Push-Pull
performance-based
Knowledge Management Systems

A performance-based view of KMS...

...for the sake of the enterprise shareholders, customers, employees, and suppliers

Originally authored by:
Guy W. Wallace
for the ISPI Conference in April 2001

EPPIC Inc.
Achieve Peak Performance
This session will present:

- The marketing concept of **push-pull** as it applies to performance-based **Knowledge Management Systems** (KMS)

- The use of **ISD methods** and customer-supplier teams to deliberately populate the KMS and:
  - **Push** knowledge products to high-payback processes and human performers audiences
  - **Chunk and store** the knowledge products for additional, user friendly retrieval to meet the needs of **pull** audiences

- A KMS **business case** outline and **four KMS implementation stages**
Session Objectives

Participants will be able to

- Describe a performance-based KMS

- Describe the push-pull orientation to performance-based KMS to better ensure shareholder ROI

- Describe the use of performance-based ISD and HPT methodologies to populate a KMS

- Describe the organizational teams and their roles to implement, operate, and maintain a performance-based KMS

- Describe a four-stage implementation plan for KMS
1. Session open

2. What is KM and KMS
   - Knowledge Management
   - Knowledge Management Systems

3. Push-pull KMS

4. Performance-based/push-pull KMS

5. Four stages of KMS implementation
   - The KMS business case
   - Calculating potential “returns” and “investment costs” for KMS
   - KMS teams, roles, and responsibilities
   - ISD methodologies in populating KMS

6. Session close
Guy has been in the T&D field since 1979 and an ISD consultant since 1982. He is the author of two books, more than 20 articles, and has presented more than 40 times at ISPI conferences and local chapters. He is currently the treasurer and on the 1999-2000 Board of Directors of ISPI.

Key Areas of Expertise

Performance Modeling (PM)
Since 1979, Guy has conducted more than 150 group process Performance Modeling sessions.

Curriculum Architecture Design™ (CAD)
He has conducted 71 performance-based CAD projects since 1982.

Modular Curriculum Development™ (MCD)
Guy has conducted more than 35 performance-based MCD projects since 1982.

Instructional Activity Development™ (IAD)
He has designed and developed more than two dozen performance-based simulation exercises for performances covering labor relations, high-tech product management, sales, ISD, plus many others.

ISD Project Planning and Management
Guy is the lead author of CADDI's ISD methodologies of the planning and management of the PACT™ Processes for T&D.

Group/Team Process and Facilitation
Guy has facilitated more than 300 group meetings to accomplish both human performance and business process improvement goals.
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What Worries Me about KMS

- A lack of business-based thinking and approaches to KMS planning and decision-making

- A lack of focus on ROI for KMS efforts and investments

- Development of a philosophy and software tools to allow SMEs to create content for the KMS versus using ISD and HPT methods

- Dialogue about whether or not learners should always finish their modules (from the e-learning world)
What Is KM and KMS?

While Knowledge Management has many definitions, most definitions include:

- Knowledge as *intellectual capital*
- The *capture, storage, and dissemination* of knowledge

For our purposes here:

*KM is intellectual capital that is captured, stored, and disseminated to both protect and improve the enterprise*. 
### What Is Knowledge?

There are two primary “types” of knowledge:

- **Explicit knowledge**: documented knowledge
- **Tacit knowledge**: nonrecorded or nonexchanged knowledge

#### Explicit
- Policies
- Procedures
- Copyrights
- Patents
- Databases
- Etc.

#### Tacit
- Tricks of the trade
- Insights
- Lessons learned

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**Explicit is easier to capture, tacit is harder to capture for Knowledge Product development/deployment**
What Is KM and KMS?

Examples of Content for KMS

KM content for Knowledge Products can include

- Best practices
- Lessons learned
- Policies
- Procedures
- Job aids/EPSS
- Databases
- Tools
- Templates
- Examples of various documents

The goals include reducing “reinventing the wheel” and/or “starting from ground zero” for each performance effort.
What Is a KMS?

KMS is a system for the capture, storage, and dissemination of knowledge.

Enterprise KM systems will require:

- A knowledge-sharing culture
- Reinforcing consequences (positive and negative)
- KM policies, procedures, processes, and clear performer roles
- Staff and infrastructure
- A knowledge repository and distribution mechanism
  - Usually an electronic warehouse and Internet accessibility
What business rationale is there for considering and implementing KMS?

- **To protect and/or improve the enterprise**

  - **Protect** - via provisioning Knowledge Products that guide process performance and support compliance with external laws and regulations and internal policies and procedures

  - **Improve** - via provisioning Knowledge Products that guide/streamline process performance using
    - Job aids (paper/EPSS), tools, templates, best practices, lessons learned, and examples of process outputs (plans/documents)

**KMS - to protect and improve the enterprise**
Performance-based KMS

- Is where all Knowledge Products within the KMS are required to know for enterprise process performance
  - None of the content is nice to know

This is where our ISD and HPT methodologies become part of the KMS effort
more on this later

KMS - to protect and improve the enterprise
A marketing concept where “products” are deliberately pushed to certain target audiences, while other audiences are enabled to pull content from the product distribution system.

**Push examples**
- Nonrequested credit cards in the mail
- Free trial magazine subscriptions

**Pull examples**
- Credit cards at your bank
- Magazines available in stores
What Is performance-based/Push-Pull KMS?

Push-Pull performance-based KMS

This is a Knowledge Management System where all Knowledge Products

- Are “required to know” for critical enterprise process performance

- Are deliberately pushed to certain target audiences, while other audiences are enabled to pull content from the KMS product distribution system
  - Only push target audiences are addressed fully
  - Pull target audiences are partially addressed (if at all)
What Is performance-based/Push-Pull KMS?

KMS and E-learning

If

- “E-learning” is simply the electronic distribution of training content to facilitate learning

  - “E” is a distribution channel to push T&D to certain target audiences faster and cheaper, and allows other target audiences to pull T&D more readily

Performance-based T&D should/could always include
- Best practices
- Lessons learned
- Policies/procedures
- Job aids/EPSS
- Templates
- Example plans
- Example documents

There isn’t really much difference between KMS and e-learning today, or there really doesn’t have to be any difference!
Any prior distinctions between KMS and e-learning and traditional T&D are blurring.

E-learning’s infrastructure today can deliver and make accessible a blend of various types of “knowledge products” including:
- WBT: Web-based training
- ILT: instructor-led training

For our purposes here, T&D, e-learning, and KMS are the same in terms of their ability to become Knowledge Products.
Questions such as this are being asked endlessly in magazines and journals targeting training & development and e-learning.

The short answer is . . .
Yes if “Push” . . . Maybe if “Pull”

. . . but first things first . . .
Is there business rationale for KMS and module completion?
Four stages for KMS implementation

- **Stage 1 - KMS Business Case Development**
- **Stage 2 - KMS Processes and Infrastructure Development/Deployment**
- **Stage 3 - Initial KMS Content Development and Implementation**
- **Stage 4 - Ongoing KMS Operations and Maintenance**
KMS Stage 1:

Business Case Development

A business case helps to prove that a KMS makes business sense in terms of the investments required given the returns; this will require:

- Determining both potential ROI and strategic fit
- Defining the enterprise needs and financial stakes (protect and improve)
- Planning and conducting benchmarking efforts
- Sizing and costing the KMS initial development and ongoing operations for both infrastructure and content
- Establishing KMS goals, mission, and vision
Four Stages of KMS Implementation

**Business Case Content and Formats**

**Business Case Contents**

- The business need
  - to protect and improve: what and why

- The response
  - The KMS systems needed
  - How it would work
  - How it would be structured

- The financials
  - Investments needed
  - Returns forecasted

**Business Case Formats**

- Use an existing business case as a template and edit it!

**Focus on ROI as well as the “costs for doing nothing”**
Return on Investment

ROI = \frac{\text{Returns} - \text{Investment Costs}}{\text{Investment Costs}}

Why invest $100.00 if you’ll only get $90.00 in return?
Four Stages of KMS Implementation

Potential “Returns” for KMS

Note: hard data is hard to come by regarding ROI for KMS

But, if your KMS could increase revenues by 5 percent and reduce your operating costs by 5 percent, a $20 million business operating with a 20 percent profit margin would have returns equaling $1.8 million

5 percent of $20 million revenues = $1 million
5 percent of $16 million expenses = $800,000.00

And, a $200M enterprise’s return would be $18M; a $2B would return $180M; and a $20B would return $1.8B
What are the potential returns for a performance-based KMS?

Returns can come from either or both

- **Reduced costs**
  - Reduced performance cycle times
  - Reduced/eliminated errors and rework

- **Increased revenues**
  - From use of feed-up time and resources
  - From new products or product innovations

In short: **better, faster, cheaper** and **new**
KMS Investment Costs?

KMS investment costs must include both first costs and life-cycle costs.

- **First costs**
  - Infrastructure development
  - Knowledge Products development/acquisition (capture)

- **Life-cycle costs**
  - Infrastructure operations
  - Knowledge Products administration and maintenance

It is estimated that only 20 percent of the total costs of KMS is related to hardware and software. The rest are for Capture - Administration - Maintenance.
Four Stages of KMS Implementation

ROI - Do Your Math for Your “R”

At any level, enterprise - business unit - departmental what's a reasonable figure for your focus? 2% — 5% — 10% — ???

Calculate a ___ percent potential increase in revenues if that “level” generates revenues (for profit centers)

Calculate a ___ percent potential decrease in costs (for both profit and cost centers)

Revenue Impact?

$  

Cost Impact?

$
Four Stages of KMS Implementation

Do the ROI Math

Returns - Investment Costs

ROI = \frac{\text{Returns} - \text{Investment Costs}}{\text{Investment Costs}}

Potential Returns $:

$__________ for _______
$__________ for _______
$__________ for _______
$__________ for _______
$__________ for _______
$__________ for _______

Total “R”: $__________

Potential Investment $:

$__________ for _______
$__________ for _______
$__________ for _______
$__________ for _______
$__________ for _______
$__________ for _______

Total “I”: $__________

\left( \frac{\text{Returns} \text{ minus} \text{Investments}}{\text{Investments}} \right) \text{ divided by} \text{ Investments}
KMS Stage 2: KMS Processes & Infrastructure Development/Deployment

Development and deployment of the following processes and the required environmental and human infrastructure:

- **Knowledge Product** analysis and design/deployment processes and deployment processes (for push) and access processes (for pull)

- **Infrastructure - Environmental Assets**
  - Data/information
  - Facilities/grounds
  - Equipment/tools
  - Materials/supplies
  - Budget
  - Organization/job design
  - Consequences

- **Infrastructure - Human Assets**
  - Staff with the right knowledge/skills/attributes/values
The key teams for KMS include

- **Customer-side roles**
  - Governance board
  - Advisory groups
  - Communities of practice and/or performers
  - Coaches
  - Learners

- **Supply-side roles**
  - Analysts
  - Designers
  - Developers
  - Facilitators
Four Stages of KMS Implementation

Governance and Advisory

Governance Board
- "Owns" the KMS on behalf of the shareholders/owners
- Is responsible for all KMS ROI and the support and achievement for strategic initiative
  - Need to target "mission-critical" processes and audiences for investment in KMS knowledge products' capture-storage-dissemination

Advisory Groups
- Advise the governance board on where and how to operationally target KMS investments for both financial and strategic returns
- Oversee the capture and maintenance efforts required
  - Identify master performers and subject matter experts to represent the processes and audiences targeted

KMS - to protect and improve the enterprise
Four Stages of KMS Implementation

Communities of "Process/Performers"

**Communities of "Process"**
- Are enterprise process (target process) focused
- Provide a cross-functional orientation
- Provide a content source for ISD efforts
- e.g., strategic planning processes, supplier qualification processes, new product development processes

**Communities of "Performers"**
- Are enterprise performers (target audience) focused
- Provide a functional discipline orientation
- Provide a content source for ISD efforts
- e.g., ISD professionals, electrical engineers, programmers, counter sales staff

Note: Select one approach to addressing content capture—either processes or performers
Coaches

- Help transfer knowledge (explicit and tacit) to the learners/users as on-the-job coaches and mentors, as well as classroom instructors and facilitators.

Learners

- These are the users of KMS and can/should include anyone/everyone—as either push or pull target audiences.
Four Stages of KMS Implementation

ISD Roles

Using traditional and nontraditional ISD methods to capture and maintain Knowledge Products

**ISD Analysts**
- Determine both the performance requirements and the enabling K/S

**ISD Designers**
- Chunk and “tag” (e.g., S.C.O.R.M.) content objects for both push and pull audiences

**ISD Developers**
- Develop content within “e” (electronic) or “t” (traditional) templates for storage and assembly (for push) and retrieval (for pull)

**ISD Facilitators**
- Deploy content as instructors/coaches/facilitators
KMS Stage 3: Initial KMS Content Development and Implementation

- The initial KMS content is captured (created), stored, deployed (for **push**), or retrieved (for **pull**)

  - This is costly; and, according to our model, only push-audience needs are addressed, but addressed (chunked and stored) in such a manner as to facilitate related pull-audience needs

    - By definition, the needs of pull audiences never warrant meeting those needs; if we discover that there is a return on meeting those needs, then the pull becomes push
ISD and HPT methodologies can be used to capture/store/disseminate KMS content for performance-based Knowledge Products.

- **Awareness/knowledge/skills** via capture, storage and dissemination of:
  - Best practices
  - Lessons learned
  - Policies/procedures
  - Tools/techniques
  - Job aids/EPSS
  - Templates
  - Example documents
  - Etc.
A traditional ADDIE-type methodology can be used (with some adaptations) as a “framework” to incrementally define and develop knowledge products.

- **Determine the**
  - Terminal performance requirements
  - Enabling knowledge and skills

- **Design content structure and presentation**
Nontraditional ISD methods also can be used to holistically architect the entire KMS product line for broad or narrow target audiences.

This will facilitate reuse design strategies that traditional ADDIE models/methods don’t address.

- Use nontraditional ISD methodologies such as
  - CADDI’s PACT Processes for T&D: Curriculum Architecture Design and Modular Curriculum Development methodologies
  - Other adapted ISD methodologies that go beyond the traditional ADDIE approach of one course/set of curricula at a time and have proven content chunking strategies
KMS Stage 4: Ongoing Operations and Maintenance

- KMS systems are administered and Knowledge Products are deployed to **push** audiences and made accessible to **pull** audiences
- KMS content is maintained as needed
- KMS infrastructure is maintained as needed

Note: Not all potential content should be shared over the enterprise KMS, as it might make it much easier to find its way to the competition or violate various laws/regulations and internal policies.
If your KMS “capture-store-dissemination” systems and processes allow just any and all types of content into your KMS, you might end up with

• Diminished and unpredictable ROI
  • Uncontrolled first costs and life-cycle costs and questionable returns
    • A lot of “nice-to-know”/“low-hanging fruit” content
    • Redundant content and the expenses for redundant capture-storage-dissemination
    • Obsolete knowledge products negatively affecting enterprise process performance that is too expensive to properly administrate/maintain

Do the math - push content to key targets and make it accessible for nonkey targets. Don’t serve EVERYONE’S needs. Your enterprise can’t afford it!
Objectives review

- Describe a performance-based KMS
- Describe the push-pull orientation to performance-based KMS to better ensure shareholder ROI
- Describe the use of performance-based ISD and HPT methodologies to populate a KMS
- Describe the organizational teams and their roles to implement, operate, and maintain a performance-based KMS
- Describe the four-stage implementation plan for KMS

Thank you for your time, attention, and feedback