Oracle's KMS Solution Framework

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Agenda

- Introduction
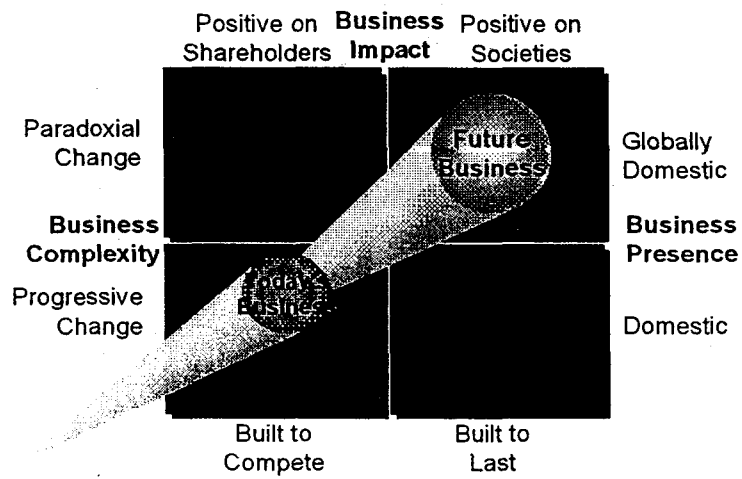- Integrated Knowledge Environment Solution
- Oracle's Framework

The Paradigm shift is already here......

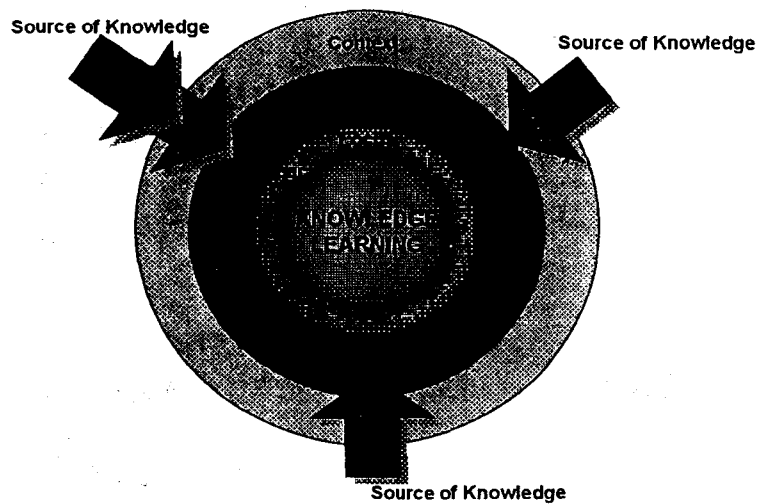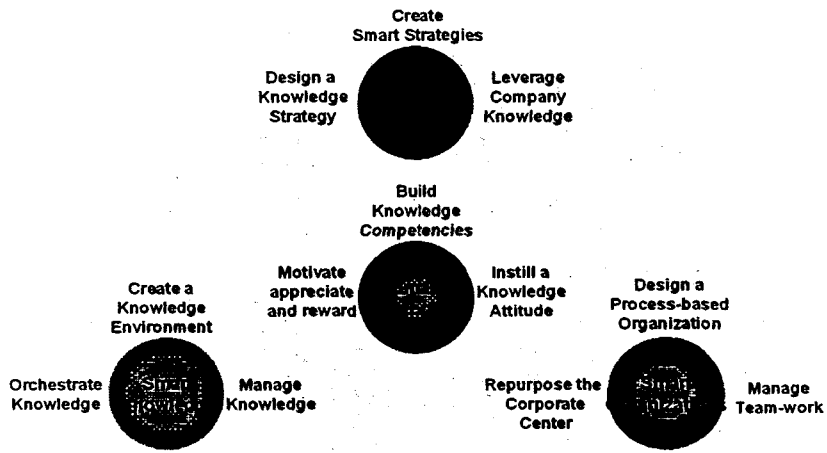|		
Economy		
Information System		
Requirements		
Employees		

Enhance Customer Worth

Increase Value or Disappear

What is Knowledge?

How to become a successful company in Knowledge Economy

Create Smart Strategies

Design a Knowledge Strategy

Leverage Company Knowledge

Build Knowledge Competencies

Create a Knowledge Environment

Motivate appreciate and reward

Instill a Knowledge Attitude

Design a Process-based Organization

Orchestrate Knowledge

Manage Knowledge

Repurpose the Corporate Center

Manage Team-work

Three Types of Knowledge Management

Value-Based Knowledge Management

Strategic Knowledge Management

Operational Knowledge Management
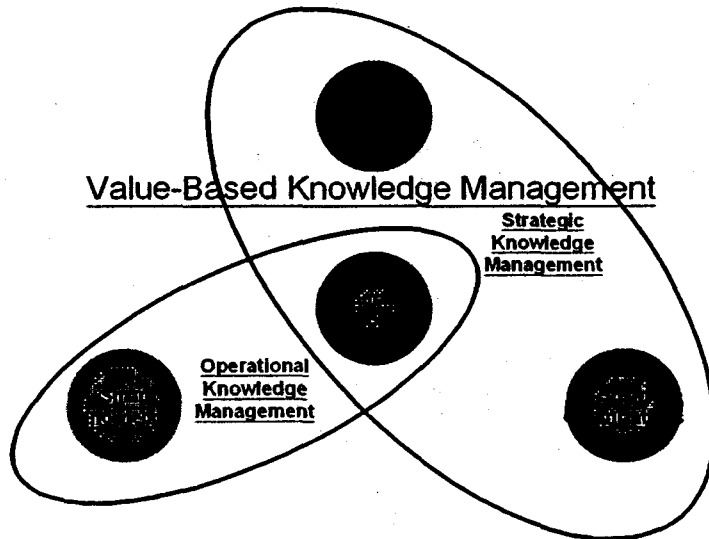
Six Capabilities to be successful in Knowledge Economy

Ability to Anticipate

Ability to Respond

Ability to Last

Ability to Create

Ability to Learn

Ability to Produce
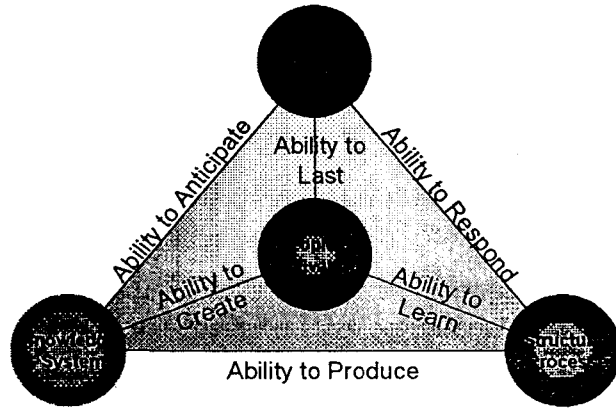
Supply or Demand-based, Which one is better?

Three Steps Toward Operational Knowledge Management

People & Motivation

Systems

	From Projects	From Processes	From Systems
LEARN			
Assess	Knowledge Competencies Attitude		
Plan Projects	Strengthen Education & Training Leadership Appraisal & Reward Systems		
Realize	Sharing		
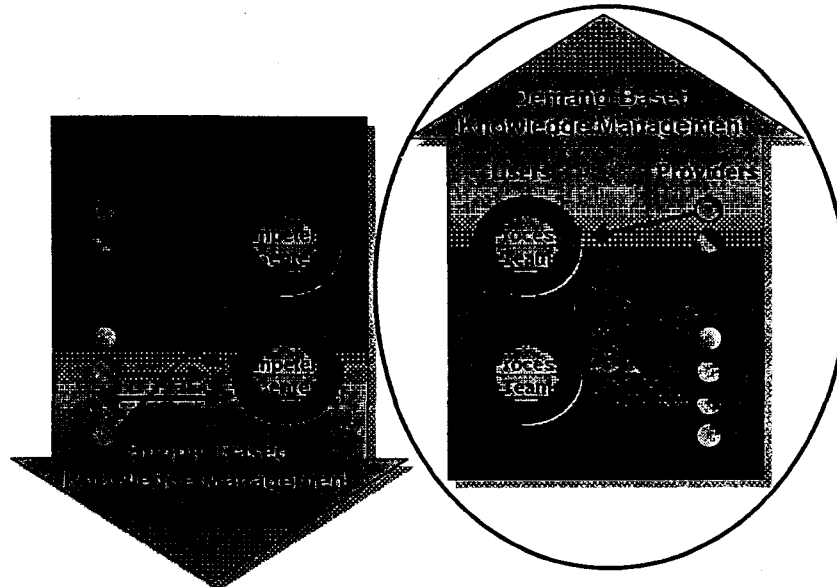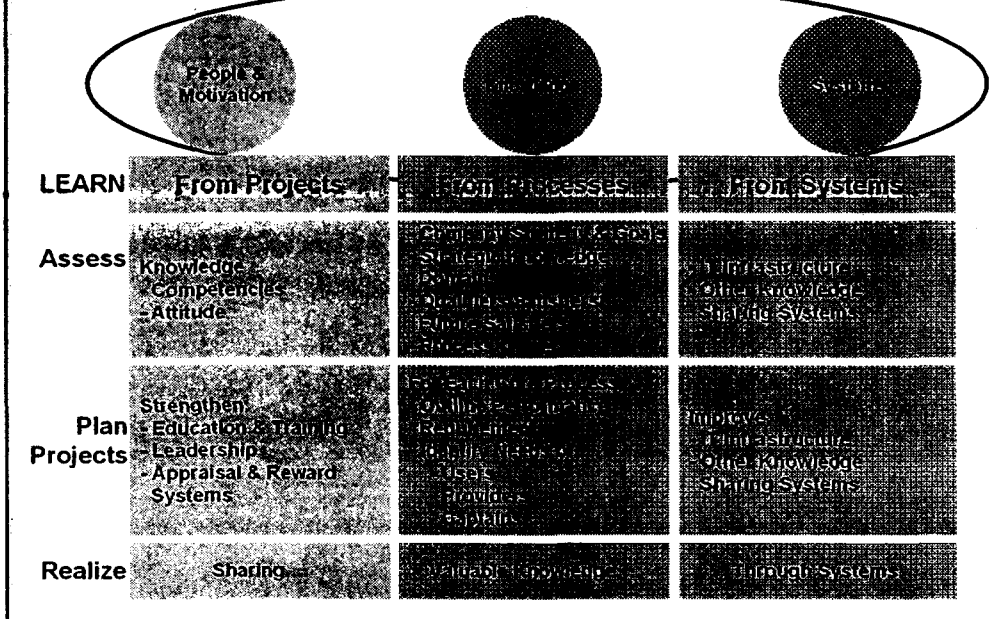
Steps Toward Strategic Knowledge Management

KnoVa Performance Indicator

Increase Your Ability to   Sub-KnoVa   KnoVa   Super-KnoVa

Centralize   Develop   Communi...

Authority   Processes   Professionals
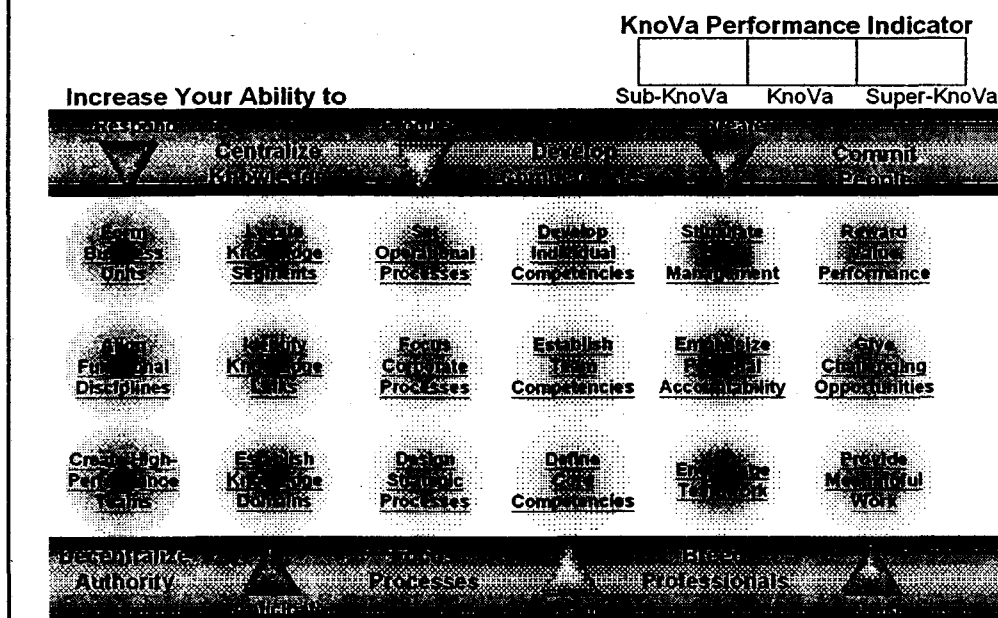
Strategic Knowledge Management
Camp 0 - Market Driven Organization

KnoVa Performance Indicator

Increase Your Ability to

Sub-KnoVa   KnoVa   Super-KnoVa

Centralize Knowledge   Develop Competencies   Commit People

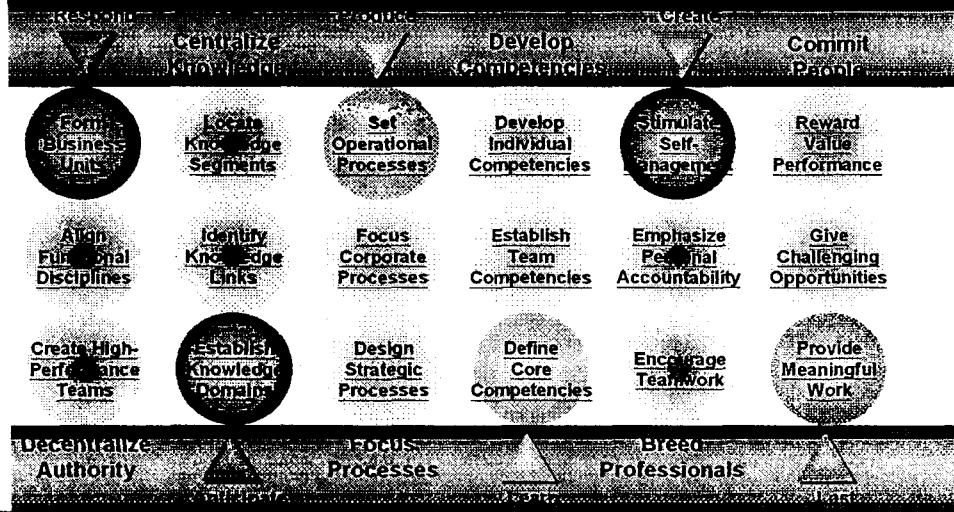|					
Form Business Units	Locate Knowledge Segments	Set Operational Processes	Develop Individual Competencies	Stimulate Self-Management	Reward Value Performance
Align Functional Disciplines	Identify Knowledge Links	Focus Corporate Processes	Establish Team Competencies	Emphasize Personal Accountability	Give Challenging Opportunities
Create High-Performance Teams	Establish Knowledge Domains	Design Strategic Processes	Define Core Competencies	Encourage Teamwork	Provide Meaningful Work

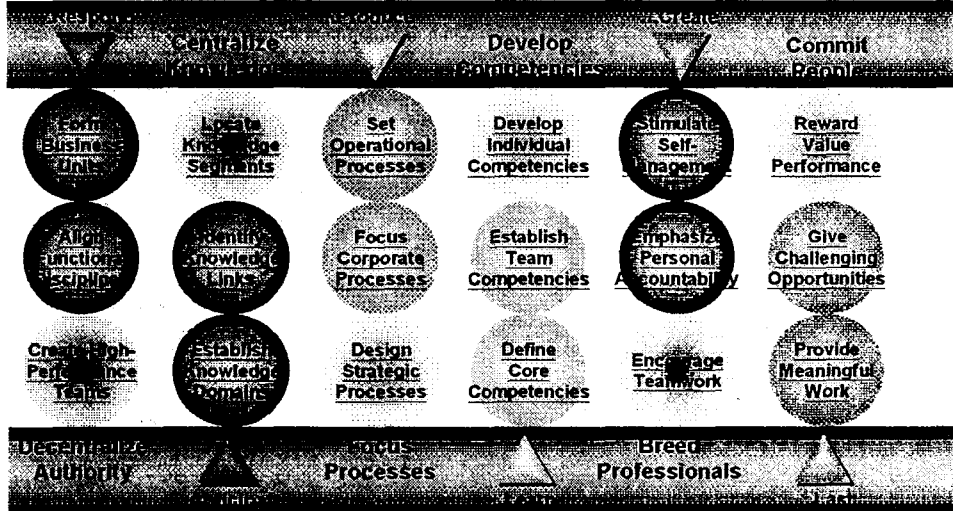Decentralize Authority   Focus Processes   Breed Professionals

Strategic Knowledge Management
Camp 1 - Competency and Process Based Org.

KnoVa Performance Indicator

Increase Your Ability to

Sub-KnoVa   KnoVa   Super-KnoVa

Centralize Knowledge   Develop Competencies   Commit People

Form Business Units	Locate Knowledge Segments	Set Operational Processes	Develop Individual Competencies	Stimulate Self-Management	Reward Value Performance
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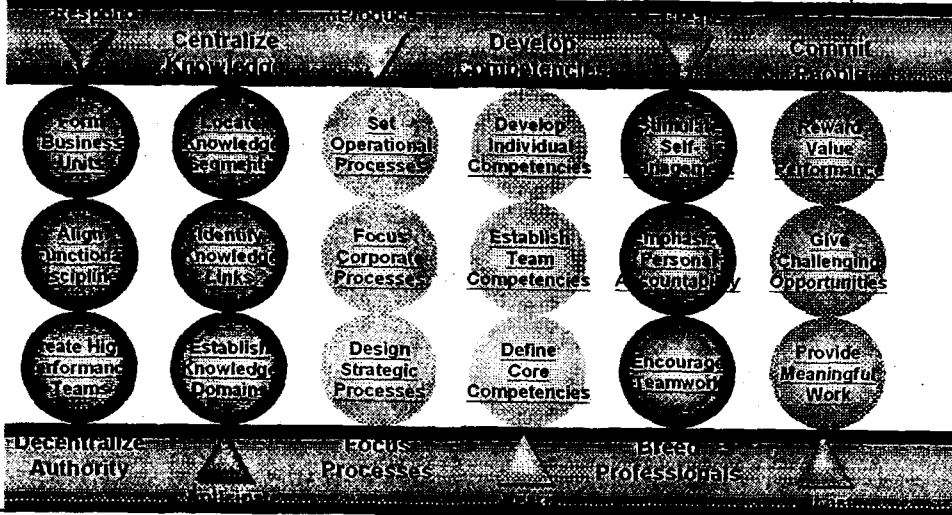Decentralize Authority   Focus Processes   Breed Professionals

Strategic Knowledge Management
Camp 2 - Continuous Learning Organization

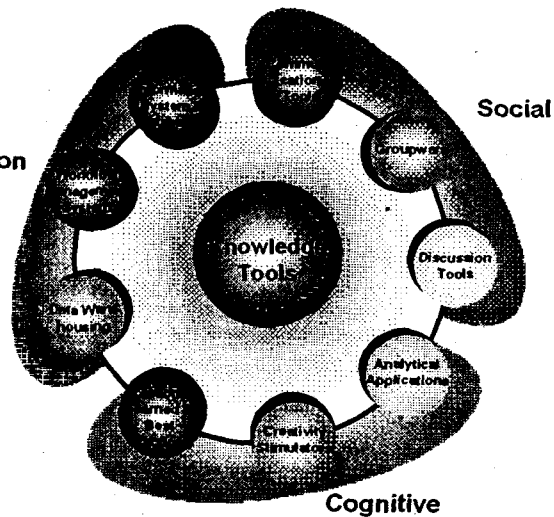KnoVa Performance Indicator

Increase Your Ability to

Sub-KnoVa   KnoVa   Super-KnoVa

Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning

Information

If knowledge workers are given the right tools, they can greatly enhance their productivity. Such tools should support their learning through information, interaction and intellect. The future of Integrated Knowledge Environments will depend on the ability to utilize intranets to enhance to use and flow of knowledge and not just information.
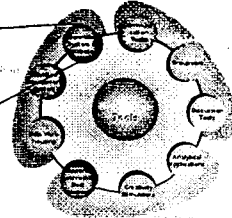
Social

Cognitive

Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Information

If we create an integrated knowledge environment, what kinds of Knowledge Tools are needed to best support learning from every source?

...it should provide the tools which are used to learn from Information

Known information is stored and retrieved from Systems and Databases. These can include company databases, Corporate Yellow Pages, external databases, and a customized literature service.

Example: Eli Lilly & Co's corporate internet links more than 25,000 employees in 30 countries. It has more than 12,000 pages of information about job postings, handbooks, corporate news bulletins, stock prices, and a news feed about the pharmaceutical industry. Sales reps can access data through desktop or laptop on-line connections.

Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Information

Workflow Management Systems access information as the flow of work demands. These should be designed to both support the workflow and gather information.
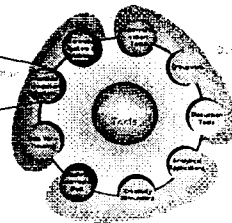
Example: The US Court of Appeals is undertaking an automation initiative to streamline the workflow. A customized application of groupware has been developed to replace the existing paper-based voting system.

Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Information

Data Warehousing data mining helps to find and organize new knowledge.

Example: DW: Sears Roebuck and Co.'s credit department has been implementing a data warehouse which allows them access to the information about 500 million transactions made by 120 million Sears Card holders in 80 million households throughout the US.

Data mining: Accessing the information in a data warehouse needs to be fast and flexible. CUC International Inc. is in a wide range of business areas, from travel to time-sharing resorts. It uses a number of statistical software packages to find out which customers to target with which service and in which order to offer services.
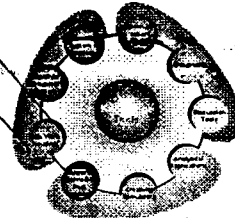
Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Social

If we create an integrated knowledge environment, what kinds of Knowledge Tools are needed to best support learning from every source?

...it should provide the tools where interaction between Knowledge Professionals increase and improve

Communication Tools should include e-mail, voice mail, news groups, bulletin boards, audio and videoconferencing, fax...

Example: An audio-video intranet is being planned by Wall Street firm Bear Stearns & Co. To allow face-to-face discussions between traders and analysts without them having to leave their desks. The intranet will also be used for training.

Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Social
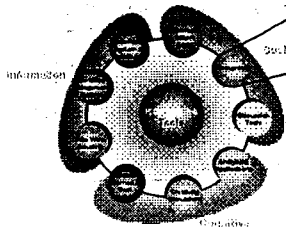
Groupware enables groups of people to work with the same document.

Example: Asea Brown Boveri has a Lotus Notes set-up for 50,000 users. With 750 dedicated Lotus Notes servers linked to five main worldwide network hubs, it is the most sophisticated Notes system anywhere and is maintained by 300 dedicated administrators.
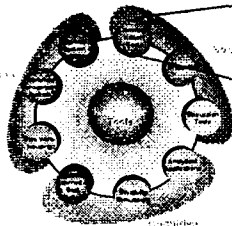
Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Social

Discussion Tools include discussion groups, chat groups, publish and subscribe systems.

Example: Since 1995, Roche's Bioscience Intranet has grown from a simple telephone guide to a worldwide system connecting several company divisions on which Roche scientists compare research results, discuss findings, and connect to on-line public information resources.

Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Cognitive

If we create an integrated knowledge environment, what kinds of Knowledge Tools are needed to best support learning from every source?

...it should provide the tools which improve our ability to comprehend information
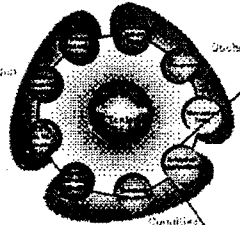
Analytical Applications include fishbone diagrams, critical path analysis tools, decision trees, forces field analysis, SWOT analysis, systems thinking tools, clack boards, white boards and mindmaps

Example: Royal Caribbean, on of America's largest cruise company, uses a New Revenue Decision Support System to determine cruise fares, when and how to promote voyages, and whether there is a need to redeploy ships. A single screen provides data for deciding revenue status and deciding whether any action is required.
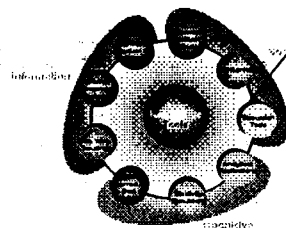

Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Cognitive
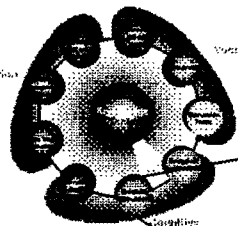
Creativity Stimulators help us to generate new ideas. These include both software supported and pen and paper type tools.

Example: A recent laboratory controlled test was made to see whether two creativity-enhancing programs (available on the Internet) did enhance the users' creativity. The results suggest that the software-sup orted ideas were more novel and valuable than responses generated by pen and paper.

Integrated Knowledge Environment Requires Nine Classes of Knowledge Tools for Information, Social and Cognitive Learning - Cognitive
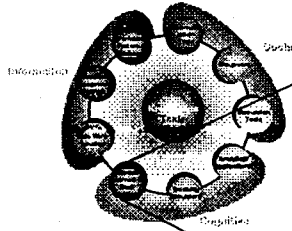
Lessons Learned and Best Practices databases tell us what we have learned from previous experiences. They can include computer-aided lessons learned, lessons learned examples and best practice examples.

Example: Tandem Computers' 11,000 employees use e-mail to request assistance from colleagues and the replies, with suggestions, are stored in a public file to which additions, solutions and modifications can be made.

Types of Information and Knowledge within a Organization

Uncaptured external knowledge and best practices

Uncaptured knowledge accumulated within knowledge workers

Captured information stored in desktop PC but not shared with others

Captured information and data within traditional information systems

Uncaptured paper documents   Uncaptured social experience

Enterprise Wide Data Warehouse Removes Chaos

BEFORE

ENTERPRISE INFORMATION ARCHITECTURE *AFTER*

ENTERPRISE DATA WAREHOUSE

SALES ANALYSIS   SERVICE ANALYSIS   CAMPAIGN MANAGEMENT

- HUGE AMOUNTS OF UN-INTEGRATED DATA – DISPARATE LOCATIONS

- MULTIPLE OPERATING SYSTEMS AND HARDWARE PLATFORMS

- OPERATIONAL AND INFORMATION DATA ARE NOT DISTINGUISHED

- INCONSISTENT DATA STANDARDS AND DEFINITIONS
  NO CLEAR SYSTEM OF RECORD – WHO'S DATA IS RIGHT?

- APPLICATIONS SUPPORT BOTH OPERATIONAL
  AND INFORMATION NEEDS – NO DIRECT ACCESS

- MINDSET – GET YOUR OWN "STASH" OF DATA AND HOARD IT

- DATA IS INTEGRATED AND ORGANIZED BASED ON THE
  COMMON ARCHITECTURE, MODELS AND STANDARDIZED DESIGNS

- DISTINCTIONS ARE MADE BETWEEN OPERATIONS DATA FOR TRANSACTIONS
  AND INFORMATION DATA FOR DECISION-SUPPORT

- INTEGRATED ENVIRONMENT PROVIDES A SINGLE, RELIABLE
  SOURCE OF INFORMATION

- OPERATIONAL SYSTEMS CAN FOCUS ON TRANSACTION
  PROCESSING, AS OPPOSED TO ANALYTICAL REPORTING

- MINDSET – SINCE DATA IS SHARED AND "OFFICIAL,"
  THERE IS NO NEED TO CREATE "STASHES" OF DATA

Integrated Knowledge Management System Architecture

ANALYTICAL CONSOLIDATED INFORMATION

TRANSACTION INFORMATION

ATOMIC-LEVEL &
SUMMARIZED,
SUBJECT-ORIENTED
ANALYTICAL DATA

Data Mining &
Visualization

OLAP

Security - Access Privileges
Local & WEB Access

DATA
MART

SUMMARIZED,
SUBJECT-
ORIENTED
ANALYTICAL
DATA

CENTRAL
DATA
WAREHOUSE

DATA
MART

MetaData

Standard
Reports

KMS DB

Ad hoc Query
& Reporting

DATA
CONVERSION
AND
POPULATION

ATOMIC-LEVEL
TRANSACTION-ORIENTED
OPERATIONAL DATA

INFORMATION
DELIVERY

MetaData

INTEGRATED ENTERPRISE KNOWLEDGE META DATA: THE INFORMATION CATALOG

How Much MetaData is Needed?

INTEGRATED KNOWLEDGE METAMODEL

BUSINESS INFORMATION DIRECTORY

DEVELOPER METADATA
- CONVERSIONS
- SOURCE — TARGET
- DATA MIGRATION AND EXTRACTION

DATABASE ADMINISTRATOR METADATA
- CREATE AND ADMINISTER THE ENVIRONMENT
- DATA WAREHOUSE MAINTENANCE

DATA MART, EIS, KMS AND DSS METADATA
- AD HOC AND QUERY TOOLS
- STANDARD REPORTS
- DOCUMENTS
- INFORMATION DELIVERY AND DATA MARTS

SOURCE METADATA	CONVERSION METADATA	TARGET METADATA	DATA WAREHOUSE METADATA	AD HOC METADATA	REPORT METADATA	DOCUMENT METADATA
SYSTEM OF RECORD	DATA TRANS-FORMATION LOGIC	SUBJECT AREA LOGICAL DATA MODEL	PHYSICAL (RELATIONAL) MODEL	WHAT DATA MARTS, DATA OBJECTS AND DATA CLASSES ARE AVAILABLE?	WHAT STANDARD REPORTS ARE AVAILABLE?	WHAT DOCUMENTS ARE AVAILABLE?
PHYSICAL DESCRIPTIONS OF FILES	CONVERSION MATRIX	BUSINESS RULES	DE-NORMALIZED FOR PERFORMANCE		WHAT ARE THE	WHAT TYPE OF
DATA LAYOUTS	REFORMATTING RULES	"PERFECT WORLD"	PHYSICAL TABLE CHARACTERISTICS	WHAT ARE THE DIMENSIONS AND FACT TABLES?	DEFINITIONS AND VALID VALUES OF THE REQUESTED	DOCUMENT?
FILE FORMATS	EXTRACTION HISTORY	NORMALIZED STRUCTURE	FIELDS, INDEXES, DESCRIPTIVE INFO		ELEMENTS?	WHAT APPLICATION WILL PRESENT THE DOCUMENTS
LEGACY SYSTEM DATA DICTIONARY		LOGICAL ENTITIES LOGICAL ATTRIBUTES	UPDATE SCHEDULE AND SECURITY	WHAT INFO IS DETAILED OR SUMMARIZED?	WHEN DO THE REPORTS RUN?	
			VERSIONING – HOW KEPT OVER TIME			WHERE IS THE DOCUMENT?
			WHEN PURGED, ARCHIVED AND CONDENSED (SUMMARIZED)	PROFILE DATA – HOW MANY ROWS AND TABLE COUNTS	WHAT ARE THE FILTER GROUPS?	

Business Information Directory - Conceptual View

An On-line Catalog that provides access to information in easy-to-understand business terms
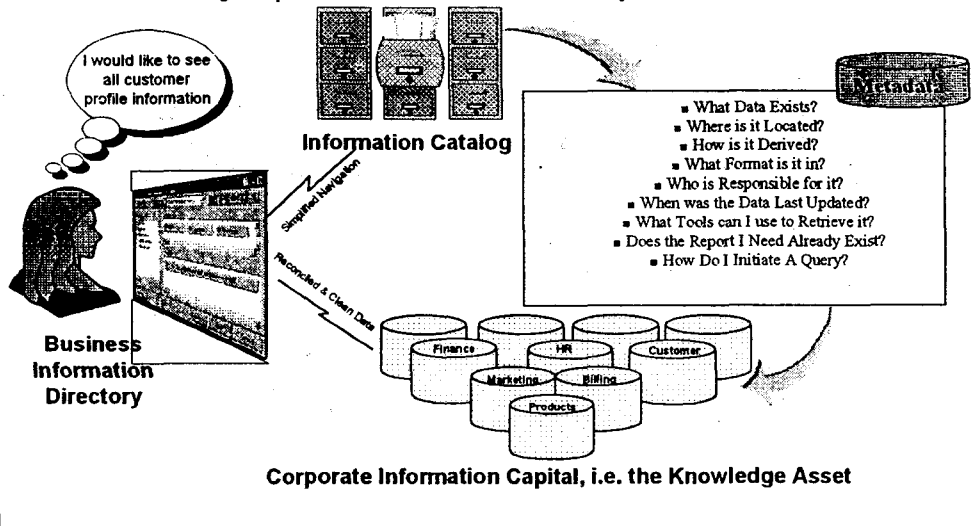
I would like to see all customer profile information

Information Catalog

Business Information Directory

- What Data Exists?
- Where is it Located?
- How is it Derived?
- What Format is it in?
- Who is Responsible for it?
- When was the Data Last Updated?
- What Tools can I use to Retrieve it?
- Does the Report I Need Already Exist?
- How Do I Initiate A Query?

Finance, HR, Customer, Marketing, Billing, Products

Corporate Information Capital, i.e. the Knowledge Asset

Business Information Directory -
Sample View via Corporate Intranet

Business Information Directory
Why is this JUST happening Now ?
Answer: Technology Convergence

Oracle's KM Vision

Common Desktop Environment Integration

Custom Web clients
Oracle Applications client integration

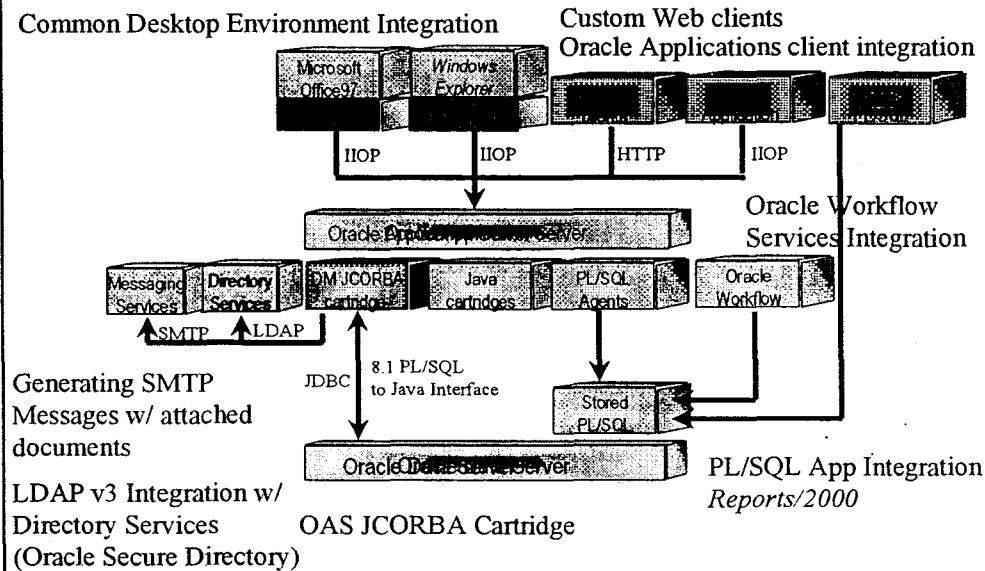|	
Microsoft Office97	Windows Explorer

IIOP | IIOP | HTTP | IIOP

Oracle Workflow
Services Integration

Oracle Application Server

| Messaging Services | Directory Services | OM JCORBA Cartridge | Java cartridges | PL/SQL Agents | Oracle Workflow |

SMTP | LDAP

Generating SMTP
Messages w/ attached
documents

JDBC | 8.1 PL/SQL to Java Interface

Stored PL/SQL

LDAP v3 Integration w/
Directory Services
(Oracle Secure Directory)

OAS JCORBA Cartridge

Oracle Database Server

PL/SQL App Integration
Reports/2000

Oracle's KM Technology

- Core Technologies
  - Oracle Application Server 4.0 JCORBA Cartridge, JTS
  - Oracle 8.1 JavaVM, Java Stored Procedure, CORBA/ORB, IIOP
  - ConText Cartridge 8.1
  - Enterprise Scalability and Performance
  - Open SQL Query Layer
  - Fully-Extensible Object Model for custom solutions
- Next Plan
  - Oracle Application Server 4.1 EJB Cartridge

Future Plan

WebDAV supported by OAS for 3rd
Party Authoring Tool integration

ODMA 2.0 and/or XML for
Compound Document Management

FTP

WebDAV   IIOP   IIOP   HTTP

IIOP

DMA   SMTP   LDAP

Integration with
3rd Party DM Services
via DMA

Integration with
non-Java CORBA objects

Content Management functionality
moves down into Data Tier