Outline

• Case Study 1: Deutsche Bank
  – Background
  – Data-Driven EA Design
  – The Results

• Case Study 2: C.W. Bill Young Marrow Donor Program
  – Background
  – Data-Driven EA Design
  – The Results
Background

• About the Company
• Market Positioning
• Operating Model
• Functional Decomposition
• Business Needs and KPI’s
• Current State Assessment

About the Company (1)

• A German Bank
• Founded in 1870
• Their Big & Global
  – #6 in the world based on assets ($2.6 trillion!)
  – Top 5 Wall St. Firm
• Multiple Divisions / Products
  – Retail Banking
  – Private Wealth
  – Investment Banking
  – Corporate Banking
About Investment Banking Business Unit

- Broad range of products and services
- Focused on serving
  - Public and private institutional traders (pension funds, mutual fund companies like Fidelity Investment)
  - Private equity companies
  - Hedge funds
- Three sub-divisions: Fixed Income; Equities & IBD
- Organized (and culturally divided) into “The Front Office” and “The Back Office”
Market Positioning (1)

Deutsche Bank


Market Positioning (2)

Deutsche Bank

Lower Cost

Broad Range of Buyers

Differentiation

Narrow Buyer Segment

UNLOCKING BUSINESS VALUE
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Operating Model

**Coordination**
- Shared customers, products and suppliers
- Impact on other business unit transaction
- Operationally unique business units
- Autonomous business mgmt. & process design
- IT application align to business units

**Unification**
- Customers & suppliers may be local or global
- Globally integrated business processes
- Use enterprise systems
- BU’s with similar or overlapping operations
- Centralized management often matrixed
- Centrally mandated databases and IT

**Diversification**
- Few, if any, shared customers or suppliers
- Independent transactions
- Operationally unique business units
- Few data standards across business units
- Most IT decisions made within business units

**Replication**
- Few, if any, shared customers (per transaction)
- Independent transactions & BU Leaders
- Operationally similar business units
- Standardized data definitions but locally owned
- Centrally mandated IT services

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Current State Assessment

**Organization & Readiness**
- Enables

**Business Processes**
- Delivers

**Data Assets**
- Enables

**Business Goals and Objectives**
- Enables

**Technology Assets & Practices**
- Enables

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*Source: MIT*
Current State: Cultural Readiness

Organizational Structures

- Understand roles, responsibilities, authority & accountability
  - CIO and COO at the same level
  - IT decisions managed at the C-Level

- Assess Skills Across Business, Data & Technology
  - Lots of Cobol Programmers
  - A few good data modelers
  - Experienced program managers
  - Serious application & technical architects
  - A few NASA-level technical engineers
  - Experienced (and supportive) SME's
Current State: Technology Assets

- Deutsche Bank
- Mostly Client-Server applications
- A variety of technical platforms
- Mixture of homegrown & 3rd party

Current State: Business Process

- Run reports to see what and how many trades have been received
- Run reports for each sub-system to see what happen to the trades
- Find trade exceptions from looking at reports of ALL trades

- Processes aligned to sub-systems
- Process integration points not understood or proactively managed
- Integration required extensive manual intervention & reconciliation

- System would shut down at 100,000 trades
- Fragile & difficult to change because impacts can’t be anticipated
- Key-man dependencies defined the career path
Current State: Data Management Practices

On a scale of 1 to 5, let’s just say they were a ‘1’.

Current State: Data Assets

- Transactional, Master, Reference and Accounting Data
- Structured and flat
- Typical of Legacy VSAM files
  - Over-loaded fields were the norm
  - Intelligence built into identifiers
  - Non-atomic values
  - Relationship tables widely used
- Attempted to maintain extensive technical metadata for change control
- 95% ROT (Redundant, Obsolete or Trivial)
Data-driven **Unification EA Model**

Application architecture for enabling functionality

**Data Objects**

- Master Data
- Lifecycle Mgmt.
- Exception Workflows
- Decision Support
- Shared Utilities

Middleware passing data objects

Application architecture for core business functionality

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**Data-Driven EA Design**

- Guiding Principles

  - Straight-through processing
  - Data correct the first time using VEST’ing (Validation, enrichment and standardization)
  - Exception-based workflows
  - Loosely coupled architecture; develop functional systems linked through a common data model
  - Treat data exchanges as a data model
  - Identify the key data elements
  - Put controls on key data elements
  - Create and use business-event metadata to create absolute workflow transparency and control – end-to-end
  - Identify system of Record and Authoritative Data sources

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The Results

By the Numbers:
- Reduced cost per trade by 54%
- Increased number of trades per operational staff by 37%
- Increased trading capacity by 2000%
- Improved ranking (from #11 to #2) in client trading performance
- Increased to over 1.5mn trades per day (from 500K per day)

New Capabilities:
- Work proactively
- Enable continuous improvement
- Transparency and control
- Business agility

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About Marrow Donor Centers

- 120+ Donor Centers in the U.S.
- 9+ million registered donors with NMDP
- Approx. 4,800 marrow donations annually (increasing 14% per year)
- Probability of an HLA (DNA) match is approx. 1 in 20,000 donors
- C.W. Bill Young Department of Defense Marrow Donor Center (MDC) has 854,000 registered donors (adds ~75,000 donors every year)
- Donor Centers paid for each registered donor and marrow donation
Donor Centers Process

Data Valuation

- A unique valuation model – measure impact on mission as well as business operations
- Donor Center Mission
  - Provide high-quality HLA typings for a better match
  - Highly efficient match request processing to meet patient critical timing needs
  - On-going donor engagement and education to increase donor participation
- Donor Center Business Operations
  - Increase revenue opportunities
  - Cost takeout
Organizational Needs

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Benefits / KPI’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity</td>
<td>• Increase # of stem cell collections per coordinator</td>
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<tr>
<td></td>
<td>• Increase # of DNA Samples typed per lab tech.</td>
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<td>Transparency &amp; Control</td>
<td>• Reduce the number of missed SLA milestones</td>
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<td></td>
<td>• Measure and improve process &amp; staff performance</td>
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<td></td>
<td>• Proactively &amp; efficiently address workflow exceptions</td>
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<td></td>
<td>• Full audit capability gives proof of FDA compliance</td>
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<tr>
<td>Quality of Services</td>
<td>• Min. process errors &amp; max. reporting analytics</td>
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<tr>
<td></td>
<td>• Staff focused on quality of results by minimizing manual steps</td>
</tr>
<tr>
<td></td>
<td>• Improved stakeholder experience</td>
</tr>
<tr>
<td>Donor Mgmt and Retention</td>
<td>• &gt;99% accuracy for critical donor information</td>
</tr>
<tr>
<td></td>
<td>• Identify donors with highest probability of a match</td>
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<tr>
<td></td>
<td>• &gt;75% donor participation rate</td>
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</tbody>
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Data Services Layer

Donor Center Workflow

Donor Typing Lab

Third Parties

Fedex, Labs, NMDP, BMDP

Donor Registry and CRM

Donor 360° View

Recruit Donors

Donor DNA Typing

Marrow Collection

Donor CRM

Donor Center

EA Solution
Results (1)

Mission Metrics

Lag to Register Donor (in Days)

Average Days to Complete Donation Request

Business Metrics

Percent of SLA’s Hit for Donor Requests Processed

Number of Request Processed per Donor Coordinator

Results (2)

• Mission Goals
  – Fewer days to register a donor with NMDP
    • Impact: Increase in donor growth population (velocity); greater chance of finding a match
  – Donation requests processed more quickly
    • Impact: Increase in actual marrow donations (still to be measured)

• Business Operations Goals
  – Higher throughput with same resources = decreased cost per request
    • Impact: 100% increase in requests processed per coordinator = 50% reduction in cost to process a request
  – More SLA payment targets hit
    • Impact: 32% increase in revenue from SLA targets