Raising the Bar: DQ/IQ to “Enterprise IQ”
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Objectives of this presentation

• Traditional Data Quality and Information Quality: Example DQ/IQ Evolution with BI
• From DQ/IQ to “Enterprise IQ” Considerations
  – Organizational Context
    • Complexities
    • Business Strategy/Goals
    • Regulatory
    • Culture
• Summary
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Example Systems DQ/IQ Evolution

20+ years ago: “Converting paperwork to data records” – Batch environment

10-20 years ago: Terminals for most employees, PC’s for power users
Information decentralization from IT vastly increased data volumes but inflicted heavy impacts on performance, security, and reported information consistency!

~5y - Current
Near real-time
Not quite real-time – BI - Executive SS

Why BI?

• Some Drivers behind (Getinge USA’s) BI:
  – Centralized consistent information source and toolset.
  – One analytic view of the customer
  – Enhanced analysis: strategic advantage
  – Ability to “close the books” in record time

• Management embraced BI as a springboard towards a data/information quality culture.
Why BI?

• Project significantly involved business management.
  – Required analyzing and understanding business processes.
  – Inter-relationships and complexities between information producers and consumers clarified.

• The BI project made it necessary. Clean (scrubbed) source data...
  – Re-organize the business towards this goal.

Why BI?

• Data Quality Review Board formed
  – Business Management (Data Stewards)
  – IT

• Continuous Improvement Process.
  – Identification or Hypothesizing of problems and areas for improvement.
  – Design and development of solution
  – Test then Implement
  – Monitor
  – Repeat
Effective DQ/IQ Technical Mechanism

- Data Quality Monitoring: real-time alerts chosen instead of application edit modifications because of application re-validation requirements.
  - Alerts directly to data producer.
  - **Correction Deadline**: end of business day.
  - Data producers correct their own information
  - Management receives individual visibility and statistical summaries.
  - Managers assure compliance to alerts, devise corrective action such as training or discipline as necessary.

Effective DQ/IQ Technical Mechanism

- For us, real-time alerts now robust
  - Mass “data scrubbing” is a thing of the past.

- For data consumer - there are two basic expectations:
  - "Realtime" – assume may not yet be scrubbed.
  - "BI" – assume information has been scrubbed.

- In the end: Data Quality is internalized as a normal daily business responsibility.
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Enterprise IQ (EIQ) – DQ/IQ Up a Notch

Multiple Entities/Divisions/Business Units

Org Context
Complexity
Strategy
Regulatory
Culture

Business-Critical Expectations!
Supply Chain
Customer
Shareholders
Global Mgt

• Especially for complex corporate environments, there are added demands to information, for example:
  – Multiple divisions/business units/sister companies
  – Multi-National Corporations (MNC's)
  – Multiple product families and shared customers/suppliers
  – Combinations of the above!

• Information Shareholders in EIQ are beyond end-users; they include stockholders, group management, and customers/suppliers…
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Complexities - Real-World Example

GETINGE GROUP

Extended Care  Infection Control  Medical Systems

ARJOHUNTELEIGH  GETINGE  MAQUET

2007 Global Revenue: ~$2.547B

Employees: 10,358
GETINGE INFECTION CONTROL

Healthcare  Pharmaceutical  Medical Device  Research

2,866 Employees
26 Sales/Dist Companies
65 Dealer Network
12 Manufacturing Plants

Complexity – BA and Customer Segments

Business Areas
EXTENDED CARE 37%
INFECTION CONTROL 26%
MEDICAL SYSTEMS 37%

Customer Segments
Elderly Care 18%
Hospitals 73%
Life Sciences 9%
Complexity – Infrastructure

Complexity - Multiple Applications

- ERP
- CRM
- Document Management
- HR
- QS
- BI/DW
- Budgeting
- Training Management
- CAPA
- NC
- Engineering
- Messaging/Collaboration
- Intra/Inter/Extranet
- eCommerce
- Legal
The MIT 2008 Information Quality Industry Symposium

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Key: ElQ Alignment to Business Goals

Business Goals (examples):
• Top-quality deliverables to the customer, exceeding customer expectations?
• Increased Revenue?
• Increased Market Share?
• Reduce re-work and returns to minimize cost?
• Maximize return to investors?
• Increased Focus on Core Competencies?

• Question: where does information quality fit in with relation to your company’s business goals?
**IC Strategic Cornerstones: Customers**

**COST LEADERSHIP**
To utilize the business area’s world-leading position to give cost-effective, good-value solutions to customers.

**INTEGRATED SOLUTIONS**
To be the best complete solution provider, where Getinge’s broad product range and expertise will benefit customers.

**SERVICE**
To utilize Getinge’s well-developed service network and the Getinge Academy to give customer superior service and optimal use of their investment.

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**Strategy – Growth**

**Infection Control**
- Bolt-on acquisitions to add new technologies and to reach new geographies within existing product lines
- New product lines: Consumables

**Extended Care**
- Bolt-on acquisitions to add new technologies or to build critical mass in existing product lines

**Medical Systems**
- Bolt-on acquisitions to add new technologies and to reach new geographies within existing product lines
- New product lines: Cardiac surgery
Leveraging Information for Growth

• Information for a customer-centric approach
  – Listen to customers
  – CRM approach: acquire/enhance/retain customers
    • Areas: sales, service/support, retention/loyalty, marketing, account/contact management.
    • Capture customer information at all contact points
    • Make a customer’s information available for all who contact the customer.
  – Genuinely use customer feedback for improving products and services.
  – Leverage information across business units for a customer-centric experience.
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Regulatory - Environment

• Multitude of regulatory/governance factors:
  – GMP, TQM
  – Corporate Governance (example: SOX)
  – Internal and External Audits (Finance/Accounting, Quality, Corporate Governance)
Regulatory - Governance → IQ

Corporate Governance internal controls:

Objectives (CAVR):
- Completeness
- Accuracy
- Validity
- Restricted Access (Security)
- Segregation of Duties...

Fin Stmt Assertions:
- Completeness
- Existence/Occurrence
- Validity/Accuracy
- Rights & Obligations
- Presentation/Disclosure...

- Preventative/Detector
- Automated/Manual

Note some overlap with IQ-related dimensions (Wang, et al, 1997).

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Culture - Quality Maturity/Consistency

• Maturity level of Quality Culture influences where your company weighs:
  – Balance of Resources, Time, Cost, Risk, Urgency, …

• A company undergoing frequent corporate combinations needs additional focus on cultural integration.
  – Quality Culture must prevail.
  – Especially for combinations with dissimilar maturities.
  – MNC: differing interpretations of same standards between countries.

Culture - Quality Maturity/Consistency

• Overall Business Maturity and Strategy impacts EIQ:
  – Business Culture
  – Continual Improvement/Learning Organization
  – Measurements → Accountability
  – Organizational Alignment with Quality
  – Education/Training
  – Individual understanding how roles contribute to the organization as a whole
  – Company-Unique Factors
Information Quality may be viewed as an essential element to organizational/operational success but…

Information Quality is a fundamental contributor to the larger goal of embracing business-wide Quality Systems and Principles.

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DQ/IQ:
• DQ/IQ can be reinforced in projects such as BI, via involvement of non-IT management.
• Re-organize around DQ/IQ and utilize stick and carrot.

EIQ:
• DQ/IQ and EIQ Information Stakeholders are different,
  – It’s about the customer, suppliers, shareholders, group management…
• Associate DQ/IQ/EIQ to the larger picture of Quality Systems.
  – Organizations in regulatory/governance environments by nature must internalize elemental concepts of DQ/IQ.
• There are complex contributors towards the end-goal of EIQ.
• IT's role is to be aligned to the business and contribute to progression towards strategic goals (value-add).

Thank You

Questions?

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