The Value of Data Quality Solutions

ABSTRACT

The Customer Data Integration program at National Instruments (NI) was launched in response to longstanding business issues resulting from duplicate and disparate customer data. This data comes into NI via various communication channels and business functions and is stored in various business applications. Couple NI's insufficient capability to search for, and identify customers with the variations that occur in names and addresses, NI saw a constant stream of duplicate customer records. To address these issues, NI purchased IBM's Initiate Master Data Service to implement a customer data integration hub. Source system customer records are loaded into the CDI hub in near real-time, utilizing SOA. Using the CDI hub's probabilistic matching algorithm, duplicate customers are identified and linked together (into a linkage set). In this presentation we will share how we established a game plan, methods we employed, some of our deliverables, the business impacts, and plans for the future.

BIOGRAPHY

Deepa Srinivasan
IT Applications Manager
National Instruments

Deepa Srinivasan is an IT Applications Manager responsible for a global team of programmer/analysts at National Instruments (NI). In her role as the program manager for the Customer Data program, Ms. Srinivasan worked closely with business and IT to deliver internal user and external customer facing solutions for NI. Continuing on the journey to improve customer insight for NI, she is currently managing a program to build out a customer product ownership platform and a customer intelligence hub. As an IT professional with 14 years of experience, she has diverse experience in building and growing distributed technical teams, project and program management, and providing architectural guidance for ERP and CRM solutions.

Christine McClary
Internal Consultant, Business Intelligence Group
National Instruments

Christine McClary has been with National Instruments since 2000 and is presently an internal consultant in the Business Intelligence group, specializing in data management. She has expertise in the areas of information requirements planning, master data management, customer data integration, data modeling, information quality improvement, and business metadata management. Christine has over 20 years of experience in information

systems development and implementation at high-tech companies such as NI, GMF Robotics, and Digital Equipment Corp and at food industry companies such as Ben & Jerry's Homemade Inc and Whole Foods Market.

CUSTOMER DATA INTEGRATION

NI's Journey to Improved Customer Insight

DeepaSrinivasan
Christine McClary
2011

Agenda

- Who is National Instruments (NI)?
- NI's Data Integrity Journey
- Customer Data Foundation
- Leveraging Customer Data across the business
- Building a Successful Customer Data Program
- Evolution of our Customer Data foundation

Investment Highlights

- **Leader in computer-based measurement and automation**
- **Long-term track record of growth and profitability**
- **$873M revenue in 2010**
- **More than 5,200 employees; operations in 40+ countries**
- **More than 30,000 companies**
- **No Industry >15% of Revenue**
- ***FORTUNE's* 100 Best Companies to Work For list for 12 consecutive years**
- **Cash and short-term investments of $351M at December 31, 2010**

Many different Applications

No Industry >15% of Revenue

Telecom

Automotive

Semiconductors

Electronics

Computers

ATE

Military/Aerospace

Advanced Research

Petrochemical

Food Processing

Textiles

Many different customers

More than 30,000 companies
>90% of Fortune 500 manufacturing companies

Our Application Footprint

Typically Buy vs. Build

Applications (best of breed & custom)

- Oracle ERP
- Oracle CRM
- IBM (Initiate)
- Eloqua
- Custom Applications on Web
- Data Warehouse

2 Major Data Centers

- Americas (US, Canada & Latin America)
- Europe (Euro & Japanese Data)
- Many smaller data centers (Asia)

The Data Integrity Journey: Before CDI

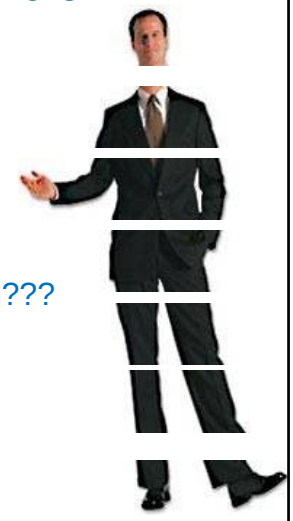
Low quality matching in Search Tools
- High Duplication Rate
- Internal Inefficiencies

Customer Dissatisfaction
- Potential delays in delivery of proper service
- Spamming
- Incorrect contracts & discounts
- Shipment to old address
- Unnecessary credit holds & Order Delays

Disorganized Sales Follow-up
- Searching for information
- Improper lead valuation

No Holistic view
- Inaccurate Web Self Service
- Privacy Policy Violations (Domestic & Int'l)
- Export non-compliance
- No Company hierarchy analysis and reporting

Who is
Joe Smith???



The CDI Goals

This is
Joe Smith!

Improve Customer Experience
- 360-degree view of WW prospects & customers
- Deliver on service entitlements
- Enable quality web self-service
- End privacy violations

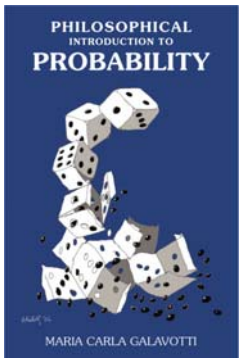
30% Increase in Operational Efficiencies
- Faster and more accurate customer searches
- Automated customer matching & lead processing
- Reduced duplicate rates

Provide Accurate Business Intelligence
- Company hierarchy reporting and analysis

Matching & Quality

Modifying Algorithms

Algorithm Definition → New data sources → As data evolves



How it's done

Determine sample size → Identify random sample → Examine false positives & negatives → Calculate rate of false positives & negatives

Quality Measures (Contact & Location)

Contact Data

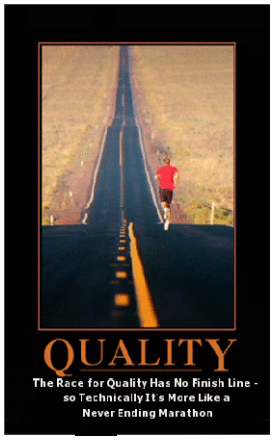
False Positives
- Minimum: 95%
- Target: 99%
- **Actual: 97%**

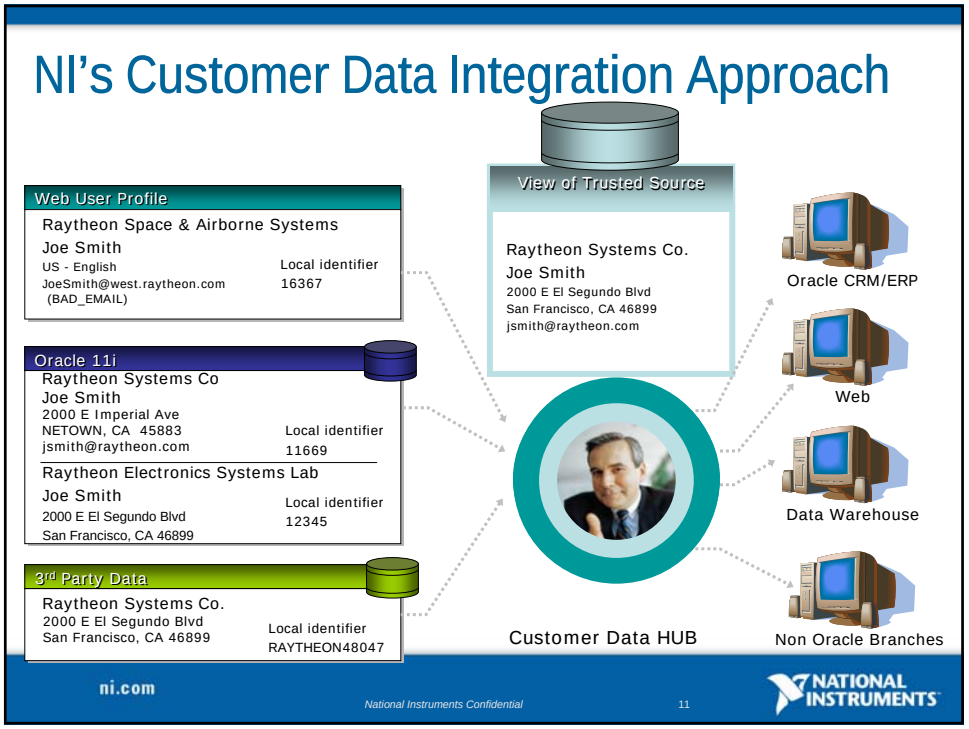
False Negatives
- Minimum: 89%
- Target: 95%
- **Actual: 98%**

Org Location

False Positives
- Minimum: 95%
- Target: 99%
- **Actual: 98%**

False Negatives
- Minimum: 89%
- Target: 95%
- **Actual: 92%**




NI's Customer Data Integration Approach
Web User Profile
Raytheon Space & Airborne Systems
Joe Smith
US - English
JoeSmith@west.raytheon.com
(BAD_EMAIL)
Local identifier
16367
Oracle 11i
Raytheon Systems Co
Joe Smith
2000 E Imperial Ave
NETOWN, CA 45883
jsmith@raytheon.com
Local identifier
11669
Raytheon Electronics Systems Lab
Joe Smith
2000 E El Segundo Blvd
San Francisco, CA 46899
Local identifier
12345
3rd Party Data
Raytheon Systems Co.
2000 E El Segundo Blvd
San Francisco, CA 46899
Local identifier
RAYTHEON48047
View of Trusted Source
Raytheon Systems Co.
Joe Smith
2000 E El Segundo Blvd
San Francisco, CA 46899
jsmith@raytheon.com
Customer Data HUB
Oracle CRM/ERP
Web
Data Warehouse
Non Oracle Branches
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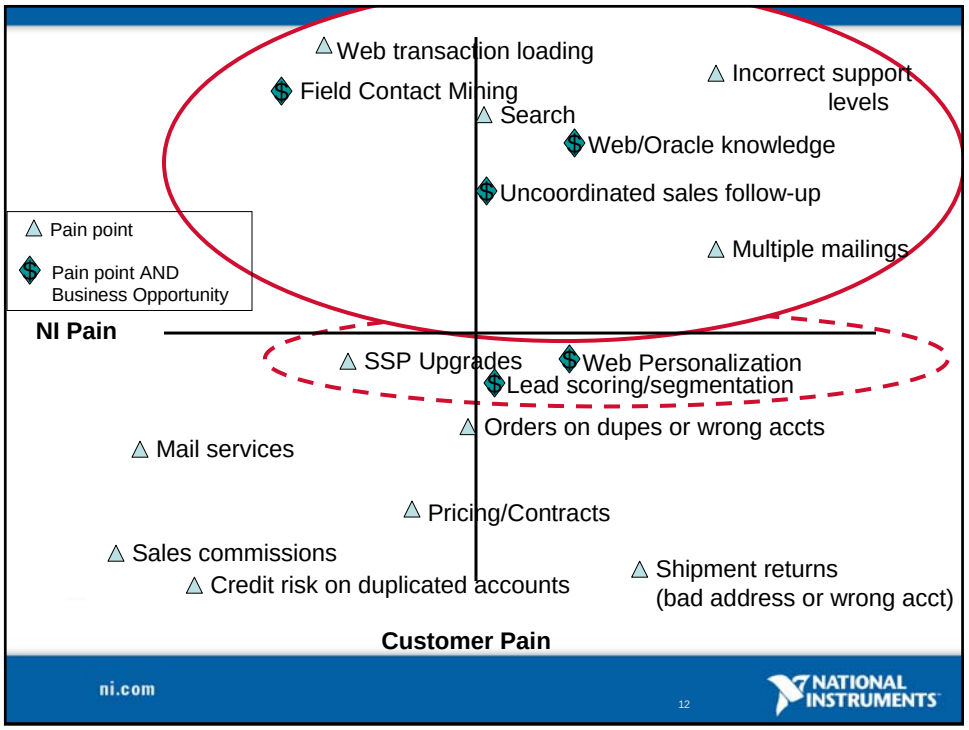
Web transaction loading
Field Contact Mining
Search
Incorrect support levels
Web/Oracle knowledge
Uncoordinated sales follow-up
Multiple mailings
Pain point
Pain point AND Business Opportunity
NI Pain
SSP Upgrades
Web Personalization
Lead scoring/segmentation
Orders on dupes or wrong accts
Mail services
Pricing/Contracts
Sales commissions
Credit risk on duplicated accounts
Shipment returns (bad address or wrong acct)
Customer Pain
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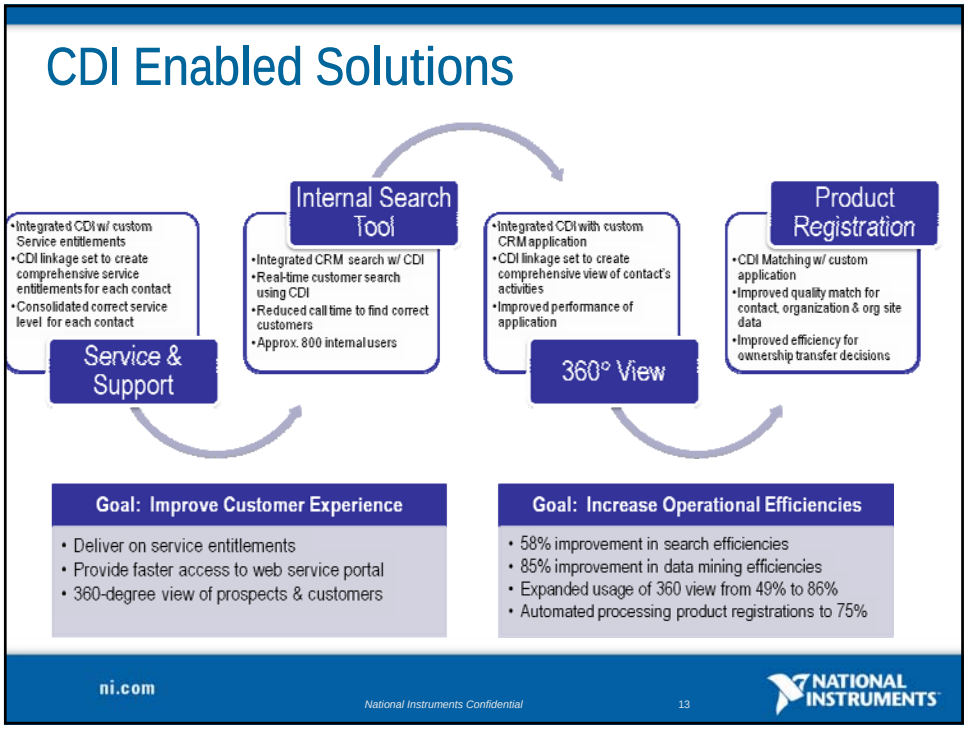
CDI Enabled Solutions
Service & Support
•Integrated CDI w/ custom Service entitlements
•CDI linkage set to create comprehensive service entitlements for each contact
•Consolidated correct service level for each contact
Internal Search Tool
•Integrated CRM search w/ CDI
•Real-time customer search using CDI
•Reduced call time to find correct customers
•Approx. 800 internal users
360° View
•Integrated CDI with custom CRM application
•CDI linkage set to create comprehensive view of contact's activities
•Improved performance of application
Product Registration
•CDI Matching w/ custom application
•Improved quality match for contact, organization & org site data
•Improved efficiency for ownership transfer decisions
Goal: Improve Customer Experience
• Deliver on service entitlements
• Provide faster access to web service portal
• 360-degree view of prospects & customers
Goal: Increase Operational Efficiencies
• 58% improvement in search efficiencies
• 85% improvement in data mining efficiencies
• Expanded usage of 360 view from 49% to 86%
• Automated processing product registrations to 75%
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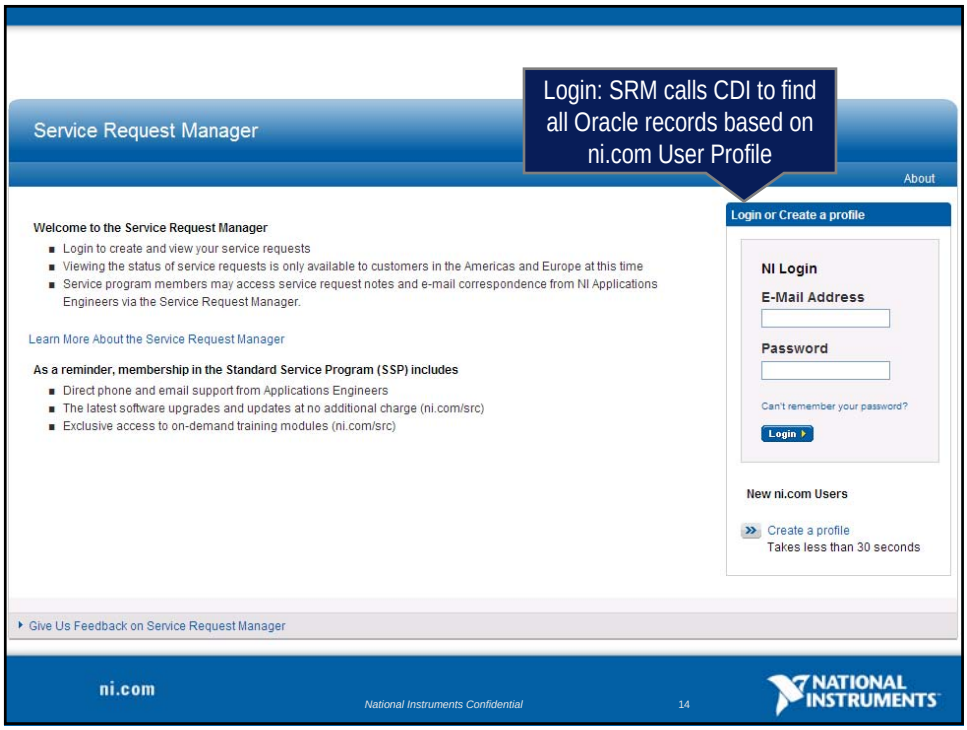
Login: SRM calls CDI to find all Oracle records based on ni.com User Profile
Service Request Manager
About
Welcome to the Service Request Manager
Login to create and view your service requests
Viewing the status of service requests is only available to customers in the Americas and Europe at this time
Service program members may access service request notes and e-mail correspondence from NI Applications Engineers via the Service Request Manager.
Learn More About the Service Request Manager
As a reminder, membership in the Standard Service Program (SSP) includes
Direct phone and email support from Applications Engineers
The latest software upgrades and updates at no additional charge (ni.com/src)
Exclusive access to on-demand training modules (ni.com/src)
Login or Create a profile
NI Login
E-Mail Address
Password
Can't remember your password?
Login
New ni.com Users
Create a profile
Takes less than 30 seconds
Give Us Feedback on Service Request Manager
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Service Request Manager
My Service Requests
Get Assistance
About
Service Entitlements are displayed for all Oracle records returned by CDI
Service Request Data
SR Number
Summary
Product
Creation Date
Owner
Status
1482929
IIb not opening on PC after installing LV 2009
LabVIEW
2010-02-03
Tejinder Gill
In Progress
1471975
After 2009 upgrade, GPIB communication very slow
LabVIEW
2010-01-11
Michael Waage
Closed
1427963
Error
Zachary Hawkins
Closed
1427501
8.2, V
Bradford Johnson
Closed
Service Requests are displayed for all Oracle records returned by CDI
1425899
Questions on installing LabVIEW driver for Tektronix scope
GPIB
2009-09-14
Steven Zittrower
Closed
1389911
TDM Add-in for Excel has unresponsive icons
LabVIEW
2009-06-18
Al Billington
Closed
1385665
Reading CSV files and getting first column of each file
LabVIEW
2009-06-09
J Heslop
Closed
1384619
Using cursor property nodes
LabVIEW
2009-06-05
Marti Chance
Closed
1384589
How to Create and Use Cursors on a XY Graph.
LabVIEW
2009-06-05
Jordan Fink
Closed
My Services
Standard Service Program (SSP)
Your service program membership gives you access to your SR details and phone and e-mail technical support.
Account - Update
Bryan Moran
Lawerence Livermore National Laboritories
PO Box 808
LIVERMORE CA
94550
925 4233568
moran5@llnl.gov
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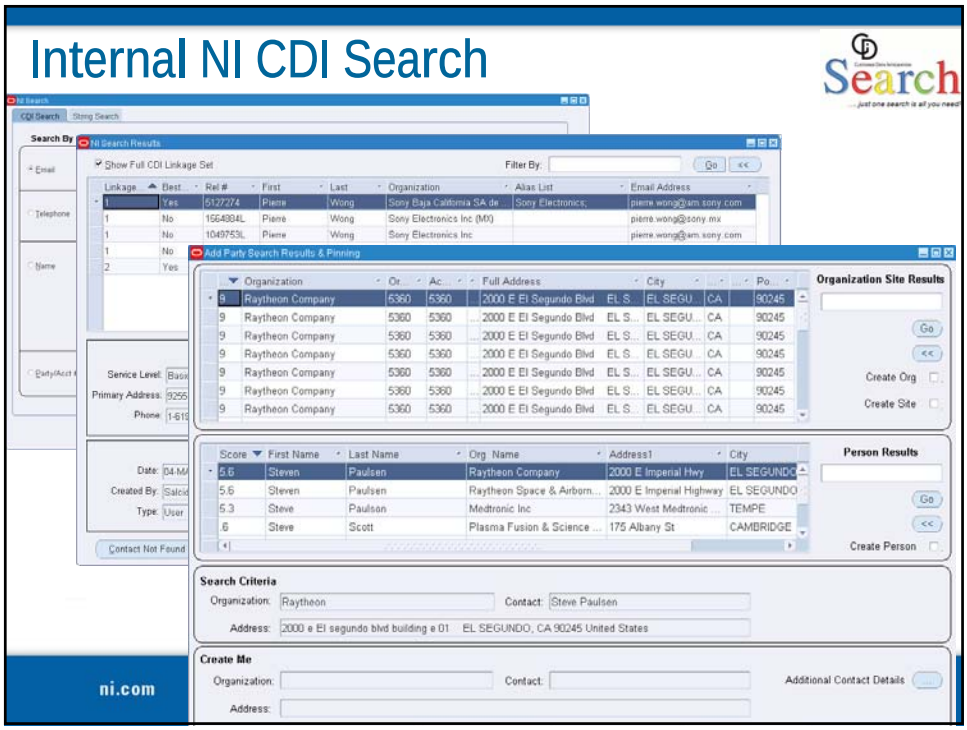
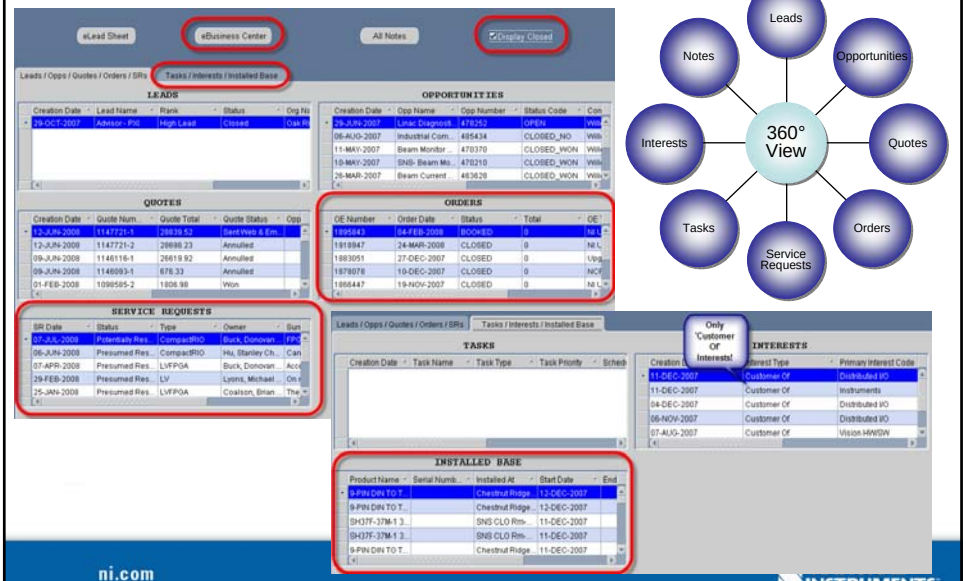
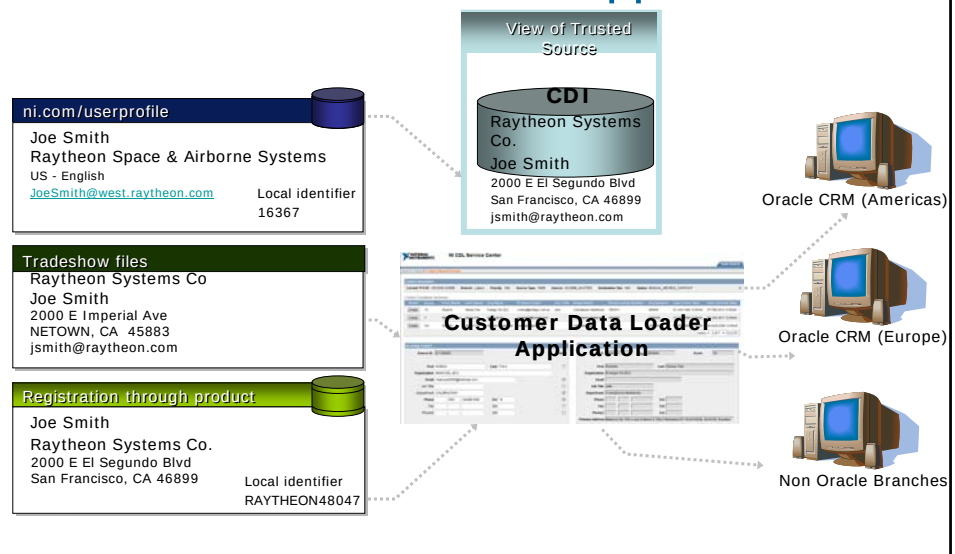
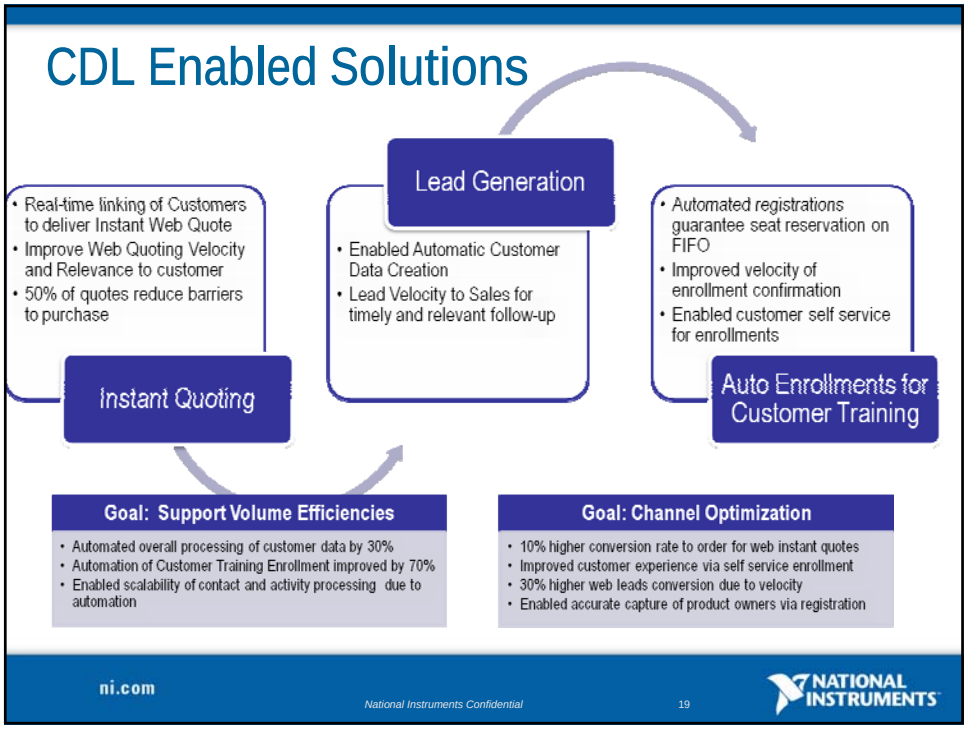

Internal NI CDI Search
Search
NI Search Results
Add Party Search Results & Pinning
Organization Site Results
Person Results
Search Criteria
Organization: Raytheon
Contact: Steve Paulsen
Address: 2000 e El segundo blvd building e 01 EL SEGUNDO, CA 90245 United States
Create Me
Organization:
Contact:
Additional Contact Details
Address:
ni.com

New 360° Activities View



NI's Customer Data Loader Approach




CDL Enabled Solutions
Real-time linking of Customers to deliver Instant Web Quote
Improve Web Quoting Velocity and Relevance to customer
50% of quotes reduce barriers to purchase
Instant Quoting
Lead Generation
Enabled Automatic Customer Data Creation
Lead Velocity to Sales for timely and relevant follow-up
Automated registrations guarantee seat reservation on FIFO
Improved velocity of enrollment confirmation
Enabled customer self service for enrollments
Auto Enrollments for Customer Training
Goal: Support Volume Efficiencies
Automated overall processing of customer data by 30%
Automation of Customer Training Enrollment improved by 70%
Enabled scalability of contact and activity processing due to automation
Goal: Channel Optimization
10% higher conversion rate to order for web instant quotes
Improved customer experience via self service enrollment
30% higher web leads conversion due to velocity
Enabled accurate capture of product owners via registration
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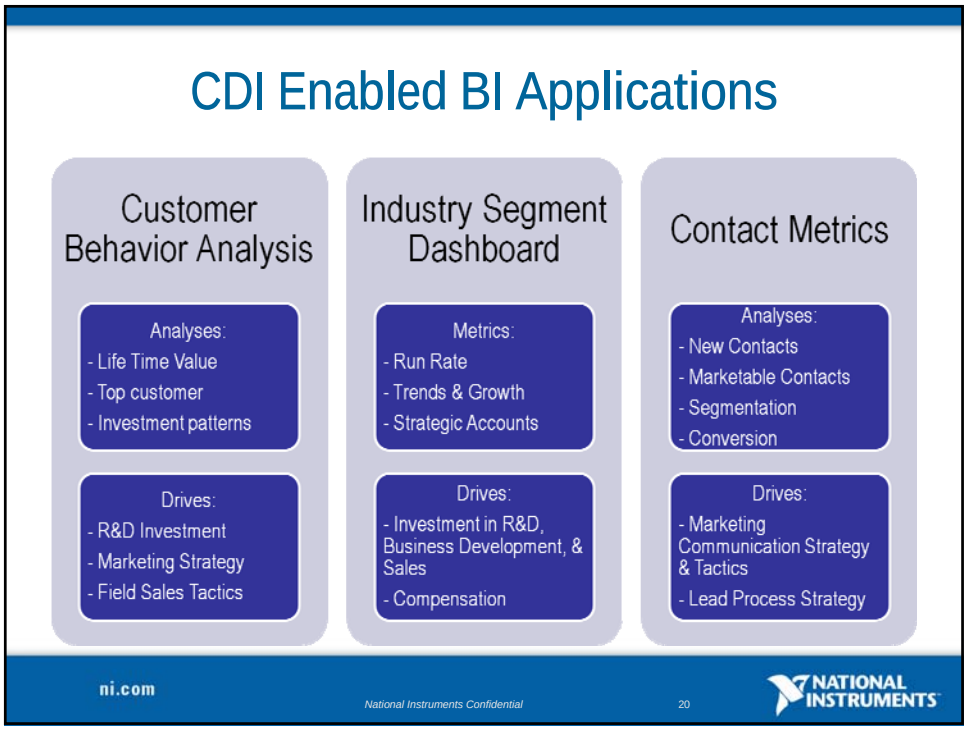
CDI Enabled BI Applications
Customer Behavior Analysis
Analyses:
- Life Time Value
- Top customer
- Investment patterns
Drives:
- R&D Investment
- Marketing Strategy
- Field Sales Tactics
Industry Segment Dashboard
Metrics:
- Run Rate
- Trends & Growth
- Strategic Accounts
Drives:
- Investment in R&D, Business Development, & Sales
- Compensation
Contact Metrics
Analyses:
- New Contacts
- Marketable Contacts
- Segmentation
- Conversion
Drives:
- Marketing Communication Strategy & Tactics
- Lead Process Strategy
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Golden Contact

Source id	First name	Last name	Organization name	Job title	Department	Creation date
1437876	Madhu	Balakrishnan	Massachusetts Institute of Technology			09-JUL-02

Source id	First name	Last name	Organization name	Job title	Department	Creation date
2637894	Madhu	Balakrishnan	MIT		Mechanical Engineering	01-APR-05

Source id	First name	Last name	Organization name	Job title	Department	Creation date
2916710	Madhu	Bala	Massachusetts Institute of Technology	Engineer	Lab/Research	07-MAY-08

Enterprise id	First name	Last name	Organization name	Job title	Department	Creation date
39326528	Madhu	Balakrishnan	Massachusetts Institute of Technology	Engineer	Lab/Research	09-JUL-02

Golden Site

Source id	Organization name	Creation date	Customer category	Address
3515352	Massachusetts Institute of Technology	30-MAY-06	Education	138 Albany St

Source id	Organization name	Creation date	Customer category	Address
2570982	MIT	27-FEB-96	Education	138 Albany St Nuclear Reactor Laboratory

Source id	Organization name	Creation date	Customer category	Address
3504190	MIT Nuclear Reactor Laboratory	23-JAN-08	Education	138 Albany Street

Enterprise id	Organization name	Creation date	Customer category	Address
48500	Massachusetts Institute of Technology	27-FEB-96	Education	138 Albany Street

NI Best Practices

Team & Quality

- Executive Sponsorship
- Steering team for alignment and decision making
- Core team for technical & functional expertise
- Define measurable goals & metrics
- Leverage BI & DW

"Journey" Approach

- Set and manage clear expectations with business and vendor
- Evangelize – use sound bytes
- Pilot with vendor
- Phased rollout to balance foundation with business solutions
- Execute an adoption plan
- Rapid prototyping for complex technical components

CDI gave us the REAL Joe Smith but…

What NI products does he own ?

Why don't we know ?

We've never asked him

or

We've asked him but we don't "remember"

Customer Insight: More Known End Users = $$$

Joe Smith

Owns

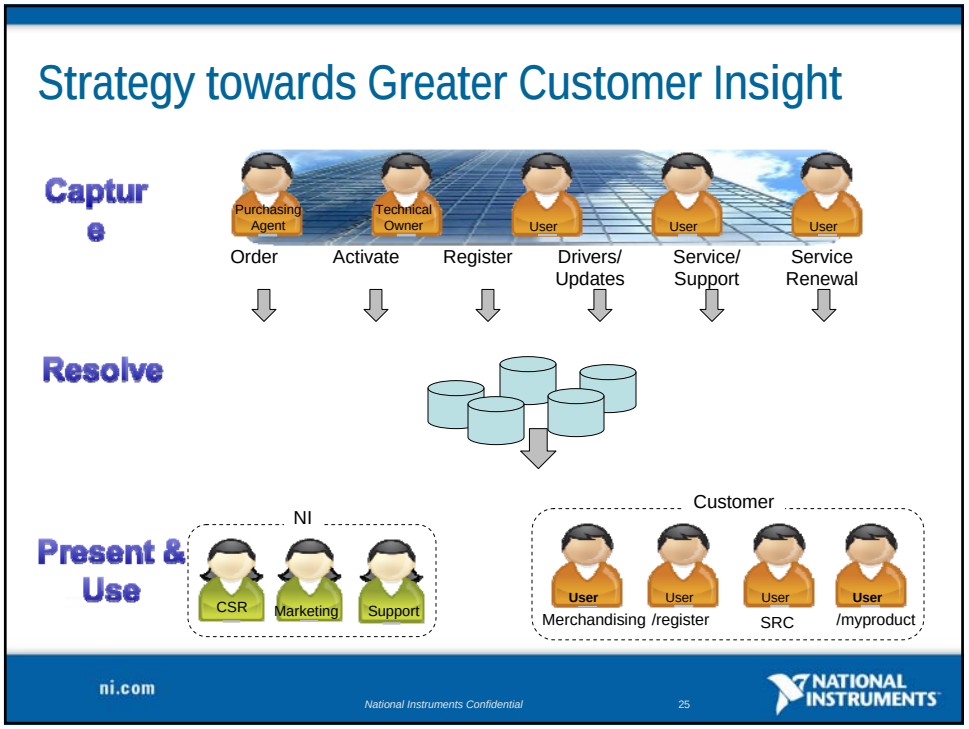
- LabView Serial #
- DAQ Serial #
- PXI Serial#
- Modular Inst. Serial #

System XYZ

Also Used by

Entitled to (or should be informed about)

Extended Warranty | Calibration | System Assurance | Multi-year Service | Premium Content


Strategy towards Greater Customer Insight
Capture
Purchasing Agent
Technical Owner
User
User
User
Order
Activate
Register
Drivers/ Updates
Service/ Support
Service Renewal
Resolve
Present & Use
NI
CSR
Marketing
Support
Customer
User
User
User
User
Merchandising /register
SRC
/myproduct
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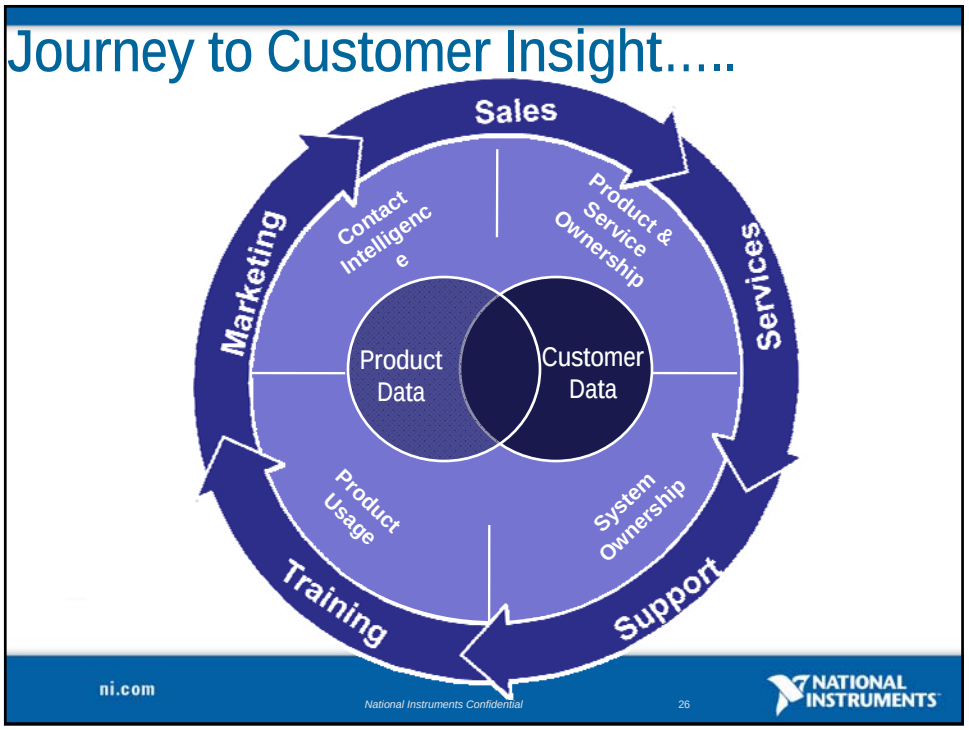
Journey to Customer Insight…..
Sales
Services
Support
Training
Marketing
Contact Intelligence
Product & Service Ownership
Product Usage
System Ownership
Product Data
Customer Data
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NI's Journey to Improved
Customer Insight continues…
Questions?
Customer Data Integration
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