Data Quality in Shell: Building IQ Knowledge and Skills

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About Shell
Information Management is like a refinery

Oil
- Receive crudes
- Distil
- Crack
- Store
- Blend
- Distribute

Data
- Collect raw data
- Validate and classify
- Normalise
- Store
- Integrate
- Distribute

Supply high quality oil
Supply high quality data

To get high quality data (or oil) we need to get the process right

Why do Data Training

"Develop greater breadth and depth on data quality" - Redman review 2009

World Class People

End-to-end Process and Data Management
What Makes a Data Professional?

Understands business processes that generate data

Understands business processes that use data

"Most issues occur on interfaces between organizations. Data quality requires end-to-end, horizontal management." - Redman

Understands best practice data process

Key Business Processes and related Data Objects

- Asset Integrity
  - Asset, equipment, functional location

- Hydrocarbon Inventory Management
  - Product, plant, storage location

- Offer to Cash
  - Customer, product, pricing

- Requisition to Pay
  - Material, service, vendor, contract

- Well and Reservoir Management
  - Field, reservoir, well
Where we have been - timeline

2004 Formed a global team in Downstream focussing on master data
2005 Data Quality Standards applied
2006 Central data management operations goes live
2007 Automation of quality checking
2008 Data Process established with Group responsibilities
2009 Upstream data operations commence
2010 External benchmarking
2011 Data quality training programme

Imperatives for 2011

■ "Finish what we have started"
  ■ Develop data professionals

■ More business impact
  ■ Improve understanding of cost of poor quality data

■ Continuous functional improvement
  ■ Continuous improvement of the data process

■ World-class people
  ■ Certification for data professionals
Competence development for Information Management

For anyone working with data to help them:

- Engage stakeholders
  - Understand the impact of defective data on business.
  - Understand the roles that people play in delivering reliable data
- Contribute to resolving data issues
  - Understand the causes of defective data
  - Understand the importance of error prevention
- In house developed e-learning: 1 hour duration
Information Management Fundamentals Course (2010)

Awareness level for recently started IM practitioners to help them:
- Analyse data issues
  - Understand the e2e processes for data management
  - Understand how people, policies and practices affect data quality
- Develop solutions to data issues
  - Understand the tools and techniques used in data management:
    - Understand how different elements of data management fit together
- Engage stakeholders
  - Understand the roles that people play in data governance
  - Understand the principles followed by data professionals

Data Quality and You (2011)

Knowledge level course for established data practitioners (1 year+)
- Identify customer needs
  - Know who all their customers are
  - Effective techniques to understand customer needs
- Analyse data issues
  - Treat data as a product of a process that affects quality.
  - Identify process customers and suppliers
- Develop effective data controls
  - Build quality controls and metrics around the customer viewpoint
- Apply Lean Sigma to continuously improve data processes
  - Proactively address data quality issues
Data Quality and You (2011)

- Developed with Tom Redman and professional learning designer
- Blended learning
  - Five facilitated virtual workshops @ 1.5 hours
  - 3 books + 3 modules eLearning for details
  - Work-oriented assignments to apply the theory
- Line manager involvement encouraged
  - Set participant objectives
  - Coaching and guidance
  - 3-way feedback of course results, gaps, next steps
- ~40 hours commitment over 3 months

Next: Knowledge training for the business (2011)

Knowledge training for business people for whom IM is a critical, but non-core activity (e.g. Business process managers)

- Lead continuous improvement of business processes using data quality controls and measurements as drivers
- Contribute to continuous improvement of data processes to improve data quality
- "Light" version of "Data Quality and You" training
  - Challenge: How to fit it all in to 2 hours or less
Next: Information Management Skill (2012)

For experienced IM professionals (3+ years)
- Blended learning
  - Extensive reading and workshops
  - Emphasis on practical application through projects
- IQCP exam and certification from IAIDQ
- Estimate 20 days duration over 1 year

What We Have Learnt

- People and processes impact quality more than systems
  - Consolidate the people and skills
  - Standardise the data process
- Changing behaviours requires ongoing effort
  - Raise awareness of quality issues
  - Communicate the need for data governance
- Continuous improvement (CI) can be applied to anything
  - Build skills in CI across the organisation
  - Apply to processes, data, data processes, meta-data, meta-processes…
- There are not many people with the skills needed
  - Few sources of training
  - Professional certification is just starting