Managing Knowledge in Projects

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Knowledge Management

Introduction

- Knowledge is light, weightless, intangible, and recognized as organizational asset contributing to knowledge economy (has replaced traditional economic models)
- Knowledge Management (KM) is the systematic process of identifying, capturing, organizing, and disseminating or sharing knowledge assets (KM is drawn from different disciplines)

KM Hits in Google & WorldCat

Source	February 2002	January 2003	September 2004	February 2006	December 2008
Google Sites	643,000	1,150,000	10,600,000	32,000,000	69,306,000
WorldCat Monographs	912	1,239	6,064	12,765	28,473

Two Types of Knowledge

1. Explicit knowledge refers to what has been codified, structured, or semi-structured, recorded, and is accessible.

2. Tacit knowledge refers to the knowledge that resides in an individual's mind. It is the "know-how" and experience of the staff member that is vital to the organization.

Knowledge Management: Necessity

- Digital information growth
- Enterprise-wide knowledge sharing culture
- Stay competitive
- Advancing technology
- Need to be more productive with less resources

KM Technology Context

Decade	CPU	Memory	Disk	OS	Cost
1980's	16 MHz 386	2 Mbytes	120 Mbytes	DOS 3.2	$5,000
1990's	33 MHz 486 66 Mhz Pentium Pentiums II & III	4 Mbytes 16 Mbytes 64 Mbytes	330 Mbytes 540 Mbytes 1-5 Gbytes	DOS 6.2 Windows 3.x Windows 9/x2000	$4,000 $2,000
2000	1+ GHz Pentium	128+ Mbytes	20+ Gbytes	Windows XP	$1,000

Four Stages of Knowledge Management

Stage 1: Best Practices/Lessons Learned "by the Internet Out of Intellectual Capital"

- Information Technology
  - Tool to accomplish knowledge capture and sharing
- Intellectual Capital
  - Corporations share similar problems and expertise, could be used by others
- The Internet/Intranet/Extranet
  - Corporate tool used for knowledge capture, knowledge coordination and sharing
- Technology Emphasis

Four Stages of Knowledge Management

Stage 2: Human Relations Stage "It's no good if they don't use it"

- Communities of Practice
  - Oriented towards people (peoplecentric)
- Organizational Culture
  - Formal vs. informal
  - Profit vs. not for profit
  - Large vs. small
- The Learning Organization
  - Senge (1990) knowledge sharing and communication
- Tacit Knowledge
  - Nonaka (1995) discovering KM and cultivating
- Human Relations emphasis

Four Stages of Knowledge Management

Stage 3: CMS Systems "It is no good if they try to use it but can't find it"

- Content Management
- Taxonomies
- Information Professionals Emphasis

Four Stages of Knowledge Management

Stage 4: "Knowledge loss results in diminishing productivity and performance among knowledge workers."

- Expansions of KM Boundaries
  - KM has expanded, linking to knowledge outside the organization
- New fields are integrated into KM
  - KM application has been expanded to cover content management, competitive intelligence, environmental scanning, knowledge audit and project management.
- Emphasis on technology, process, content, and people.

Project Management

Project Management

- Organizations are focusing more and more on projects to meet their objectives
- Internal and external forces control projects:
  - **Internal**—business plans, strategy, funding, staff, processes, architecture, politics, and culture
  - **External**—industry, market, economic, political, social, and technology environments

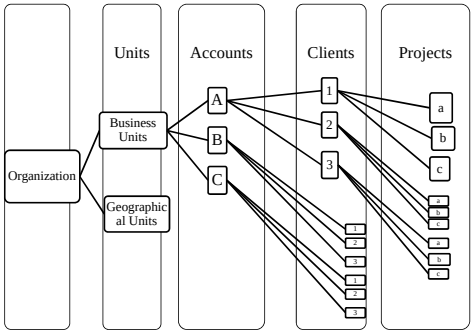
Project Management (cont'd)

- Project management is different from general management
  - A project is a temporary endeavor to create a unique product, service, or result (Project Management Institute)
  - Every project is unique in nature and has a temporary structure
  - Every project has start and end dates, a detailed project plan, budget, schedule, human resources, and deliverables
  - In the project environment, tacit knowledge of individuals plays an important role in the success of projects and strengthening the organizational knowledge base

Projects

- Projects get generated through OTR (opportunity through receipt). Engagement Managers take the leading role and Sales Unit deals with the new customer
- Once documents are signed, delivery managers produce a project code and plan the project
- There should be a mechanism to capture knowledge before RFI and RFP are produced
- Project knowledge is the core and critical asset of any project
- Knowledge covers all accounts, clients, and projects
- Generally, every project is headed by a project manager and assisted by a delivery manager and a quality control manager

Knowledge Capture and Sharing in Projects



Projects (cont'd)

- RFP will include standard project profiles and the basic information on projects
- Knowledge management should enable to find :
  - Similar objectives in other projects
  - Related outcomes in other projects
  - Failures in like projects
  - Successes in comparable projects
  - Analogous methodologies in projects
  - Parallel systems in project areas
  - Projects with corresponding types of results
  - Approximating risks in projects
  - Lessons learned in like projects
  - Other projects used in the project design
  - Etc.

Project Life Cycle (cont'd)

- PMBOK Guide identifies nine knowledge areas of project management:
  - Project Integration Management
  - Project Scope Management
  - Project Time Management
  - Project Cost Management
  - Project Quality Management
  - Project Human Resources Management
  - Project Communications Management
  - Project Risk Management
  - Project Procurement Management

Project Life Cycle

- All projects do not include all nine knowledge areas, but knowledge is generated in all areas included in the projects. Knowledge flows through areas in all phases of the project life cycle
- Projects need to learn to manage the knowledge they acquire effectively, so the current and other projects in the organization will benefit
- Knowledge gained from success or failures in projects is vital for the long term sustainability of the organization

Project Life Cycle (cont'd)

- Life cycles generally cover technical work, deliverables, human resources and a plan to control and approve at each phase
- There are four basic phases:
  - Identification of problem or need
  - Development of a proposed solution
  - Doing the project- utilizing resources, and meeting stated objectives
  - Terminating the project

Basic Patterns of Knowledge in Project Management

Nonaka's SECI Model (Socialization, Externalization, Creation, and Internalization)

- from Tacit to Tacit (Socialization)
- from Explicit to Explicit (Creation)
- from Tacit to Explicit (Externalization)
- from Explicit to Tacit (Internalization)

Possible Issues in Project Knowledge

Lacking in:

- User needs assessment
- Knowledge Audit
- A standardized taxonomy
- Organizational level mandatory requirements for projects to capture project knowledge and share
- Debriefing to capture project knowledge may not have a holistic approach resulting in knowledge loss
- As artifacts increase in repositories, methodology for monitoring the quality
- Collaboration among projects resulting in reinventing the wheel (although portals designed to serve specific projects contain high volumes of useful knowledge)
- At client locations, access to headquarters information/knowledge may not exist

KM Architecture for Projects

- Four Pillars:
  - People
  - Process
  - Content
  - Technology

People

- Expectation from all quarters of the organization and managing those expectations;
- Delivering the responsibility to make KM happen in projects; and,
- Defining specific roles to collectively own those responsibilities

Process

- Making content generation easier through process in projects;
- Integrate processes for effective knowledge capture in projects
- Streamlining the process to Maintain content as needed in projects; and,
- Measuring KM initiatives, to benefit the organization from the usage in projects

Content

- Understanding the scope, the context of content, and limitations in projects;
- Understanding the role of tacit knowledge in projects; and,
- Appropriate taxonomy for classification and retrieval to fulfill user needs

Technology

- Investment to support KM applications in projects;
- Developing technology systems internally to meet the needs of KM architecture; and,
- Designing the appropriate technological platform

Benefits from KM in Projects

- Major Benefits
  - The major benefits of KM in projects are: deliverables on schedule, cost savings, time savings and quality
- Avoid Reinventing the Wheel
  - KM enables to tap existing knowledge in the current project environment to be applied toward future projects
  - Managing knowledge in projects provides a strategic advantage to the organization
  - It helps to avoid waste, duplication, and some mistakes
- Capture Lessons Learned
  - Learn from the problems or issues encountered and solutions devised in the past projects and apply them to current projects
  - Managing knowledge in projects helps share the best practices
- Use Collaborative Tools
  - Collaborative tools such as ERP allow the project team to share knowledge and collectively manipulate and analyze knowledge so it becomes valuable for the current project an institutional memory
  - Promotes successful innovation
  - Enables team to make better and faster decisions

Benefits from KM in Projects (cont'd)

- Customer Services Function
  - KM streamlines customer service through response, products, and services
- Other
  - KM increases the rate of return in projects
  - Promotes collaboration, collective wisdom and experience
  - Assists in capturing tacit knowledge, and evaluating contents in documents (as most documents are sanitized) to capture undesirable aspects of a project.

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Thank You