Travel & Transport Solutions Overview

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Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Oracle Powers Travel and Transportation Industries

Logistics Service Providers

Hospitality

Ports & Shipping

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TRAVEL AND TRANSPORTATION

Aviation

Rail

- *20 of the Top 20 Airlines*
- *17 of the Top 20 Hotels*
- *20 of the Top 20 Third Party Logistics Providers*
- *8 of the Top 10 Ports*

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Oracle in Travel & Transportation Industries

Airlines	Airports	Ports	LSPs	Shipping Lines	Rail / Metro	Hospitality
QANTAS	Amsterdam Airport Schiphol	PSA The World's Port of Call	TOLL	MAERSK LINE	Network Rail	Marriott
KOREAN AIR	B·A·A	HPH	exel	CMA CGM The French Line	BNSF RAILWAY	starwood Hotels and Resorts
virgin atlantic	YVR	DP WORLD	DHL	APL Moving Business Forward / NOL	CSX CORPORATION	POSADAS
Emirates	Thailand Airports Authority of Thailand	PTP Port of Tanjung Pelepas RELIABLE · EFFICIENT · ADVANCED	SCHNEIDER NATIONAL	HANJIN SHIPPING	地鐵公司 MTR Corporation	Hilton
AIR CHINA 中国国际航空公司	Sydney Airport	THE PORT OF LOS ANGELES	BAX GLOBAL	MOL Mitsui O.S.K. Lines	metrorail	TAJ Hotels Resorts and Palaces
BRITISH AIRWAYS	HONG KONG INTERNATIONAL AIRPORT	ect Europe Container Terminals	APL Logistics 志勤美集科技物流 APL-JHIQH TECHNOLOGY LOGISTICS	CSAV	eurostar	HYATT
SOUTHWEST AIRLINES	IIAC Incheon International Airport	PORT OF OAKLAND	misc INTEGRATED LOGISTICS	Finnlines	Heathrow Express Heathrow express	GOLDEN NUGGET
American Airlines	Chengdu SICHUAN PROVINCE AIRPORT GROUP CO.,LTD.	شركة أبوظبي للموانئ ABU DHABI PORTS COMPANY	KUEHNE+NAGEL	SinoTrans SINOTRANS 中国外运	SNCF	RoyalCaribbean INTERNATIONAL

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Agenda

- Complete CX for Airlines
- Aircraft Data management
- Modern Maintenance Repair & Overhaul
- Sales Ratings and Operations
- Ports & Terminal Management

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Travel & Transportation Industry Solutions Managers

Vijay Anand

Senior Director
Global Lead, Travel & Transportation

Michael Parsons

Industry Solutions Director
Global Aviation MRO

Poh Yuen Kam

Industry Solutions Director
Global Ports, Shipping & Logistics

Siang Kiang Loh

Industry Solutions Director
Global Freight & Logistics

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Complete CX for Airlines: Personalized Passenger Experience

Slippers!

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Airlines Can't Afford to Lose Revenue...

	$225.58	$219.93	$5.65
	Ancillary $13.93		
	Air fare $180.96	Costs $219.93	
	Cargo & other $30.69		
	Revenues	**Costs**	**Net profit**

Source: IATA Financial Forecast March 2014

23%

Average potential annual revenue lost – *as a result of not offering a positive, consistent, and brand-relevant customer experience*

Source: Oracle Travel CX Survey

BIG DATA SURVEY: Airline Industry Results

How would you rate your ability to glean intelligence from customer information?

3% We have a single 360-degree view of each customer

53% We have multiple views of each customer and can piece them together effectively

20% We have multiple, but conflicting, views of each customer

10% We have only a partial view of each customer and lack insight into many of their interactions with us

7% We have a very narrow or non-existent view of the individual customer

7% Unsure

Where does your organization face the biggest challenges?*

37% Consolidating customer information spread across multiple data repositories

37% Leveraging customer information to create tailored new offers across channels and customer touch points

33% Drawing insights from passenger data residing in legacy reservation systems

30% Drawing insights from customer interactions using mobile applications

30% Personalizing the customer experience across channels

*Respondents asked to select the top three

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3%

Of airlines have a single 360 degree view of each customer

Airlines Top Priority

87%

Improving The Customer Experience

Source: Airline Information Survey 2011

Challenges

- **Multiple Channels For Processing Passenger Data**
- **Multiple Internal Repositories For Passenger Data**
- **Historical Data From Legacy Systems That Need to Be Modernized or Retired**

Oracle Customer Experience Framework For Airlines

Social · Mobile · Online · Travel Agencies · Call Center · Reservations

SOCIAL → Passenger Engagement ← **INSIGHT**

SOCIAL → Passenger Lifecycle Management ← **INSIGHT**

SOCIAL → Passenger Data Management ← **INSIGHT**

Airline CX Architecture

Social Mobile Online Travel Agencies Call Center Reservations

Customer Life Cycle

| Customer Engagement | Shopping Experience | Booking Experience | Pre-flight Experience | In-Flight Experience | Service Experience | Search Experience | Social Experience | Mobile Experience |

Customer Lifecycle Management

| Marketing | Sales | Service | Call Center | Loyalty Management | Loyalty Analytics |

SOA/ESB/Middleware

Passenger Data Management

Customer Data Management

Oracle Big Data Appliance

Oracle Linux 5.8 with Unbreakable Enterprise Kernel
Oracle Hotspot Java Virtual Machine
Cloudera's Distribution including Apache Hadoop 4
Oracle R Distribution
Oracle NoSQL Database Community Edition
Oracle Big Data Appliance Enterprise Manager Plug-I

Oracle Xadata

Oracle Airline Data Model
Historical Enterprise DW and Pre-built Analytics
Operational Data Store on Exadata

Customer Hub

GDS

PSS

Loyalty

Unstructured Data

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The Oracle Airline Data Model: The Foundation For CX

Oracle Airline Data Model

Foundation Layer → **Analytic Layer** → **Presentation Layer**

- Industry-standard compliant based Enterprise-wide Data Model
  - Over 700+ tables and 11500+ columns
  - Over 250+ industry measures and KPIs
- Contains Logical and Physical Data Models Third Normal Atomic, Dimensional Schema
- Industry specific Airlines Measures and KPI
- Pre-built OLAP cubes, Mining Models & Reports
- Automatic Data Movement Among Layers
- Extensive business intelligence metadata
- Easily extensible and customizable
- Usable within any GDS, GCS Applications
- Central repository for atomic level data
- Complete metadata (end-to-end)
- Rapid implementation

The Oracle Airline Data Model: The Foundation For CX

Oracle Airline Data Model

Foundation Layer → **Analytic Layer** → **Presentation Layer**

Analytic Workspace and Cubes

Star Schemes, Summary Tables, Materialized Views

Derived Tables

Passenger Data Management, Revenue, Cost & Route Profitability

Booking Check-in PNR Ticket Coupon Traffic Flight Segment PAX DOCO/CA/CS Call Center Loyalty Calendar Carrier Revenue

Personalize the Passenger Experience

- Personalize and differentiate the passenger experience by effective customer engagement and fulfillment
- Deliver 1-1 personalized service targeting the right products and services to the right customer at the right time

Pre-flight:
Marketing and Service Experience

Pre-flight:
Service and Mobile Experience

In-flight:
Service Experience

Shop/Buy:
Sales, Service, Search, Marketing and Social Experience

Post-flight:
Service and Social Experience

Michelle: 39
frequent traveler
brilliant accountant
attentive mother

Solution Architecture Overview

Key Features

- Personalize and differentiate the passenger experience by effective customer engagement and fulfillment

- Deliver 1-1 personalized service targeting the right products and services to the right customer at the right time

5 Use Cases that showcase:
- 5 Oracle Products & Cloud Services

E-Commerce Portal for Customers and also used by Employees
ATG Web Commerce

Mobile experience to passengers on the move
Oracle ADF

Social media to monitor users feedback on Airlines Social Media Portal
Facebook

Manage loyalty programs and promotions and acts as a customer hub for the solution
Siebel (Loyalty)

Connect to social media to interact with customers and a platform to analyze sentiment analysis on social media sites
Social Engagement and Monitoring

Offering real time relevant loyalty products and holiday destinations
Real-Time Decisions

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Solution & Product Highlights

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1 **Passenger Data Management**

Know and own all your customers

2 **Personalize Passenger Experience**

Focus on all passengers, not just the FFPs

3 **Proactive & Real Time Interaction**

Leverage mobile solutions. over 70% of the passengers are smart phone users

4 **Passenger Engagement**

Get the customers to engage the brand across channels

Airline Data Management

Information to Insight

The Aviation Data Challenges

Connected

Complex

Cognitive

- Sensors
- RFID / Wireless
- Automated

- Statistics
- Visualization
- Analytics

- Predictions
- Transformation
- Elaboration

Harness the Data to Drive Improvement

$1,200 Average Cost Of Maintenance Per Flight Hour

50 million Annual Flying Hours

$60 Billion

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Harness the Data to Drive Improvement

1% Improvement
in Maintenance Efficiency

Cost Saving of
$60 Million

Improving Operational Insight to Deal with Disruptions

- Adopt a proactive approach to ground time – complete awareness of aircraft status, maintenance requirements, defects, logistics and operational capabilities

- Fault First - minimize downtime by beginning before the aircraft arrives

- Combining aircraft systems data with unstructured data such as pilot reports, crew reports & passenger feedback

- Need to make more real time decisions with fewer engineers, ensure effective collaboration

Improving Maintenance Effectiveness

- The ability to modify aircraft maintenance check times and content, based on actual performance data

- Manage data to substantiate removals and component life / hard times extension – use performance trending as removal trigger

- Technician and Operations interaction and ability to diagnose and rapidly dispatch an aircraft

- Adopting a different maintenance approach "Predict and Prevent" rather "Find and Fix"

Why Aren't These Challenges Being Met?

- Data capture and analysis often manual - islands of information

- Lack of visibility across operational, technical and logistics data to make "right-time" operational, tactical and strategic decisions

- Disconnected systems supporting siloed asset team members

- Limited team collaboration

Capture

"Total asset awareness"

Analyze

"Right-time analysis and decision-making"

Execute

"Timely execution"

Maintenance & Engineering

Operations

Inventory & Logistics

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Benefits of Integrated Aircraft Data Management

Transforms data into insightful, actionable information

Supports cost effective maintenance assessment and execution

Aligns Engineering and Maintenance with Operations to support on time performance & reduce operational interruptions

Enables assessment of performance and supports identification of improvement opportunities

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A Practical Approach

Discover insights not visible through traditional business intelligence approaches

Proper Input	Practical Outputs	Real Results

Proper Input:

10110010
01011001
11001011

Sensor Data

Engineering Data

Operations Data

Performance Data

Asset Data

Maintenance Data

Practical Outputs:

- Actionable Insight into Operational Systems
- Calculations/Algorithms for Ad Hoc Analysis
- KPI Dashboards with Drill Down Capability
- Reports

Sample Outputs
- On Time Performance
- First Time Fix %
- Average MEL Clearance time
- Value of Loans & Borrows
- Maintenance Priorities
- Spares & Line Capabilities

Real Results:

REDUCED Maintenance & Inspection Costs

INCREASED Collaboration between M&E and Operations

REDUCED Aircraft disruptions and down time

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Capturing the Necessary Information

The Oracle Aircraft Data Management Solution will leverage the existing data acquisition instrumentation layer & industry specific data model

Sensor — FDAU
Sensor — FDAU

CFR / ACARS/ CMS/ QARS

Data Acquisition System

LM MRO OPS
INV AHM
FIN

Fault Data → Aggregator

Protocol

Operational & Historical

Operations & Maintenance Data

Oracle Aircraft Data Management Solution

FDAU = Flight Data Acquisition Unit
QARS = Quick Access Recorders
CFR = Current Flight Report
CMS= Central Maintenance System,
ACARS = Aircraft Communications Addressing and Reporting System

AIRCRAFT

Automatically Sent Reports

DMU reports
- Aircraft Cruise Performance Report
- Engine Trim Balance
- Engine Start Report
- Engine Divergence Report
- Engine Gas Path Advisory Report
- Engine On Request Report
- Engine Mechanical Advisory Report
- Engine Run up Report
- Engine Take-Off Report
- APU Shutdown Report
- Engine Cruise Report
- APU Main Engine Start
- APU idle Report
- Hard Landing/Structural Load Report
- Environmental Control System Report
- Ram Air Turbine Test Report
- System conf report (P/N, Hw/Sw…)

CMS/CFDS reports
- Post Flight Report (PFR)
- Current Flight Report (CFR)
- Real Time Failure messages
- BITE report (e.g. Trouble shooting data)
- Avionics Configuration Reports
- Servicing Report
- ECAM warnings
- Class 3 reports

DMU = Data Maintenance Unit
CMS= Central Maintenance System
CFDS = Centralized Fault Data System

Manually Sent Reports

Maintenance Telex:
Free text

Speeds / temperatures
Engines data
Oil data

Compass error report:
Compass heading
ADIRU heading
Errors

Snag report:
Technical malfunction

Diversion report

- MEL Advisory
- Specific data request
- Decision making
- Help to pilots

Maintenance Department

Airline Applications

Unscheduled maintenance Preparation

Monitoring
Flight crew monitoring
APU health monitoring
Aircraft Performing Monitoring
Engine condition monitoring:
Engine Trend Monitoring
Engine Exceedance Monitoring

Recording / Statistics
Data recording
Maintenance Log History
Special investigation
Trouble shooting

Hard Landing Detection

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Across the Enterprise

Oracle Airline Data Model

Analytic Workspace and Cubes

Star Schemes, Summary Tables, Materialized Views

Derived Tables

Foundation Layer

Analytic Layer

Presentation Layer

Passenger Data Management & Revenue, Cost, Route Profitability

Booking

Check-in

PNR

Coupon

Ticket

Traffic

Flight

Segment

PAX DOCO/ CA/CS

Call Center

Loyalty

Calendar

Carrier

Revenue

Maintenance & Operations

Modern MRO

MRO Business Challenges

- Next Generation e-enabled Aircraft

- Improve Maintenance Planning Efficiency

- Improving Supply Chain Forecasting & Management

- Continued Focus On Costs – Material / Labour

- Legacy System Limitations

- Mobility / e-signatures

"How can my MRO organization continue to effectively support my mixed fleet of aircraft. My Next Gen Aircraft should be supported by Next Generation Maintenance practices."

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MRO Focus Areas

IT Systems & Processes Airlines Want Upgraded

Category	Percentage
Document Management	65%
Inducting e-enabled Aircraft	55%
E-Signatures	55%
Supply Chain Management	55%
Maintenance Planning	55%
Maintenance Execution	50%
Config Control: Software	45%
Going Mobile	40%
Supply Chain Execution	40%
Config Control: Hardware	25%
Inducting Other Aircraft	20%

Source: Aviation Week

"A well defined information systems architecture is the foundation for an e-Enabled airline"

Robert Rencher, Senior Systems engineer, Associate technical Fellow Boeing - Integrated IT for improved Airplane Support

Oracles Modern MRO Architecture

External Interaction

User Interaction and Collaboration

eCommerce

| Portals/ Self-Service | Mobile Apps | Social Media | Email | Collaboration |

Remote Management Services

Digital Configuration

| Remote Data Capture | Monitoring and Alerting | Diagnostics/ Prognostics | Update |

BI/Analytics

| Reporting and Analytics | Data Mining |

Enterprise Business Processes

Planning & Forecasting → Engineering → MRO → Logistics → Analysis

Performance Management

Functional Matrix

Engineering			Maintenance				Logistics		
Compliance	Planning & Scheduling	Reliability	Airframe	Engine	Component	Customers	Optimisation	Material Management	Forecasting
AD / SB / EO / MEL / CDL / Deferrals	Maintenance Events	Warranties	Line / Base Maintenance	Shop Maintenance	Shop Maintenance	Contracts & Sales Order	Inventory Location	Procurement	Demand Planning
Maintenance Program Mgt	Modifications	Remote Monitoring Integration	Outside processing	Outside processing	Outside processing	Billing & Payments	Install Base and Knowledge Base	Inventory Management	Supply Planning
Technical Records	Fleet Forecasts	Trend Analysis	Production Planning & Control	Production Planning & Control	Production Planning & Control	Maintenance Cost Tracking	Service Part Planning	Supply Management	Non Routines
Configuration Control	Resources & Tools	Non Routine Profiles	Work Execution	Work Execution	Work Execution	Exception Handling	Repair Costing/ Billing	Supplier / Vendor Mgt.	Costs

Data Model

Flight Ops	Customers	Sales Orders	ACARS	Partners	Service Requests	HR	Quotes	Flight Planning	Performance Indicators
Service BOM	Locations	Contracts	Asset/ Location	FDM	Work Orders	Pricing	Maintenance	Resources	Asset Configuration

Infrastructure & Integration Management

Information Management

| Content Management | Enterprise Data Warehouse |
| Data Integration | |

SOA and Event Management

Enterprise Service Bus

| Business Process Management/ | Applications Development | Mobile Development |
| Complex Event Processing | | |

Servers/Storage/Network

| Database/App Server | Network |
| HW Servers | Storage |

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Supporting Modern MRO Processes

Information Insight Reliability, Deferrals etc.

In Stores

In The Air

Maximize Asset Availability With Modern MRO

Information Any Time Anywhere

Electronic & Wireless Integration

Under Repair

Awaiting Repair

Simulations & Planning Automation

Visibility, Compliance, and Control of Aircraft Service and Maintenance with Oracle

Oracle provides a complete, open, integrated solution to meet the complex needs of aviation maintenance service providers. Oracle's MRO Industry Solution will enable maintenance service providers to: (1) effectively manage maintenance programs, configurations, planning, and execution; (2) optimize planning and scheduling, inventory, purchasing, settlement, and supplier performance; (3) respond rapidly to customer maintenance requirements, facilitate collaboration, and provide self-service support; (4) employ lean practices for measurement and continuous improvement of maintenance operations.

SALES AND MARKETING

CUSTOMERS

CUSTOMER SERVICE AND SUPPORT CENTER

HEAVY MAINTENANCE

STANDARDS AND COMPLIANCE

MATERIAL AND REPAIR MANAGEMENT

PLANNING AND SCHEDULING

LINE MAINTENANCE

FINANCE
Global planning and budgeting, financial consolidation, receivables and payables processing, and financial reporting with strong governance, risk management, and financial controls.

HUMAN CAPITAL MANAGEMENT
Manage and optimize the workforce throughout the employment lifecycle through automated, industry-leading practices for human capital management.

ENTERPRISE PERFORMANCE MANAGEMENT
Compute and monitor key performance. Use sophisticated analytical tools to get a 360-degree customer view, operating metrics, and financial metrics to support lean MRO processes, continuous improvement, and long-term planning.

❶ **CUSTOMERS**
Enable complete maintenance and engineering support for internal and external customers. Meet the most stringent requirements for reports, status updates, service history, earned value, service levels, and maintenance requirements.

❷ **SALES AND MARKETING**
Increase brand awareness, and, up-sell and cross-sell existing customers and prospects. Manage accounts, respond to bids and contracts, and manage pricing for service lines. Track customer value.

❸ **STANDARDS AND COMPLIANCE**
Implement corporate risk management, segregation of duties, conflict monitoring and analysis, and policy compliance monitoring. Maintain airworthiness policies and procedures for complying with all regulations pertaining to operation and maintenance of aircraft, components, and engines.

❹ **PLANNING AND SCHEDULING**
Ensure complete and accurate planning, scheduling for aircraft, engines, components, and resources to ensure their efficient use and compliance with all regulations according to the maintenance plan.

❺ **LINE MAINTENANCE**
Enable line maintenance to maintain the aircraft in a scheduled or unscheduled environment. Provide the capability to maintain the aircraft in a safe and reliable manner while keeping the schedule integrity to meet profitability goals, customer expectations and enhance loyalty.

❻ **HEAVY MAINTENANCE**
Enable heavy or base maintenance for overhauling the aircraft during scheduled maintenance as required by the airline maintenance program. Enable for-profit maintenance.

❼ **MATERIAL AND REPAIR MANAGEMENT**
Optimize inventory availability to minimize cost through effective and compliant planning, procurement, repair and logistics management of spares and materials.

❽ **CUSTOMER SERVICE AND SUPPORT CENTER**
Offer customers self-support, access to work-in-progress updates, workflow approvals, and the latest estimate to complete status. Enable control of access and data security.

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Glasses Technology

Vendor	WESTUNITIS	Google
Product Name	Inforod	Glass
Prizm size	3.8mm	10.0mm
Outdoor use	:-) good	:-(not good
Mount	:-) good	:-(not good
Touch Gesture	:-) good	:-) good

Modern MRO

出荷検査　18
ヨシ
問題あり
修正
作業ナビ
次/戻
未入力へ
検査結果
作業中断
認識音量
x2
status:
st:

ファンブレードの確認
傷がないことを確認　ok

Demo application developed.

Smart Glass +AR [Integration]

Collaborate with

Technical Capabilities

Oracle cMRO [Core APPS]

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Information search

Modern MRO Benefits

Support the next generation of e-enabled aircraft, with a digital maintenance solution.

Information integration reduces the time and effort required to support decision making

Provides an efficient and automated method for creating, evaluating and updating maintenance work

Improves user engagement and efficiency reducing amount of time spent in maintenance

Sales, Rating and Operations (SRO)

Logistics Industry at a glance

Logistics Industry is worth
$4T

10% of global GDP

Logistics industry grows **3x** faster than GDP

5% of revenues is what Logistics companies spend on IT

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Mega Drivers in logistics

Cities and Population

1800 - 3 in 100 live in cities

2030 – 3 in 5 will live in cities

Consumers, Mobile and Devices

2010 - $34T GDP 600 cities. 12.5B global devices

2025 – $65T GDP 600 cities. 50 B global devices

Cities and Consumers

Export and Import

Distribution

350M New City Dwellers

Top 10 = 7%

Consolidation

Logistics 18% GDP

China

185M Aged

Life Sciences

Cold Chains

74% 15-64 yrs old

Retail lifestyle

E-commerce

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Top 3 Demands from Shippers

- Seamless <u>Customer Experience</u>

- <u>End-to-End </u>Process Integration

- <u>Proactive</u> Sharing

Gartner

Implications for Logistics Companies

Customer Centricity

Improve customer experience through visibility and control

Speed to Market

Quickly bring new, innovative services to market

Operational Efficiencies

Improve end-to-end productivity, optimally maintain and deploy assets

Logistics Solution – Sales, Ratings & Operations

Top 3 Shipper Demands

- Seamless Customer Experience
- End-to-End Process Integration
- Proactive Sharing

Gartner

Most Innovative Supply Chain Solution Award

Supply Chain Asia 2013
Nov 7, Hong Kong

Sales	Ratings	Operations
(1) Automate and Integrate Quoting and Order Management	(2) Optimize Planning & Execution	(3) Automate Monitoring & Reporting

ORACLE SIEBEL CUSTOMER RELATIONSHIP MANAGEMENT

ORACLE Transportation Management

ORACLE BUSINESS INTELLIGENCE

ORACLE Real Time Scheduler

ORACLE FUSION MIDDLEWARE

ORACLE Exa-Technologies

ORACLE DATABASE

On Premise Option

ORACLE SALES CLOUD

ORACLE CONFIGURE, PRICE, AND QUOTE CLOUD

ORACLE Transportation Management

Cloud Option

ORACLE

Ports & Terminal Management

Oracle Is A Leader In Ports Industry

GLOBAL PORT OPERATORS 3 of Top 5	ASEAN 3 of Top 5	GREATER CHINA 3 of Top 5	KOREA 3 of Top 5	TOP REGIONAL PORTS Top in Region
PSA Largest Port Operator	**PSA SINGAPORE** 2nd Largest Port Globally	**SHANGHAI PORT** Largest Port Globally	**BUSAN** 5th Largest Port Globally	**EUROPEAN CONTAINER TERMINAL** Largest in Europe
HUTCHISON 2nd largest Port Operator	**PORT OF TANJUNG PELEPAS** Largest in Malaysia	**HONG KONG** 3rd Largest Port Globally	**GWANGYANG** 2nd Largest in Korea	**DUBAI PORT** Largest in Middle East
DubaiPort World 4th Largest Port Operator	**LAEMCHABANG** Largest in Thailand	**SHENZHEN** 4th Largest Port Globally	**INCHEON** 3rd Largest in Korea	**LOS ANGELES PORT** Largest in US

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Ports Terminal Management Solution

ERP:	Financials, EPM, HCM, SCM, eAM, Analytics, OTM, Projects, OPA
GBU:	Billing & Revenue Mgmt, Primavera
Middleware:	SOA, Golden Gate, IDM, Weblogic, Webcenter
Database:	DB, RAC, OBIEE, DWH
Hardware:	Sun, Exadata, Exalytics, Exalogic

Installed base (Selected Examples)

Ports And Freight Logistics Trends

Rising Cost
Pressurizing supply chain
Cost

Local Partnership
Local dynamics & regulations
Markets

Ocean Shipping
Will continue in the long term
Mode

Increasing Awareness
Manage supply chain risks
Network

Technology
For efficiency, Customer Experience
Operations

Manpower Shortage
Automation, awareness
People

Growing Demand
Increase complexity
Customer

Global Operations
Increase complexity
Globalization

ORACLE®

Ports Strategies

Strategic Positioning

Horizontal & Vertical Growth

- Globalization
- Timely capacity expansion
- Pull out strategy
- Joint Ventures

Strict Cost Management

- Controls over expenses
- Cost effective procurement
- Overhead reduction
- Outsourcing
- Process standardization & consolidation

Resource Optimization

- Centralized functions
- Process optimization
- Equipment optimization
- Effective equipment maintenance
- Repeatable Solutions

Automation of Process & Equipment

- Operations planning
- Operations execution
- Gate automation
- Cranes automation
- Truck automation
- Billing
- Documentation

Customer Entrenchment

- Dedicated berth
- Long term agreement
- Dialogue
- Value added IT services

Some Regional Port Projects

Growth Beyond Ports

☐ Ports in certain regions, eg MEA, GC are venturing into logistics, trucking, freight forwarding and freight rail business to ride on government initiatives to develop logistics hubs

☐ Some ports have B2B solutions (ie Port Community System) for manufacturers to select door-to-door service providers and ship their cargo through their ports

☐ Offering value added IT solutions to shipping line customers to entrench them

Implications

➤ Port companies need to build new expertise, have new solutions covering logistics, warehousing, transportation management and enterprise solutions

➤ Need to have strategic Port Community System beyond basic order management and documentation capabilities

➤ Transformational change that will enable company to venture into other businesses

Some Regional Port Projects

Port Investment Priorities

- ❑ Optimizing resources and cost effectiveness to improve profit margin and operations efficiency

- ❑ Streamline and standardize processes and IT solutions to lower TCO

- ❑ Better analytics to for decision making

- ❑ Port community system to improve maritime processes

- ❑ Full automation of cranes and use of AGVs

Implications

- ➢ Leverage on port automation and optimization algorithms

- ➢ Leverage on TOS, PCS and ERP best practices and capabilities

- ➢ Enterprise unified billing platform

- ➢ Enterprise terminal analytics covering operations, back-office and engineering processes

Ports Terminal Management Solution
Covering All Types Of Terminals

Terminal Type

Break bulk

RoRo

Container

Oil & Mining

ORACLE®

Transform Your Port Operations and Back Office with the Ports Terminal Management Solution from Oracle

Only Oracle offers a comprehensive ports terminal management solution that provides interoperability, scalability, and high performance. Oracle's hardware and software solutions are engineered to work together to provide exceptional performance and value to meet the current and future information technology needs of your ports. Oracle's solutions help ports deliver reliable services to their customers across the container/cargo lifecycle, maximize asset availability, and increase front- and back-office efficiency.

CUSTOMERS

SHIPPING

RAIL

TRUCKING

RETAIL

SHIPPERS

MANUFACTURING

CONTRACTS

AGREEMENT

2

CONTRACT AND ACCOUNT MGMT

NEGOTIATION

SECURITY MONITORING INSPECTION DOCUMENTATION

FINANCE

$

SETTLEMENT

6

BILLING

ACCOUNTS RECEIVABLE

SECURITY MONITORING INSPECTION REPORTS

REGULATORS

VESSEL / CARGO DETAILS

CUSTOMER INTERFACES

SERVICE APPLICATION

3

SERVICE APPROVALS

VESSEL / CARGO DETAILS

CONTRACT REVIEW AND APPROVAL

CONTROL ROOM

4   PLANNING

BERTH | VESSEL | YARD | GATE

5   OPERATIONS

REPORTS IN COMPLIANCE WITH STANDARDS

MONITOR ALL SHIP, YARD, AND GATE OPERATIONS

HEADQUARTERS

Inbound Outbound

1 TERMINAL PLANNING & DEVELOPMENT

BERTH

VESSEL

CONTROL ROOM

CARS

CONTAINERS

BULK

YARD

GATE

ENGINEERING & PLANNING

7

MAINTENANCE   PURCHASING (spare parts)

TERMINAL   BACK OFFICE

1 Terminal Planning and Development
Planning of terminal civil infrastructure, equipment, manpower, IT requirements, terminal, layout, and gate layout. Monitoring of infrastructure development and equipment acquisitions.

2 Contracts
Negotiation and capturing of shipping customer rates for all services. Monitoring of shipping customer business volume with committed throughput in contract.

3 Customer Interfaces
Manage submission of berth, vessel, container/cargo details, and service request through a Port Community System (part of the container/cargo system). Provide workflow and status on service bookings. Provide vessel operations and container/cargo status.

4 Planning
Provide graphical planning capabilities with optimization for optimal use of berths, yard spaces, cranes, trucks, and gate utilization. Subplanning modules are: Berth Planning, Ship Planning, Yard Planning, Operations Planning, and Gate Planning.

5 Operations
Execute and monitor the planned berthing of vessels, loading/ discharging of containers/cargo, yard operations, and gate operations.

6 Billing and Settlement
Process billing events created by the Operations modules, group billing events, and payee according to customer requirements, and finally pass invoice details to Accounts Receivable.

7 Maintenance and Engineering
Acquire, support, repair, and overhaul quay/wharf cranes, yard cranes, trucks, and other equipment including ground services vehicles, building, and terminal infrastructure. Record maintenance activities in compliance with regulatory standards. Plan equipment availability with Operations.

SUSTAINABILITY
Enable ports to monitor and manage advance environmental programs. Help ports to monitor energy usage, greenhouse gas emissions, and other environmental impacts.

FINANCE
Improve financial planning and budgeting, financial consolidation, receivables and payables processing, and financial reporting with strong governance, risk management, and financial controls.

HUMAN CAPITAL MANAGEMENT
Effectively recruit, develop, deploy, and manage talent across the enterprise using automated, industry-leading practices for human capital management. Support human capital management processes with a comprehensive recruit-to-hire toolset.

FACILITIES
Streamline and automate lease administration and space management, enabling you to manage your real estate portfolio efficiently.

ANALYTICS AND COMPLIANCE
Compute and monitor key performance indicators generated from transactional data. Use sophisticated tools to get a 360-degree customer view, operating, and financial metrics that drive improvement and compliance.

ORACLE

Ports Terminal Management Solution

| PORT CUSTOMERS AND SUPPLIERS | EMPLOYEES | GOVT AGENCIES | BANKS |

PORT COMMUNITY SYSTEM

ERP

- FINANCIALS MANAGEMENT
- HUMAN RESOURCE MANAGEMENT
- ASSET MAINTENANCE MANAGEMENT
- PROCUREMENT & INVENTORY MANAGEMENT
- CUSTOMERS & CONTRACTS MANAGEMENT
- PROJECTS MANAGEMENT

Financials Interface

HR Interface

Maintenance Interface

Customer Interface

TOS (Terminal Operating System)

- BERTH PLANNING / OPERATIONS
- VESSEL PLANNING / OPERATIONS
- YARD PLANNING / OPERATIONS
- RAIL PLANNING / OPERATIONS
- GATE PLANNING / OPERATIONS
- CFS PLANNING / OPERATIONS
- TERMINAL MONITORING

Real-time Centralized Billing & Revenue Management

TERMINAL ANALYTICS

ORACLE®

Terminal Analytics

Terminal Analytics

Terminal Analytics

Oracle Powers Travel and Transportation Industries

Logistics Service Providers

Hospitality

Ports & Shipping

ORACLE®

TRAVEL AND TRANSPORTATION

Aviation

Rail

- *20 of the Top 20 Airlines*
- *17 of the Top 20 Hotels*
- *20 of the Top 20 Third Party Logistics Providers*
- *8 of the Top 10 Ports*

ORACLE®

Hardware and Software
Engineered to Work Together

ORACLE®