The Synergy Between Knowledge Management and Analytics

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Table 1. A PAIR examination of KM Process and Outcome

<table>
<thead>
<tr>
<th>KM Process</th>
<th>Productivity</th>
<th>Agility</th>
<th>Innovation</th>
<th>Reputation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Productivity of a process that makes sense, predictions, evaluation, or decisions about a situation</td>
<td>Agility of a process that makes sense, predictions, evaluations, or decisions about a situation</td>
<td>Innovativeness of a process that makes sense, predictions, evaluations, or decisions about a situation</td>
<td>Reputability of a process that makes sense, predictions, evaluations, or decisions about a situation</td>
</tr>
<tr>
<td>KM Outcome</td>
<td>Knowledge that aids organization’s productivity</td>
<td>Knowledge that aids organization’s agility</td>
<td>Knowledge that aids organization’s innovativeness</td>
<td>Knowledge that aids organization’s reputation</td>
</tr>
</tbody>
</table>

Holsapple (2015)
Number of academic publications with “Knowledge Management” keyword (Ribiere, 2015)
Google Trends

"data analytics"
Search term

"knowledge management"
Search term

Worldwide
2004 - present
All categories
Web Search

Interest over time

Average
0
Jan 1, 2004
Jul 1, 2009
Jan 1, 2015
Key Categories Why KM May Have Difficulties
(34 experts, 111 reasons; Ribiere, 2015)

• Culture
• Measurement/Benefits
• Strategy
• Organizational structure
• Governance and Leadership
• IT related Issues
• Lack of KM understanding / Standards
O’Leary (2016), “Is KM Dead (or Dying)?”, Journal of Decision Systems

• Social media and enterprise social media
• Crowdsourcing
• Watson-like knowledge search and analysis
NASA Knowledge Services Strategic Framework (Hoffman, 2015)

Networks, alliances, and communities of practice

Accessible information, user-friendly services

Culture of openness and sharing

Infusion of lessons learned, mishaps, and best practices

Effectiveness
NASA 2020 VISIONING

- **Make a Metaphor**
  - Bring back some retirees
  - Disney rotation from different areas

- **Danger**
  - This is how its always been done
  - Better 30 Second Story

- **Prioritizing which knowledge to go after**
  - Last minute capturing is bad
  - Better: Put in Video

- **Budget**
  - Devoted to capturing & sharing knowledge

- **If I were king...**
  - Bids on Knowledge

- **3 Way Mentoring**
  - Rewards & recognition has been shown to work not as a target card

- **Social Network Maps**
  - Make info accessible to everyone in the org

- **Make KM part of culture**
  - More related to younger generation

- **Play your cards right!**
  - Ask for forgiveness

- **Harrisburg University of Science and Technology**
Edwards & Rodríguez, ICKM 2016

Dat

Techniques

Pattern

Knowledge

Action

a

s
Journal of Knowledge Management (Vol. 21, No. 1, 2017—Special Issue on KM & Big Data/Analytics)
Strategic Intelligence
BDA-KM Model (Pauleen and Wang, 2017)

Figure 1. Big Data/Analytics-Knowledge Management (BDA-KM) Model

The analysis of Big Data may be initiated by predefined problems, motivations of exploring new opportunities without clear problems defined, or the organizational goals.
Impelling research productivity and impact through collaboration: a scientometric case study of knowledge management

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Data Mining and Data Integration
A Community College and University Partnership
To Improve Transfer Student Success
Overview of Research on Student Success

• UMUC, Prince George’s Community College, and Montgomery College are collaborating to build an integrated database to make data-driven decisions on how to improve student success.

• Students are working adults who enrolled at a community college, then transferred to UMUC.

• Data mining techniques and statistical analyses are used to analyze the integrated data to identify relationships among variables.
Tools & Methodology

Oracle Database

IBM SPSS Modeler

CRISP-DM Project Methodology
Major Information Systems

Student

Facult

Course

Advisors

Goldmine/CRM

Interactions

PeopleSoft

Classes

WebTycho
Data Currently Available

- Classroom Behavior
- Demographic
- Re-enrollments
- Previous Academic Work
- Student Financial Aid
- Use of University Resources
- Courses Taken in the First Term
- Interactions with the University
- Assessment Data
Some Results

• Course taking behavior prior to transfer influences success at the subsequent institution

• Online classroom activity prior to the first day of class can predict course success

• Faculty engagement is critical for course/student success

• A Civitas pilot predicted with 85% confidence how successful a transfer student would be in their UMUC program within 8 days of starting their program
Potential Areas for KM-Analytics Synergies

- Cognitive computing (blend analytics with intuition-based decision making/experiential learning)
- Business process mining
- KM as a key role in the management and governance of the use of big data/analytics in organizational settings
- Strategic intelligence (Intersection of KM, BI, and CI)
What Needs to be Done?

• Promote greater dialogue between the 2 communities (e.g., Suliman’s book, this conference, degrees with joint focus (UNT, Notre Dame of Md, etc.), social media/joint CoP)
• KM educators/practitioners must be somewhat adept in applying analytics tools, techniques, and methodologies, and the Data Analytics educators/practitioners must also develop appropriate KM skills
• Further investigate areas for collaboration (cognitive computing, executive decision making, IoT, Scientometrics, etc.)
Successes and Failures of Knowledge Management

Case studies and leading research demonstrating how to leverage knowledge within organizations to improve decision making and facilitate innovation.

Contributions Include:
- Clyde W. Holsapple, (University of Kentucky, USA) discusses parameters of knowledge management success.
- Ed Helfman (NASA Headquarters, USA) explores success and failure as existing in NASA through REAK and the James Webb Space Telescope (JWST).
- Yolande Chan (Queen's University, Canada) and Nadine Levallet (Ohio University, USA) examine knowledge use and retention - the paradoxical role of IT.
- Eric Tsui (The Hong Kong Polytechnic University) shares lessons learned from nearly two hundred cases of KM journey by Hong Kong and Asian Enterprises.
- Vincent Ribiere and Francesco Calabrese (Bangkok University, Thailand) discuss why companies are still struggling to implement Knowledge Management, with answers from 40 experts in the field.
- Seth Farley (Kaiser Permanente, USA) explores how organizations can build their knowledge processes for long-term sustainability.
- John S. Edwards (Aston Business School UK) shares views on opportunities – perhaps still considered the poor relation in the knowledge management family.
- Andrea Wadley (University of Toronto-Mississauga, Canada) offers some personal reflections on major challenges through KM successes and failures.

...and much more!

Edited by Jay Liebowitz, Distinguished Chair in Applied Business and Finance at Harrisburg University of Science and Technology, United States.

Key Features:
- Provides keen insight for knowledge management practitioners and educators.
- Conveys KM lessons learned through both successes and failures.
- Includes straightforward, proposal case studies, and research developed by the leading KM researchers and practitioners across industries.
New and Forthcoming

Analytics and Knowledge Management

Hardback | Data Analytics Applications | English
By (author) Suliman Hawamdeh, By (author) Hsia-Ching Chang

Analytics is the examination, interpretation and discovery of meaningful pattern, trends and knowledge from data and textual information. Knowledge management, on the other hand, is concerned with the knowledge processes and practices. This book examines the role of analytics in knowledge management including the integration of analytics theories, methods and technologies into knowledge management processes. It aims to identify the role of analytics in knowledge management and how analytics can be seamlessly integrated in the knowledge management processes.

Data Analytics Applications in Law
Walters

Data Analytics in Institutional Trading
Waelbroeck

Unstructured Data Analytics: Solutions for Text and Natural Language Applications
Ford, Shaalan, Farreras

Data Analytics and Scientometrics: Methods and Applications
Cantu-Ortiz

Data Analytics Applications: Emerging Economies and Latin America
Rodriguez

Big Data and Analytics Applications in Government: Current Practices and Future Opportunities
Richards

Sport Analytics: Using Data to Increase Revenue and Improve Operational Efficiency
Bukstein, Harrison

Data Analytics Applications in Education
De Witte, Vanthienen

Actionable Intelligence for Healthcare
Liebowitz, Dawson

Data Analytics for Marketing and CRM
Cheng

Big Data in the Arts and Humanities: Theory and Practice
Schiuma, Carlucci

Big Data Analytics in Cybersecurity and IT Management
Savas, Deng
THANKS Y’ALL!