance*. The new platform leverages SAP Fiori as well.

With implementation complete, Indus transformed processes as well as company culture including:

- Creating a culture of real-time visual analytics as monitors on the production floor display key metrics real time. Line workers and managers see information in real time and can take immediate corrective action which has contributed to a 20% reduction in defects per unit.
- Moving disparate spreadsheets of data from marketing, sales, and production to an integrated real-time single version of the truth that is shared with suppliers, dealers, sales, and service centers which is improving sales order accuracy 10%.
- Recording production information directly into a SAP Fiori app from mobile devices. The real-time predictive analytics can detect and alert Indus suppliers to issues before the parts have time to move into the downstream manufacturing process and contribute to 95% faster material requirements planning.

Benefits and Outcomes

Business / Social

Saving > 30,000 man hours annually with S/4HANA

20% reduction in defects per unit worth ~ US $1M in lost sales (*a big impact in Pakistan Rupees*)

10% improvement in sales order accuracy which reduced capital tied up in inventory by US $1.2 million

Real-time quality management keeps Indus from stopping the production line with costs USD $3500 per minute in lost production

IT

95% Faster material requirements planning- a report that took 4 hours and stopped operations is now done in 12 minutes without impacting operations.

Operational controls: All functions managed through centralized ERP so the Board of Directors has confidence in the built in controls that comes in S/4HANA

Reduced time to perform financial close by 60% from eight days to three saving over 800 employee hours/month.

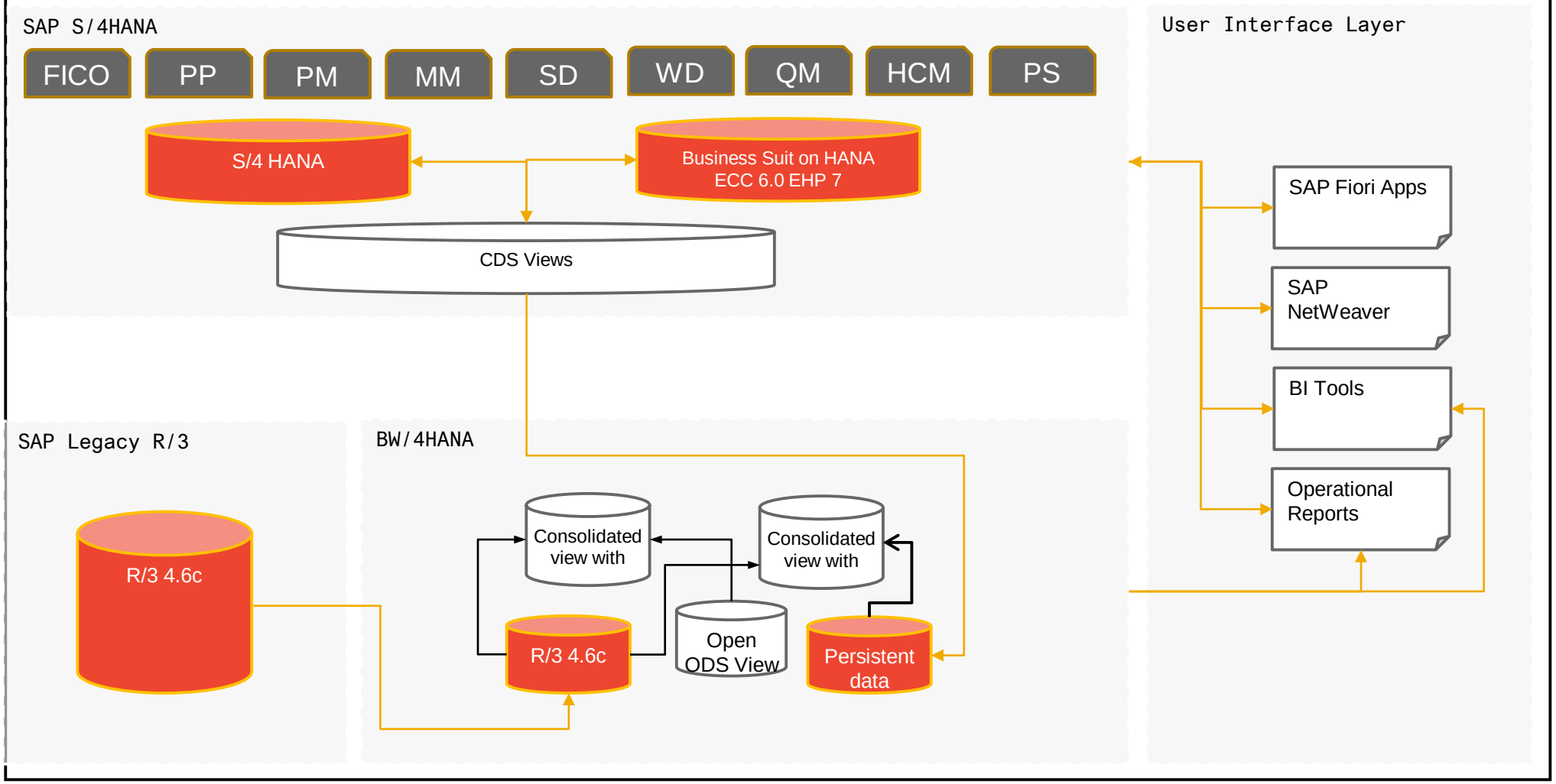
Human Empowerment

With real-time production data, line workers and managers on the production floor are able to immediately troubleshoot and correct process and materials problems which minimizes the economic cost of anomalies.

Real-time tracking of customer deliveries which pleased customers and ensured compliance with SLAs

Architecture

Consolidation of 15 years of Legacy R3 data with S/4Hana for Consolidated Reporting



Deployment

Date of Deployment or POC: POC 2016 and live deployment began early 2017

Number of live users: 500

SAP Technologies Used:

Product	Live	POC	# Users
SAP S/4HANA	X		500
Business Warehouse	X		500
Success Factors		X	
Ariba		X	

Server Processor: IBM POWER8

Linux Distribution: IBM PowerLinux running SUSE Linux Enterprise Server for SAP Applications

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	Yes	Proof of concept with IBM to detect defects with image processing & deep learning
2.	IoT	Yes	Working on predictive maintenance use case for critical production equipment w/ SAP Leonardo
3.	3D printing	No	
4.	Blockchain	Yes	In Pakistan record keeping isn't optimal, looking at Blockchain for vehicle ownership. Still early.
5.	API Economy / Integrate the Intelligent Enterprise	No	Still in infancy in Pakistan
6.	Cloud Native / Event Based Architectures	No	
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)	Yes	Working on Design Thinking & currently in the works in collaboration with IBM and SAP