Using Information Quality for Competitive Advantage

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Overview

- Connecting information quality with value

- The journey to data quality

- Emergence of information quality

- Vision for China

- Three steps to achieve the vision

- UALR IQ Graduate Program

Greetings From

- **Dr. Rich Wang**, Director of the MIT Information Quality Program

- **Dr. Joel Anderson**, Chancellor of the University of Arkansas at Little Rock

- **Dr. Eric Sandgren**, Dean of the UALR College of Engineering and Information Technology

Information Quality and Value

Information Quality is an emerging discipline of theory and practice concerned with

- Maximizing the value of an organizations information assets
  - and

- Assuring that the information products created by the organization meet the expectations of the customers who use them

Information: A Strategic Asset

- In an information economy, information quality is a competitive advantage
- To be successful, an organization must manage information as product
- IQ is the equivalent of "lean manufacturing" for information products in an information-driven economy

Journey to Data Warehousing

- In the 1990s, US businesses were persuaded that collecting all of their data into a single repository for analysis would create the strategic information that would given them a competitive advantage

- It was a compelling idea that was conceptually correct, but very difficult to execute

Journey to Data Quality

- The attempt to deliver on the promise of data warehousing was also the start of our journey to data quality
- Until they tried to put their information together – they had no idea how
  - Inconsistent
  - Inaccurate
  - Incomplete
  - Poorly organized
- Were data across the enterprise

The Journey Has Been Difficult

- It took many years just to establish data quality dimensions so we could have a way to measure data quality
- More time and debate was needed to develop methodologies for assessing the impact of data quality on business processes
- Software vendors were slow to develop and offer tools for data quality

Birth of Information Quality

- Even with this, information still did not produce value easily
- Learning how to set requirements, assess, clean, and monitor data quality, i.e. conformance to requirements (DQ) was not enough
- It took more than 10 years from the invention of DW to reach a point where more than 50% of DW projects were successful!
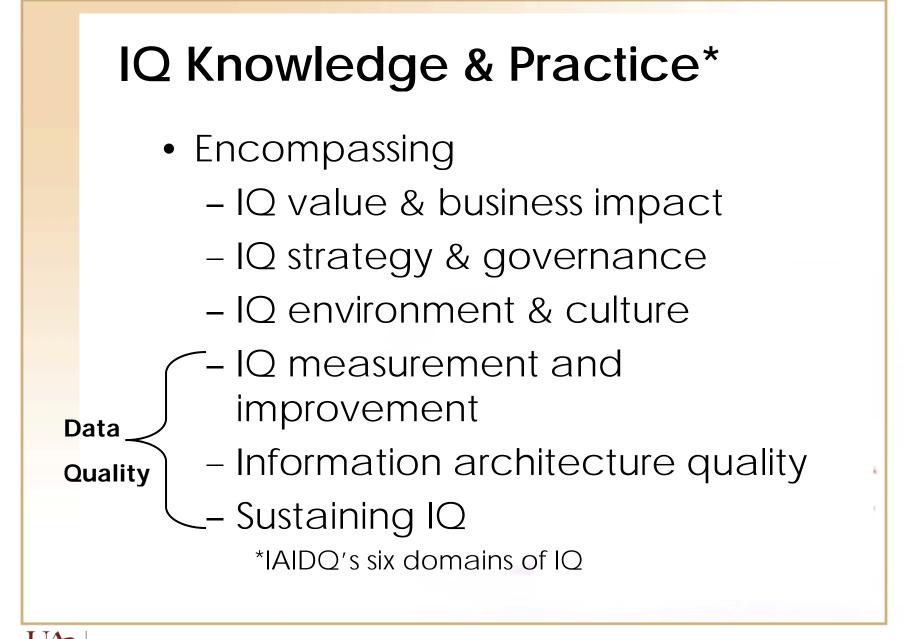
There Was Still More to Learn

- Information must be governed and controlled at the enterprise level
- Information stakeholders must all have **clearly defined roles** and **agreement** on
  - Who is **R**esponsible
  - Who is **A**ccountable
  - Who should be **C**onsulted
  - Who should be **I**nformed

  RACI Model

IQ Culture and Training

- Success requires a culture of shared responsibility across the enterprise – **data stewardship** – not ownership!
- People must have training to understand how to
  - Assess DQ
  - Build business cases for DQ projects
  - Lead Improvement projects
  - Establish governance and policies
  - Develop and apply data standards

IQ Knowledge & Practice*

- Encompassing
  - IQ value & business impact
  - IQ strategy & governance
  - IQ environment & culture
  - IQ measurement and improvement
  - Information architecture quality
  - Sustaining IQ

Data

Quality

*IAIDQ's six domains of IQ

IQ Growth and Maturity

- Books
- Journals
- Conferences
- Professional Societies
- Professional Certification
- Commercial and Open Source Tools
- Training and Education

Opportunity for China

- China can gain a competitive advantage in the global economy by understanding and applying best practices in

Information and Data Quality

- This opportunity can be realized by following 3 principles

Achieving the Vision

1. Take advantage of the 20 years already invested in learning what IQ is and how to do it!

2. Form a collaboration among MIT IQ program, UALR IQ program, and Xi'an Jiaotong University to advance IQ education and training in China

3. Incorporate IQ Policy and Strategy into your strategic plan for business development

Go to the Front of the Line in IQ

- No need to re-invent the wheel
- Take advantage of the lessons learned
- Exploit the many IQ resources available now that were not there 10 or even 5 years ago

Books

- **IAIDQ.org** – IQCP Reference List
- *Journey to Data Quality*, Lee, et al, MIT Press
- *Data Quality: The Accuracy Dimension,* Olson
- *Data Quality: The Field Guide*, Redman
- *Data Quality Assessment*, Maydanchik
- *Executing Data Quality Projects: Ten Steps to Quality Data and Trusted Information*, McGilvray
- *Information Quality Applied*, English
- *Entity Resolution and Information Quality,* Talburt

Journal

ACM Journal of Data and Information Quality

- Co-Editors-in-Chief
  - Dr. Stuart Madnick, MIT
  - Dr. Yang Lee, Northeastern University

International Journal of Information Quality (Inderscience Publishers)
  - Dr. Andy Koronios (Editor-in-Chief), University of South Australia

Conferences

- ISMAP Today in Xi'an
- SigIQ Pre-ICIS Workshop
  - 2011, Shanghai on December 3, 2011
  - 2012, Orlando, Florida, USA, Dec 15, 2012
- MIT International Conference on Information Quality (ICIQ)
  - 2011, Adelaide, Australia, Nov18-20, 2011
  - 2012, Paris, France, Nov 15-17, 2012
  - 2013, University of Arkansas at Little Rock, November, 2013

Conferences

- MIT Chief Data Officer & Information Quality Industry Symposium,
  - Each July at MIT in Cambridge, MA, USA
- Data Governance and Information Quality (DGIQ) Conference
  - 2012, San Diego, California, USA, June 25-28, 2012

Professional Societies

International Association for
Information and Data Quality (IAIDQ)

- – www.iaidq.org
- Only international professional association devoted entirely to IDQ
- Vendor, product, and methodology independent

IQ communities now forming in China, Brazil, Germany, France, South Africa Spain, …

Professional Certification

Information Quality Certified Professional (**IQCP**)

- Developed by the IAIDQ for working IQ professionals
- 3 Year Experience and Examination
- Next offering March, 2012
- Application and study guide available online at **iqcp.org**

IQ Tools

- Commercial
  - SAS Data Management Platform
  - Informatica
  - IBM Data Stage
  - … many others
- Open source
  - DataCleaner
  - Talend
  - OYSTER (UALR)
  - …many others

UALR IQ Graduate Program

- Co-Founded in 2006 by
  - Rich Wang, MIT IQ Program
  - Charles Morgan, Acxiom Corporation
  - Mary Good, Dean UALR Engr & IT College
- Three Programs
  - Graduate Certificate in IQ (12 hrs)
  - MS in IQ (33 hrs, project/thesis option)
  - IQ Emphasis in Integrated Computing PhD (72 hrs)

Unique Program

- Only US program granting IQ degree
- Current enrollment: 75 students (18 in PhD program)
- More than 50 MS and Certificate graduates
- Five PhD graduates
- Courses are webcast live from UALR
- Remote students in Brazil, South Africa, Finland, and across U.S.

Questions or Discussion?

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