A Practical Approach to Managing Knowledge…2.0

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Merck Manufacturing Knowledge Management COE
28-Apr-2015

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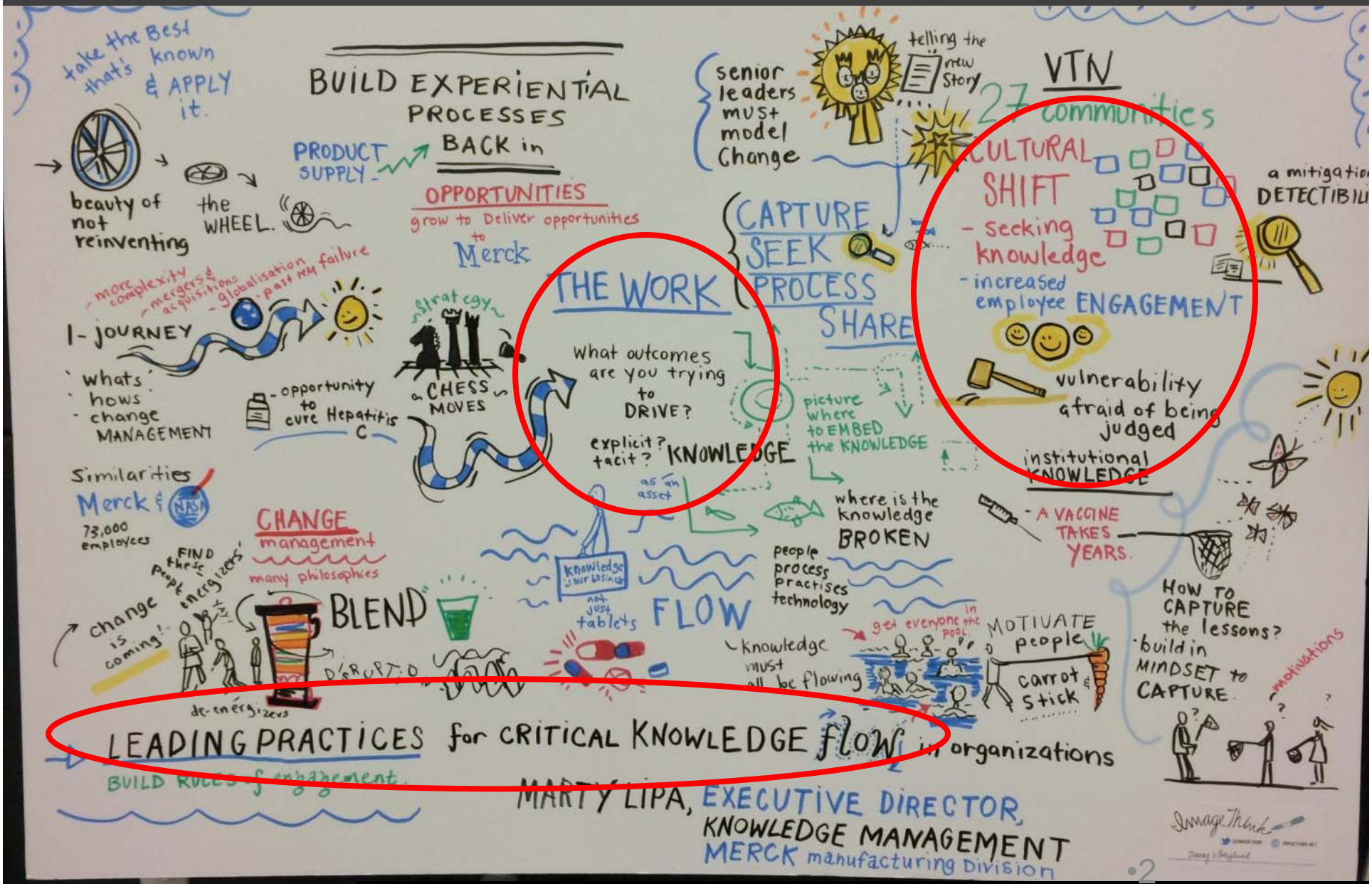
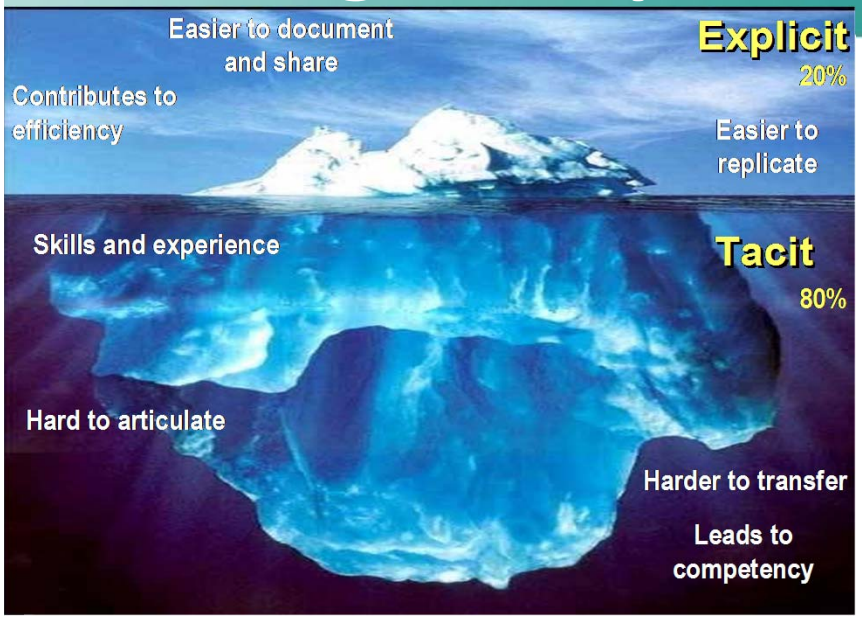
Where we left off…



ImageThink depiction of Merck KM Strategy, created 22-Oct-2014 at *NASA Knowledge 2020 Workshop*

Guiding Principles



credit: APQC

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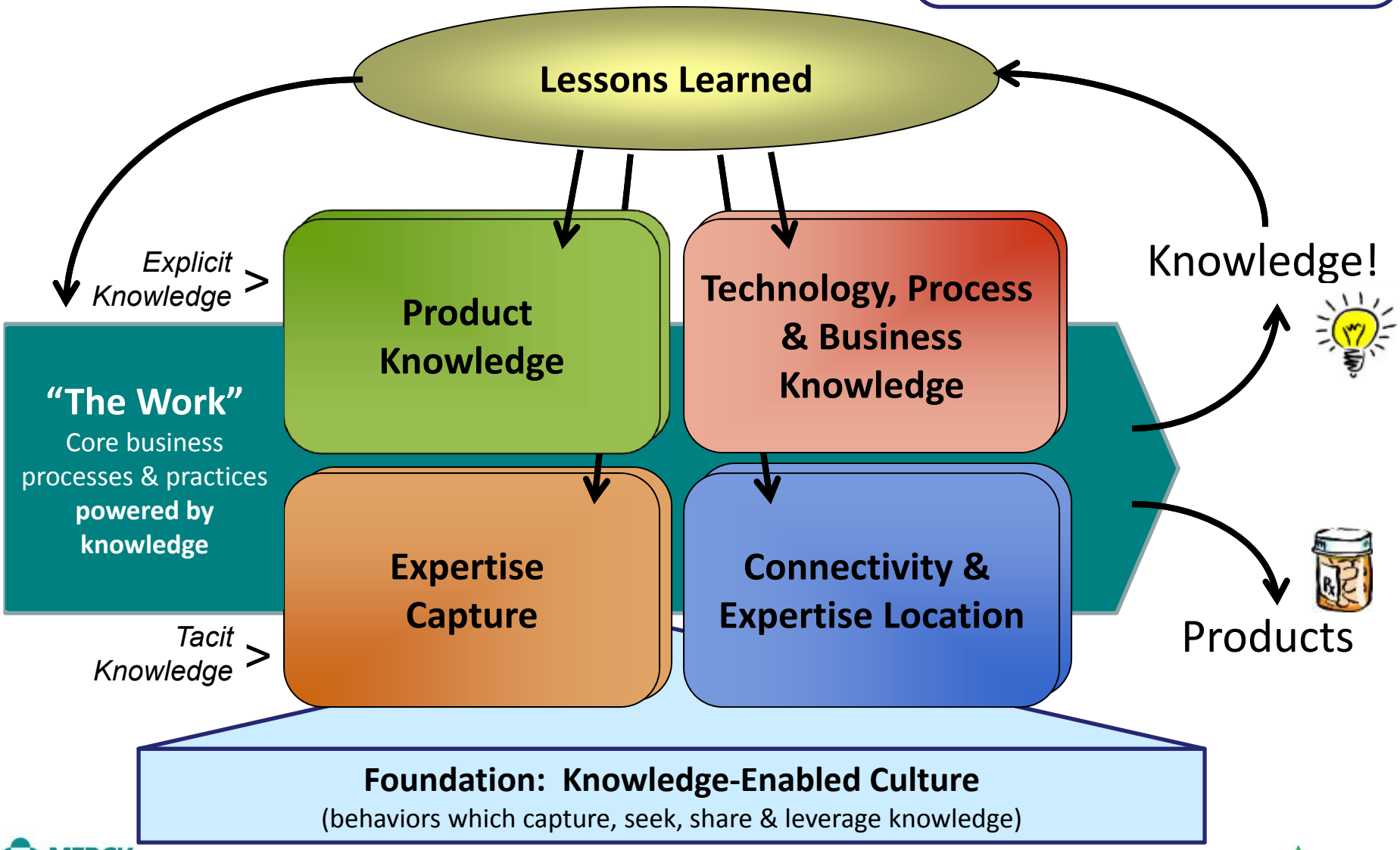
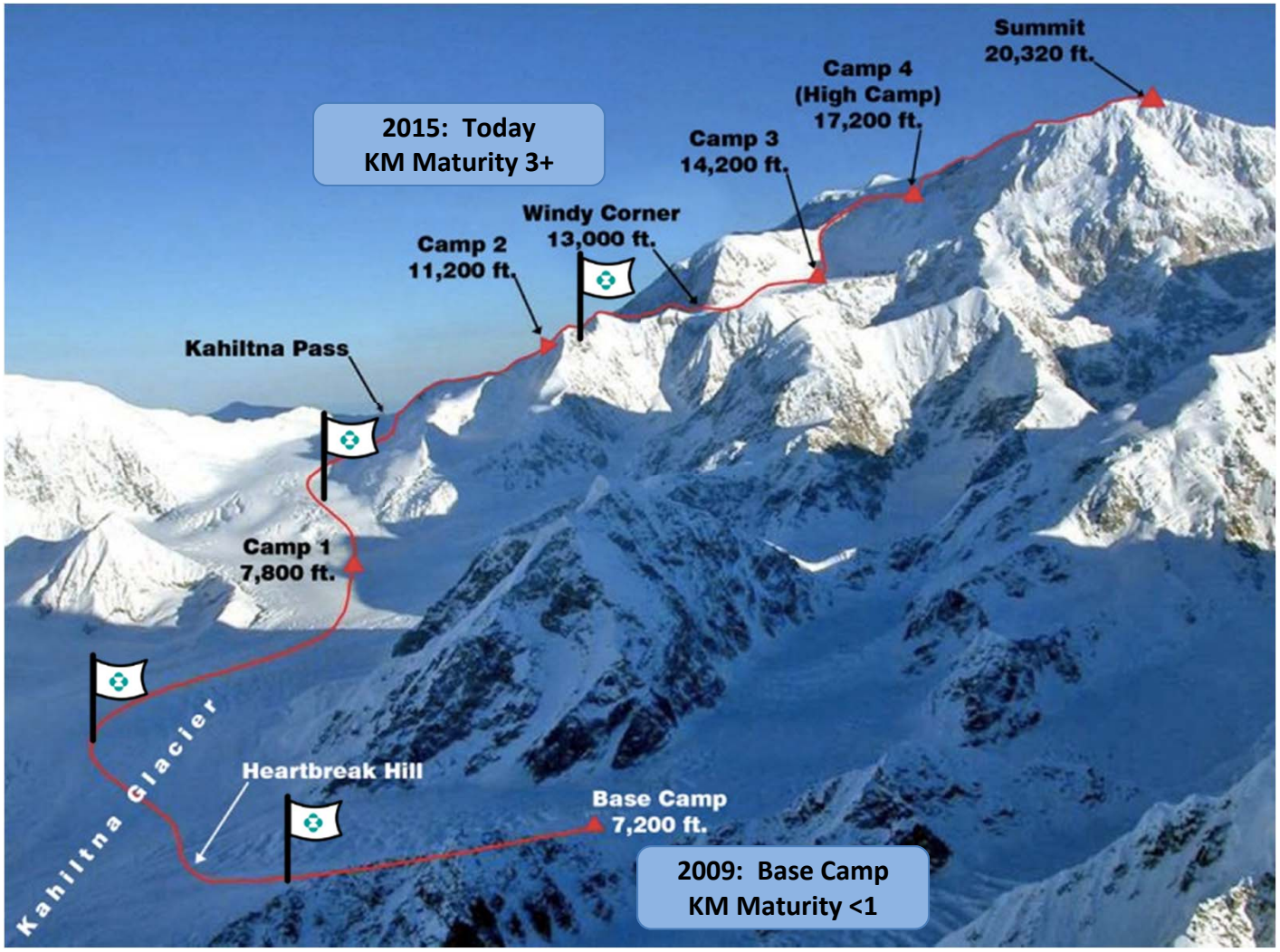
Merck Knowledge Ecosystem

*"Knowledge knows no organizational boundaries… it is **boundaryless**"*



Merck's Journey in KM Capability



This looks so straight forward when viewed this way…

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Learnings & Happenings…

Emphasis on **Connectivity** & creating a **Boundaryless Organization**

Continual Improvement

Challenges in **Process & People**

Connectivity & Boundaryless Organizatio

Boundaryless = Rapid flow of our **science**, **knowledge**, **processes**, and **people** to meet critical business needs, grow and develop our people and deliver value to our patients and customers.

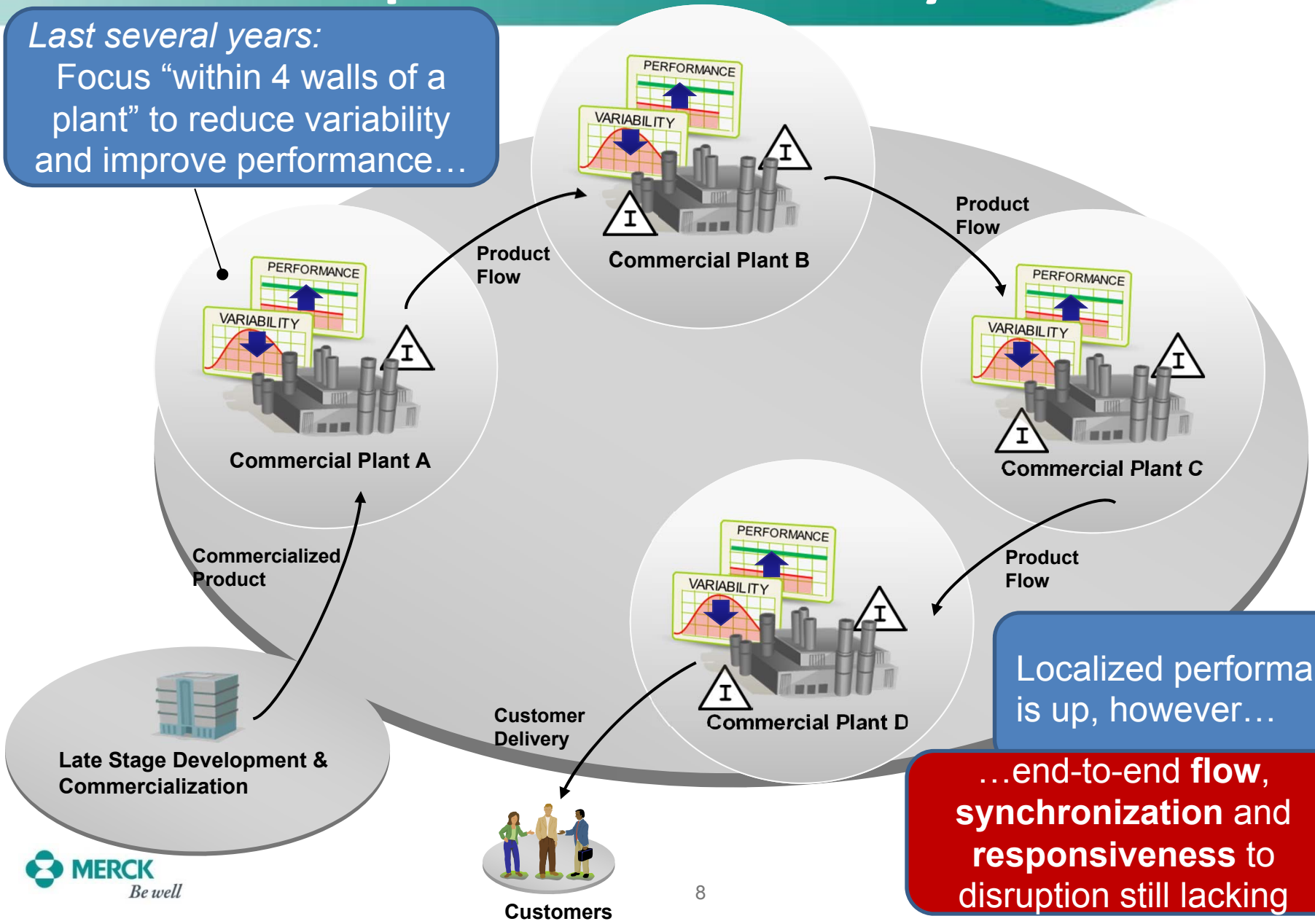
Boundaries we need to overcome: Geographical, Hierarchical, Functional, Cultural, Memory vs. Time

Connectivity enables us to operate as one business and integrated network

Rapidly changing business environment demands this for our survival…and it's simply good business

MMD's Improvement Journey

Last several years:
Focus "within 4 walls of a plant" to reduce variability and improve performance…



Localized performance is up, however…

…end-to-end **flow**, **synchronization** and **responsiveness** to disruption still lacking

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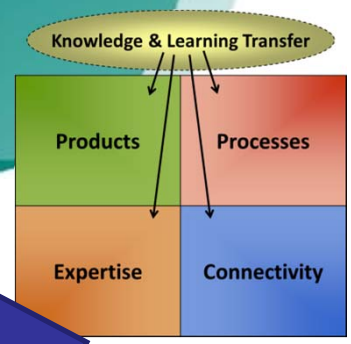
MMD's Improvement Journey…

…powered by KNOWLEDGE & CONNECTIVITY



Standardized, repeatable, robust channels for knowledge flow …

PERFORMANCE
VARIABILITY
Commercial Plant B

PERFORMANCE
VARIABILITY
Commercial Plant A

Take 5!
AAR

PERFORMANCE
VARIABILITY
Commercial Plant C

Product Knowledge

PERFORMANCE
VARIABILITY
Commercial Plant D

Late Stage Development & Commercialization

Customers

…enabling **connectivity**, rapid **problem solving**, **sharing** of issues and best practices, higher engagement, and more

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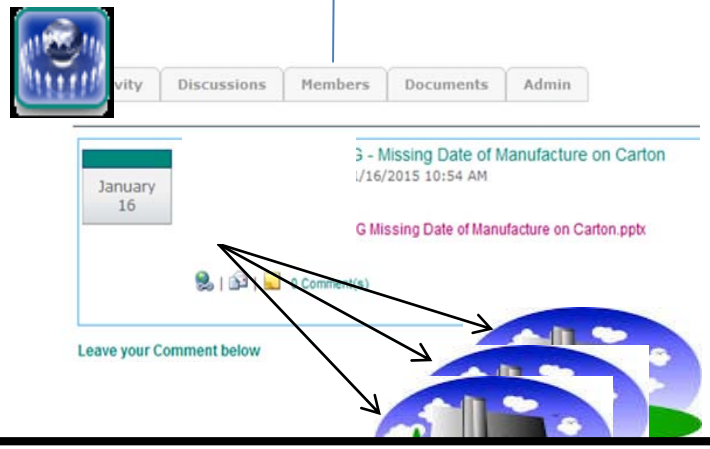
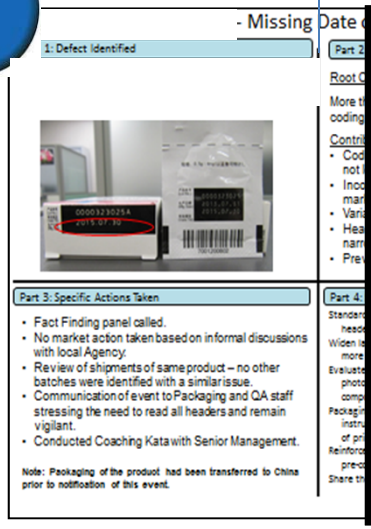
Connectivity Application: Packaging Defects

Monitor for Packaging-related Defects → Investigate and Capture defects → Share via standard work → Assess impact → Act



We are going to **prevent**



Sharing & Assessment Metrics

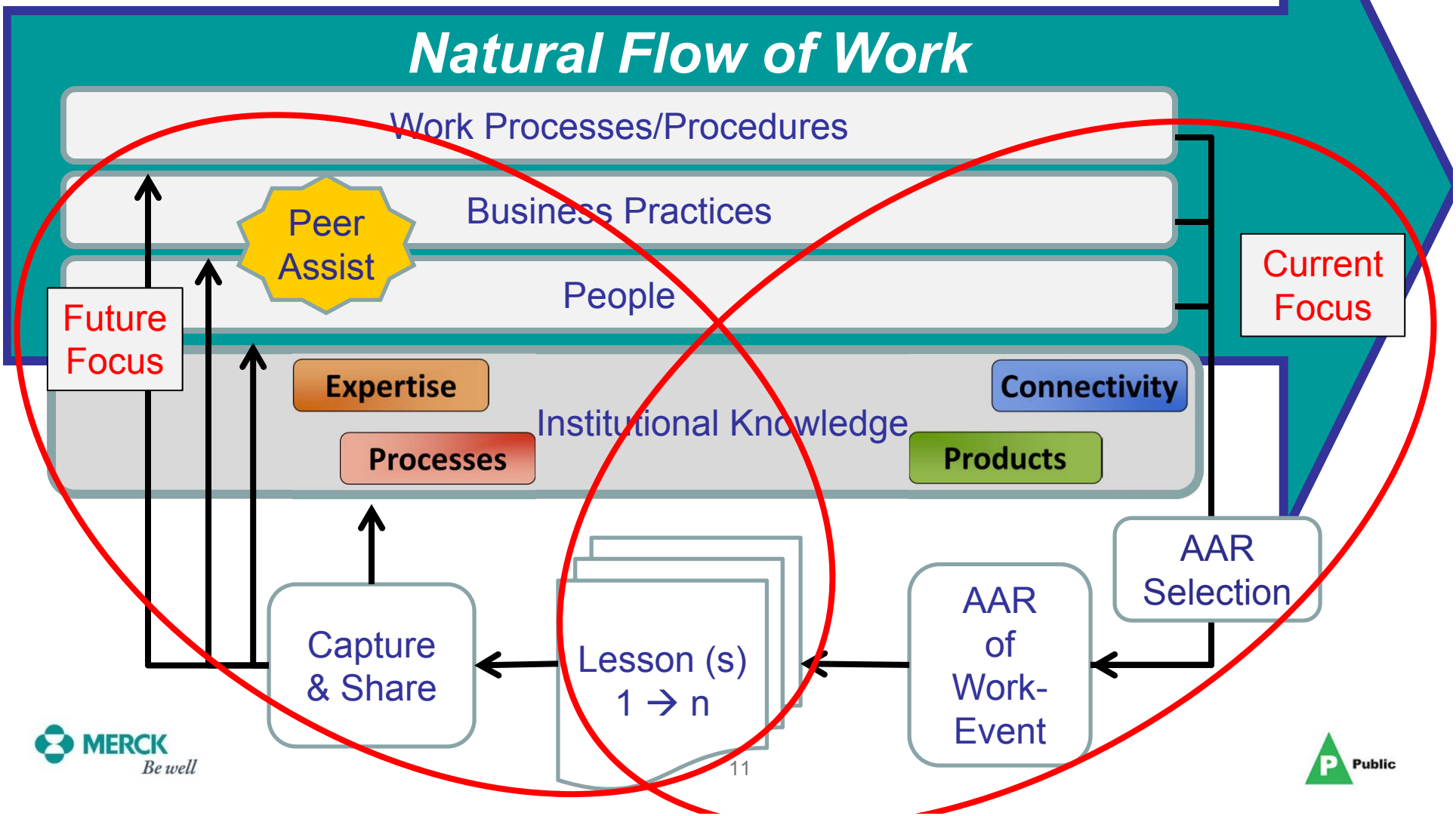
Response Rate (goal 100%)	Response Time (goal ≤ 5d)	Response Profile (goal: n/a)
100%	4 / 12 (≤ 5d / ≥ 5d)	4 / 5 / 7 (n/a / potential / fixed)

CAPA Strength

Prevent	Minimize
Eliminate	Detect
Automate	Mitigate
Simplify	Retrain / Review

Continual Improvement: AAR

MMD Lessons Learned System - *Generalized Life of a Lesson*



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After Action Review

From *Take 5* → *Take 60*

Capability Building

- See One, Do One, Teach One

Creating Safety

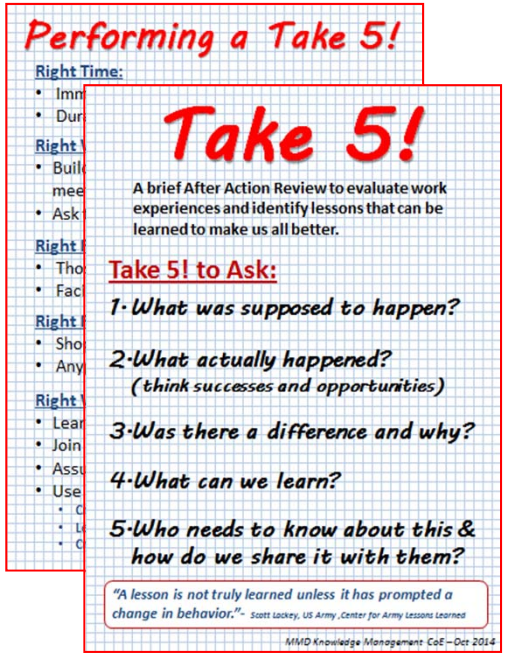
A process, not just an event

- *Practitioners* not *Facilitators*

Focus on

- **Standard Work**
- Built ***in the flow***
- Focus on **Actionable** Lessons
  - 'Message in a Bottle'

Phase 2: Building Lessons into Standard Work


Performing a Take 5!

Right Time:

Take 5!

A brief After Action Review to evaluate work experiences and identify lessons that can be learned to make us all better.

Take 5! to Ask:

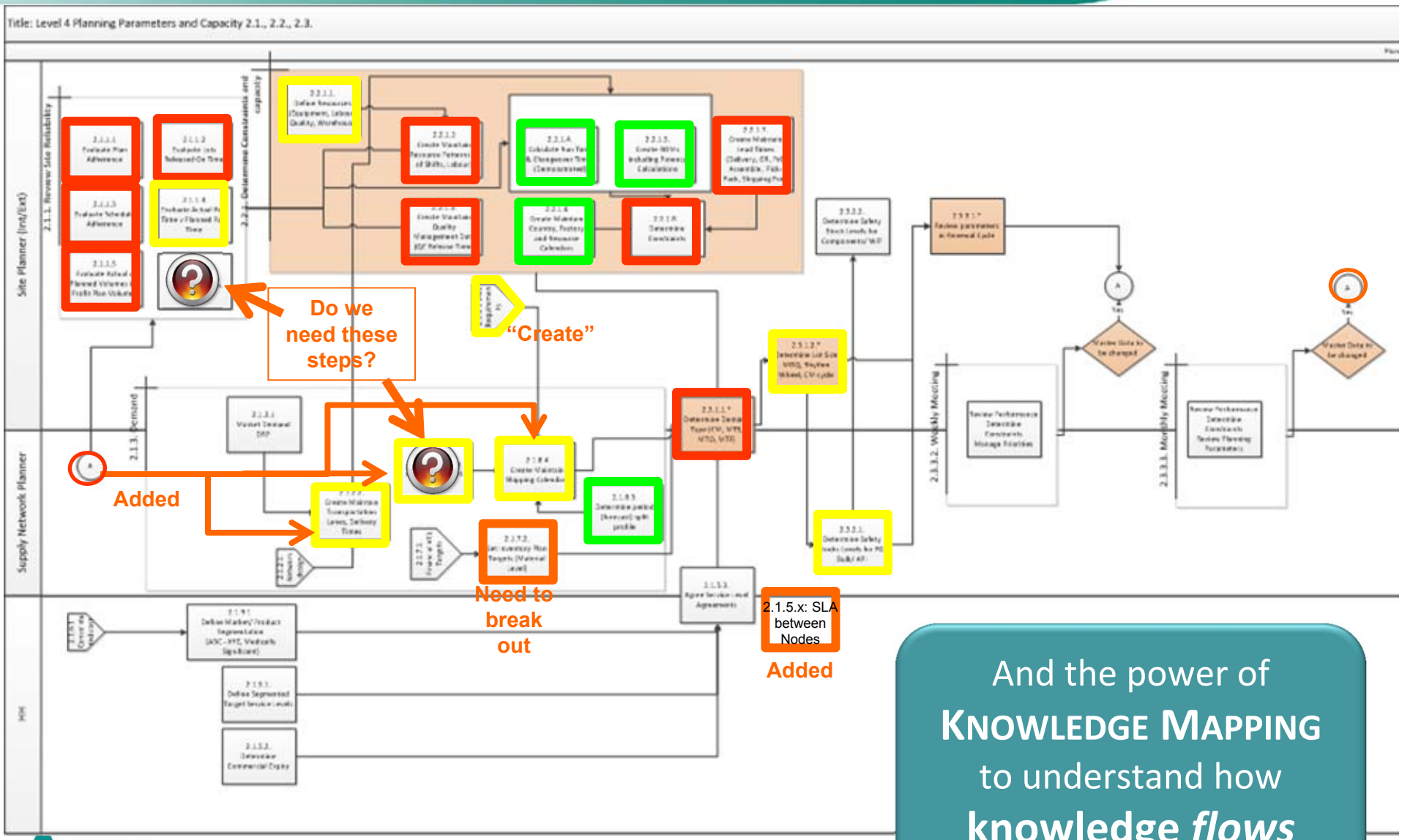
1. What was supposed to happen?
2. What actually happened? (think successes and opportunities)
3. Was there a difference and why?
4. What can we learn?
5. Who needs to know about this & how do we share it with them?

"A lesson is not truly learned unless it has prompted a change in behavior."- Scott Lackey, US Army ,Center for Army Lessons Learned

MMD Knowledge Management CoE – Oct 2014

TAKE 5! WALLET CARD

Process: The Process as Foundation



And the power of
KNOWLEDGE MAPPING
to understand how
knowledge *flows*

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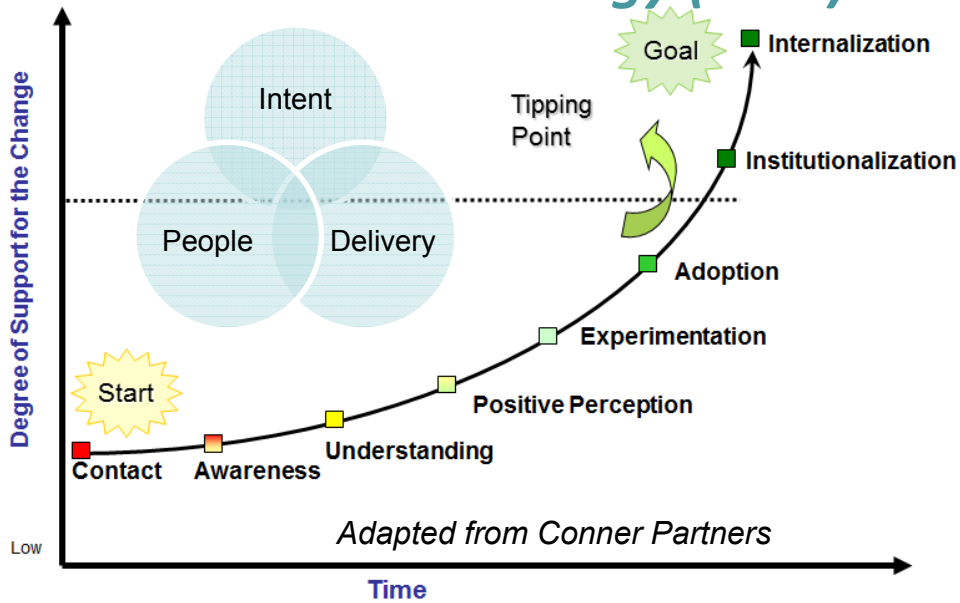
People: Key Change Execution Concepts

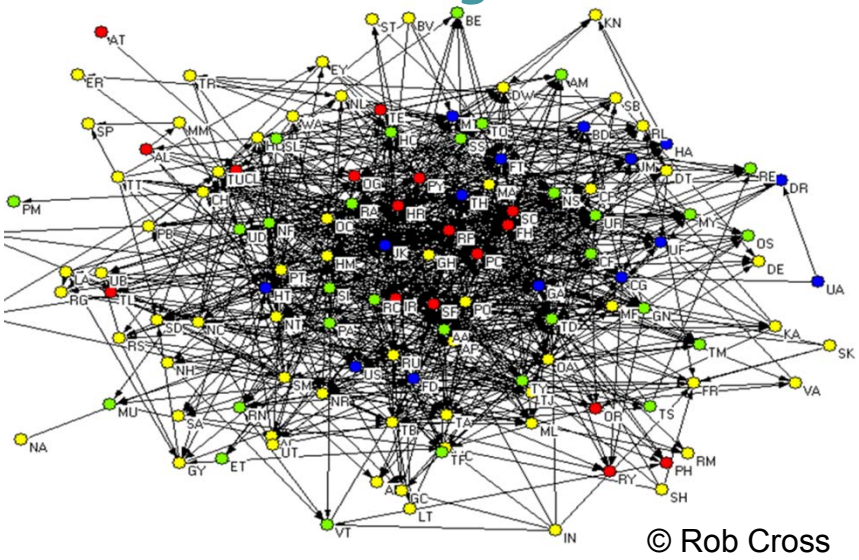
*blending social technologies for success**

Structured Methodology (CEM)



Adapted from Conner Partners

Create an Energized Network



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Tap into Culture

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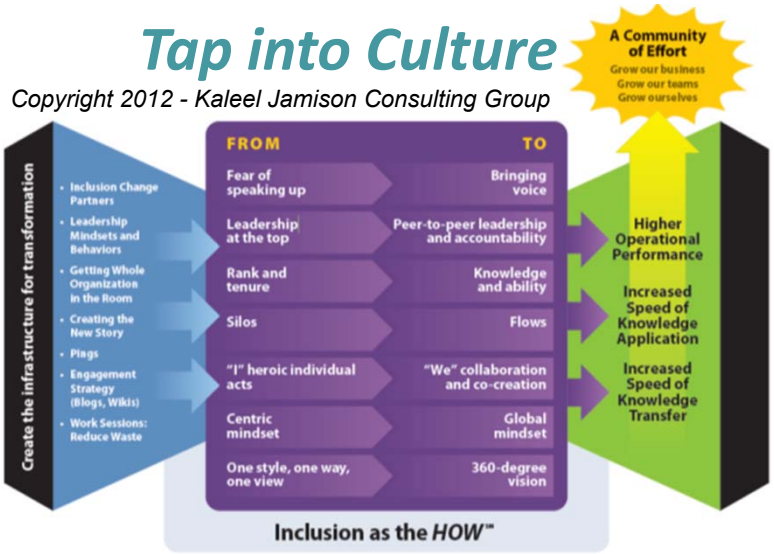

Behaviors are Critical

Ensuring people have the right:

- **D**irection
- **C**ompetence
- **O**pportunity
- **M**otivation

*R. D. Guenard, M.J. Lipa, S. Bruno and J. Katz, "Enabling a New Way of Working through Inclusion and Social Media: A Case Study", *OD Practitioner*, 45(4), **2013**

Link to & Leverage Organizational Norms

- KM as the backbone to enable the speed and effectiveness of knowledge transfer

People and teamwork are at the heart of
Merck Production System

Ask who else needs to be involved and create 360º vision…

MMD:
HOW WE MANUFACTURE SUCCESS

"Making Problems Visible and solving them once, collaboratively, at root cause…"

Provide Leadership *…words from our sponsor*

- **Learn**
  - Must be a role model and know what you are asking for
- **Commit**
  - Time (culture) & Effort & Visible *Upward* Advocacy
  - Resources: KM SMEs, functional experts, stewards, …
- **Create the right environment**
  - "Top down and bottom up"
- **Set expectations**
  - Managing knowledge is "part of your job"
  - Cannot change culture without clear expectations, accountability and consequences
- **Remain Resolved!**

Thanks for your attention!

With Special Thanks to…

- Dr. Michael Thien
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- David Vossen
- GSTC Leadership Team
- MMD KM CoE Team
- APQC

and many fellow KM practitioners!

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For more details, see ISPE Pharmaceutical Engineering (Nov/Dec 2013, Vol 33 #6):

A Practical Approach to Managing Knowledge –

A Case Study of the Evolution of Knowledge Management (KM) at Merck

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