

# What's Next for Knowledge Management? Evolution and Revolution

**Reid Smith and Guillermo Arango** 







### **Road map for the presentation**

- Where are we today?
- What are the problems?
- What to do next?
   Outsource KM services
   Add onboard domain knowledge

Knowledge Powered Enterprise



### Where are we today?





### **Generally Accepted Ideas**



#### Gustave Flaubert *Dictionnaire des Idées Reçues* (Dictionary of Generally Accepted Ideas) 1853

- Conversation Politics and religion must be kept out of it.
- Incompetence Always 'utter'. The more incompetent you are, the more ambitious you must be.
- Innovation Always 'dangerous'.
- The Learned Make fun of them. All it takes to be learned is a good memory and hard work.
- Learning Despise it as the sign of a narrow mind.
- Stockbrokers All thieves.



### **KM Generally Accepted Ideas**



- Knowledge A corporate asset.
- Knowledge Management Systematic approaches to help information and knowledge grow and flow to the right people at the right time to create value.
- Knowledge-Sharing Culture Critical for success.
- **Connections** Essential (people to people, people to information, people to communities, ...).
- **People** The "Killer App".
- Community of Practice Fundamental building block.
- Tacit vs. Explicit Knowledge It's 80/20.
- Stories The best way to convey experience.
- Lessons Learned Not "learned" until they result in a change of behavior.



### **KM Generally Accepted Ideas**



- KM Projects Focus on business objectives.
- Management Support Don't leave home without it.
- Governance Central KM group needed.
- Change Management Technology won't succeed without a change in work process.
- Processes Honor all links in the Knowledge Flow Cycle.
- Technology Merely an enabler.
- Content Management Important, but only part of KM.
- Taxonomies Can't do without.
- Best Practices The Holy Grail.



#### • "Do It Yourself" knowledge management

- Symptom: high initiative mortality rates
- Diagnosis: knowledge about getting KM to work is also 80/20!
- Recommendation: employ experienced specialists

#### "It would be nice, but we can't afford it"

- Symptom: disillusionment sets in when considering resources and effort
- Diagnosis: organization's size (structure, pace of change) are barriers
- Recommendation: cut down the cost of deploying KM best practices

#### "Thanks, but I can't wait"

- Symptom: good roll-out practices perceived to take "too long"
- Diagnosis: organizations want apples, we offer them gardening manuals
- Recommendation: accelerate time to results

#### Large sectors of the economy (e.g., SMEs) are disenfranchised



### What to do next?

#### Deliver a step-change improvement

- in success rate of KM initiatives
- in effort it takes to deploy KM services
- in time it takes to achieve results
- in adoption by disenfranchised organizations

#### **Outsource KM** infrastructure and logistics

Managing, leveraging and protecting the firm's knowledge assets does not imply that the firm must "own" KM infrastructure and logistics





### Outsourcing

"Outsourcing is the procuring of services or products from an outside supplier in order to reduce costs, fill the gap of (or replace) inhouse capabilities and minimize time scales of projects, without the loss of control or flexibility."

### The Outsourcing Institute

## The internal KM function as a precursor to outsourcing

Companies that invested in an internal KM function have taken a step toward outsourcing. Typically, the KM function is expected to provide

- qualified personnel
- processes and technology
- the right industry knowledge
- plans, metrics and estimation guidelines
- experience in the ins and outs of what it takes to succeed.

... so that they can take care of the direction, infrastructure and logistics of KM programs, leaving the regular employees to focus on doing their jobs with minimal KM overhead.

### Why can KM services be outsourced today? Learnings from manufacturing, software, IT services, ...



#### Time



- Defining a KM strategy aligned with the business objectives of the organization
- Establishing and operating a governance structure
- Change Management
- Membership and participation in communities of practice or similar structures that promote desirable behaviors
- Creation, reuse and application of knowledge
- Application of KM techniques to drive or enable organizational or cultural transformation
- Use of KM as a tool for innovation

## But KM infrastructure and logistics are "in scope"

- Operating the IT infrastructure of KM as a managed service
- Ontology development and evolution
- Documents validation, organization, migration
- Brokerage and facilitation services
- Journalism harvesting, editing and publishing success stories, best practices and lessons learned.
- Expert services consultants, analysts, research organizations
- Auditing business impact setting up, operating and reporting on measurement programs



### What levels of service could be offered?

Hosting

- Turnkey versions of the technology enablers

• ASP

- KM applications management and service desks
- KM Services
  - managing a company's ontology, investigative and editorial work to produce best practices, CoP facilitation, search tuning, ...

### End-to-end KM processes

- Knowledge salvage services
- Knowledge continuity services

## What does it take to be a supplier of KM services?

### • Like the internal KM function

- qualified personnel
- processes and technology
- the right industry knowledge
- plans, metrics and estimation guidelines
- experience in the ins and outs of what it takes to succeed.
- Plus
  - Service Level Assurance
    - + Will SLAs be the next step in the evolution of KM metrics?
    - + Will internal process maturity (KMMI?) become a standard requirement?







## **Technology Changes the Game**



### **Buckminster Fuller**

"If you want to teach people a new way of thinking, don't bother trying to lecture or instruct them. Instead, give them a tool, the use of which will lead them to new ways of thinking."

#### **Marshall McLuhan**

"It is the medium that shapes and controls the scale and form of human association and action."





What to do next?

# Deliver a new generation of technology, with onboard domain knowledge

### Change the game of knowledge management

In this game, technology is not "merely" an enabler – it is an essential carrier of domain knowledge

The new medium – technology with onboard domain knowledge – will lead to new ways of thinking about performance support



### The Knowledge Environment of the Firm





### **The Knowledge Environment of the Firm**



## **Example: ASCO Breast Cancer Information Exchange**

![](_page_20_Figure_1.jpeg)

![](_page_21_Picture_0.jpeg)

- Meetings & Education
- Policy & Practice
- Publications
- Publications Catalog
- Journal of Clinical Oncology
- Educational Book
- Abstracts

	Browse by Meeting
	Basic Search
	Advanced Search
	Advanced Search - Breast
	Cancer
	Search Tips
Þ	Permissions Request
Þ	Reviews
Þ	Lung Cancer Supplement
Þ	ASCO News
D	Practice Guidelines
D	Career Resources

![](_page_21_Picture_9.jpeg)

#### ASCO MEMBERS

Pay Membership Dues, Membership Directory, Drug Database, Update Your Profile <u>Home</u> > <u>Publications</u> > <u>Abstracts</u> >

#### Abstracts

Search ASCO's comprehensive database of abstracts to find the results of the latest clinical cancer research. If a search returns more than 100 results, only the first 100 will be displayed. Please narrow your search criteria for more effective results.

#### Annual Meeting abstracts dated before 1999 can be found using the Advanced Search.

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Local-Regional Nodes Positive Negative Sentinel Node Positive Negative	
Patient Characteristics	
Gender Female Menopausal Status Pre- Peri- Post- All	
Therapy	
Radiation Chemotherapy Endocrine	
Targeted Supportive Adverse Events/Toxicity	
Diagnostics/Biomarkers	
Imaging Genetic Factors Circulating Tumor-specific	
Specific agents or other terms: Search All Fields 💙 Submit Reset	23
Disclaimer Search and Data Mining Powered by Medstory, Inc. Copyright © 2003. All Rights Reserved.	

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Disclaimer

Onboard domain knowledge supports inferencing

Example: The phrase 'targeted therapy' is rarely found in the text of the abstracts

## Onboard Domain Knowledge enables data mining & analysis

![](_page_24_Figure_1.jpeg)

![](_page_25_Figure_0.jpeg)

- \$400B industry with unprecedented challenges in innovation, productivity, time-to-market and capital efficiency
- Fundamental transformation underway
- Key transformation factors
  - Drug targets are increasingly complex
  - Significant interdependencies exist between programs
  - In-licensing is as important as internal development
  - Personalized medicine drives market segmentation
  - Companies are increasingly virtual

![](_page_26_Picture_0.jpeg)

### **Knowledge Connections**

![](_page_26_Figure_2.jpeg)

![](_page_27_Picture_0.jpeg)

Terms		antibody					
Compound Criteria							
Bus	Business Criteria						
1.	Feasibility of Radioimmunotherapy of Experimental Pneumococcal Infection. Antibody therapies take advantage of the specificity and high affinity of the antigen-antibody interaction to deliver antibacterial compounds to a site of infection in Antimicrob Agents Chemother (04.23.2004) [Notes]						
2.	Neural stem cells and cell death. Using an <b>antibody</b> specific for cytochrome c, we found that cells exposed to staurosporine or DMNQ exhibited diffuse fluorescence throughout the cytosol, implying a Toxicol Lett (04.19.2004) [Notes]						
3.	Mechanisms by which SGN-40, a Humanized Anti-CD40 Antibody, Induces Cytotoxicity in Human Multiple Myeloma Cells: Clinical Implications. utility of SGN-40, the humanized anti-CD40 monoclonal antibody, for treating human MM using MM cell lines and patient MM cells (CD138(++), CD40(+)). SGN-40 (0.01-100 Cancer Res (04.16.2004) [Notes]						
4.	Conversion from cyclosporine A to tacrolimus in pediatric kidney transplant recipients with chronic rejection: changes in the immune responses. BACKGROUND: Tacrolimus (Tac) has immunosuppressant properties similar to those of cyclosporine A (CsA), but it is more potent. At present, however, its immunosuppressive activity in Transplantation (04.15.2004) [Notes]						
5.	Hyaluronan regulates TGF-{beta}1 receptor compartmentalisation. by inhibition of HA-CD44 interactions using blocking <b>antibody</b> to CD44, or inhibition of MAP kinase activation. In conclusion we propose a model by which J Biol Chem (04.15.2004) [Notes]						
6.	Tumor necrosis factor alpha blockade for the treatment of steroid-refractory acute GVHD. constructed IgG1 murine-human chimeric monoclonal <b>antibody</b> that binds both the soluble subunit and the membrane-bound precursor of TNF- alpha, blocking its interaction with receptors Blood (04.07.2004) [Notes]						
7.	Association of r allotransplantat (B7 group; n treatment of rapa Nephrol Dial Tra	<ul> <li>apamycin and co-stimulation blockade using santi-B7 antibodies in renal tion in baboons.</li> <li>= 4), and the third received the anti-B7 antibody treatment as above with an additional mycin (B7-Rapa; n = ansplant (04.07.2004) [Notes]</li> </ul>					
8.	Calponin is expr cytoskeleton. In the present 38-kDa protein in Cell Tissue Res	ressed by Sertoli cells within rat testes and is associated with actin-enriched t study, a monoclonal <b>antibody</b> against human smooth-muscle-cell calponin detected a a total protein extract of rat testis. The (N/A) [Notes]					
9.	Recombinant an Analysis of th with amphotericin Vaccine (03.25.)	<b>ntibodies: a natural partner in combinatorial antifungal therapy.</b> e <b>antibody</b> response which occurs in patients with invasive candidiasis, being treated B, showed a close correlation between recovery and <b>2004)</b> [Notes]					

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2. Neural step cells and cell d ... Using in antibody specific exhibited diffuse fluorescence th Toxico Lett (04.19.2004) [N

3. Mechanisms by which SGN-4 Hum: (Multiple Myeloma Ce ... unity of SGN-40, the huma cell lines and patient MM cells (O Can ar Res (04.16.2004) [No

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 T mor necrosis factor alpha . constructed IgG1 murine-hu ad the membrane-bound precu Bood (04.07.2004) [Notes]

 F sociation of rapamycin ar otransplantation in baboc
 (B7 group; n = 4), and the t atment of rapamycin (B7-Rap phrol Dial Transplant (04)

Iponin is expressed by Sectoskeleton.
 In the present study, a more

-kDa protein in a total proteir Il Tissue Res (N/A) [Notes] ELSEVIER FULL-TEXT ARTICLE

Recombinant antibodies: a natural partner in combinatorial antifungal therapy.

Matthews RC, Burnie JP.

Medical Microbiology and NeuTec Pharma plc, 2nd Floor, Clinical Sciences Building 1, Central Manchester Healthcare Trust, Oxford Road, Manchester M13 9WL, UK.

Monotherapy, in the form of amphotericin B or one of its liposomal derivatives, is the usual treatment for invasive fungal infections, due to lack of a safe, effective combination of antifungal drugs.

Combination therapy is not necessarily beneficial-there may be mutual antagonism or indifference, increased toxicity or interference with concomitant medication. But the benefits of a well-tolerated. synergistic combination would be great-the enhanced efficacy would improve clinical outcome, reduce the need for prolonged courses of treatment and prevent the emergence of antifungal drug resistance. Antifungal antibodies would be a natural partner in a combinatorial approach to antifungal therapy. Analysis of the antibody response which occurs in patients with invasive candidiasis, being treated with amphotericin B, showed a close correlation between recovery and antibody to the immunodominant heat shock protein 90 (hsp90). The molecular chaperone hsp90 is essential for yeast viability. Mycograb is a human recombinant antibody to hsp90 which shows intrinsic antifungal activity and synergy with amphotericin B both in vitro and in vivo. It is now the subject of a multinational, double-blind, placebo-controlled trial, in patients with culture-confirmed invasive candidiasis on liposomal amphotericin B.

Recombinant antibodies: a natural partner in combinatorial antifungal therapy.

 Analysis of the antibody response which occurs in patients with invasive candidiasis, being treated with amphotericin B, showed a close correlation between recovery and ...
 Vaccine (03.25.2004) [Notes]

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8.	<ul> <li>Iponin is expressed by Sectoskeleton.</li> <li>In the present study, a nor S-kDa protein in a total platein study.</li> <li>Il Tissue Res (N/A) [Notes]</li> </ul>	subject of a m patients with cu amphotericin B	Related compounds	by MOA	by Target	by Class	
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3.	Mechonisms by which SGN-4 Human Multiple Myeloma Ce unity of SGN-40, the human cell / es and patient MM cells (O Can er Res (04.16.2004) [No	Monotherapy, derivatives, is t to lack of a saf		о / <sub>жн</sub> он <b>Т</b> 4. ап	Bayer AG Eli Lilly and Co Genome Thera Myriad Geneti	ompany apeutics Corp. cs, Inc.	2003.03.0 2004.03.1 2004.03.1 2004.03.1	3 5 5 5	4 67 4 6
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### **Expertise Network – Composite View**

![](_page_34_Figure_2.jpeg)

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### **Expertise Network – Key Authors**

![](_page_35_Figure_2.jpeg)

![](_page_36_Picture_0.jpeg)

### **Expertise Network – Patents**

![](_page_36_Figure_2.jpeg)

![](_page_37_Picture_0.jpeg)

### Onboard Domain Knowledge – Software that knows the domain

#### Portal

- Ontology for precise search, publishing, content management, ...
- Structured display highlighting relationships 360 perspective

#### Intelligence and News / Data Feeds

- Knowing what to look for, where to look, how to make queries, ...

#### Expertise Locator

- Skills taxonomy, knowing where to look, relationships, ...

#### Data Management & Mining

- Coupled with precise search

### Applications – Analytics, Data Interpretation

- Knowledge Appliances - transforming data into "decision ready" knowledge

#### Workflows

- Presenting the right information at every step

#### Collaboration

"in context" – with structured annotation

![](_page_38_Picture_0.jpeg)

- Knowledge Management Services outsourcing
  - Focus on the value-creating activities
- Technology with onboard domain knowledge
  - Change the rules of the game

# **Power = Knowledge**<sup>Shared</sup>

![](_page_39_Picture_1.jpeg)

![](_page_39_Picture_2.jpeg)