Decentralized Data Governance with

Oracle Customer Data Management Cloud Service

Attila Edvi-Illés
Senior Solution Consultant CEE – Oracle Customer Experience Solutions
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Customer Data is Forever Changing

Do you really know who you are dealing with?

- Data changes at a rate of 2% a month on average
- 4+ Million individuals in the EU will change jobs a month
- 1.2 Million individuals will change address a month
- 370,000 individuals will get married a month
- 190,000 individuals will get divorced a month

In addition:
- On average, organizations have 9 sources of customer contact data with 20% data duplications on average

Source: Experian Survey, 2017
Challenge: Quality of Data (1)

Challenge 1: Duplicate Data
Companies use multiple sources to collect data
- Websites
- Sales teams
- Call centers
- Mobile sites, apps, 3rd party sources

This often produces duplicate records for the same party (organization, person)

Duplicates have transactions associated to them

Duplicates prevent from building a correct and complete customer 360° view

Challenge 2: Obsolete Data
Customer and contact data changes rapidly
- Businesses and people move
- People change jobs
- People change marital status
- Contact data such as phone numbers change

This constant churn produces obsolete or incorrect records for the same party

Challenge 3: Incomplete Data
Companies and customers use multiple modes of communication:
- Phones
- Mails
- Emails
- Blogs
- Social media platforms

There is more to contact information than just a mailing address

Companies need customer account and contact data that is reliable, accurate, and complete
## Challenge: Quality of Data (2)

**Challenge 4: Inconsistent Data across the Organization**

### Participant Information

<table>
<thead>
<tr>
<th>First</th>
<th>Susan</th>
<th>Susanne</th>
<th>Sue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last</td>
<td>Benson</td>
<td>Benson-Smythe</td>
<td>Smythe</td>
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<tr>
<td>Address1</td>
<td>Flat 1 Flaxman</td>
<td>1 South Place</td>
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<tr>
<td>Address2</td>
<td>1 Coleherne Rd</td>
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<td>RG6 1RA</td>
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<td>0118 924 3348</td>
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<tr>
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</tr>
<tr>
<td>Status</td>
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<td>Historical</td>
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### Contact Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Susan Benson</th>
<th>Susanne Benson-Smythe</th>
<th>Sue Smythe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:sbenson@email.com.uk">sbenson@email.com.uk</a></td>
<td></td>
<td></td>
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<tr>
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<td>1 South Place</td>
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<td>117-781856</td>
</tr>
</tbody>
</table>

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**Questions:**

1. Which first/last name does Susanne use today?
2. Which address is correct?
3. Is this her latest phone number?
4. Is this the email address she really uses?
Delivering (GDPR) compliance

Accurate and complete customer data is a cornerstone of an effective and efficient enterprise and can have a significant impact on the bottom line and regulatory compliance.

Common problems arise from inconsistent, incomplete and inaccurate and non-actionable customer data – addressed also by GDPR.

- Right of access by the data subject (A.15)
- Right to rectification (A.16)
- Right to erasure (‘right to be forgotten’) (A.17)
- Right to restriction of processing (A.18)
- Notification obligation regarding rectification or erasure of personal data or restriction of processing (A.19)
- Right to data portability (A.20)
The Solution:

Oracle CDM Cloud

A powerful, out-of-the-box APPLICATION, not a TOOLKIT!
First Name: Susan  
Last Name: Benson  
Address1: Flat 1 Flaxman  
Address2: 1 Coleherne Rd  
City: London  
Post Code: SW10 9BS  
Tel.: 0207 598 1962  
ID: A1  
Status: Pending  

First Name: Susanne  
Last Name: Benson-Benson  
Address1: 1 Coleherne Rd  
Address2:  
City: London  
Post Code: SW10 9BS  
Tel.: 0118 924 3348  
ID: A2  
Status: Active  

Name: Sue  
Last: Smythe  
Address1: 1 South Place  
Address2:  
City: London  
Post Code: RG6 1RA  
Tel.: 0207 816 7884  
ID: B1  
Status: Historical  

Name:  
Last:  
Address1:  
Address2:  
City:  
Post Code:  
Tel.:  
ID: C1  
Status: Active  

• Data Quality Levels  
• Issues  
• Remediations  

• Data Quality Levels  
• Issues  
• Remediations  

• Data Quality Levels  
• Issues  
• Remediations  

• Data Quality Levels  
• Issues  
• Remediations
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</table>

**RULES**
- Matching
- Survivorship

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**Golden Record**

**Profile History**

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**CDM**

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<table>
<thead>
<tr>
<th>Name</th>
<th>Susan</th>
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**XREF A/A1**

**XREF A/A2**

**XREF A/A3**

**XREF C/C1**

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<td>SYS A</td>
<td>XX-XX-XX</td>
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**RULES**

- Survivorship
First Susan
Last Benson
Address1 Flat 1 Flaxman
Address2 1 Coleherne Rd
City London
Post Code SW10 9BS
Tel. 0207 333 333
ID A1
Status Pending

Name Susan
Last Benson-Smythe
Address1 Flat 1 Flaxman
Address2 1 Coleherne Rd
City London
Post Code SW10 9BS
Tel. 0118 924 3348
ID A2
Status Active

Name Susan
Last Benson-Smythe
Email sbenson@email.co.uk
Address 1 Coleherne Rd
City London
Post Code SW10 9BS
Tel. 0207 598 1962
ID B1
Status Active
Master Data Management Components

- **Master Data Model (TCA)**
  - Base Tables
  - History Tables
  - Tables for Discarded Data
  - Cross References Tables
  - Tables for Matching Indexes

- **Mastership Capabilities**
  - Data Model Flexibility
  - Data Import/Export Facilities
  - Survivorship Rules
  - Duplicates Identification & Resolution
  - Data Enrichment

- **Data Steward UI & Task Flows**
  - Data Management
  - Data Import/Export
  - Duplicates Identification
  - Duplicates Resolution
  - Data Enrichment
Oracle Customer Data Management (CDM)

A Customer Master Platform embedded within Oracle CX Cloud, delivering:

- **Record ID Registry across All Sources**
- **Data Standardization, Validation & Enrichment**
- **Duplicate Record Identification & Resolution Management**
- **Single, “Best Version” Record for Publishing**
- **Central Privacy Preferences Management (Incl. GDPR Consents)**
CDM Creates a Consolidated Trusted Golden Record of Customers Across Sales, Service, Marketing, Finance, Web…

Customer Data Mart

Bill 1  Asset 1  Service Req. 1
Bill 2  Asset 2  Service Req. 2
Bill 3  Asset 3  Service Req. 3
Bill 4  Asset 4  Service Req. 4
Bill 5  Asset 5  Service Req. 5
Bill 6  Asset 6  Service Req. 6

Interaction 1  Prrocedure 1  Priv. Cons. 1
Interaction 2  Prrocedure 2  Priv. Cons. 2
Interaction 3  Prrocedure 3  Priv. Cons. 3
Interaction 4  Prrocedure 4  Priv. Cons. 4

Service Req. 1
Service Req. 2
Service Req. 3
Service Req. 4
Service Req. 5
Service Req. 6

Priv. Cons. 1
Priv. Cons. 2
Priv. Cons. 3
Priv. Cons. 4

Asset 1
Asset 2
Asset 3
Asset 4
Asset 5
Asset 6

Bill 1
Bill 2
Bill 3
Bill 4

Interaction 1
Interaction 2
Interaction 3
Interaction 4

Prrocedure 1
Prrocedure 2
Prrocedure 3
Prrocedure 4

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CDM maintains the cross reference information

Universal ID: G203443211

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<td>G203443211</td>
<td>Finance</td>
<td>...</td>
</tr>
</tbody>
</table>

Name                | Susanne Benson-Smythe
Alias               | Sue
Address1            | Griffon Road 43
Changed from        | Leicester street, Unit 45
City                | London
Post Code           | RG6 1RA
Tel.                | 0118 924 3348
ID                  | G203443211
Email               | sbenson@email.com
Social Profile(s)   | Twitter, Facebook, LinkedIn
Status              | Active F, S, ...
Disposition Code    | Variable additional data details TBD
(dozens of additional) | Roomate X, 350 friends on FB

Mandy knows:
- **What** changed,
- **When** it changed,
- **Who** changed it
- **Why** it is valid.
- **Where**: Other systems update.

This is Mandy, a Data Steward
CDM prevents, Identifies and solves duplicates
CDM Keeps the Golden Record at high quality levels

Survivorship
Rules are Key:
Survivorship enables decentralized data governance!

Data Lakes
Oracle CDM
Sales&Service
Marketing
Social
eCommerce
Any Cloud Solution
Asset Mgmt
Financials
Web
Loyalty
HRM

Data Warehouse
Data Integration Adapters – some examples

<table>
<thead>
<tr>
<th>Database &amp; Data</th>
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<th>Application Adapters</th>
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<tbody>
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<td>• Paradox</td>
<td>• Oracle E-Business Suite</td>
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<tr>
<td>• Teradata</td>
<td>• Generic ANSI SQL</td>
<td>• Oracle Peoplesoft</td>
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<td>• Generic Flat File Driver</td>
<td>• Oracle JD Edwards EO</td>
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<td>• Generic XML Driver</td>
<td>• Oracle Siebel CRM</td>
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<td>• Unstructured Documents</td>
<td>• Oracle Hyperion Planning</td>
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<td>• IBM Informix</td>
<td>• Oracle Essbase</td>
<td>• Oracle BI EE</td>
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<td>• IBM Informix DS</td>
<td>• Oracle Internet Directory</td>
<td>• SAP ERP (with iDoc)</td>
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<td>• IBM Informix XPS</td>
<td>• Oracle Mediator</td>
<td>• SAP ERP (with ABAP)</td>
</tr>
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<td>• Oracle GoldenGate</td>
<td>• SAP BW</td>
</tr>
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<td>• Derby</td>
<td>• Oracle Tuxedo</td>
<td>• And many more.....</td>
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<td>• IBM WebSphere MQ</td>
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<tr>
<td>• Cassandra</td>
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<tr>
<td>• MongoDB</td>
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<tr>
<td>• Kafka</td>
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</table>
Personal Data Master Predefined & Flexible UI

**Business User**
(SAL, MKTG, CS,...)
- Search Customers
  - Saved Searches
  - Personalize Search
- Customer Lists
- Customer 360° View
- Edit Customer
  - Data Quality KPIs
  - Data Validation
- Create new Customer
  - Address Verification
  - Duplicate Prevention
- Enrich Customer Record
- Duplicate Resolution Request creation

**Data Steward**
- Search Customers
- View/Edit Customer
- View/Edit Customer Hierarchies
- Duplicate Identification
  - Batch
  - Manual
- Non-duplicates Management
- Duplicate Resolution
  - Automatic
  - Manual
- Address Verification
- Customers Imports/Exports

**Administrator**
- Setup
  - Lookup Values Extension
  - New Classifications
  - New Relationships
  - Matching Configurations
  - Survivorship Rules
  - Veto Rules
- Data Model Extensibility
  - New Attributes
  - New Custom Child Entities
  - New Custom Entities
- Analyses/Reports
  - New Reports
  - New Analyses
Contact Profile: New Contact Creation with Duplicate Prevention
A.15, A.16 & A.20

- Right of access by the data subject (A.15):
  - Oracle CDM CS consolidates party data into a single, complete, best version 360° view which can be securely accessed by the data subject.
  - The 360° Data Subject view can be a combination of stored data and federated data.

- Right to rectification (A.16):
  - Data Subject will also be able to update his/her data (in a controlled way and tracking history).

- Right to data portability (A.20):
  - Data Subject will also be able to export his/her data (after checking this will not affect rights of third parties associated with it).
Oracle Customer Data Management Cloud Service vs. GDPR
A.17 & A.18

- Right to restriction of processing (A.18)
  The 360° Data Subject view can also include privacy info and consents, in order to have them centrally stored and managed and to keep them synchronized across all systems.
  - Oracle CDM CS can provide a UI screen to the Data Subject where he/she can explicitly set his/her privacy info and consent preference.
    - Consents data could be used by Oracle Policy Automation to set usage and access rules to be provided centrally as a service to all the enterprise applications.

- Right to erasure (‘right to be forgotten’) (A.17)
  - Oracle CDM CS can provide a UI screen to the Data Subject where he/she can explicitly set his/her request his/her data to be deleted.
  - A BPM Process could be implemented to perform all the checks, approvals and needed actions (built-in workflow engine).
Oracle Customer Data Management Cloud Service vs. GDPR

A.16, A.17 & A.19

• Right to rectification (A.16):
  – Cross References keep a connection between the consolidated master record and all the corresponding records stored in the connected systems
  – Upon update of a party record in the master registry or in one of the connected systems, these cross references will support data alignment across all systems

• Right to erasure (‘right to be forgotten’) (A.17)
  – the cross references will support also the conditional propagation of a record delete

• Notification obligation regarding rectification or erasure of personal data or restriction of processing (A.19)
  – Updates and logical deletes can trigger actions which can fire direct notifications

Contact Cross-references: Record IDs for this same Contact on other systems connected to CDM
Coming Soon to Your Oracle Cloud....
A Data-first Approach Centered on the Customer
A Complete View of Customers Across Sales, Service, Marketing, Web to Drive Richer Engagements

**1st Party Data**
- Customer Profile
- Purchase History
- Recommendations
- Preferences
- Favorites
- Web Analytics
- Loyalty

**3rd Party Data**
- Demographics
- Syndicated Segments
- Shopper Flags
- Buyer Flags

**Mobile Data**
- Install Date
- Preferences
- Advertising ID
- Last Known Location
- User ID
- Last Seen

**Behavioral Data**
- Email
- SMS
- Mobile
- Web
- Sent
- Open Clicked
- Purchased
- Converted Cart
- Browse Search
- Abandon

**Name:** Susanne Benson  
**Age:** 35  
**Gender:** Female  
**Kids:** 3  
**Owns Dog:** Yes  
**Travels With Family:** Yes  
**DIYer:** Yes  
**Deal Seeker:** Yes  
**Spending With Competitors:** Yes  
**Shopper Flag:** Super  
**Last Browse Date:** 12/30/2017  
**Last Browse Category:** Jeans  
**Last Purchase Date:** 12/20/2017  
**Last Sent Date:** 1/2/2018  
**Last Clicked Date:** 1/2/2018
Oracle CX Unity

A Customer Intelligence Platform embedded within Oracle CX Cloud, delivering:

1. Connected Customer Profile
   - Consolidated Data Lake
   - Integrating online, offline and 3rd party data sources into a single view of your customer

2. Comprehensive Customer Intelligence
   - AI Based Insights
   - Applying machine learning for modeling, predicting and prescribing the optimal audience

3. Personalization Across the Entire Customer Experience
   - Pre-integrated with CX Cloud
   - Activating the intelligence by connecting with marketing, sales and service to orchestrate the next best experience across the entire customer journey

Built for CX Professionals who need to deliver a customer experience that is timely, relevant and consistent across each and every brand interaction.