Moving From a Reactive to Proactive Supply Chain with a Cognitive Cloud SCM: Digital Reinvention in Industrial Manufacturing

IBM Global Business Services
Agenda

• Industry Trends
• Digital Reinvention in Manufacturing
• Cloud Solutions
• Cognitive in Manufacturing
• Questions
Industry Trends

Digital Reinvention in Manufacturing

Acceleration of Business Globalization

Customer-Centric Experience

Hybrid Supply Chain Strategy

Logistics Efficiency to Stay Competitive

Attracting and Retaining Talent
Digital Reinvention

New Focus
- New Business Model
- New Expertise
- New Ways of Working
- Orchestration Ecosystem

New Experience
- New Business Model
- Market Activations
- Actionable Insights
- Responsive Operations

New Expertise
- Innovation focused Culture
- Orchestration Ecosystem

New Ways of Working
- Cloud
- Mobile
- Social

New Experience
- Analytics & Cognitive
- Security

Innovations & Cognitive
- Responsive Operations
- Orchestration Ecosystem

New Business Model
- Market Activations
- Actionable Insights

Outthink limits
Manufacturers are considering Cloud Computing

Cloud-based platforms give Manufacturers the chance to collaborate and share their innate intelligence and knowledge in the ecosystem. While on-premise systems could also do this, cloud-based systems are quicker to roll out, easier to customize and increases adoption rates across the partners.

- Accelerate new product development and introduction (NPDI)
- Improve collaboration across value chain
- Single Cloud platform for indirect and direct sales channel.
- Enable IoT automation applications
- Support two-tier ERP strategies
- Unify Human Resource Management for all manufacturing locations globally
Quick path to Digital Reinvention for Industrial Manufacturers

Supply Chain Planning

Product Lifecycle Management
Procurement
Inventory & Cost Management
Product Master Data Mgmt.

Globalization & Localizations

Social Network
Mobile
Analytic KPIs & Dashboards
Cognitive
Integrations

Manufacturing
Order Mgmt.
Logistics
Financials
EPM
HCM
CX

Financials
EPM
HCM
CX
Product Master Data Management

Business Drivers
• Fragmented data sets and using disparate tools and technologies to stitch together.
• Common product data definition across geography and desperate systems.
• Support both structured and unstructured data at any volume and scale with product data definition.
• Effective data governance framework and proper data stewardship.
• Consistent enterprise product information and data quality at lower cost of ownership.
Product Master Data Management in Cloud

On board Product Data
Classify Product
Cleanse Product Data
Enrich Product Information
Localize Product Information
Validate and Remediate

Govern, Quality Management and Monitor

Oracle SaaS Cloud

IBM Pre-built Adaptors
Integration Cloud Services / Fusion Platform / integration Layer

• Products and attributes
• Data Synchronization

On Premise
ERP
CRM
HCM

Cloud SaaS

External Partners

Texts: documents, emails, logs, survey results...
Product Life Cycle Management

Business Drivers

- Share product data with all stakeholders more accurately and timely at lower cost.
- Outsourcing operation requires more streamlined supply chain interaction between manufacturers and suppliers throughout the product life cycle.
- Pressure to collapse time to market while improving quality and profitability.
- Constant need to innovate products while reducing prototyping costs.

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**Develop and Innovate Products**
- Innovation Management
- Product Development
- Product Catalog

**Project Execution Management**
- Project Management
- Task Management
- Resource Management
- Analytics
Product Life Cycle Management in Cloud

**Oracle SaaS Cloud**

- Idea
- Proposal
- Product Requirements
- Product Portfolio
- Project Management
  - Product Design
  - Create Parts
  - Manage Data
  - Add/Manage AML
  - Collaborate & Approve Structures
  - Manage Change

**Integration Cloud Services/Fusion Platform**

- IBM Pre-built Adaptors

- External Partners
- Supply Chain Interaction

- Product, attributes and Eng./Mfg. Data

- • Products and attributes
  • Engineering/Manufacturing Structures
  • Data Synchronization

On Premise
- ERP
- CRM

**Outthink limits**
Procurement Cloud

Business Drivers

- People involved in the process are scattered all over the world requiring collaboration and centralized form of business communication with various possible partners.
- Sourcing and procurement needs are complex across organizations with large number of requirements gathering, document sharing and analytics.
- Indirect procurement and/or services procurement follow different process and are managed separately.
- Small and medium operations struggling with cost controls and looking for quick deployment of processes at lower cost.
Procurement in Cloud

Oracle SaaS Cloud

Strategic Sourcing
- Spend Analysis
- Requirement Gathering
- RFx
- Bid Collection
- Award Contract

Supplier Management
- Supplier Registration
- Supplier Qualification
- Supplier Evaluation
- Supplier Development

Procure to Pay
- Catalog Management
- Requisition /Approval
- Purchase order
- Receipt
- Invoice /Payment

Texts: documents, emails, logs, survey results...

Website content

Social and Organization Data

On Premise
ERP
CRM
HCM

Cloud SaaS

Employee data

- Invoicing /Reconciliation
- Supplier Data

IBM Pre-built Adaptors

Outthink limits
Inventory and Cost Management

Business Drivers

• Warehouse operation is remote with limited IT infrastructure
• Warehousing has simpler replenishment requirements and Lite WMS needs including task assignments and semi-directed Picking & Putaway.
• DC is outsourced but need inventory visibility.
• Need better tracking of MRO/Supply items.
• Procurement is on Cloud and need to extend capabilities for Inventory management.
Inventory and Cost Management in Cloud

Oracle SaaS Cloud

Procure to Pay
Catalog Management → Requisition/Approval → Purchase order → Receipt → Invoice/Payment

Inventory Management
Manage Inventory → Pick & Transfer → Shipping → Cost Inventory Transactions → Analyze Performance

• Financials/Reconciliation
• Inventory Transaction details

IBM Pre-built Adaptors

On Premise ERP CRM HCM
Cloud SaaS

Mobile Solution in Partnership with rfs SMART
### How to advance Cloud Adoption

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#### 1. Create Cloud strategy
- **Determine** the organization goals, platform requirements & complexity associated
- **Develop** enterprise cloud strategy, options available and roadmap
- **Envision** the cloud architecture that will support cloud initiatives
- **Update** IT Strategy and IT plans to align them with cloud strategy

#### 2. Identify & prioritize Business drivers
- **Define** business drivers to prioritize use cases for cloud
- **Implement** a Cloud strategy with right blend of cloud options for new projects
- **Assess** and evaluate from the current applications, the best candidates for cloud
- **Determine** the applications to be moved to cloud

#### 3. Determine cloud options
- **Define** multi-sourcing models and cloud vendor selection criteria
- **Assess** and determine how to best leverage the options of private, public and hybrid delivery models
- **Develop** Cloud Service Catalog, SLAs and KPIs

#### 4. Develop Cloud business case
- **Develop** cloud cost models including transition
- **Assess** and determine how to best leverage the options of private, public and hybrid delivery models
- **Finalize** a cloud business case and examine its ROI including time required for initial payback

#### 5. Prepare for implementation
- **Prepare** infrastructure for cloud
- **Develop**
  - Cloud Risk Management plan and policies
  - Security and Compliance plan and processes
  - Transition plan including workforce transition
- **Assess** impact on operating model; identify and plan changes required
Engage IBM for Oracle Cloud Assessment

Review Requirements

- Business goals and objectives
- Prioritized requirements and pain points

Access Current State

- Current state solution and application portfolio
- IT total cost of ownership (TCO) and business value analysis
- Candidate solutions and deployment options

Map Future State

- Fit-Gap analysis
- Future-state solution options and coexistence scenarios
- Data migration and integration approach

Cloud Transformation Roadmap

- Cloud Transformation Roadmap with deployment options
- Organizational readiness strategy and plan

Present Roadmap

- Agreed upon Cloud Transformation Roadmap
- Potential public, private and hybrid cloud strategies
- Oracle business solutions with built-in analytics, mobility and social capabilities

*Use Workshop Approach to execute these activities

4 hour session during OOW on case for change

1-2 Days | 2-4 Days | 4-6 Days | 4-6 Days | 1-2 Days
Digital Reinvention with Cognitive

Cognitive transforms manufacturing in three focused ways:

• Intelligent assets and equipment: utilizing connected sensors, analytics, and cognitive capabilities to sense, communicate and self-diagnose issues in order to improve performance and reduce unnecessary downtime

• Efficient processes and operations: analyzing a variety of information from workflows, context, process, and environment to drive quality, enhance operations and decision-making

• Smarter resources and optimization: combining various forms of data from individuals, location, usage, and expertise with cognitive insight to optimize and enhance resources such as equipment, workforce, and energy
IBM Cognitive Solutions with Cloud

36 use cases by support function

- Partner & Customer Contact Advisor
- Sales Operations Advisor
- Campaign Advisor
- Cogitative Content
- Cognitive Events
- Watson Content Management
- Solution Configuration Advisor
- Partner Match Making Advisor

- Supply Planning Advisor
- Procurement Intelligence
- Manufacturing & Logistics Advisor
- Warranty, Defect & Fraud Advisor

- Cognitive Engineering advisor
- Cognitive Failure advisor
- Cognitive Solutions advisor Beta & Pilot

- Customer Service Advisor
- Technical Service Advisor
- Demand Planning Advisor

- Cognitive Solution
- Maintenance & Repair Advisor
- Operator Advisor
- Operations Management & Risk Advisor

- Partner Training Advisor
- Cognitive Training Advisor
- Knowledge Management for Trainers
- Cognitive Training Coordination

- Voice of the Market
- ECN Knowledge management & Conflict identification for Engineers
Cognitive with Oracle Cloud

Oracle SaaS Cloud

Oracle PaaS Cloud

Oracle IaaS Cloud

IBM Watson Explorer

IBM Watson Developer Cloud

WDC API Services

WEX Connector Service

Texts: documents, emails, logs, survey results...
Website content
Social Media content
Socio-economic factors
Climatic change data
IBM Engagement for Cognitive

Implementation: Reqs & Design
- Provides blueprinting workshops to document relevant to-be process-work and data-flows. Specify and design new components (gaps) from template to final solution
  - Facilitate workshops
  - Blueprint document
  - Design Artifacts
  - Realization Plan
  - Test Plan

Implementation: Realization
- Deliver final MES solution, Big Data solution, BI templates in accordance with requirements and design
  - MES solution
  - Big Data preparation
  - Data preparation, data modeling
  - System and user testing
  - Operator training
  - Power-user training

Implementation: Final Preparation
- Provides a systematic, industry standard approach to analytics problems as defined during the workshops
  - Production system setup and install
  - Applications support

Plant: Deploy
- Install and cutover Production versions of all technology to the plant. Drive and support adoption of new processes and tools.
  - Evaluation of data analysis patterns, recommending adjustments as required.
  - Process improvement
  - Track improvements against value drivers

Plant: Run
- Provide plant onsite consulting to drive behavioral change. Consultant may be shared across 2+ plants
  - Production operations
  - Hardware and system support
  - Application support

Maintain & Operate
- Provides application hosting, hardware and software operations (including data center operations), application upgrades, and application support

12-17 weeks
3-4 weeks
12-18 months

4 hour session during OOW on case for change

4 hour session during OOW on case for change
Experience the power of Watson with our featured Cognitive activations
Cognitive for Automotive
Cognitive Enabled Industrial Industry Value Chain

- Voice of the Customer and Product Development
- Manufacturing, Supplier Management, and Logistics
- Marketing, Sales, and Finance
- Customer Experience, Aftermarket, and Warranty
- Cognitive Vehicle/Devices
The Safety/Quality problem in the auto industry

Business Problem
How to develop a systematic, analytics based approach to identify potential quality issues sooner (move the point-of-identification left)

Challenges
- Engineers often rely on intuition and experience
- Complex data environments
- Potential issue discovery difficult and time consuming
- Time spent gathering, cleansing and organizing data for reporting
- Closed loop feedback systems to prevent reoccurrences

Strategic Impact
- Reduce impact to bottom line by reducing # of issues through early warning
- Minimize brand erosion by proactive issue identification and timely field action
- Improved product quality enabled by early feedback to engineering/R&D
- Increased commitment to customer service with higher speed-to-resolution
Early Warning - Safety and Quality

Significant reduction time to finding potential safety issues from 100 days to a few days.
Safety/Quality Analytics Solution and Operating Model

**Issue Identification**
Rapid identification of emerging safety issues in Social and NHSTA data using Natural Language Processing capabilities of Watson and Social Analytics capabilities of IBM SMA.

**Visualization, Trends Analysis and Feedback Loop**
Integration with engineering platforms like Siemens TeamCenter and feedback loop into product development.

**Manage Issues, Automate and Deliver Actionable Insights**
Safety issue management using IBM Case Manager, automate business rules using ODM to deliver insights across business units.

**Predicting using Social Media and NHTSA Data**
Correlation analysis of regulatory data and customer complaints in social media to forecast emerging safety issues using SPSS advanced analytics models.

**Data Platform and Governance**
Enable a Safety analytics data lake and repository using IBM BigInsights supported by Data Governance to explore and discover safety issues.
Global automaker maximizes insights from multiple customer and vehicle data sources to develop world-class safety capabilities

96% decrease
in the time needed to analyze data and gain safety insights

Millions in savings
in recall costs by early and accurate identification of potential safety issues.

Compliance with regulations
set by the regulatory agencies through speedy action and effective communication.

Solution Components
• IBM Global Business Services®
• IBM® Watson Explorer
• IBM Case Management for Investigations
• IBM InfoSphere® BigInsights™

Business challenge: This global automaker faced the daunting task of combing through multiple sources of customer and vehicle data to identify and resolve safety issues rapidly and effectively, before they can have catastrophic effects. The safety business processes operated in a siloed manner and the analytics and search tools had limited capabilities preventing the safety experts from discovering what didn’t already know.

The smarter solution: The automaker now uses IBM Big Data & Analytics solutions that apply natural language processing (NLP) to analyze a vast volume and variety of structured and unstructured data. Using Watson Explorer, the safety team is able to see patterns and correlations between safety issues and their root causes that traditional analysis software misses, allowing the automaker to quickly identify and rectify problems before they can have major consequences.

IBM Strategy and Analytics team developed a safety transformation strategy and roadmap that is helping the automaker enable industry-leading safety organization and capabilities.
Q&A
Backup Slides
Watson Procurement Intelligence

Oracle SaaS Cloud

Supplier Registration ▶ Supplier Qualification ▶ Supplier Evaluation ▶ Supplier Development

- RFx
- Bid Collection
- Award Contract

- New Supplier registration information
- Documents uploaded by supplier
- Price
- Delivery information
- Quality criteria
- Supplier Capacity

Cognitive Analytics

- Supplier eligibility for RFQ response
- Supplier evaluation and Benchmarking

Validate company information
Check company website for authenticity
Customer Feedback on Supplier
Past Environmental and Labor Records, Any Lawsuits, etc

Texts: documents, emails, logs, survey results...
Website content
Social Media content
IBM Blue Mine
Industry Journals

Watson Analytics Dashboard displaying Supplier ranks and benchmarking vs. peers