Intelligent Transportation Systems
Industry Solutions for Seaports

Sub-topic – Cyber Security
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Safe Harbor Statement

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Program Agenda

- Oracle Overview
  - Oracle in Public Sector, Transportation, & Seaport Industries

- Business Intelligence – in general

- What Solutions Oracle Offers in the area of cyber security
  - Why Social Relationship Management (SRM) Matters
  - Apply Open Source Media to Cyber Intelligence
## Oracle Corporation

### Scale
- $38.8B in revenue on a trailing twelve-month basis *
- 400,000 customers in 145 countries
- $34B in R&D since 2004
- $60B on more than 100 acquisitions
- More than 25,000 partners
- More than 120,000 employees
- 18,000 customer support specialists, speaking 29 languages
- 17,000 implementation consultants
- 2.2 million students supported annually

### Innovation
- #1 in 50 product/industry categories
- #2 software company in the world
- #2 cloud company in the world
- More than 17,000 patents worldwide
- 36,000 developers and engineers
- 15 million developers in Oracle online communities
- 900 independent Oracle user groups with 500,000 members

*GAAP revenue reported in USD as of November 30, 2014*
Investment in Innovation and Integration

MORE THAN $34B IN R&D SINCE 2004

Figures in GAAP

FY04: $1.3B
FY05: $1.5B
FY06: $1.9B
FY07: $2.1B
FY08: $2.6B
FY09: $2.6B
FY10: $3.1B
FY11: $4.5B
FY12: $4.5B
FY13: $4.9B
FY14: $5.2B
Hardware

Together

Software
ENGINEERED TO WORK TOGETHER
Oracle Corporation Today

TECHNOLOGY
- Application Server
- Application Services Governance
- Business Process Management
- Database
- Database on Linux
- Database on Unix
- Database Management Tools
- Data Warehouse
- Embedded Database
- Identity and Access Management
- Middleware
- Service-Oriented Architecture

APPLICATIONS
- Business Analytics
- Enterprise Performance Management
- Human Capital Management
- Marketing Automation
- Project Portfolio Management
- Supply Chain Execution
- Supply Chain Planning
- Talent Management
- Talent Recruiting
- Transportation Management

INDUSTRIES
- Banking
- Communications
- Construction
- Education
- Financial Services
- Healthcare
- Insurance
- Life Sciences
- Manufacturing
- Professional Services
- Public Sector
- Retail
- Transportation
- Wholesale
Oracle Travel and Transportation Industry
Commercial & Public Sector Definitions

- Aviation
  - Airlines
  - Airports
  - Air Cargo

- Ports & Shipping
  - Ocean Carriers
  - Seaports
  - Shipyards

- Roadways
  - Buses
  - Logistics
  - Postal
  - Trucking/Distribution
  - DOTs/DMVs
  - Tolls, Parking & Photo Enforcem’t

- Rail
  - Freight
  - Railroads
  - Inter-City Passenger
  - Railways
  - Mass Transit
  - Light Rail

- Hospitality
  - Travel Agencies
  - Tourism
  - Hotels/Casinos
  - Econ. Dev.
  - Metro Planning
  - Car Rentals
  - Cruise Lines

Oracle is the leading provider of the enterprise business software and infrastructure technologies that power the Travel and Transportation Industry.
Sample Seaports Clients from hundreds world wide

- Hong Kong, Yantian
- Laem Chabang
- Saigon, HPH
- PSA, Jurong Port, PTP
- Busan Port, Incheon Port
- JIKT
- Alexandria, Sokna
- Karachi
- Sri Lanka SAGT
- Tanzania
- Rotterdam, Antwerp
- HPH UK Ports
- DP World
- Mumbai
- Genoa, Voltr
- Sines
- Tercat Genoa, Voltr
- Tercat
- Bangalore
- Mumbai
- NZ
- Boston
- NY
- Miami
- Miami
- Houston
- Veracruz
- Panama
- Vancouver
- Seattle, Portland
- Oakland, SF
- Los Angeles
- Ensenada
- Corpus Christi
- Alabama
- South Carolina
- Buenos Aires
### Oracle’s ITS Footprint -- Functional View with Analytics

*The LEADING INTEGRATED SOLUTION in the Industry*

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<td>Operate / Monitor / Control</td>
<td>Integration with Core Financials</td>
<td>Business Intelligence</td>
</tr>
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</table>
Business INTELLIGENCE
Starts with data collection, enterprise data architecture

- Customer Analytics
- Financial Analytics
- Procurement Analytics
- Incident Analytics
- Supply Chain Analytics
- Sustainability Analytics
- Industry Standard Analytics
- HCM Analytics

BI Tool
Warehouse Tool
Infrastructure Tool
Business Intelligence can be applied to Social Media

Oracle Can Help unravel the unstructured data

#1 online activity is Social
Your agency is the middle of the conversations …

in Open Source Media (e.g. Facebook, Twitter, Blogs, etc.)

- 42% of Facebook users have mentioned an organization in a status update ⋆
- 65% of organizations say that social media is a critical risk to their reputation ⋆⋆
- #1 online activity is social  •

Citizens Power and Choice

Government’s Power and Voice

Mass media Internet/1:1 Social/Mobile
What is Social Relationship Management

Social Relationship Management (SRM) - the processes an organization & Institution uses to monitor, engage with, and activate the often large number of loose ties it maintains across open social networks.

SRM goals for Government include:
- Gain proactive intelligence of potential threats
- Build Mindshare, Visibility, Transparency and Trust = Brand Equity for Government entities,
- Increase Reach and Reduce time of Communication,
- Improve services to citizens,
- Communicate & Engage effectively with Youth
Cyber Intelligence

Information Security Is Becoming a Big Data Analytics Problem

“One of the primary drivers of security analytics will be the need to identify when an advanced targeted attack has bypassed traditional preventative security controls and has penetrated the organization.”

“Markets for security analytics platforms and for security patterns/algorithms providers will emerge”

“Enabling organizations to uncover previously unseen patterns and to develop sharper insights about their businesses and environments, including information security.”
Government as a Brand and Brand Management

- Understanding Citizen Sentiments, Trends
- Citizen Engagement
- Web
- Service / Policy Launch
- Digital Service Optimization
- Reputation & Visibility
- Data
- Public Relations
- Email
- Feedback
- Reduce communication cost and time

Citizen Service

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Social Media Is A Low Cost Channel To Hear/Reach Citizens And Potential Criminals

Examples of different program areas

- **CONSTITUENT SENTIMENT**
  - Detect trends through social media activities

- **KNOWLEDGE SHARING**
  - Increase transparency to citizens

- **EMERGENCY RESPONSE**
  - Respond to emergency situations

- **SERVICE DELIVERY**
  - Improve service and lower costs

- **REVENUE GENERATION**
  - Increase revenue through tourism/economic development

- **JUSTICE & PUBLIC SAFETY**
  - Enhance intelligence & Policing platforms
Apply Open Source Media to Cyber Intelligence
Global Cyber investment and expenditure

- 7% of every IT Budget across all Industries - Worldwide spending on security infrastructure, including software, services and network security appliances used to secure enterprise and consumer IT equipment.

- 2011 – 55 Billion

- 2012 – 60 Billion

- and to grow 10% per year that will reach $86 billion in 2016, according to new research from Gartner.
Cyber Intelligence

- Cyber **Defense** technologies protect specific threats, at a boundary to the organization

- Cyber **Intelligence** helps **identify** and defend against immediate attacks and prepare for future threats
  - Collect Information from across the organization
    - Security Logs, Access Logs, Network Information (DPI)
    - Analyze Patterns and Trends to Identify Current and Future Threats
  - Collection of External Sources of Information -- including info found in Open Source Media matched with “watch lists” or completely unstructured
  - International Collaboration and Disclosure
Cyber Intelligence Components
Oracle has tools to find information within the big data of social open source media

- **Exalytics**
  - **AutoVue**
  - **Endeca**
  - **Advance Analytics**
  - **OBIEE**
  - **SOA Suite**

- **Exadata**
  - **In-Database MapReduce**
  - **Oracle R Enterprise**
  - **In-Database Text Mining**
  - **In-Database Mining**
  - **In-Database Spatial**
  - **Semantic Analysis**

- **Oracle Data Integrator**
- **OEP & Coherence**

- **Hadoop**
  - **Oracle Loader for Hadoop**
  - **HDFS**
  - **NoSQL Database**

- **ETL**
- **Filter**
- **Index**
- **Classify**
- **Correlate**

- **Tasking and Coordination**
  - **Siebel / OPA**
  - **BPM**

- **Real-time & Batch Feeds**
- **OEP & Coherence**
- **Exalogic**

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Oracle Solution overview

– **Collection:**
  • Metadata and content extraction

– **Aggregation:**
  • Big Data Appliance – distributed file system
  • Recording & indexing
  • Real-time and batch analytics – *filtering*, aggregation & correlation
  • Situational Awareness
  • Investigation, Information discovery & analytics

– **Set-up/Detection:**
  • Customer algorithms & Definitions (e.g. Seaport call letters)
Intelligent Real Time Systems

Solutions

- Monitors Social Media to identify hot-spots
  - Uses Oracle Information Discovery
- Crime Prevention & Information Center (CPIC)
  - Correlate with police deployment
  - Initiate operational orders
  - Retrospectively identify potential witnesses

Chicago, USA
Filtering Words – used to yield info from social media raw data

Can you guess what these words mean in the criminal world?

– GAT
– Deuce Deuce
– S.O.S. (which most often is used as a distress signal)
– T.O.S. (which sometimes stands for seaport Terminal Operations Systems)
– B.O.S.
– Cheddar/Snaps
– 187
Filtering Words – used to yield info from social media raw data

- GAT = Gun
- Deuce Deuce = 22 caliber pistol
- S.O.S. = Shoot on sight
- T.O.S. = Terminate on sight
- B.O.S. = Beat on sight
- Cheddar/Snaps = Money
- 187 = California penal code for murder

=> There must be many other words for illegal shipments
Oracle Cyber Intelligence Solution Benefits

• Next generation of intelligence solutions built on technology available today
• Open, flexible, extensible solution based on intelligence cycle
• Processing of semi-structured & unstructured data
• Big data analysis & information discovery
• Ability to use information for multiple purposes
  – i.e. security AND citizen sentiment
ENGINEERED TO WORK TOGETHER