RM to Achieve Analytical Competitiveness

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New Challenges for Business Executives
“At a time when companies in many industries offer similar products and use comparable technology, many of the previous bases for competition are no longer viable. In a global environment, physical location is frequently not a source of advantage, and protectionist regulation is increasingly rare. Proprietary technologies can often be rapidly copied and attempts to achieve breakthrough innovation in products or services often fail. What’s left as a basis for competition is execution and smart decision making. An organizational commitment to and developed capability of Analytics is enabling market-leading companies to succeed in the rapidly evolving arena of global competition.” – Davenport and Harris 2007
## Do You Have the Analytics to Win

Finding the right business metric is crucial to success

<table>
<thead>
<tr>
<th>Company</th>
<th>Original Metric</th>
<th>The Right Metric</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wells Fargo</td>
<td>Profit per loan</td>
<td>Profit per employee</td>
<td>Defined regional banks and early to adopt ATMs, 24 hour banking by phone, eBanking – has 75% of market share</td>
</tr>
<tr>
<td>Gillette</td>
<td>Profit per division</td>
<td>Profit per customer</td>
<td>Identified need for disposables – now premier global brand of daily necessity</td>
</tr>
<tr>
<td>Walgreen’s</td>
<td>Profit per store</td>
<td>Profit per customer</td>
<td>Pioneered drive-thru pharmacies and 1st to globalize convenient corner drugstore</td>
</tr>
<tr>
<td>Circuit City</td>
<td>Profit per single store</td>
<td>Profit per region</td>
<td>1st “superstore” for electronics - stock up 300% over 10 years in a flat market</td>
</tr>
<tr>
<td>Pitney Bowes</td>
<td>Profit per postage meter</td>
<td>Profit per customer</td>
<td>Extended to provide all sophisticated back office equipment needed</td>
</tr>
</tbody>
</table>

*Source: Jim Collins, Good to Great*
Can You Rely on Your Analytics?

- RELIABLE?
- ACCURARE?
- CONSISTENT?
- INTEGRATED?
- ACTIONABLE?
Why Is Your Analytics Not Good Enough?

• DISCONNECTED FROM BUSINESS PROCESS
• POOR DATA QUALITY

• LOW ANALYTICS MATURITY LEVEL
  – THE KEY ISSUE for MOST ORGANIZATIONS
• (many companies spent millions $ in building data warehouse, but do not have high quality analytics to enable utilizing the data)
Your Needs: Moving Up
Enterprise Analytics Maturity

Stages of Competing on Analytics

<table>
<thead>
<tr>
<th>Process</th>
<th>Tactical Analytics</th>
<th>Aspiring Strategic Analytics</th>
<th>New Strategic Analytics</th>
<th>Strategic Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disconnected and narrow focused</td>
<td>Enterprise-wide Starting up.</td>
<td>Partially embedded</td>
<td>Dynamic, fully embedded and highly integrated</td>
</tr>
<tr>
<td>Data</td>
<td>Structured and organized</td>
<td>Standards based, both structured and unstructured</td>
<td>Seamless and shared, structured and unstructured integrated</td>
<td>All info seamless and shared, fully integrated enterprise-wide</td>
</tr>
<tr>
<td>Skills</td>
<td>Isolated analysts</td>
<td>Skills in multiple areas, with limited interaction</td>
<td>Skills exist, but not aligned to right level and role</td>
<td>Highly skilled, leveraged, mobilized and centralized</td>
</tr>
<tr>
<td>Sponsorship</td>
<td>Functional and tactical</td>
<td>Executive support for competitiveness possibilities</td>
<td>Broad C-suite support</td>
<td>CEO passionate, broad based management commitment</td>
</tr>
<tr>
<td>Culture</td>
<td>Support point use of data-based decision</td>
<td>Executive support for data-based culture, with considerable resistance</td>
<td>Data-based culture in building</td>
<td>Broadly support data-based, testing and learning culture</td>
</tr>
</tbody>
</table>
New Challenges for Analysts to enable strategic analytics
Challenge 1:
Research Flows Difficult to Manage
Challenge 2

• Finding needle in a haystack
  – Gain control over complexity
  – Focus on strategies rather than technical details
  – Manage logbook needs

• Moving up from try-outs to production
  – Develop research flows with ease
  – Manage partial results
  – Maintain reproducibility, validability, audit
Challenge 3

• Safeguard Analytics Assets
  – Control access
  – Auditing & tracking
  – Knowledge management

• Regulatory compliance
  – Book keeping
  – Versioning
  – Timely recording
Our RM Solution

Customized Research Management System
Core of the RM Solution: Manage Research Flows Systematically

Our RM System can
1. Manage analytics flows effectively
2. Increase research productivity
3. Improve research quality

- Research Flow Management has been used in Bioinformatics and in engineering with great success
- Research Flow Management has not been used in business and social research yet
Major Benefits of Managing Research Flows

– Automating tedious technical procedures
– Managing analytical processes and analytical resources effectively
– Supporting high-level analytical strategies

– Research flow & component reuse
– RM4Es components
– Easy research design & documentation
– Archival and sharing
– Provenance support
– Performance improvement
  • Distributed execution
– Rmap intelligent support
RM System Manages Research Flow Life Cycle

Developing research flows
- Capture the best practice and support innovation
- Integrate data, resources and software applications

Warehousing research flows
- Manage research flows
- Construct knowledge base of research flows

Deploying research flows
- Turn your research flows into reusable
- Turn every researcher to a solution builder
RM System Provides an Integrative Platform

ResearchMap
Research Flow Warehouse

Researchers

Deployed for End Users

RM Data Components

R

RM4Es Components

Customized Apps
Key to success of the RM System:
- User Centric Research Flow Management

- RM makes use of previous knowledge about developing and mapping research flows
  - Explicit and Expert knowledge
  - Implicit knowledge

- RM semi-automatic tools advise and assist users in authoring research flows

The aim is to help researchers, not to replace them
The RM System Design
What is RM System Designed for?

RM system is not an application but a framework to build and deliver applications for researchers and business users.
Major Elements of The RM System

THREE ELEMENTS:

RM4Es components
Research flow repository
ResearchMap Intelligence
Note: this is the initial design to be modified by group B.
RM Structure

Solution Building

Integrative Research Flow Platform

Research & Data Components
- Equation
- Estimation
- Evaluation
- Explanation

Data & App Integration
- Data manipulation
- Multiple data sources

Portal
Application
To Business Process

Manager
Analyst
User

Rmap
Expert
System
RM Elements for Integration

Embedding
Research applications

Resource Mapping

Research flow
Warehousing

Research flow
Authoring & Composing Services

Research flow
Execution & Deployment

ResearchMap Expert System
ResearchMap Knowledge Management
A Total Solution for Competing on Analytics

Optimal Use of RM System
Embedding RM into Solutions

Business Process

Get Customer Value Score → Get Propensity Score → Risk Assessment → Acceptable Risk?
- Yes: Continue What Offered
- No: Special offer

RM System

Embeddable Analytic Applications
- Propensity Analysis
- Lifetime Value Studies
- Risk Management

Data Processing

Customer data → Customer Value scores → Risk data → Risk Scoring

Research Repository

Rmap

Research flows