



Knowledge Management and Transfer in Education

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Objectives for Today

Create a base of understanding about Knowledge Management

❖ **Lessons Learned**

❖ **Approaches that work**

Discuss KM as it relates to Education

Give you ideas about how to use it—and benefit from it—in your lives

Offer you some tools

American Productivity & Quality Center

Founded in 1977

Non-profit, 501(c)(3)

Houston, Texas

Staff: 100; Budget \$13 M

Revenues: Membership & Fees

Board of Directors: 50 Leaders

Mission: Improve productivity and quality in organizations



The American Productivity & Quality Center

Founded in 1977 as non-profit, research and education institution

Created MBNQA criteria

Created International Benchmarking Clearinghouse

❖ **500+ Members (firms, gov't, universities)**

Created APQC ConnectED

No government support; no endowment

❖ **Benchmarking & Best Practices**

❖ **Knowledge Management & Internal Transfer**

❖ **Research, Publications, & Consulting**

Staff: 100 +

We help organizations improve through..

Benchmarking Services

Training and Conferences

Publications

Research and Technical Assistance

Information Services/Library

Education Initiative

- ❖ **Data Disaggregation (including STARS software)**
- ❖ **Performance Improvement, Strategic Planning**
- ❖ **Baldrige**
- ❖ **Knowledge Sharing Network**

KM: Sponsor & Partner Companies

Sponsors:

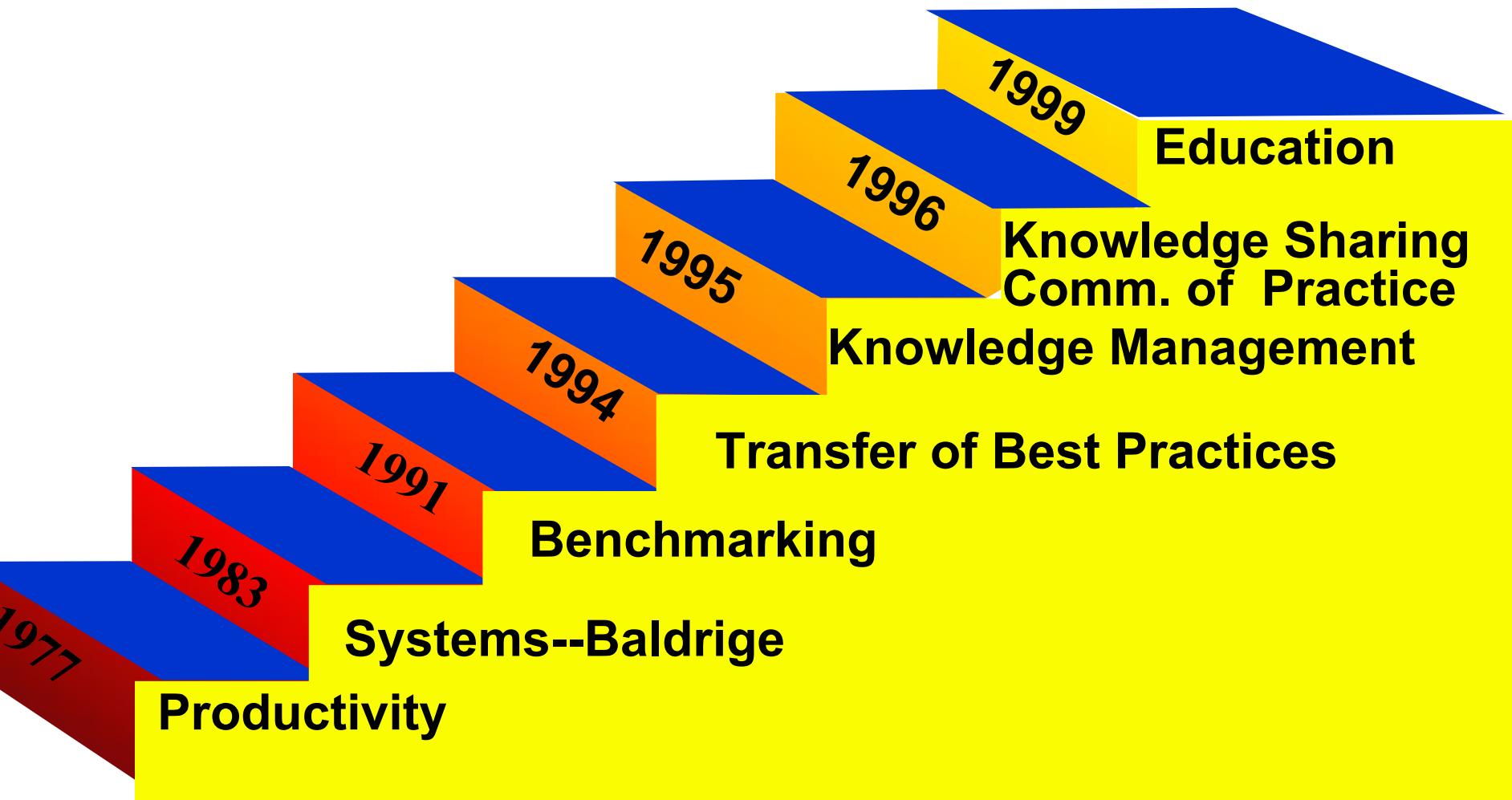
- ☞ Allstate Insurance
- ☞ Amoco
- ☞ BASF
- ☞ Boehringer Mannheim
- ☞ DuPont
- ☞ Fujitsu
- ☞ GTE Directories
- ☞ IBM
- ☞ Johnson & Johnson
- ☞ Lincoln National Corp.
- ☞ Lion Nathan Ltd.
- ☞ Masco Corporation
- ☞ Mobil
- ☞ Pillsbury
- ☞ Premier
- ☞ Shell Exploration

- ☞ Sprint
- ☞ Western Digital
- ☞ World Bank
- ☞ Xerox

Partners:

- ☞ Arthur Andersen
- ☞ Chevron
- ☞ Dow Chemical
- ☞ Hughes Space & Communications
- ☞ Kaiser Permanente
- ☞ Price Waterhouse
- ☞ Sequent Computers
- ☞ Skandia
- ☞ Texas Instruments
- ☞ National Security Agency (NSA)
- ☞ USAA

Evolution of APQC



Knowledge Management



In the beginning, KM was without form.

Research on barriers to transfer of best practices:

Gabriel Szulanski, INSEAD -> Wharton

Then...

The Knowledge Symposium (1995)

APQC KM Consortium Studies

- ❖ **Emerging Best Practices in KM(1996)**
- ❖ **Using Information Technology for KM (1997)**
- ❖ **Europe - The Learning Organisation & KM (1997)**
- ❖ **Expanding Knowledge Externally (1998)**
- ❖ **Creating a Knowledge Sharing Culture (1998-99)**
- ❖ **Building & Sustaining Communities of Practice (2000)**
- ❖ **Managing Content and Knowledge (May, 2001)**
- ❖ **Launching a KM Initiative: Getting Started and Generating Results (July, 2001)**

APQC's Work in Knowledge Management

Research on KM since 1993

Research Consortia started 1995

- ❖ **Over 200 firms in APQC's KM Consortia**
- ❖ **45 Best Practice firms studied in detail**

Worked with thousands of KM practitioners in U.S., Europe, Asia, S. America and Middle East

Have helped firms implement KM

- ❖ **Creating a strategy, vision and business case**
- ❖ **Developing KM approaches**

APQC's Definition of Knowledge Management

**Systematic approaches to find, understand,
share and use knowledge to create value
To help information and knowledge flow to the
right people at the right time so they can act
more efficiently and effectively.**

Knowledge Management

Identifying, Collecting, Organizing, Sharing,
Adapting, Transferring, and Implementing--

❖ **Explicit and tacit knowledge**

❖ **Best practices—what works**

In order to get the right knowledge to the right
person at the right time

And to create new knowledge.

Defining Terms...

Data is...

- ❖ **The ingredients in the cake**

Information is...

- ❖ **What order to mix the ingredients**

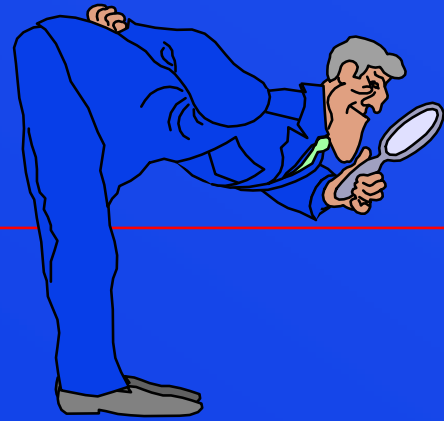
Knowledge is...

- ❖ **How the cake will feel when its done**



Knowledge is information in action

Our First KM Study



We identified six major KM Strategies and Value Propositions

- 1. Knowledge Management as a Business Strategy**
- 2. Innovation & Knowledge Creation**
- 3. Transfer of Knowledge & Best Practices**
- 4. Customer Focused Knowledge**
- 5. Intellectual Asset Management**
- 6. Personal Responsibility for Knowledge**

State of KM in 1995

“Knowledge” just becoming an explicit asset
Some early successes and strong hints of direction
Could change the role of IT in organizations
Internal transfer of “best practices” expanding
Incentives often negative
Little attention to tacit knowledge
Few financial measures
Culture.. culture... culture

APQC's Knowledge Management Framework



Based on a model codeveloped
by APQC & AA, 1995

A Few of the Early Leaders

- ✎ Consulting firms
- ✎ British Petroleum
- ✎ Buckman Labs
- ✎ Chevron
- ✎ Dow
- ✎ IBM
- ✎ J&J
- ✎ Monsanto
- ✎ Sequent Computers
- ✎ Skandia
- ✎ Texas Instruments
- ✎ USAA
- ✎ US West
- ✎ The World Bank
- ✎ Xerox

Observations about the APQC KM Community

Dramatic progress since our first study

**Participants are learning from each other and
leapfrogging the leaders**

Leaders are still learning

Rapid adoption of Intranet technology

Partnership of IT and KM practitioners

Lessons learned are abundant

**Everyone is still new and at stage of “Design
and Test”**

1997: KM enters the mainstream

“If you build it, they won’t come.”

“Corporate amnesia”

Dozens of conferences

Chief Knowledge Officer

“Careers in KM” Working Woman

Magazine

Books, magazines, journals, web sites



Lessons Learned

Lesson 1

Information and knowledge exist -- but won't automatically flow despite the pipes and buckets and posters.



Just because best practice information is available, does not mean that action will follow.



Tree of Knowledge



Explicit

20%

Tacit





80%



Lesson 2
Tacit is tough to
“transfer”.

Tacit

Explicit

-  Personal Knowledge
-  Know-how
-  Know-why
-  Experience

-  Data
-  Locations
-  Descriptions
-  Policies
-  Procedures
-  Formulas
-  Processes

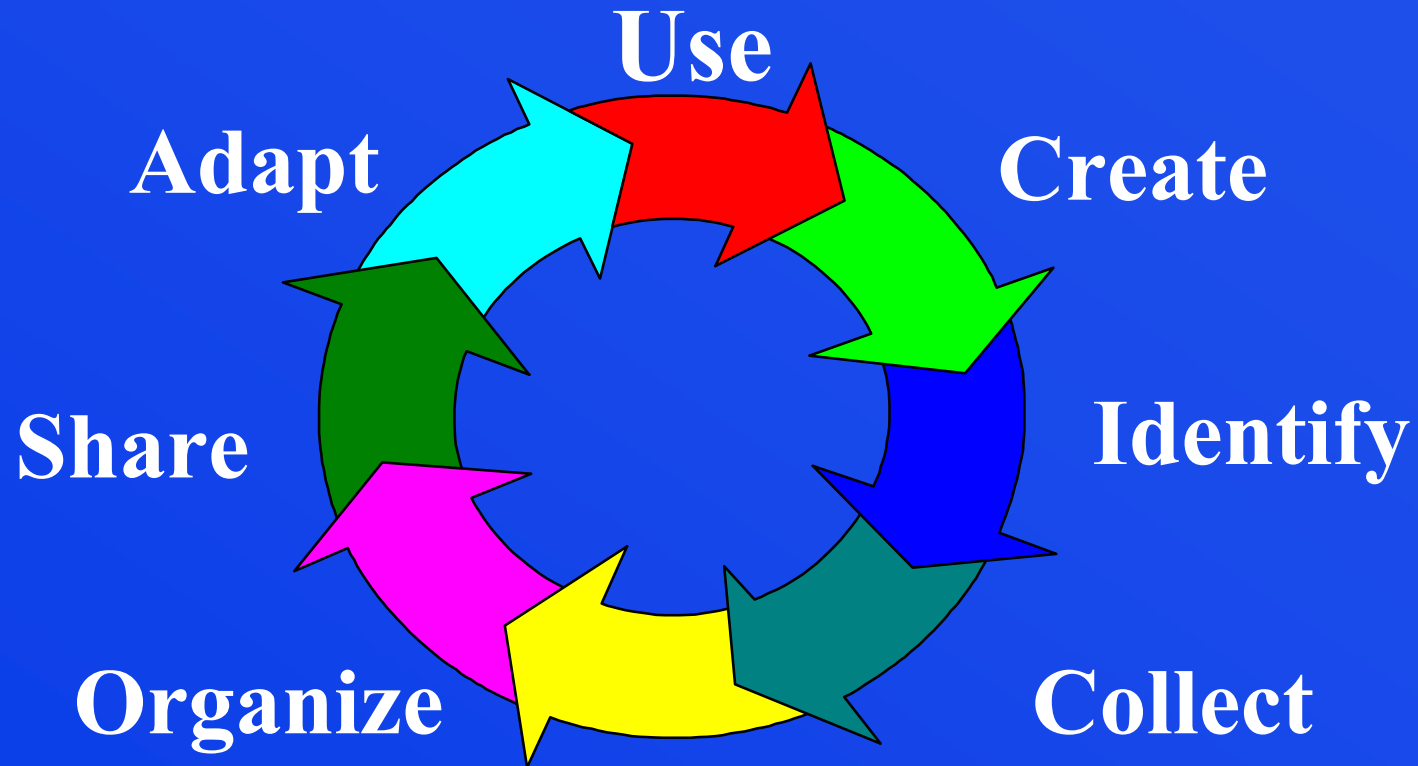
Tacit

Explicit

- 👉 Hard to articulate
- 👉 Hard to transfer
- 👉 Hard to steal
- 👉 High competitive advantage

- 👉 Contributes to efficiency
- 👉 Leads to competency
- 👉 Easier to replicate

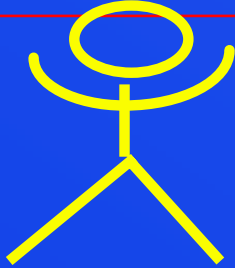
Knowledge is a Flow, Not a Thing



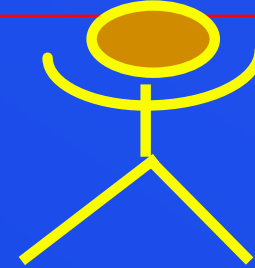
Lesson 3
Ignore organization
and
human dynamics
at your peril.



Source



Recipient



**“I don't know what I know”
I didn't know you wanted
it”**

“Why should I transfer it”

**“I don't know how to
transfer it to you”**

**“I don't know what you
know”**

“I didn't know you had it”

“Why should I use it”

“I don't know how to get it”

Constraints on Knowledge Transfer

1. Absorptive capacity of the recipient
 - ❖ **Resources**
2. Understanding the practice
 - ❖ **poorly documented by the source**
 - ❖ **poorly understood by the recipient**
3. Quality of the relationship
 - ❖ **Trust and credibility of source**
 - ❖ **Strength of the relationship**
4. Motivation of source and recipient

Other Reactions

What do *THEY* know?!?

We can do our own thing (silos)

Won't work here (NIH)

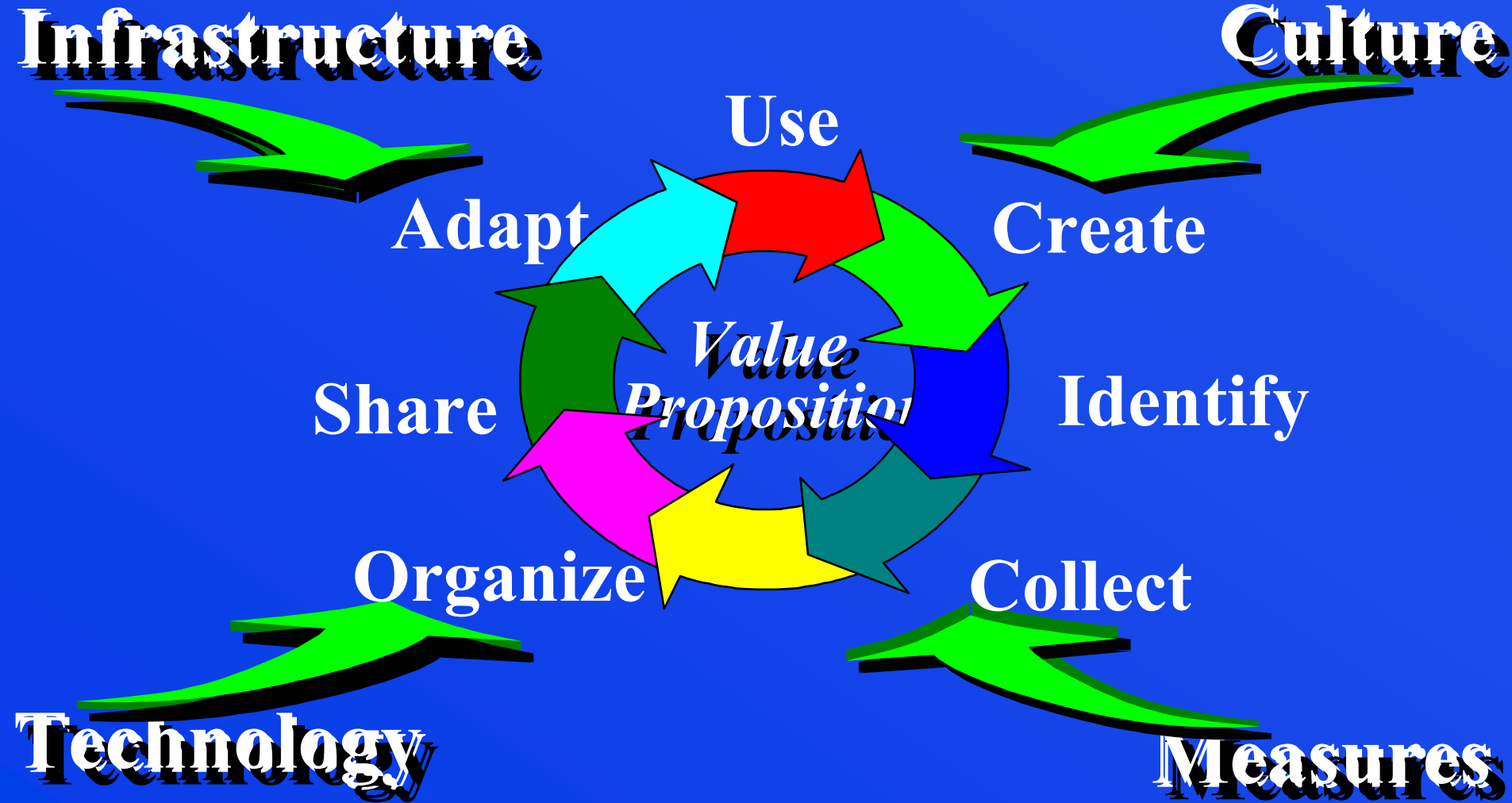
We're too busy (yes)

We're really good (i.e.,

Better than you!)

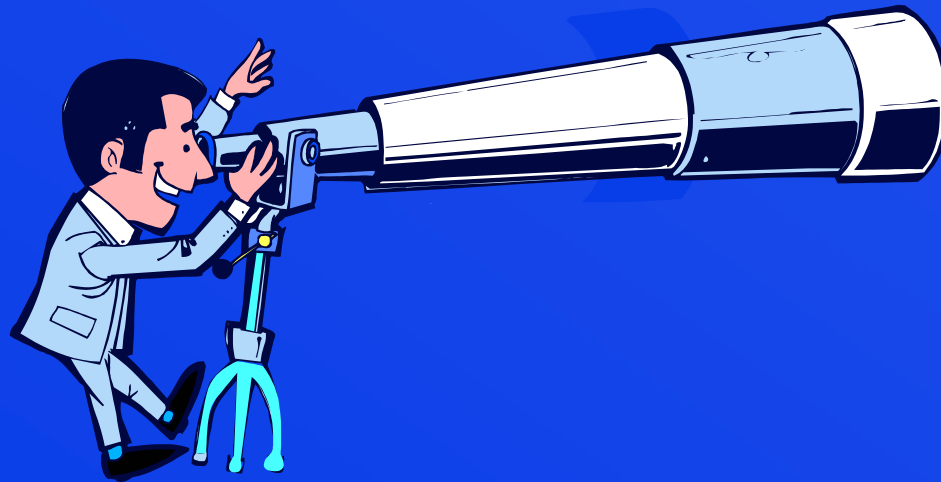


Knowledge in Context



Lesson 4

*You can make money from KM
if you focus.*



The Business Case for KM

Tightly link to strategic objectives and have an explicit business case

Hitch your KM wagon to an important business project

- ❖ **Stakeholder intimacy and response time**
- ❖ **Product Excellence**
- ❖ **Operational excellence**

Lesson 5

**If you don't believe KM is
about Information
Technology, try doing it
without it.**

Technology: If you build it, will they come?

The really important and useful information for improvement is too complex to put on-line; there is too much tacit knowledge required to make a process work.

There has to be a framework for classifying information.

Entering information into the system must be part of someone's job.

Culture and behaviors are the key drivers and inhibitors of internal sharing.

Technology : Prevalent Tools

E-mail

Internet/World-Wide Web

Internal Internet (Intranet)

- ❖ **Databases that capture/share institutional memory**
- ❖ **Skill/Knowledge inventory systems**
- ❖ **“Yellow pages” or service directory of current activities/projects/resources**

Project tracking systems

Knowledge-based/expert-based systems/Artificial intelligence

Customer relationship management system

Groupware

Check Point: Where are you now?

Is your organization doing anything it calls ‘knowledge management’?

Is there a general consensus in your organization about what knowledge management means?

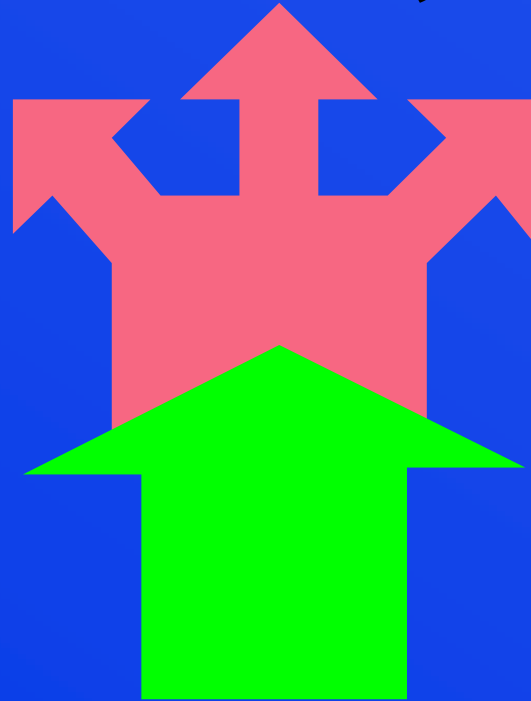
Is your organization doing something that, although not called KM, falls under the definition of KM (either the one your organization uses or the one presented today)?

If KM is occurring, whether at the grassroots or the organizational level, does it have senior management support?

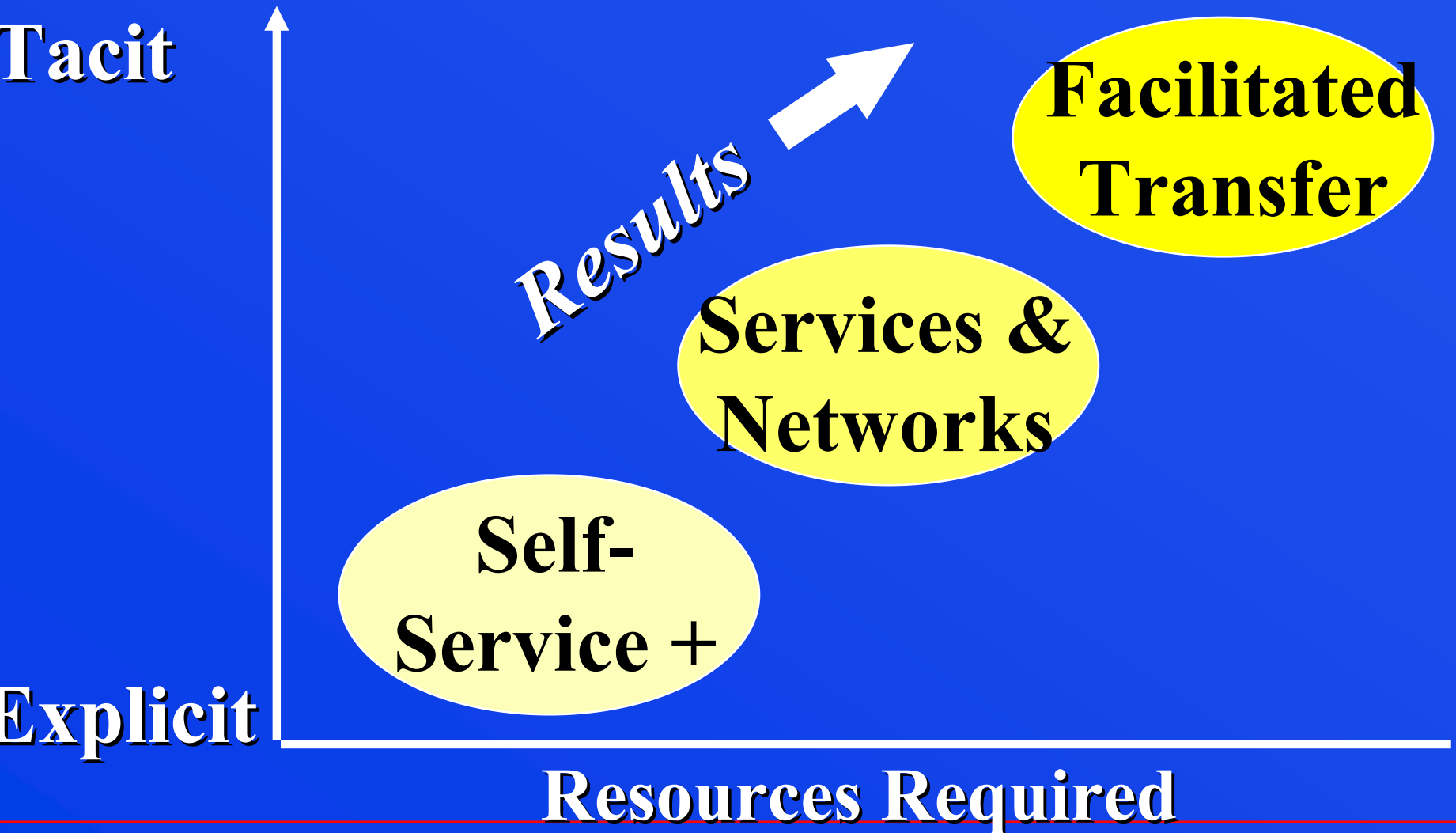
Does senior management understand and support KM as a key to your organization’s organizational strategy?

Three Approaches That Work

Lessons 6, 7, 8



Knowledge Transfer Approaches



Lesson 6: Self-Service +

- Who:** The Knowledge Worker
- What:** Link person to information
- Why:** Help people find and access “know-what”, “know-who”, and simple “know-how.” Reduce cycle time, avoid relearning, reduce hassle, free up time for creativity.
- Where:** Right from their desktops in the course of their daily work.

Self-Service +

How: Intranets, applications
Search Engines

Content: Explicit knowledge and information

 Databases

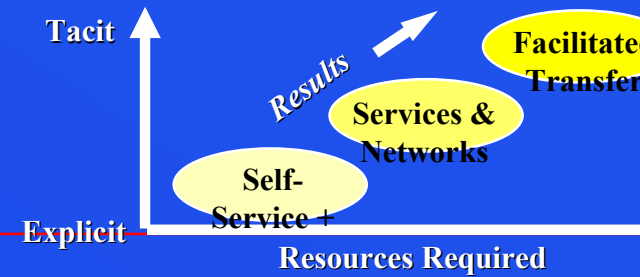
 Documents

 Yellow Pages and “Maps” to info

 Templates, tools & presentations

 Computer-based learning

 Performance support systems (CBR)



Lesson 7

Knowledge Services and Networks

*Access to information is important,
but access to people with knowledge is
more important.*

Knowledge Services & Networks

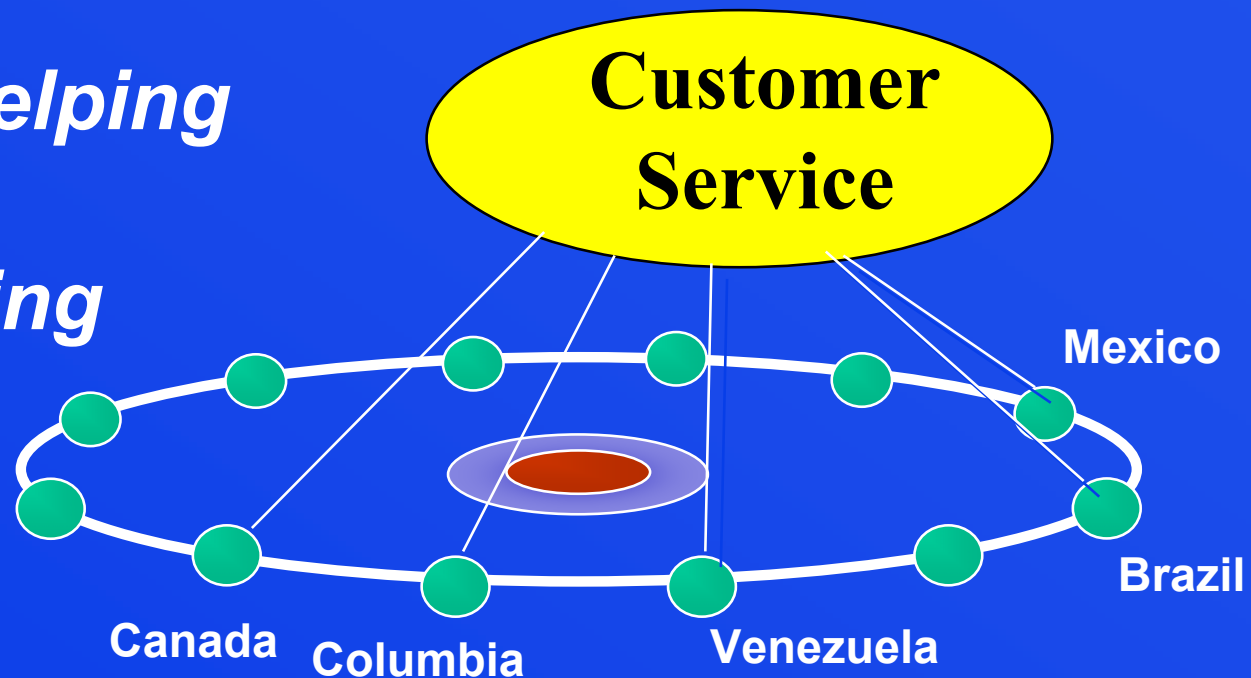
- Who:** Groups of people - teams, CoPs, functions
- What:** Link people to people by creating a shared space for dialogue, advice & work
- Why:** Simple tacit knowledge transfer
Project work (across time and space)
Speed Learning
Speed action and fast response
Build new knowledge
“All of us know more than one of us.”

Knowledge Services & Networks

- How:** Meetings, co-location
GroupWare - cyber teams
Facilitation and coordination
Video conferencing
- Types:** Project teams
Peer information exchange
New product teams
Support networks of experts and mentors.
Technical Tip networks
- Rewards:** Authorship, peer review, acclaim, help

Networks and Communities of Practice

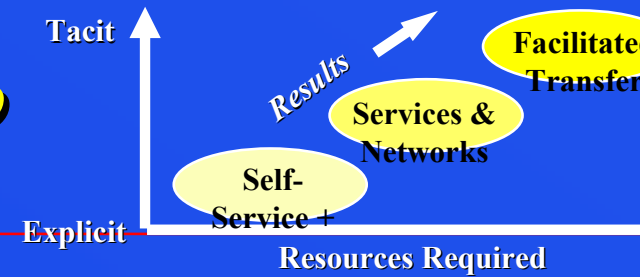
*Community of practice
is an
ongoing group helping
each
other by sharing
knowledge.*



Lesson 8
High investment yields
high return--
facilitated transfer of
best practices.



Facilitated “Transfer”



Who: Unit to Unit

What: “Transfer” a successfully demonstrated, complex practice with high ROI.

Why: Actually transfer the process

Close gaps

Raise performance

Avoid trial & error

Learning curve

Facilitated “Transfer”

How: Best Practice Teams
Internal benchmarking
Facilitator network

Content: Any process or practice with
high impact and gap closure

- ◆ Customer/Stakeholder
- ◆ People / HR
- ◆ Operations
- ◆ Courses

The Famous “Free Fab” Story

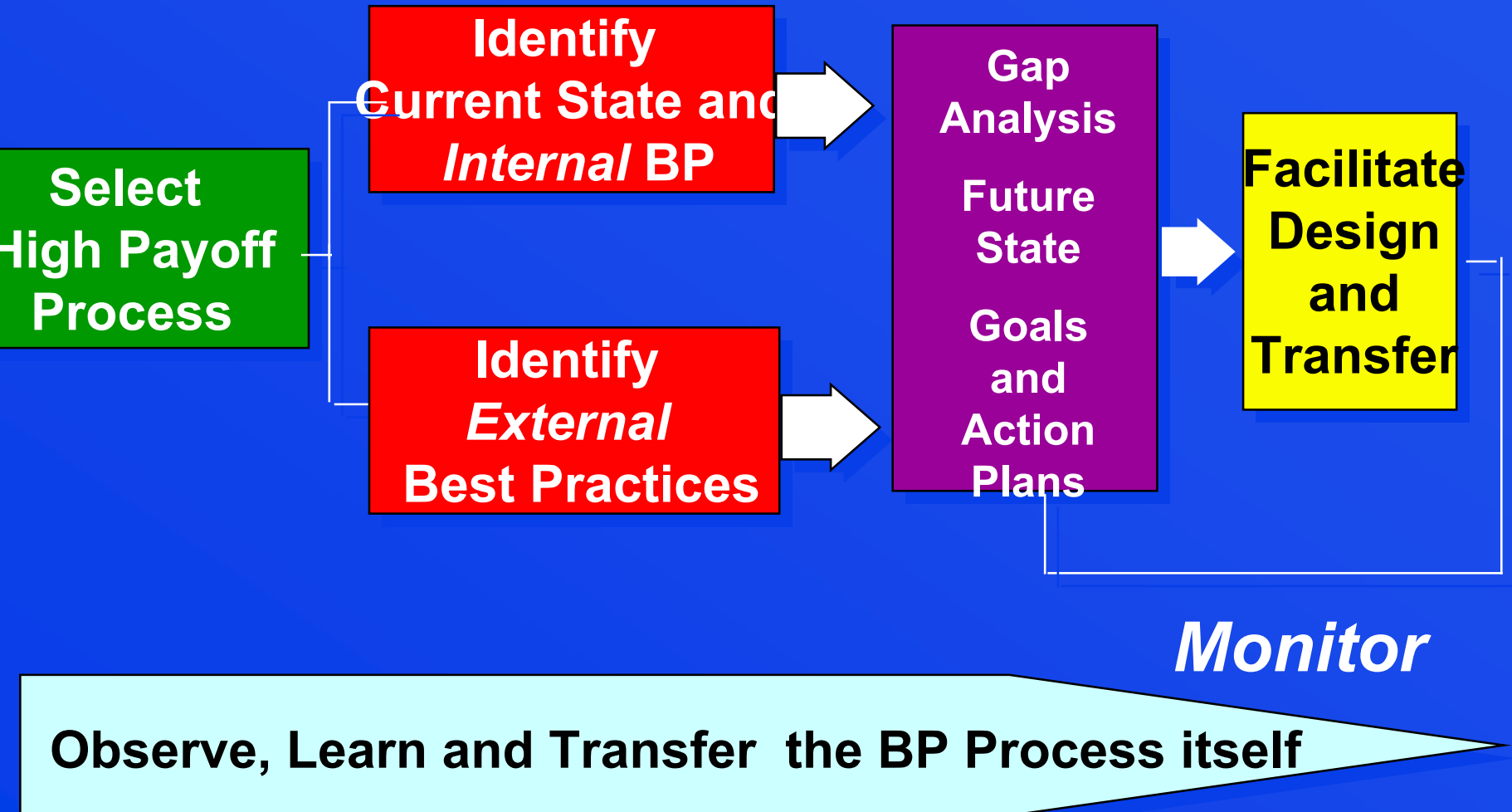
TI reviewed the variance of yields across 12 wafer fab plants. The results became its “Case for Action.”

TI created the equivalent yield capacity of entirely new fabrication plant by sharing the best practices from existing operations.

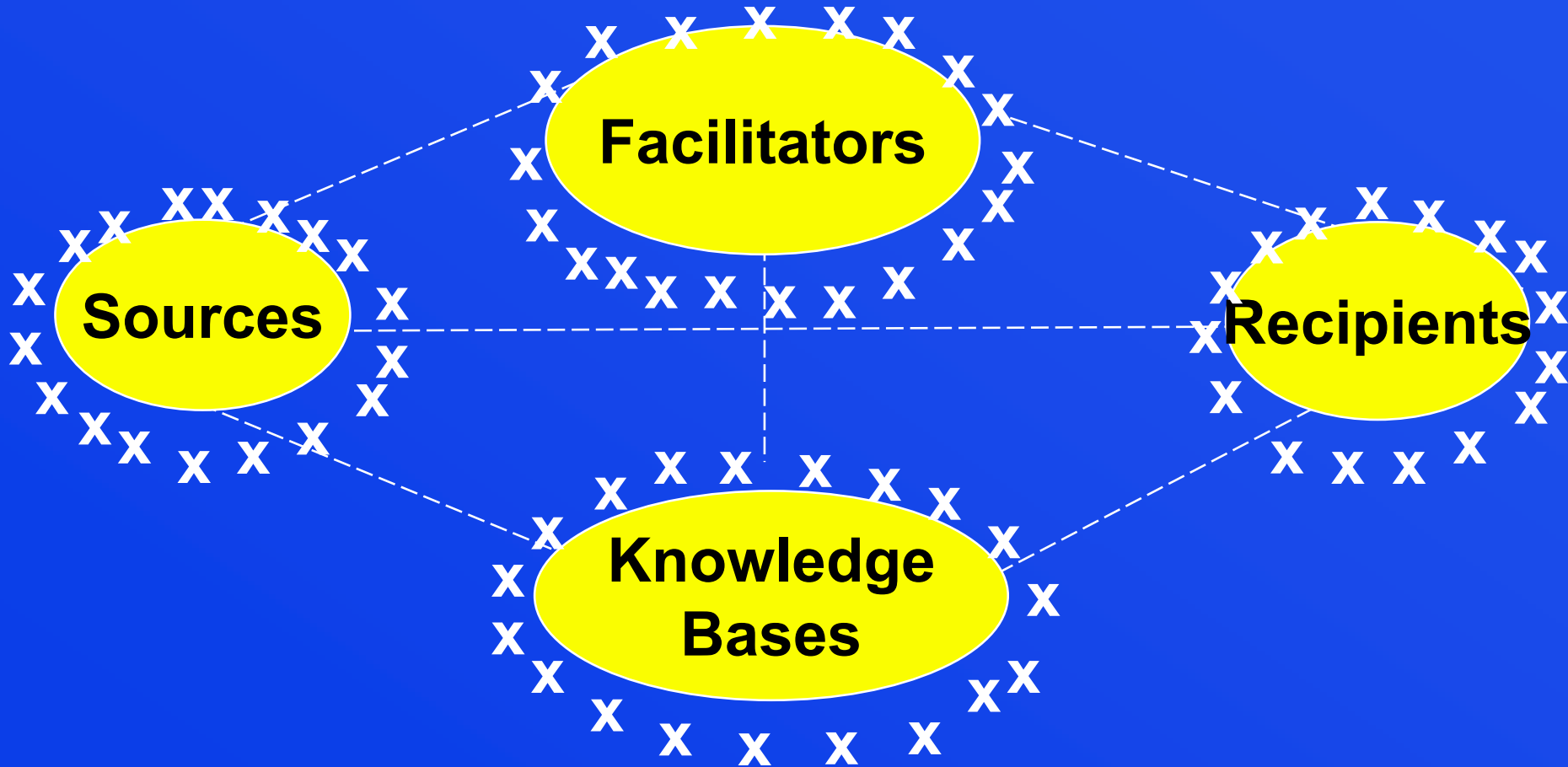
TI avoided the \$500 million cost of building a new facility

Have done it 2 more times since

Best Practice Teams



The Emerging Infrastructure for Facilitated Transfer



Lesson 9: Discover the value proposition first.

What knowledge does the organization need?

Can the gaps be filled by existing knowledge, or will it require new knowledge?

Who needs it?

Who has it?

67% have weak or no measures

Lesson 10

Observe process, but measure results.



Evolution of Measurement

Leading Measures

- ❖ **Activity (levels of use)**
 - ◆ Participation
- ❖ **Outcomes**
 - ◆ Strategic and financial
 - ◆ Balanced scorecard



Lagging measures

- ❖ **Results (objective and subjective)**
 - ◆ Cycle time
 - ◆ User satisfaction and usefulness
 - ◆ Quality
 - ◆ Costs

Check Point: Where are you now?

Are people specifically assigned to knowledge management activities?

Does your organization as a whole know what knowledge it already has?

Do the people who need information know who has it and how to find it?

Is knowledge systematically transferred from one part of your organization to another?

Is knowledge consistently gathered from outside your organization for internal use?



*And so, for
Education...*

Issues

After the 1983 report *A Nation At Risk*, school reform accelerated to an unprecedented and sustained level. Hundreds of school reforms, study commissions, design models have been created. As a result, everyone can point to isolated instances of powerful—even stunning—schools that have amazing results, award winning schools, blue ribbon schools, exemplary districts, **but they never seem to catch fire.**

Knowledge and Best Practices



remain as
Islands of Excellence

Why?

Don't know what they know or who's interested

Not accustomed to sharing

No time or incentives to share

Don't know what to ask, who to ask, how to ask, or where to ask

No mechanisms to share

Knowledge & Best Practices

also abound in:

Business – banks, energy, utilities, retail, insurance, airlines, hotels

Healthcare– insurance, hospitals, HMOs

Government – Treasury, NASA, Air Force, GPO, Census, NASA

Internationally

But educators typically don't look in other sectors or nations

Results?



Costs to reinvent the wheel



Lags in improvement



Continuing inefficient processes



Huge opportunity costs



Continuing achievement gaps:

- **Inside the U.S.**
- **Internationally**

What Can Be Done?

**Encourage an understanding of KM,
knowledge sharing and transfer.**

- ❖ **Journals**

- ❖ **Courses**

Create formalize approaches

- ❖ **Intranets**

- ❖ **Repositories**

- ❖ **Yellow Pages**

- ❖ **Communities of Practice**



Communities of Practice

Definition of CoP

Communities of Practice are:

- ❖ **Networks of people, small and large, who come together electronically and occasionally face-to-face to share and to learn from one another.**
- ❖ **Held together by a common goal and purpose that is supported by a desire to share experiences, insights and best practices.**
- ❖ **Sometimes formal with budgets and deliverable expectations; sometimes informal groups of 'learners'**

Benefits of CoPs






Best-practice companies identified through APQC's research have cited these benefits of CoPs.

- ❖ **Reducing cycle time**
- ❖ **Reusing materials, expertise, and problem solving experience to benefit partners and customers**
- ❖ **Collaborating across units to stimulate innovation**
- ❖ **Eliminating redundant efforts**
- ❖ **Avoiding making the same mistakes**
- ❖ **Learning effectively at time of need**
- ❖ **Locating and leveraging expertise and experience**
- ❖ **Finding needed information quickly and easily**






CoPs can focus on anything that people care about

**Math, English, Science, Art
Discipline, Drop Outs, Safety
Food service, Bus Schedules
Counseling, School Boards
Charters, Vouchers, For profit
Collec. Bargaining, Tenure**

Businesses have many CoPs, but they call them by many names

-  **Thematic Groups (World Bank)**
-  **Learning Communities (HPC)**
-  **Family Groups/CoPs (Xerox)**
-  **CoPs (Siemens)**
-  **Best Practice Teams (Chevron)**

Characteristics of CoPs

-  **Boundary spanning**
-  **Knowledge creation and use**
-  **Held together by passion, interest and need, and charter**
-  **Solves the problem of getting knowledge to those who need it**
-  **Means to strengthen the social fabric**

APQC has discovered four (4) Basic Types of CoPs

-  **Helping Communities**
-  **Best Practice Communities**
-  **Knowledge Stewardship
Communities**
-  **Innovation Communities**

Knowledge Sharing

- **Simple in context**
- **Complex in reality**
- **Rich in results**

Check Point: Where are you now?

Is technology used to effectively share knowledge within your organization?

Are people networks accustomed to effectively share knowledge within your organization?

Does the culture of your organization encourage people to share their knowledge and reward them for doing so?

Is your organization taking full advantage of its knowledge to improve its products and services?

Does your organization measure the impact or success of its knowledge management efforts?



*Knowledge Sharing
Network for Education*

What is the KSNE?

What is it? a web-based
virtual and face-to-face
network

Doing what? Helping educators
identify, collect & organize
knowledge & best practices to
raise student achievement
and system performance

Where? www.apqc.org/ksn

*Brought to
you by the
good folks
APQC and*



The Rationale: Why a KSNE?

Accountability pressures increasing

Disadvantaged groups being left behind

Shortages of skills for a knowledge economy

Difficult for small, isolated, and/or rural schools to find and access best practices and get help

Poor showing on int'l. exams, esp. math and science

Wasteful costs incurred reinventing the wheel

Best Practices and useful knowledge exists, but are not transferring, especially at rate needed

Not using best practices from business and government, or internationally

Knowledge Sharing has worked in business; it can in education also

The Timing is Right for a KSNE!

- Accountability pressures are increasing for improvement
- Big issue in the new administration
- Huge opportunity costs
- Technology advances and knowledge management make it possible
- Business has shown sharing works and pays off—the same can be done in education



KSNE: The Vision

Improve student achievement and system performance in K-16 education, measured by:

- ❖ **Student achievement**
- ❖ **Closing the achievement gap between student sub-groups**
- ❖ **Administrative efficiency**
- ❖ **Dropout rates**
- ❖ **Graduation rates**
- ❖ **Customer satisfaction**
- ❖ **A better prepared workforce**

The KSNE has Inter-related Components

1. Knowledge Base / Libraries
2. Discussion Forums
3. Training and Technical Assistance
4. Publications and Conferences

think I'll get information off the Web"



**Steve Denning,
World Bank**

What Makes KSNE Different?

Moderated, focused, threaded discussions

A focus on “what works”

People to people—as well as people-to-documents:

❖ **Yellow Pages**

Help Desk, ‘Ask KSNE’

A Taxonomy and Thesaurus for classification and search

Upcoming: Interest Profiles /Autonomous Agents

KSNE Features

Libraries

- ❖ **Downloadable Books, articles, presentations, tools, glossary, FAQs, news**

Links to other sites

Tacit, as well as explicit, knowledge

Addresses “cross-cutting” issues

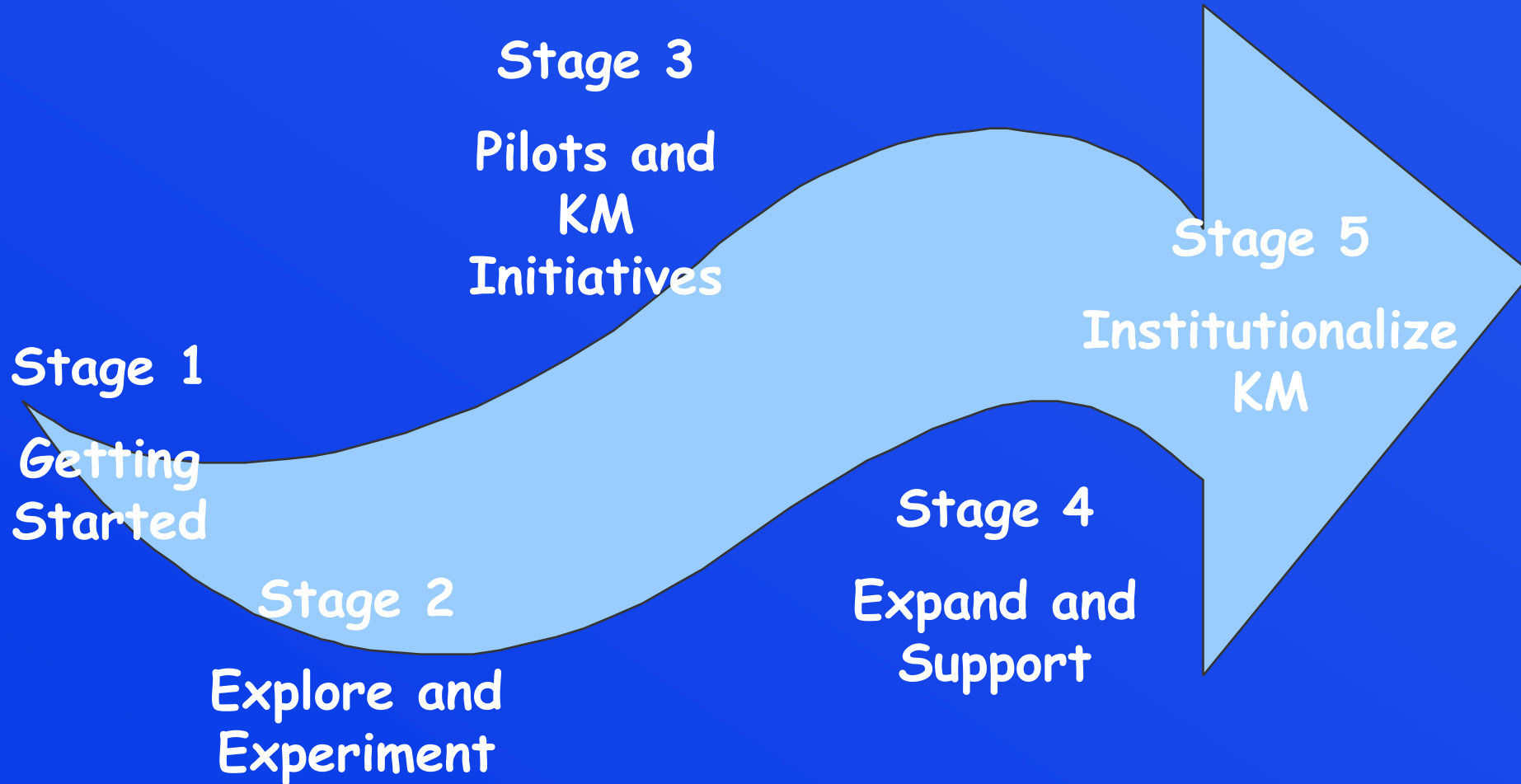
Not politically, ideologically, or constituency based

Content Management

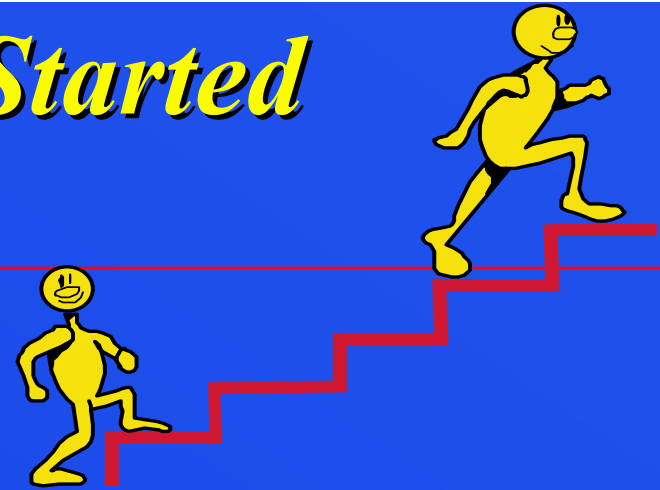


*Getting Starting in
Knowledge Management
Yourself*

APQC's Road Map to KM Results: Stages of Implementation™



Stage 1: Getting Started



Key Tasks and Issues

- ➡ **Define KM in terms people can relate to**
- ➡ **Identify others to join the cause**
- ➡ **Look for windows of opportunity**
- ➡ **Capitalize on the technology**
- ➡ **Create a compelling picture**
- ➡ **Know your own organizational history**

Where are you?

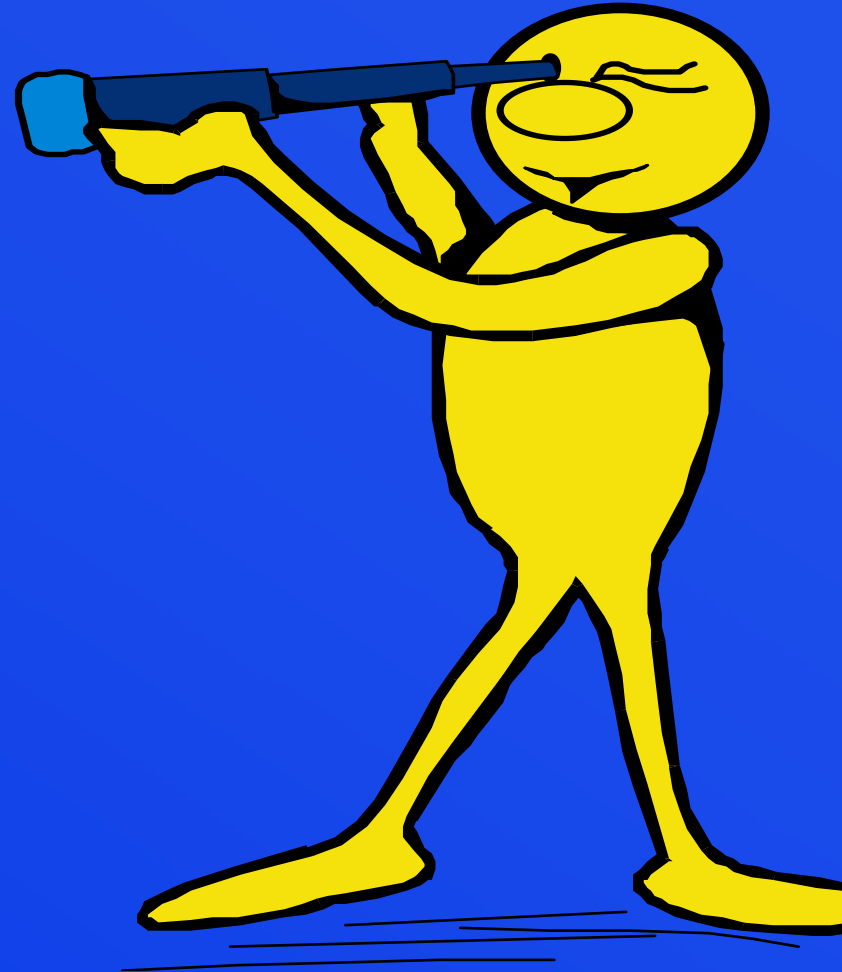
If you answer “Yes” to most of these questions, you are probably in Stage 1:

- ❖ **1. Is knowledge management emerging as a topic of interest in your organization?**
- ❖ **2. As far as you know, are there only a few employees exploring the benefits KM might have for your organization?**
- ❖ **3. Are you personally interested in spending time developing interest and action in KM?**
- ❖ **4. Are you learning about KM by participating in consortium and/or attending conferences?**
- ❖ **5. Have you created an initial rationale or vision for why your organization should explore KM?**

Stage 2: Explore and Experiment

Key Tasks

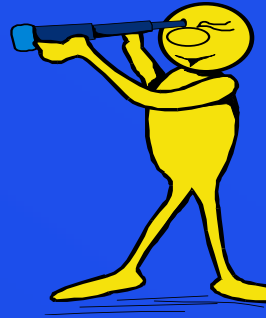
- ☞ **Form a cross functional KM task force**
- ☞ **Select pilots or identify current grass roots efforts**
- ☞ **Find resources to support the pilots**



Stage 2: Explore and Experiment

Criteria for Pilot Selection

- ☞ **The pilot issue is important to the organization**
- ☞ **Success would lead to demonstrable results**
- ☞ **There is a champion with resources**
- ☞ **Learnings are transferable to other situations**
- ☞ **Valid test of KM principles**
- ☞ **The pilot can share what has been learned**



Stage 3: Pilots and KM Initiatives

Key Tasks

- 1. Fund the pilots**
- 2. Develop methodologies**
- 3. Capture lessons learned**
- 4. Land the results**



Stage 3: Pilots and KM Initiatives

CoPs are the lever for KM expansion

Pilot efforts must

- ❖ produce results and**
- ❖ teach the organization how to better implement KM**

Pilot participants become the core team for future expansion

Stage 4: Expand and Support

Key Tasks

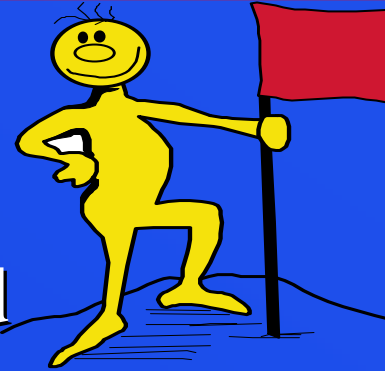
- 1. Develop an expansion strategy**
- 2. Allocate resources**
- 3. Communicate and market the strategy**
- 4. Manage growth and control chaos**



Stage 5: Institutionalize KM

Key Tasks

- 1. Embed KM in the business model**
- 2. Realign the organization structure and budget**
- 3. Monitor the health of KM**
- 4. Align Rewards and Performance Evaluation**
- 5. Balance a Common Framework with Local Control**
- 6. Continue the Journey**



Wrap Up

Scoring the Quiz: Let's see how you compare...

When you leave:

- ❖ **Share the information and questions with others**
- ❖ **Evaluate your environment for the attributes we discussed**
- ❖ **Start talking to people about KM**
- ❖ **Identify ways to share knowledge; consider a pilot, an intranet, and/or a CoP**

Scoring

0–5 “yes” responses:

- ❖ **Take out your compass and get ready to embark on an exciting journey. While you obviously have recognized the benefits of knowledge management, you’ve got a significant amount of work ahead of you to incorporate the necessary concepts and processes. The good news is that many people have forged this path ahead of you, and you can take advantage of the lessons they’ve learned along the way to ensure that you’re heading in the right direction.**

Scoring

6–10 “yes” responses:

- ❖ **You’re on the right path to taking advantage of what knowledge management has to offer, but you have many areas yet to explore. Your next step is identifying the areas in which your organization is weakest and focusing your efforts there. Once you strengthen those areas, you’ll be amazed to discover how much greater the impact of a well-rounded knowledge management strategy is.**

Scoring

11–15 “yes” responses:

- ❖ **You’re well on your way to demonstrating best practices in knowledge management. Your “no” answers will indicate the areas in which your organization needs to improve. Even if you answered “yes” to all 15 questions, ask yourself what more you should be doing to strengthen each of the components. The goal is not just to be able to say you’re addressing a specific facet but rather to say you’re doing it well enough that its positive impact is felt throughout your organization. Remember, any practice—knowledge management included—must be diligently revisited and improved upon if it is to deliver its maximum benefit.**