

The "Me" Factor: Driving Digital Disruption to Digital Transformation

The digital landscape is ever expanding... ...and so is the digital knowledge gap.

Sean Suskind





Is this popular TV series off the mark? The topic of a "big brother" watching us isn't new





Sean's Overview

"The Enterprise that does not innovate, ages and declines. And in a period of rapid change such as the present, the decline will be fast!" ~ Peter Drucker

- Director of Big Data and Analytics in Rolta's Oracle Business Intelligence and Big Data Consulting Practice responsible for developing Big Data solutions.
- Over 18 years of experience guiding clients and managing teams to deliver successful analytic reporting solutions.
- Focused on ensuring that analytic Big Data solutions at Rolta provide enhanced business functionality and new insights that drive adoption and matches the use of technology in solving business problems.
- Analytics strategist
- Favorite book; 1984
- <u>sean.suskind@rolta.com</u>
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Rolta

A Passion for Technology, Commitment to Excellence

- A Global 200 Forbes Best Companies under \$1B
- Revenue of 500M+ & 3500 employees globally
- A top partner to Oracle, HP, EMC, VMware, & SAP
- EBS, BI, EPM & Managed Services
 3500 employees globally



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Redefining Value and Solutions for Customers

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Business Applications (EBS, BI, EPMetc.)				
Middleware				
Database & Managed Services				
Infrastructure Applications – Exchange, SharePoint				
Storage				
Server Platform				
Network				
Desktop, Mobility, and End User Compute				
Management Tools				



Agenda

- The Customer
- Digital Disruption
- Digital Transformation
- Know your customers like never before







Remember when . . .

You could walk into your favorite restaurant or store, and they knew you?





Without customers we are all out of business

Knowing your customers and keeping your customers has always been critical



BizDoodles[©]





The customer connection cycle is driven by innovation

Historically, connecting with customers has evolved based on a disruption resulting in an innovation





The new Customer Connection is emerging

digital disruption



The consumer IoT "smart" connection





A world of "smart" connections all about you

The 'Internet of Things'

More Internet-enabled devices already are connected to the Internet than humans. "Smart" devices can talk to each other and measure, monitor and control the physical world. The list of web-connected sensors and devices is growing exponentially.

A sampling of those online now or predicted to become available eventually:

.......................

Smart Health

P addresses for organs in the body Sensors ingested like pills to measure vital signs

Pregnancy monitors worn like a smoker's patch

Smart World

 Toilets that can detect and predict public health issues
 Sensors monitoring lake levels, temperatures and water quality
 Sewage systems

Smart Energy

Smart electricity grids enabling utilities to adjust prices quickly and industries to sync production to low-cost periods

Smart Cities

them

capacity

ATMs that can

recognize a gunshot or

Stadiums that know

when they've reached

cry of human distress

Parking spots that

know who's parked in

Detectors to spot gas leaks and monitor drilling equipment

Hydraulic fracturing rigs that know in advance when they need to change filters

Smart Households

Laundry machines that start up when electricity rates dip to the cheapest level of the day

Forks that warn us when we eat too fast Security systems and motion detectors

Smart Economy

 Building monitors that reduce energy use
 Escalators that move only when people step on them
 Factory equipment synced internally and to suppliers and customers

Smart Agriculture

Detectors of weather patterns Sensors monitoring crops, soil acidity, irrigation systems, aquifer levels Devices tracking heads of cattle

Journal Sentinel





Digital Disruption and Disruptive Innovation





Disruptive technology drives disruptive Innovation (also Creative Destruction – Capitalism)

Disruptive Technologies (Clayton Christenson – 1995) can hurt well managed companies that are responsive to their customers and have excellent R&D.





The Diffusion of Innovation cycle

- 1. First knowledge
- **2.** Forming an attitude
- **3.** Decision to adopt or reject
- **4.** Implementation and use
- **5.** Confirmation of decision

The Disruptive Innovation Model



"In the later stages, no amount of new investment in that product will yield a normal rate of return." ~ Gabriel Tarde – 1903 (The S-curve or Diffusion Curve)



Disruptive Innovation Examples







- Postal Mail
- Telegraph
- Trains
- Metal / Wood / Glass
- Pictures (Chemical)
- Computer
- Floppy/Zip Drive
- Encyclopedia

Email

- Telephone / Cell Phone
- Cars / Planes
- Plastics
- Digital Pictures
- Smartphone/Tablet
- USB
- Wikipedia



Disruptive Innovation Coming Soon

- Email
- Telephone/Cell Phone
- Cars / Planes
- Plastics
- Digital Pictures
- Smartphone/Tablet
- USB
- Wikipedia



- Instagram
- Implant
- Virtual Conferences
- 3D printed in the home
- Google Glass Life Record
- Apple Watch / IOT
- Cloud
- Implants / Robotics









Oracle uses digital disruption for disruptive innovation

"I admire risk takers. I like leaders – people who do things before they become fashionable or popular. I find that kind of integrity inspirational." Lawrence J. Ellison | Chairman & Chief Executive Officer, 2003

- Oracle recognizes trends driving Big Data / Cloud (Mark Hurd)
 - Average age of Apps is 20 years...back then:
 - No Search
 - Few using the Internet
 - No Amazon, Facebook, Twitter
 - 40% Data growth per year
 - 90% of Data created in past two years





- **Big Data** applied to <u>non-structured</u> data sets whose <u>size is beyond</u> the ability of commonly used software tools to capture, manage, and process the data within a tolerable elapsed time.
- **Big Data Analytics** is the process of leveraging data that is too large in volume, too broad in variety and too high in velocity to be analyzed using traditional methodologies.



Examples of Oracle with Disruptive Innovation

1979 First commercial SQL relational database management system 1983 First 32-bit mode RDBMS 1984 First database with read consistency **1987 First client-server database** 1994 First commercial and multilevel secure database evaluations 1995 First 64-bit mode RDBMS 1996 First to break the 30,000 TPC-C barrier **1997 First Web** database 1998 First Database - Native Java Support; Breaks 100,000 TPC-C 1998 First Commercial RDBMS ported to Linux 2000 First database with XML 2001 First RDBMS with **Real Application Clusters** & First middle-tier database cache 2004 First True Grid Database 2005 First **FREE Oracle Database** (10g Express Edition) 2006 First Oracle Support for LINUX Offering 2007 Oracle 11g Released 2008 Exadata V1 Server Announced (Oracle buys BEA) 2009 Oracle buys Sun – Java; MySQL; Solaris; Hardware; OpenOffice 2010 Oracle announces MySQL Cluster 7.1, Exadata, Exalogic, America's Cup Win 2011 X2-2 Exadata, ODA, Exalytics, SuperCluster, Big Data, Cloud, Social Network 2012 X3-2 Exadata, Expanded Cloud Offerings, Solaris 11.1 2013 Oracle12c Released! Oracle X3-8 Exadata, Acquisitions (Acme Packet...etc.)! 2014 <u>Acquisitions/New</u>: Responsys (Marketing) & Corente (cloud/network), X4 2015 X5-2, X5-8, FS1 Flash Array, More Acquisitions (Cloud)

Technology Trends: Gartner Hype Cycle 2013





A disruptive reality: "The Internet of Things" IoT

IoT is best defined as a network infrastructure that enables interaction among physical things and virtual technology platforms





IoT Long Term – Digital Disruption is accelerating

Stamford, CT, March 24, 2014

Gartner says a Thirty-Fold Increase in Internet-Connected Physical Devices by 2020 Will Significantly Alter How the Supply Chain Operates





Smart devices are feeding Big Data

Smart Devices that are part of your every day life



Some that may not be











How Much Data ...

- 2004 monthly internet traffic >1E; 2010 it was 21E/month
- In 2012, **2.5E data created every day** (about 1Z=1000E per year)
- June 2012 Facebook has 100P Hadoop cluster
- Facebook: **500T** processed daily (210T/hr Hive scanned)
- A Single Jet Engine 20T/hour –same rate as Facebook!
- Gmail has 450 million users
- Walmart 1 million customer transactions/hour (2.5P DB)
- Large Hadron Collider produced 13P in one year
- Business data doubles every 1.2 years
- 19% of \$1B companies have >1P of data (31% in 2013)
- 2011 First **Exabyte tape library** from Oracle
- Decoding Human Genome took 10 yrs; Now takes a week!





Digital Transformation





Digital Transformation is about solving a business problem

"There are many commonly held beliefs about Big Data that need to be challenged, with the first being that you simply adopt Hadoop and are good to go. The problem is that Hadoop is a technology, and Big Data isn't about technology. Big Data is about business needs. In reality, Big Data should include Hadoop and relational databases, and any other technology that is suitable for the task at hand."

~ Ken Rudin, Head of Analytics, Facebook



Digital Disruption Drives Digital Transformation

Analysis of Big Data is reshaping operations and accelerating business results. Companies are creating new revenue streams by monetizing data.



Success with Digital Disruption provides a constant, iterative improvement in business processes, a continual flow of new insights and a transition from being reactive to proactive through Digital Transformation to close the digital knowledge gap.



Where are you?

The digital disruption of data is growing exponentially, while knowledge gained from the data continues to lag behind

Although marketers and organizations have plenty of data, they struggle to mine it, surface their most important customer segments, and respond to their customers' needs in real-time





Disruptive Innovation Closes the Gap

- Innovation is *introducing <u>something new or</u> <u>different</u>!*
 - Idea, Product, Process, Organization, Structure...etc.
- Innovation is not what you find in some companies today... which is why newer companies <u>continue to</u> replace them!
- Are you leveraging IT (and IoT/Big Data) to create innovative products and experiences for your customers? *Are you an innovative company?*
- Organizations that are NOT are missing the boat
- Leverage IT, Big Data, and IOT to deliver innovative methods to connect with their customers





The emergence of the "Me" factor

The "Me" factor lives in: Social Media, Sensor Data, Biological, Traffic, RFID Data, Environmental, Aerial, Wireless, Security & Video Data, Retail, Medical, Engineering Systems, Search Data, Photographs, Call Records, CRM/ERP data, etc.



- Event and Behavior Based Pricing
- Customer Loyalty Campaigns

Retail



- Call Detail Reporting (CDR)
- Mobile User Analysis

Telecommunications



- Credit Card Fraud Detection
- Advance Trading Patterns

Financial Services

- Smart Metering
- Geographic Data

Utilities





Solving a business problem; hindsight + insight = foresight

Hindsight

What is happening?

 Historic orientation
 Typical MIS Reporting or BI
 Oracle BI, Hyperion

Insight

Why is it happening?

- Business / Behaviour Analysis, Trends
- □ What is currently
- happening / Why?
- Internal and External
 - sources
- Real-Time





Foresight

What will / should happen?

- □ Forecasting
- Optimization
- Real-time decisions
- Past behaviour to predict and drive future behaviour
- Capitalize on future

outcomes





The Business Problem

"I don't want something everyone else is getting. Give me something for me."

Airlines are struggling to map out the customer journeys which are the key drivers of an effective customer retention strategy

- Frequent Flyer programs are failing to engage effectively with customers

 - They are commoditized
 Airlines need "sticky" programs
 - The value is declining
 "Me" information is needed
- Siloed, unstructured data and incomplete information make defining the "Me" factor a difficult task
- Airline data is plentiful, but not easily integrated to identify intersections between sources and what those intersections are saying about "Me"
 - Looking for the "Me"
 - > Reservation system
 - Information from the sales >
 - Marketing and support processes cutting across airlines website, >
 - Transcripts from customer service conversations >
 - Passenger profile >
 - Data feeding in from the loyalty card, and not to forget... >
 - Social media conversations



Critical Success Factors for Loyalty and Retention

Airlines that retain customers longer make more money from them at lower cost than airlines that are constantly paying to acquire new customers

- Attracting customers
 - The attractiveness of the airline's service
 - > Relative to that of its competitors
 - > Includes infrastructure convenience, and scope of service
 - The effectiveness of the airline's promotional expenditures
 - > Ticket sales per dollar of promotion expense
- Maintain or improve "share of wallet" of existing customers
 - Increased business traveler and high-frequency groups
- New customers
- Overall positive customer sentiment
 - Reduced customer dissatisfaction
 - Increased customer champions
- Loyalty program participation rates
 - Degree of exclusivity
- Improved customer experience
 - Driven by customer preferences and behaviors





Bottom Line Metrics for Revenue and Cost

Successful customer loyalty and retention goals are reflected in the bottom line metrics of efficiency and profitability

- Profitability based on earnings per seat -Revenue per Available Seat Mile (R/ASM): Bottom Line Revenue Measure
 - Multiply load factor times yield to get the measure of how much revenue is generated per increment of capacity
 - Using the previous example, it's 81.5 percent times 13.1 cents or 10.7 cents.

- Carrying capacity and potential for profits -Cost per Available Seat Mile (C/ASM): Bottom Line Cost Measure
 - Unit costs represent how much it costs to fly one seat (empty or filled) one-mile.
 - To calculate unit costs, divide total operating expenses by Total ASM capacity; for major airlines, using the previous example, it would be \$19.24 billion divided by 169.9 billion, or 11.3 cents per mile

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Airline customer loyalty and retention analytics Oracle's Big Data Discovery application leveraged to generate customer loyalty and retention analytics forming the basis of the "Me" factor

Flexibility to merge datasets from multiple disparate sources





Questions that need answering before you can develop the "Me" factor

 Do I need to create a program that will establish and prioritize my customer loyalty and retention initiatives to benefit the company?

- Do I have the right information, data and knowledge about my customers to objectively measure, monitor and assess retention/detraction?
 - How do I measure, monitor and assess risk?





Questions that need answering

- Do I have a comprehensive set of metrics to predict risks?
 - How do I mitigate risks?
 - Are these metrics driving my operational decisions?
- Are my engineering and IT systems robust and seamlessly integrated to ensure data integrity, accessibility and optimal processing?
 - Do my systems enable visualization of risks to my customer base?





Questions that need answering

- How can I effectively leverage the exponentially increasing amount of data being generated?
 - Ask yourself what data will be needed in 10 years and ensure that it is being collected now.
- How do I create a loyalty and retention roadmap with a positive Return on Investment (ROI)?
- How do I gain real-time visibility into my loyalty and retention program?











The "Me" Factor



Developing the "Me" factor starts with data integration And it is challenging

- Existing data sources are many, disparate and
 not necessarily joined or related
- Data is both structured and unstructured
- Large volumes of data are required
- Geospatial data is critical
- Digitization of existing analog based documents is required
- Data integration will merge data from internal and external (public) sources

- Building a model and conventional data warehouse to store and integrate the data is time consuming, costly, and somewhat inflexible to change.
- Effective data integration and resulting analytics must be real time to "individualize" customers and drive effective loyalty program decisions
- Big Data and the Internet of Things play a huge role in the "me" factor"





Architecture of the Digital You





Intelligence flowing back to you





People Tracking

Our device can also monitor breathing and heart rate

the second s

EASYTRACGPS,



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Yes... you are being tracked...*McKinsey

How does location tracking work?



SOURCE: Press and literature search



Thinkhealthwireless.blogspot.com all this data about you is going . . . somewhere





What's Connected...

INTERNET-ENABLED "THINGS" CURRENTLY CONNECTED TO NETWORKS



While 71% percent of IT pros acknowledge that IoT will affect both consumers and the workplace, their actions seem to speak louder than their words... more than half state they aren't doing anything to prepare for impact.



The impact of IoT Digital Transformation through Oracle's IoT Architecture





Oracle's Big Data management and ecosystem





"Me" factor scenarios

- Location based IoT
 - Retail
 - Restaurants
 - Events
- Device based IoT
 - Retail
 - Services
 - Healthcare

• Online activity based IoT

- Airlines
- Rental Cars
- Hotels





A device monitored threshold triggers the interaction





Location based IoT to drive behavior proactively

• The business problem

- "How can I interact with customers that are in close proximity to my store via their smartphones"?
- Rather than requiring customers to "start the interaction," we want to proactively drive their behavior.

• Objectives of the solution:

- ✓ Increase store traffic within the mall.
- ✓ Increase store traffic outside the mall.
- ✓ Increase revenue per visit and per transaction.
- \checkmark Reduce the non-buy percentage.





The technology and data required for the solution

• Technologies

- Ability to interact with smart devices with location information tied to an individual
- Data collection and decision points for real-time interactions and analytics
- Storage and processing capabilities for batch-oriented non-real-time analytics

Data Sets

- Customer profiles tied to an individual and linked to the individual's identifying device (phone, loyalty card, facial recognition, etc.)
- A very fine-grained customer segmentation tied to detailed buying behavior and tied to elements such as coupon usage, preferred products, and other product recommendations





The "Me" factor comes to life by using technology

empowered by the dataLocation Services trigger the

- Location Services trigger the interaction
 - Identify the customer
 - A customer with an IoT device walks into the mall
 - Lookup the user profile
 - Lookup the location
 - Load the "expert system"
 - Black box model evaluates the offers and profile and determines what actions to take
 - All this happens in real time
 - Oracle RTD executes the action(s)











Pervasive analytics executed through a predictive model and real-time big data decision engine

- Proactively engage the customer in real-time
 - The model leverages large amounts of data and processing resources to arrive at real-time actions
 - The predictive model and real-time "Me" factor system optimizes behavior







How this works, the possible technologies behind it

- A customer with an IoT device is identified and located as nearby
- The Oracle NoSQL DB matches the customer to the customer-profile database
- The customer profile is fed into the real-time "Me" factor system
- Hadoop executes batch jobs accessing a "customer hub" data reservoir
 - Hadoop Distributed File System (HDFS) is used to create a model of buying behavior
 - Customer profiles are batch-loaded from the Oracle NoSQL Database and the Hadoop interface and added to the MapReduce data sets
 - The customer profile data is combined with POS data, customer relationship management (CRM) data, social media, and other directly or indirectly related data linked to the customer, and readied for analysis
- The "Me" factor engine is triggered and executes a model that describes and predicts the behavior of an individual customer and, based on those predictions, determines what action(s) to take





Are you ready?

Metrics drive behavior. Is your use of metrics working for or against you?

- Effective loyalty programs must:
 - Become more personal and interact with the customer
 - Demonstrate a recognition of each customer's "uniqueness"
 - Provide the customer with something just for them
 - Leverage customer big data down to the individual
 - Execute evasive analytics to drive behavior and satisfaction

The "Me" Factor

ITS PERSONAL NOW



Thank You & Make a Difference in the World!















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