

# “KM 101” - Improving Business Performance in the Global Enterprise – Successes, Failures, Lessons-Learned

Barry K. Dayton, 3M Knowledge Management Program Office



KMWorld 2010

November 16, 2010

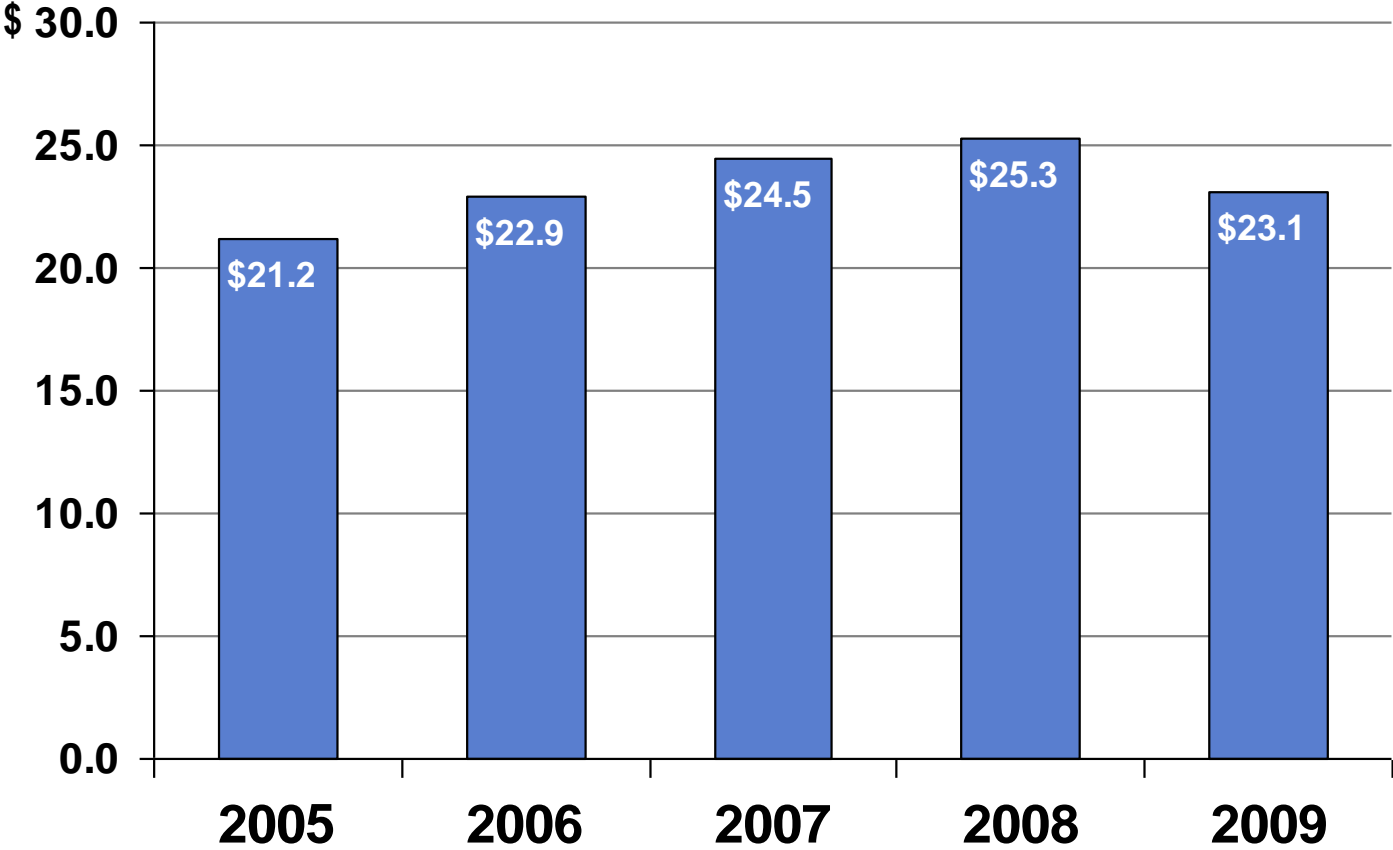


# Agenda

- Introduction
  - 3M Overview
  - KM Program Office Mission, Role
- Four Stories
  - Decatur Film Plant
  - Industrial Adhesives and Tape Division (IATD) Lab
  - Wiki Enterprise
  - InnovationLive: Markets of the Future
- Conclusion
  - Key Success Factors
  - Lessons Learned

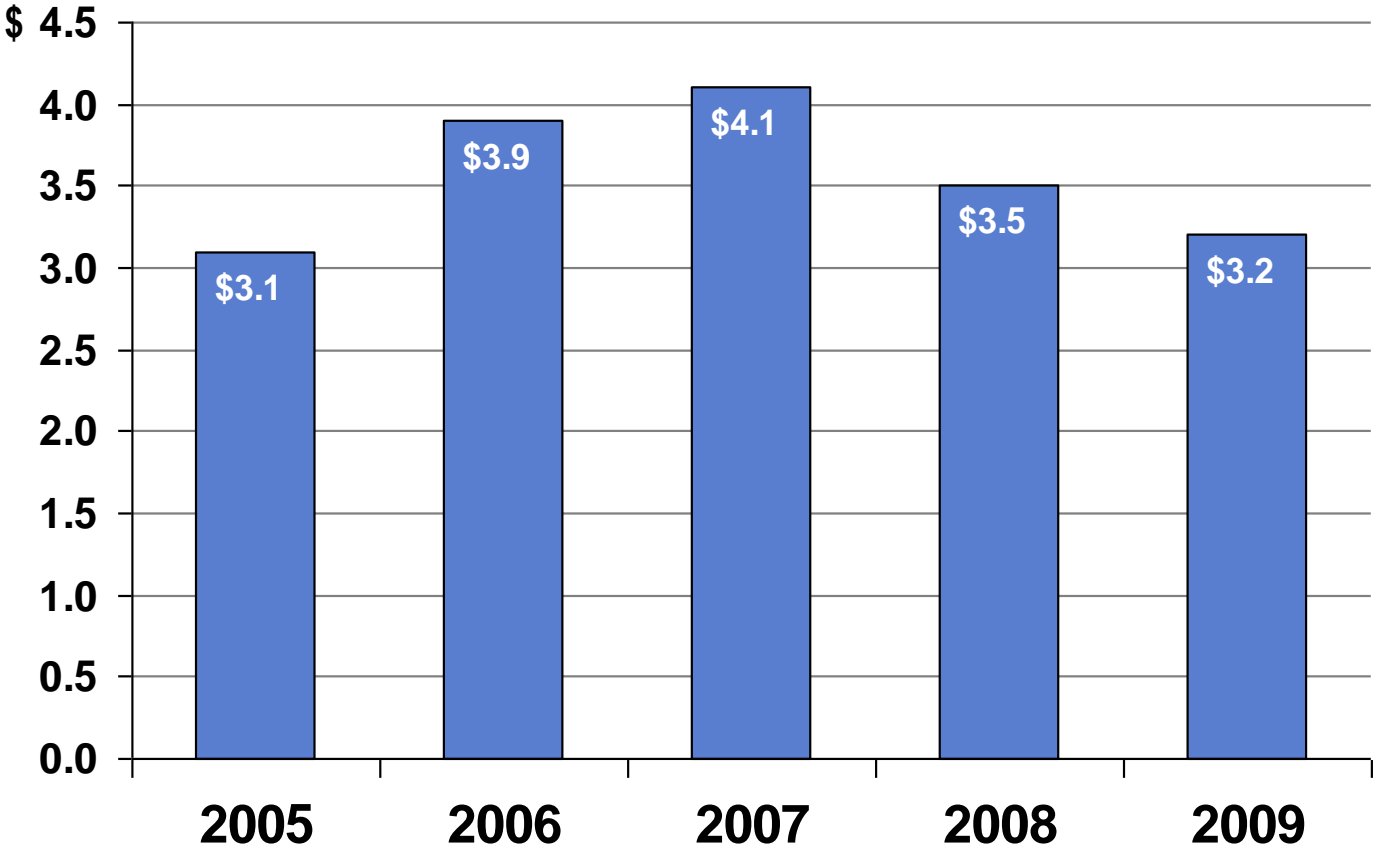
# Net Sales (billions)

## Solid Top-Line Growth



# Net Income (billions)\*

## A String of Record Profits



\* Reported net income



# Six Market Leading Businesses

Consumer and Office Business



Health Care Business



Industrial and Transportation Business



Display and Graphics Business

Electro and Communications Business



Safety, Security and Protection Services Business



# Solving Problems Everywhere

- Operate companies in more than 65 countries
  - 35 international companies with manufacturing operations, 35 with laboratories
  - In the United States, operations in 28 states
- R&D and related expenditures total \$6.861 billion for the last five years
- More than 75,000 employees worldwide
- We provide 'borderless customer success'

# 3M's Technology Platforms

<u>Ab</u> Abrasives	<u>Bi</u> Biotech							<u>Pm</u> Polymer Melt Processing	<u>Sm</u> Specialty Materials
<u>Ac</u> Acoustics	<u>Ce</u> Ceramics	<u>Em</u> Electronic Materials					<u>Nt</u> Nano-technology	<u>Po</u> Porous Materials & Membranes	<u>Su</u> Surface Modification
<u>Ad</u> Adhesives	<u>Dd</u> Drug Delivery	<u>Fc</u> Flexible Converting & Packaging				<u>Mi</u> Microbial Detection & Control	<u>Nw</u> Nonwoven Materials	<u>Pp</u> Precision Processing	<u>Tt</u> Track and Trace
<u>Am</u> Advanced Materials	<u>Di</u> Display	<u>Fe</u> Flexible Electronics	<u>Fs</u> Filtration, Separation, Purification	<u>Is</u> Integrated Systems Design	<u>Me</u> Metal Matrix Composites	<u>Mo</u> Molding	<u>Op</u> Opto-electronics	<u>Pr</u> Process Design & Control	<u>Vp</u> Vapor Processing
<u>An</u> Analytical	<u>Do</u> Dental & Orthodontic Materials	<u>Fi</u> Films	<u>Im</u> Imaging	<u>Lm</u> Light Mgmt	<u>Mf</u> Mechanical Fasteners	<u>Mr</u> Micro-replication	<u>Pd</u> Particle & Dispersion Processing	<u>Rp</u> Radiation Processing	<u>We</u> Accelerated Weathering
<u>As</u> Application Software	<u>Ec</u> Energy Components	<u>Fl</u> Fluoro-materials	<u>In</u> Inspection & Measurement	<u>Md</u> Medical Data Mgmt			<u>Pe</u> Predictive Engineering & Modeling	<u>Se</u> Sensors	<u>Wo</u> Wound Mgmt

*Successful new product growth builds on uncommon connections*



# Refocusing on Faster Growth



*Acquisitions and International growth, key growth contributors*



# Role of KM Program Office

- Center of Expertise and Internal Consultancy
- Based out of Strategy and Corporate Development
- What we do
  - Develop and execute KM strategy
  - Assess corporate knowledge vulnerabilities and redundancies to enable development and implementation of business strategy
  - Conduct projects at Corporate, Business, and Division level
  - R&D, Integration, Teaching, Benchmarking, ad hoc consulting

*Accelerating 3M's global growth*



# KMPO Engagement Phases

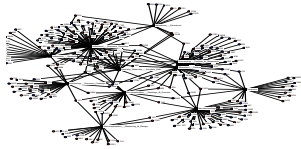


## KM Effectiveness Phases

### **Assess** → **Improve** → **Sustain**

- Identify business-critical knowledge domains
  - From Strategic Plan
- Define business case, metrics
- Interviews, mind maps, consensus meetings
- Baseline Strategic Knowledge Mapping (SKM)
- Select appropriate tools from KM portfolio
- Form project team
- Conduct training
- Pilot implementation
- Utilize CAP tools
- Measure first results
- Gather and publicize success stories
- Replicate, expand throughout organization
- Pilot team conducts training
- Measure results
  - Follow-up SKM
  - Time, \$, improved HCP
- Leaders teaching leaders
- ***KM Leader appointed***

# Knowledge Management Toolkit - Examples



## Strategic Knowledge Mapping

Users: R&D  
ESPE  
OHESD  
Brazil, China  
IATD



## Wiki Enterprise

Users: OSD  
ASD  
MISD  
China  
IATD

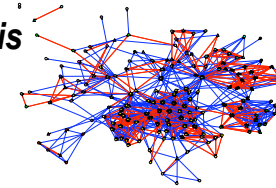


## Communities of Practice

Users: R&D  
Engineering  
Marketing  
Global Handheld Market Team  
IATD

## Social Network Analysis

Users: IATD  
Corp. Marketing  
China



## Peer Assists

Users: R&D  
FMSCO  
IATD  
Lean Six Sigma



## InnovationLive

Users: Strategy and Corp. Dev.  
D&GB  
IT  
Corp. eBusiness



## Storytelling

Users: FMSCO  
R&D  
IT  
IATD  
Leaders talking Competitiveness



## After-action Reviews

Users: FMSCO  
IATD  
HR  
Lean Six Sigma  
China

Significant uptake on KM Toolkit by global organizations

# Decatur Film Plant

## ■ Problem

- How to prevent major operations disruptions and improve productivity in the midst of rapid growth, a retirement bubble, and significant hiring

## ■ Solution

- Implement portfolio of KM tools
  - After-action Reviews
  - Storytelling
  - Mind Maps
  - Maven search engine
  - SharePoint
  - Wiki Enterprise (WE)

## ■ Benefits

- Less downtime
- Higher yields
- Faster new employee ramp-up
- Reduced injuries
- Improved employee engagement



Concept Knowledge Management Process for FMSCO Decatur



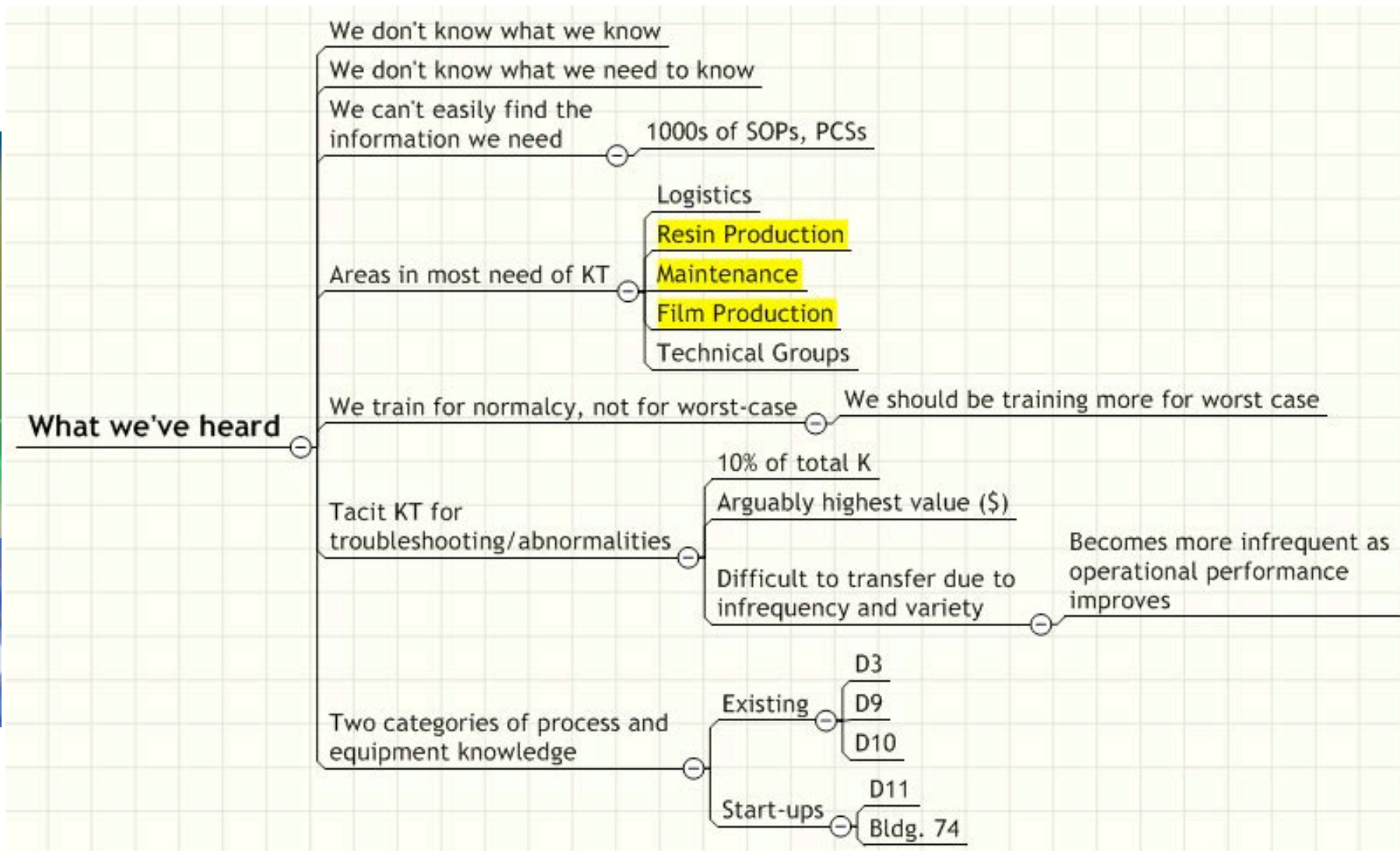
Mind Maps

Maven Search

*Highly replicable solution for 3M's manufacturing*



# Decatur Film's Compelling Business Need



# AAR Purpose

- The key purpose for doing an AAR is to learn and quickly apply the learning on the job the very next day. If recording gets in the way, don't demand it – it's more important to apply the learning and improve performance.
- The key to successful AARs is open and frank discussion. The objective is to learn and fix the problem, not to blame. Accordingly, AARs are learning events, not critiques or evaluation events. This may require some demonstration by the leader of the team at the beginning of the discussion.

# AAR Trigger Criteria

1. After events that result in 1 Hr.+ downtime
2. After events where Maintenance is required
3. After troubleshooting process problems
4. After line changeovers and start-ups
5. After shift-pieces of major downtime/rebuilds

# Storytelling purpose

- To learn from each other
  - Primarily from more experienced 3Mers nearing retirement
  - Primarily tacit-to-explicit knowledge transfer
    - Much tacit-tacit happens, also
- To develop “Decision Trees” for “Worst Case Scenarios”
  - Not necessarily like existing FMSCO Decatur decision trees
  - More like problem-solving rationale maps
    - Why do you...
    - How do you know to...
    - Who do you go to for....
    - Where do you find....
    - Where do you keep....
    - What information don't you have to....
    - Whatever you do, DO NOT do....

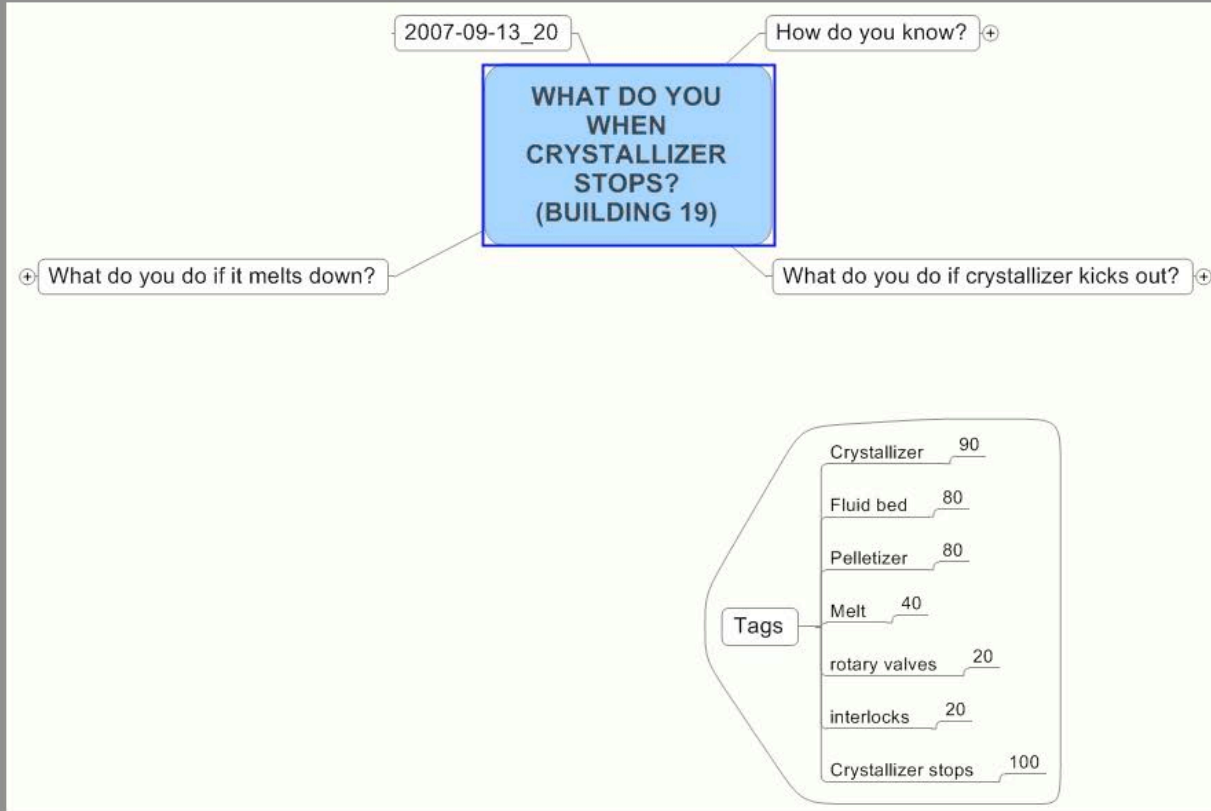




# Storytelling Process

1. Develop list of worst-case scenarios (storytelling topics)
2. Identify, invite, brief the participants
3. Conduct the session
  1. Set the tone, make participants comfortable
  2. Digitally record the conversation for future reference, if needed
  3. Facilitator builds a map on the whiteboard while scribe builds one with MindManager on notebook.
  4. Reveal and refine mind map with participants
  5. Have some fun!
4. Proof, approve, publish mind maps

# Example of Published Mind Map



# World Class Film Manufacturing Textbook on Wiki Enterprise



Page Operations

View

Edit

Attachments (4)

Info

Doc Import

Browse Space

Pages

News

Labels

Attachments

Bookmarks

Mail

Advanced

Space Admin

Add Content

Manufacturing - Supply Chain

## World Class Film Manufacturing "Textbook"

Added by [Roberto Evaristo](#), last edited by [Chris Thomas](#) on Aug 11, 2009 ([view change](#))

Labels: [film extrusion](#) [film production](#) [film processing](#) [EDIT](#)

Below you will find an outline of the topics considered to be important for Film Manufacturing. The outline is divided in two areas. The first provides a topic oriented categorization, whereas the second is based on the [3M Manufacturing Model](#). In both cases, what you see in this page is only the first level of the outline. By clicking on the hyperlink provided, you will see a more detailed level 2.

Please feel free to add your knowledge to any of the outline items and sharing with folks who visit this site after you. Suggestions on how to do so (simple syntax and basic commands) are provided at the bottom of this page.

If you are in doubt whether the content you are providing fits better in one or the other outline, worry not: simply choose what seems to be the best fit and hyperlinks will be manually provided later to connect appropriate topics. Instruction on how to link the information yourself will be provided at a later stage as well.

Moreover, if you have specific requests on content that should be added, we ask you to enter them under this [Request for Additions Link](#). Please be sure to include also your function, i.e., are you an operator, an engineer or part of the front-office?

Here's a link to the on-line Confluence User Guide for additional information on how to most effectively utilize the wiki tool.

[Confluence User Guide](#)

[Wiki and Knowledge Transfer Articles](#)

### Topic-based Outline

Level 1

[Wiki Development Team](#)

[Decatur Film Plant Manufacturing Capabilities](#)

[Decatur Product Construction and Application Glossary](#)

[Resins and materials](#)

[Recycle](#)

[Materials Handling](#)

[Optics](#)

*Collaborative authoring across locations, organizations, generations*



# How to grow 3M's core business faster in APAC/BRICP during hiring there and Baby Boomers retiring here – *R&D Globalization*

## ■ Problem

- Labs in developing countries are hiring rapidly to meet local customers' needs
- 50% of 3M's technical experts will be retirement-eligible in the next 5 years
- Traditional training and development methods are inefficient, costly, slow

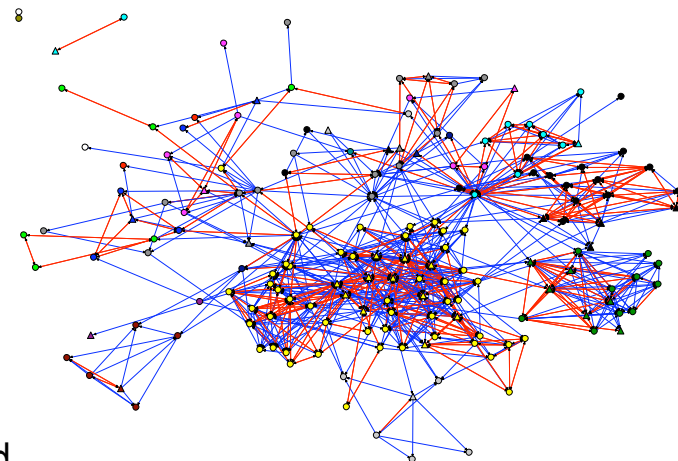
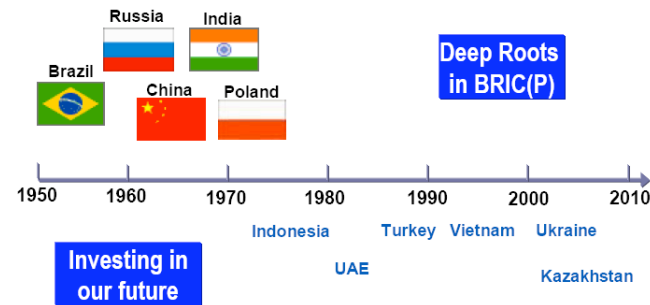
## ■ Solution

- Develop and analyze current (baseline) **knowledge network maps**
- Determine desired global network maps by country and division
- Select and implement portfolio of KM tools to close the knowledge network gaps

## ■ Benefits

- Faster core business growth
- Faster ramp-up for new R&D employees in developing countries
- More knowledge of products and technologies retained and transferred

Long-Term Focus on Developing Countries Drives Growth



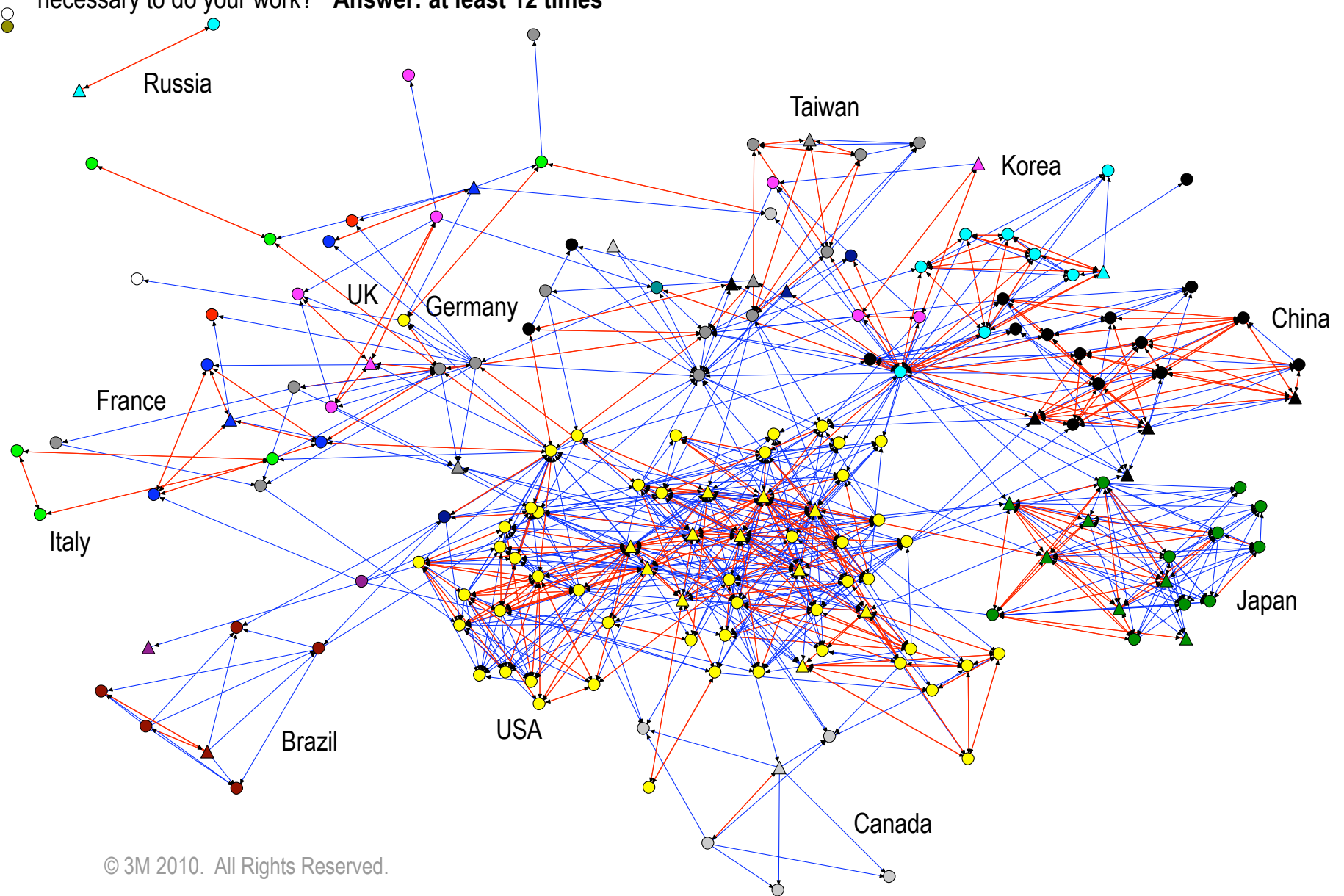
*Example: IATD Technical Service*



# IATD Global Technical Service Social Network

“How many times in the last 12 months have you contacted this person for information or insight necessary to do your work?” **Answer: at least 12 times**

Red=two-way, blue=one-way





## Page Operations

[View](#)[Edit](#)[Attachments \(4\)](#)[Info](#)[Doc Import](#)[Browse Space](#)[Pages](#)[News](#)[Labels](#)[Attachments](#)[Bookmarks](#)[Mail](#)[Advanced](#)[Space Admin](#)[+Add Content](#)

Scotchgard (tm) Protective Film



## Scotchgard(TM) Invisible Transit Film- 3M Confidential Internal Use Only

Added by [Barry Dayton](#), last edited by [Steven Ilkka](#) on Aug 12, 2010 ([view change](#))Labels: [scotchgard film](#) [multi-layer film](#) [sq\\_1004](#) [scotchgard transit film](#) [sq film](#) [multilayer film](#) [multilayer film](#) [sq1004](#) [EDIT](#)

### Introduction Box

- *Scotchgard(TM) Invisible Transit Film designed for glass and other surfaces in high traffic areas where unintentional and/or intentional scratching can occur. Saves money for the customers on surface repair and replacement and reduces maintenance costs. With multilayer protection, the customer simply peels away surface damage and leaves the surface looking clean and clear.*
- *Scotchgard(TM) Invisible Transit Film 1004*



### Topics


#### Best Practice and Common Questions

- [SKU Management Best Practice](#)
- [Origin and Attributes of Glass](#)
- [How to take Accurate Kit Dimensions](#)
- [How to Deal with Square Corner Radii in Windows](#)
- [How much space should there be between the window film and the gasket?](#)
- [How much application solution should I use?](#)
- [How do I properly clean the window?](#)
- [Can I use ammonia based cleaners?](#)
- [How do I avoid contaminating the adhesive on the film?](#)
- [How do I handle a large shield?](#)
- [How do I know I am using the correct part?](#)
- [How can I determine the Lot and Date](#)

#### Product Handling and Installation

- [Measuring Windows and Recording Information \(Including Video\)](#)
- [Fitting the Template \(Including Video\)](#)
- [Shield Application \(Including Video\)](#)
- [Shield Removal \(Including Video\)](#)
- [Application Instructions Video](#)
- [How to Measure Odd \(non-rectangular\) Shaped Windows](#)

#### Glossary of Terms

- [PET Template](#)
- [Radius Gauge](#)
- [Field Trial Kit](#)
- [Application Kit](#)
- [Vehicle Specification Worksheet](#)
- [Part Dimension Specification](#)
- [New Term](#) 

Wiki Enterprise Enabling Faster Global Product Launch





VHB steiner

Search

Showing 1-5 of 5 for VHB steiner

[Ted Steiner](#)

4 Steps to **VHB** Application Development <http://l.mmm.com/view.aspx?m=BXI2> Solving **VHB** Problems with 4 Steps <http://l.mmm.com/view.aspx?m=IXJ9>  
 I&TB Apr 23, 2010

[This is the communication with Ted Steiner --how to identify VHB tape](#)

to tell exactly what it is. If I look at our US **VHB** product line (which is now about 50 tapes? I didn't count exactly) in most cases the physical ... if it is 5952 family, but sometimes even if the foam core is like 4941 tape. I can't think of a time when I could not easily identify a US made **VHB** tape quite  
 I&TB Apr 21, 2010

[Volatile issue about VHB tape and answer from Ted Steiner](#)

Q: One of our customer now want to use **VHB** tape for decoration strip bonding inside the insulating glass. And the environment temperature maybe up to 70C degree. There one question they concern: If there any acid volatile from **VHB** tape during its hightemp. and long term bonding period? If yes, what's  
 I&TB Aug 06, 2010

[Discussions With An Expert](#)

4 Steps in **VHB** Application Development <http://l.mmm.com/view.aspx?m=BXI2> Using the 4 Steps in Solving Problems <http://l.mmm.com/view.aspx?m=IXJ9>  
 I&TB Mar 19, 2010

[Product Qualification Testing and Field Evaluations](#)

field evaluation. It is very difficult to get good, or the right, information from a field test for a "design in" product such as **VHB** tape. A "process" product ... for differences that are not really there. For **VHB** tapes I put the most faith in the 3M tests. Not just the release tests but other things that we can do  
 I&TB Nov 25, 2008

Where

All Spaces

What

All Content

When

Any date

Who

Filter

Clear Filter

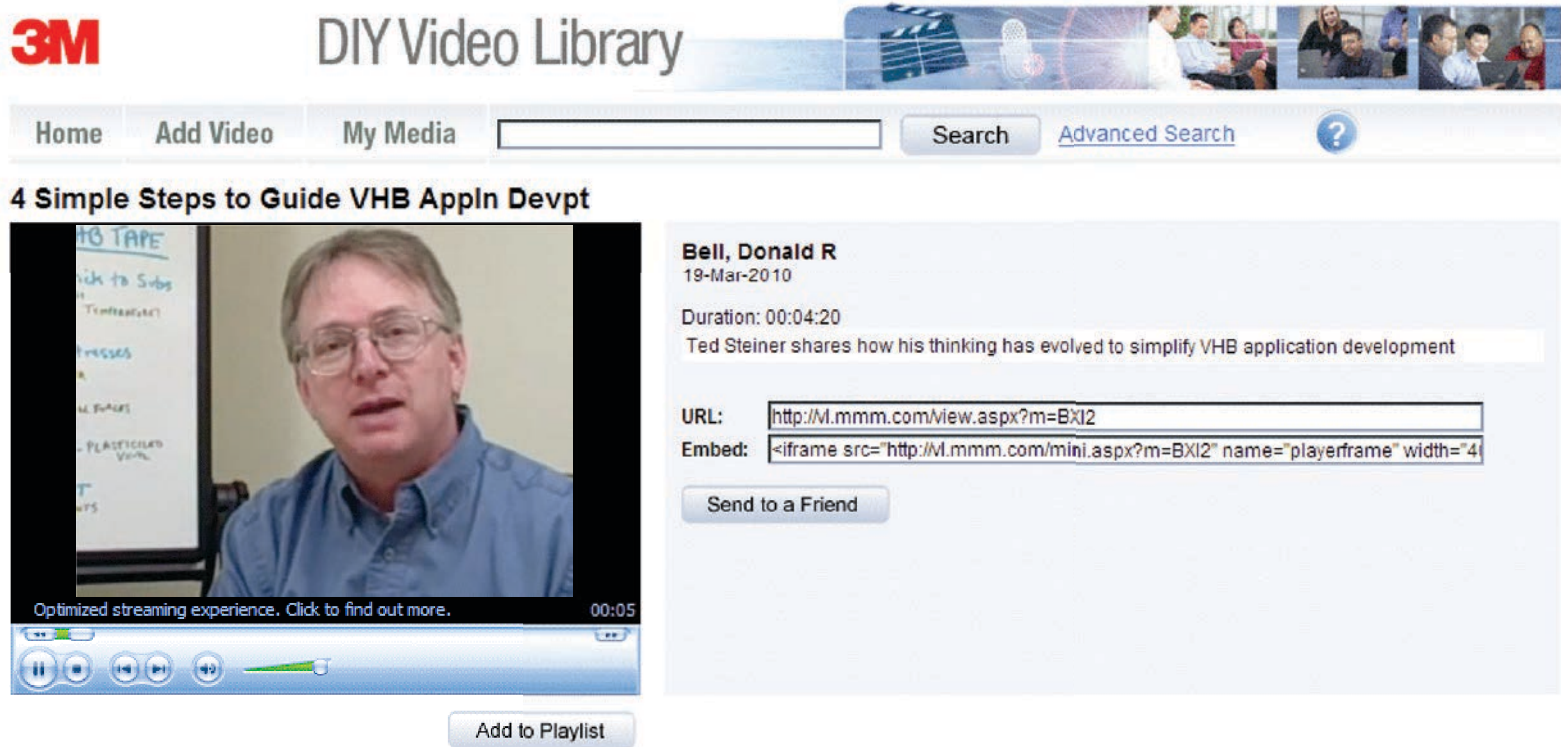
Browse Labels

[steiner](#)[vhb](#)[ted\\_steiner](#)[field\\_testing](#)[4920](#)[damping](#)[application\\_development](#)[design-in\\_products](#)[100mp](#)

*Wiki Enterprise Enabling Global Knowledge Transfer – Learners as Scribes*



# Capturing and Sharing Experts' Teachable Moments



**3M** DIY Video Library

Home Add Video My Media  Search [Advanced Search](#) ?

### 4 Simple Steps to Guide VHB Appln Devt

**Bell, Donald R**  
19-Mar-2010

Duration: 00:04:20  
Ted Steiner shares how his thinking has evolved to simplify VHB application development

URL:

Embed:

Send to a Friend

Optimized streaming experience. Click to find out more. 00:05

Add to Playlist

*Combining Storytelling and Enterprise 2.0 Technology*



# How to take “Markets of the Future” to the next level by tapping the collective insight of 20,500 3Mers in 60+ countries (2009)

## ■ Problem

- Markets of the Future process traditionally conducted by small group of Strategic Business Development analysts
- Internal collaboration platforms lacked capability to enable mass collaborative ideation
- Executive leadership looking for ways to improve enterprise-wide employee engagement

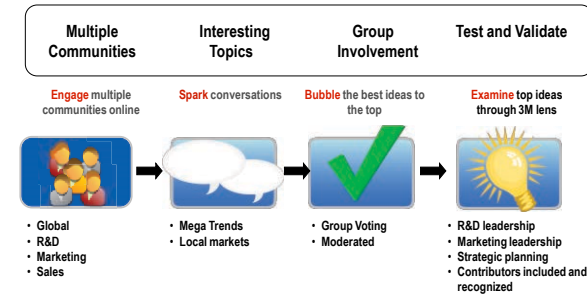
## ■ Solution

- Developed and conducted **InnovationLive: Markets of the Future** event using hosted ideation platform

## ■ Benefit

- 9 Markets of the Future identified with a combined size of approximately \$XXB
- 736 ideas, 1239 contributors, 42 countries
- Improved employee engagement
- Improved awareness of Enterprise 2.0

### InnovationLive Focus: Markets of the Future



Innovation Live – collaborative selection of future markets

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Successful PoC for future InnovationLive events

# First Attempt: "Let's use WE!"

Dashboard > Strategic Planning & Business Development > Global Trends & Markets of the Future

Welcome [Barry Dayton](#) | [History](#) | [Preferences](#) | [Administration](#) | [Log Out](#)

**3M**

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- + Add Content

Strategic Planning & Business Development





## Global Trends & Markets of the Future

Added by [Scott Eggert](#), last edited by [George Kopp](#) on Jul 25, 2008 ([view change](#))

Labels: [home page](#), [trends](#) [EDIT](#)

### Help shape the future of 3M - Share Market Trends and Ideas

The 3M Global Trends Wiki will allow 3M employees across the world to collaborate and share ideas. ***Trend data will support strategic planning and business development within all of 3M (e.g., Corporate, Big B, Divisional and Subsidiary level)***

Share/View Trends	Learn How to Use Site	Export Content	Discuss Trends
			

[Click here to view the most popular trends -> tag cloud](#)

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# Innovation LIVE

Focus: Markets of the Future



- Share
- View All Ideas
- About Live
- Home

## Topics for Focus Mega Trends

- [Expanding Urbanization](#)
- [Planet Earth in Danger](#)
- [Shifting Demographics](#)
- [Technology Enabled Lifestyles](#)
- [Economic Hangover](#)

## Focus: Markets of the Future

Bring to life the collective innovative spirit that has defined 3M for more than a century. Share your ideas on Markets of the Future. Use the Mega Trends to spark your ideas on markets untapped by 3M. What are the unspoken needs and wants of your customers? What are you and your customers dreaming about? Simple or revolutionary, we want to hear it.



Share your new market ideas to shape 3M's future.  
[> Share an Idea](#)



Discuss ideas that have been shared and help turn them into great ideas.  
[> Join the Discussion](#)



Vote for ideas that will help shape 3M's future. Collectively we vote, collectively we decide.  
[> Vote on an Idea](#)

## LIVE Activity

[Show My Activity](#)

### What's Happening

**1,239** Users have contributed to Innovation LIVE

Ideas have been submitted **736**

**6,799** Votes have been Cast

Comments have been made **1,084**

### Recent Ideas

### Top Contributors

- [A smart device for automatically serving pills](#) 40 minutes ago
- [InnovationLIVE - Is this a good idea?](#) 2 days, 19 minutes ago
- [Olive stone powder as grit for abrasive belts](#) 9 days, 2 hours, 40 minutes ago
- [Reflective Bicycle Tires](#) 9 days, 10 hours, 18 minutes ago
- [Intelligent Lighting Solutions](#) 9 days, 11 hours, 22 minutes ago
- [Increase Transportation Efficiency](#) 9 days, 11 hours, 53 minutes ago
- [Sell VHB in the retail market](#) 9 days, 12 hours, 51 minutes ago
- [Use Glass Buble in Deep Foundations for Construction Market](#) 9 days, 12 hours, 56 minutes ago
- [Pad of reusable Plastic Pen it](#) 9 days, 12 hours, 33 minutes ago

# InnovationLive Idea 1<sup>st</sup> most discussed, 10<sup>th</sup> most votes



720  
Points

## InnovationLIVE - Is this a good idea?

Please let us know what you think! Is this type of open collaboration of value to you? Why? Give us some examples, please. Do you have ideas for future InnovationLIVE events? Do you have issues or concerns? Please share those with us, also.

At this time, we have no capability of conducting another event. This Markets of the Future event is the "Proof of Concept". If there is enough interest and business value, we hope to obtain funding to continue InnovationLIVE with our employees, customers, business partners, and the public. Thanks for your participation in InnovationLIVE!

On behalf of our IL Team,

 [43 Comments »](#)  Shared by [Barry Dayton](#) to [Technology Enabled Lifestyles](#) on 4/3/2009 11:22 AM

HATS OFF TO THE IL TEAM!!!!.....This has been an absolutely amazing exercise.....for 1 thing it certainly made me feel part of the global 3M and showed me that ones ideas, comments, vote is important to the potential solutions to that could affect in a POSITIVE WAY: our economics, people, lifestyles, planet and urbanization and not to forget the healthy and vibrant long life ahead of 3M and its existing and future employees.

Thank you ever so much for the opportunity to express my view, comments, ideas. Have a fun and safe weekend.

Cathy Ivany - (Integrated Solutions) Account Executive - Newfoundland & Labrador - 3M Canada

# Sustainable Solution – Key Success Factors

- Focus on a compelling business need (don't try “boil the ocean”)
- Embed knowledge transfer into the workflow
  - Learning before, while, and after doing
    - Peer Assists, After-action Reviews, Storytelling
- Create Win-Win for 3M and the individual
  - Objectives must be aligned
  - ***“It’s my company!!”***
- Recognize and reward knowledge stewardship, re-use
  - Expectation, role modeling, recognition by positional leadership
  - To be recognized by your peers is the most powerful form of recognition
- Use CAP methodology (It’s not about the tools!)
  - Change Acceleration Process

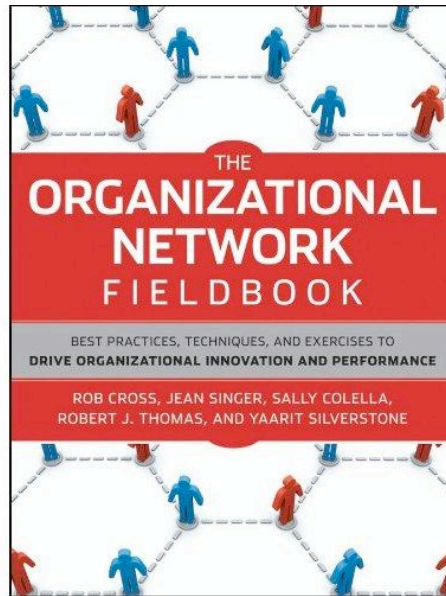
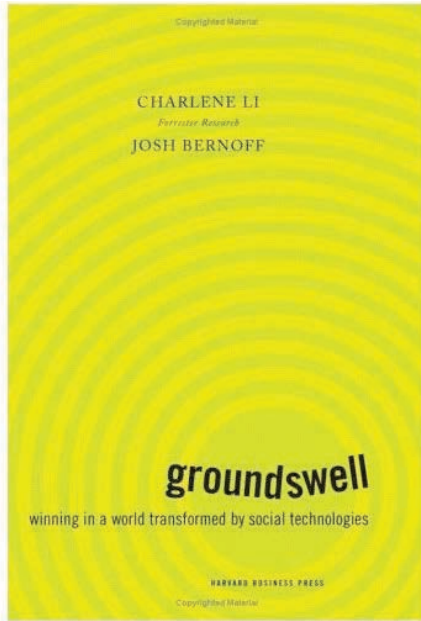
*“Recognize people’s value while they are still here”*



# Lessons Learned – so far – a sampling

- About Strategy
  - Lead with business-centric value propositions, aligned to businesses' strategic plans
  - Target those businesses and organizations the enterprise is counting on for success
- About Solution Adoption/acceptance
  - Not much happens without business leaders' commitment and role modeling
  - It **IS** about the tools, if they are not fun and ridiculously easy to use
- About Business Results
  - Strive for clear metrics, but settle for strong testimonials
  - Improvement will occur as a result of increased awareness and focus, if nothing else
- About Partnership with HR
  - Together, we can deliver more value for our clients
  - Once “converted”, HR partners are avid proponents and agents of KM
- About Partnership with IT
  - Together, we can deliver more value for our clients
  - It's important to have a clear, common understanding of our respective roles

# Recommendations



Looking to spur wiki adoption? Want to grow from 10 users to 100, or 1000? Applying [patterns](#) that help coordinate people's efforts and guide the growth of content, and recognizing [anti-patterns](#) that might hinder growth - can give your wiki the greatest chance of success.

Wikipatterns.com is a toolbox of patterns & anti-patterns, and a guide to the stages of wiki adoption. It's also a wiki, which means you can help [build](#) the information based on your experiences! Beyond this site, there are many other [additional resources](#).

#### NEW Wikipatterns book

This book provides practical, proven advice for encouraging adoption of your wiki project and growing it into a useful collaboration tool or vibrant online community. [Learn more](#)

[Wikipatterns](#) Add a button to your blog or website!



New to wikipatterns? Start here.

#### See what's changed

[Recent changes and contributors](#)

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Atlassian Summit 2009

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#### People Patterns

[90-9-1 Theory](#)  
[Acknowledge Goodness](#)  
[Ambassador](#)  
[BarnRaising](#)  
[Champion](#)  
[Contributor](#)

#### People Anti-Patterns

[Bully](#)  
[ContributorForHire](#)  
[Copyright Infringement](#)  
[Do it all](#)  
[Gate](#)  
[Leech](#)

#### Adoption Patterns

[Agenda](#)  
[Annie Lifecycle](#)  
[Assess Wiki-Ability](#)  
[Automatic Index](#)  
[Built-in obsolescence](#)  
[Business Units - Buckets](#)

#### Adoption Anti-Patterns

[All wiki all the time](#)  
[BeanCounter](#)  
[Build it and they will come](#)  
[Bully](#)  
[ButTheIntranet](#)  
[ContributorForHire](#)





*Thanks!*  
*Questions, Discussion*

[bkdayton@mmm.com](mailto:bkdayton@mmm.com)