



Knowledge Management: A Business Process in Support of Sustainability

**AMSA Winter Conference
San Antonio
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Vice President
Westin**

Agenda

- What is Knowledge Management (KM)?
- What DWSD is doing with KM
- How does KM support sustainability?
- How would KM work for me?
 - Seven Principles of KM
 - Actionable Steps

What is Knowledge Management?



- Not a “system”
- Not a technology concept – a business process
- The process through which organizations generate value from their intellectual assets, by identifying, capturing, protecting and sharing them, and using them in best practices
- KM is supported by IT, but technology in itself is not KM
- There’s a big difference between “information” and “knowledge”



Detroit Water & Sewerage Dept.



DWSD Sustainability Challenges

- Succession Planning (Workforce attrition)
- Asset Management
- Political (Regional) Issues
- Rate Pressures
- Regulatory Issues
- Knowledge Retention/Management

DWSD Initiatives (Past & Present)

- CBMS (Financial)
- HR (Personnel)
- SCADA (Operations)
- GIS (Engineering)
- CMMS (Maintenance)
- LIMS/PIMS (Lab/Pretreatment)
- CIP Management
- IT Master Plan
- Hydraulic Models
- Networks & Communications

Consent Judgment (A KM Opportunity)

- 1997 Notice of violation led to SACJ
- Requirements mandated disclosure of financial, capital, operations and maintenance information
- Information from separate sources was brought into a simple, single mechanism
- eVMS Pilot
 - Web based tool, internal browser
 - User focused
 - Searchable
 - Culture shifts began

Fully Using What We Have at DWSD

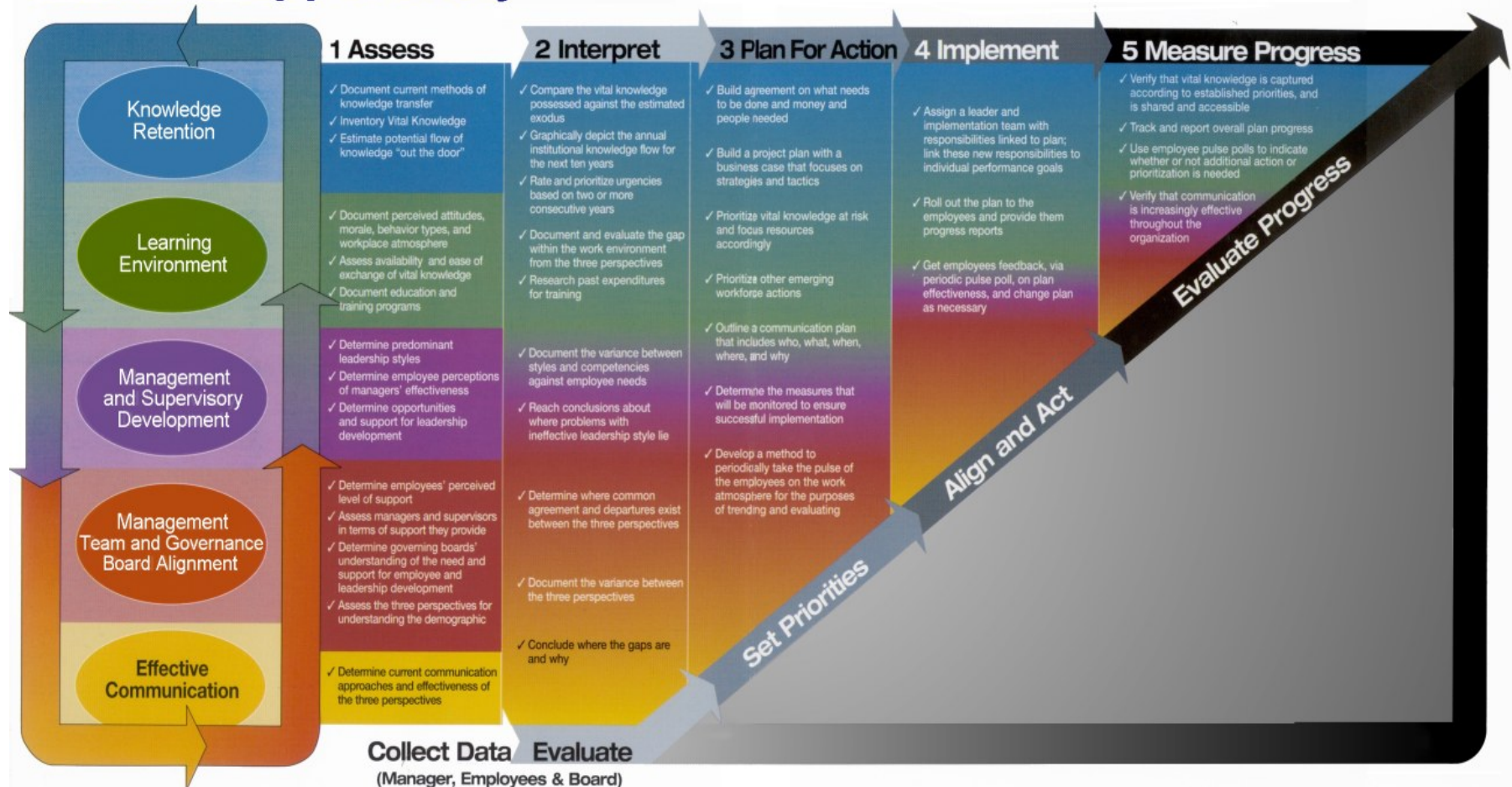
- User Deployment Initiatives are underway
- Turning “information” into knowledge which can be discussed, acted upon, shared, etc
- Putting information into a KM context
- Creating “Knowledge Workers”

KM - An Evolutionary Process for DWSD

- Multiple aspects to the KM process
 - People, process, culture, technology
- KM needs to be a “core” competency
- Can't afford not to adopt KM as a business strategy

The Changing Work Force

The Changing Workforce... Crisis & Opportunity



What is “Knowledge”?

*“The computer is merely a tool in the process...
To put it in editorial terms, knowing how a
typewriter works does not make you a writer.
Now that knowledge is taking the place of
capital as the driving force in organizations
worldwide, it is all too easy to confuse data with
knowledge and information technology with
information.”*

P.F. Drucker, Managing in a Time of Great Change

KM as a Strategy

- To operate in today's business climate involves capturing, harnessing, integrating and applying institutional knowledge (experience, know-how)
- Knowledge Management is a key business strategy and core competency to operate with a smaller, more flexible workforce, respond to public scrutiny, "do more with less," meet stiffening regulations, protect assets, and maximize the useful life of infrastructure

How would KM work for me?



Not all information is knowledge

KM can be seen as “expensive” (an additional expense)

-but not knowing is far more costly



KM requires integrated planning, best practices,
trained people, and “connected” tools



Seven Principles of Knowledge Management



1. Context

2. Simplify

3. Filter



4. Personalize



5. Intuitive

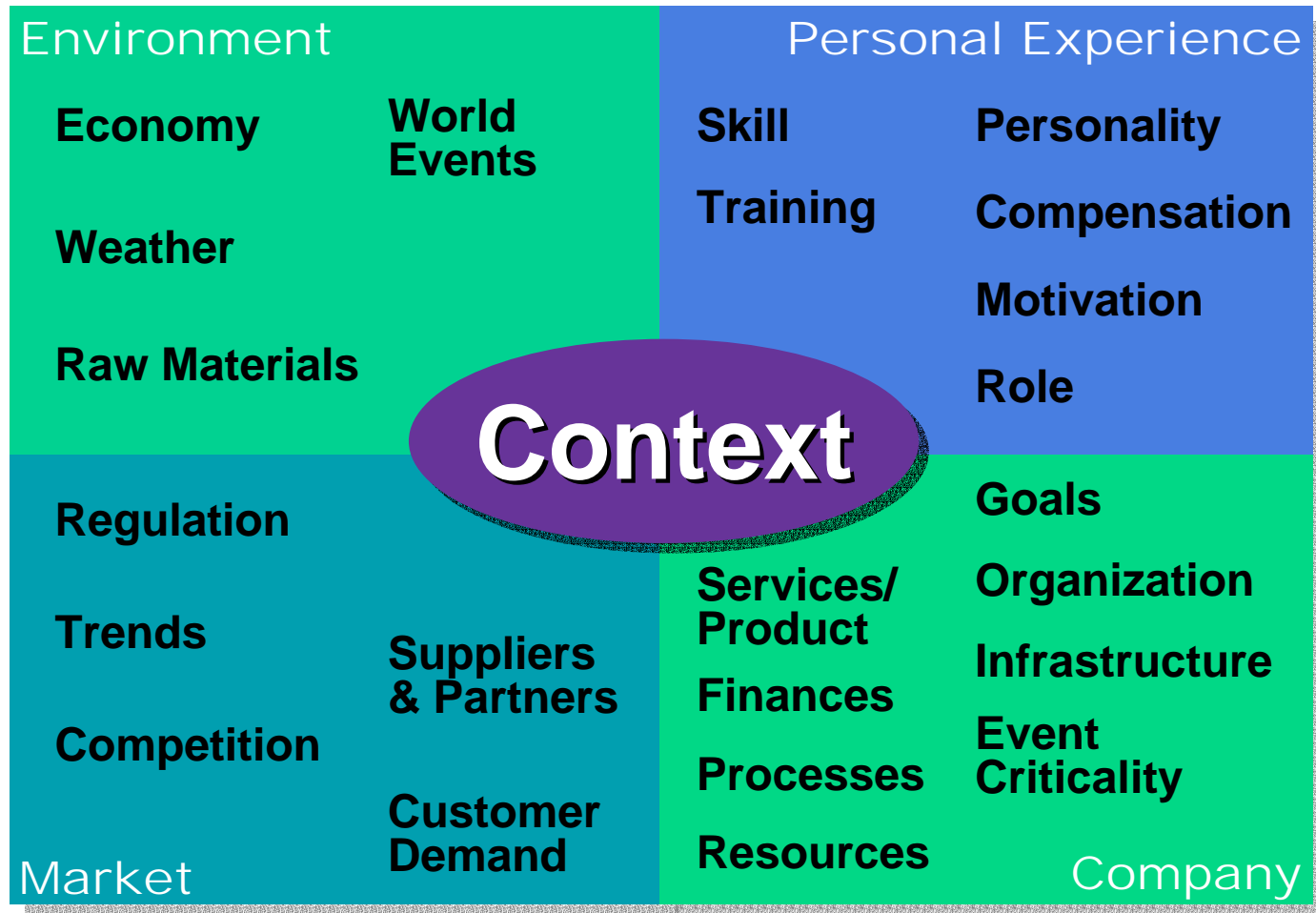


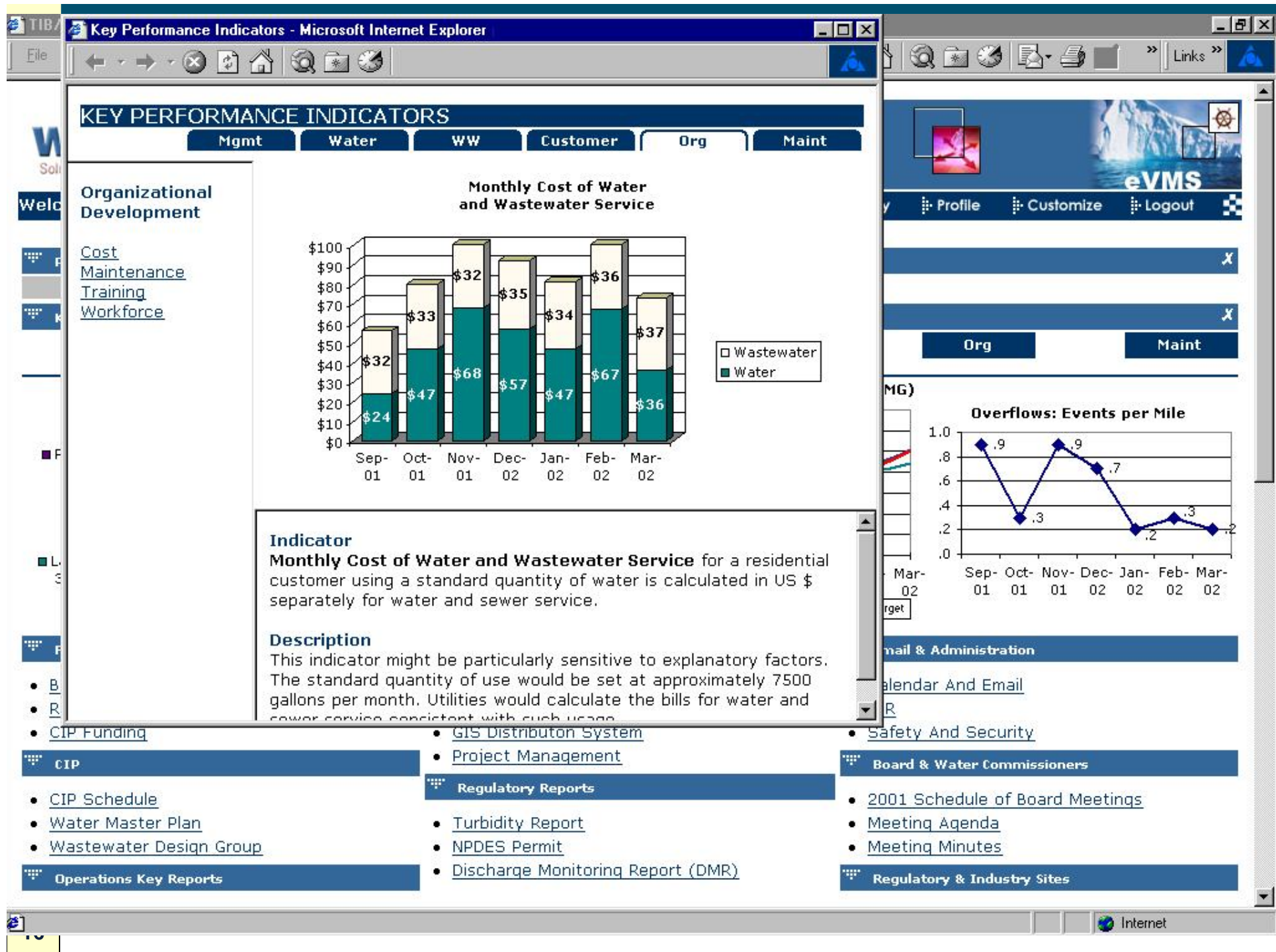
6. Collaborative



7. Ubiquitous

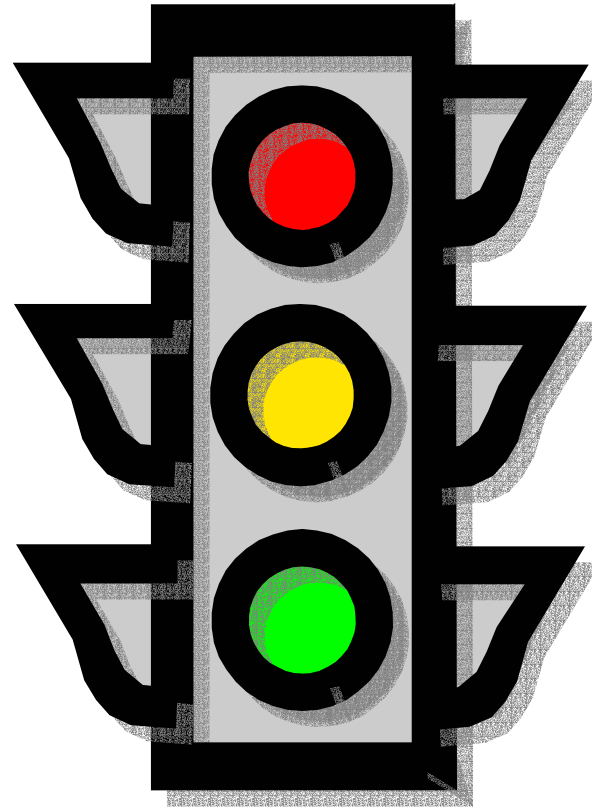
Knowledge Principle #1





Knowledge Principle #2

Simplify
Information





Welcome, Louise Lieberman

Plant Data Feed

CL2 Residual - 2.04

Board of Water Commissioners

- [BOWC Meeting Schedule](#)
- [BOWC Meeting Minutes](#)

DWSD Projects Web Sites

- [CS-1294: PC-713 Oversight Contract](#)
- [PC-744: WWTP Program Management](#)
- [PC-744: O M Manual Prototype](#)

Second Amended Consent Judgment

- [Second Amended Consent Judgment](#)
- [Second Amended Consent Judgment Asset Audit](#)
- [Comprehensive Plan](#)
- [Quarterly Updates](#)
- [WWTP Key Indicator Reports](#)

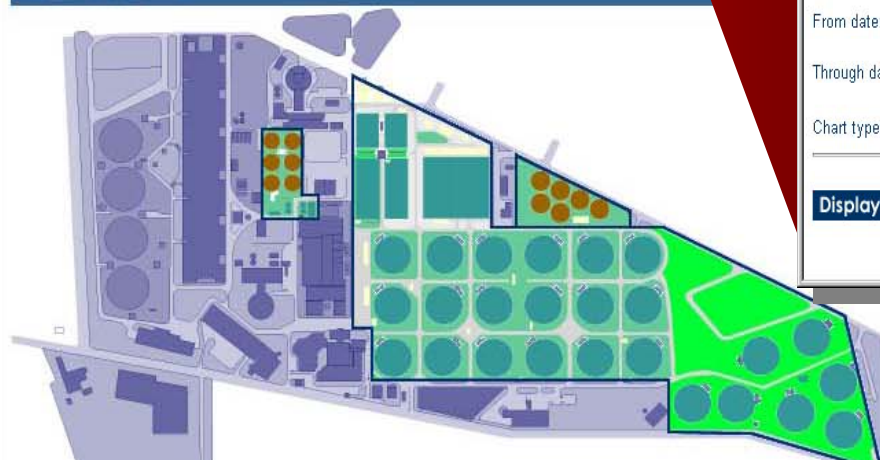
EMPAC Requisition

Please log in to EMPAC to review the following requisitions awaiting your approval:

Requisition#	Date	Total
02-0000001751	03/20/02	\$34,229.31

Note : Please select a row to view the details

Visual Drill-Down



Detroit Waste Water Management - Netscape



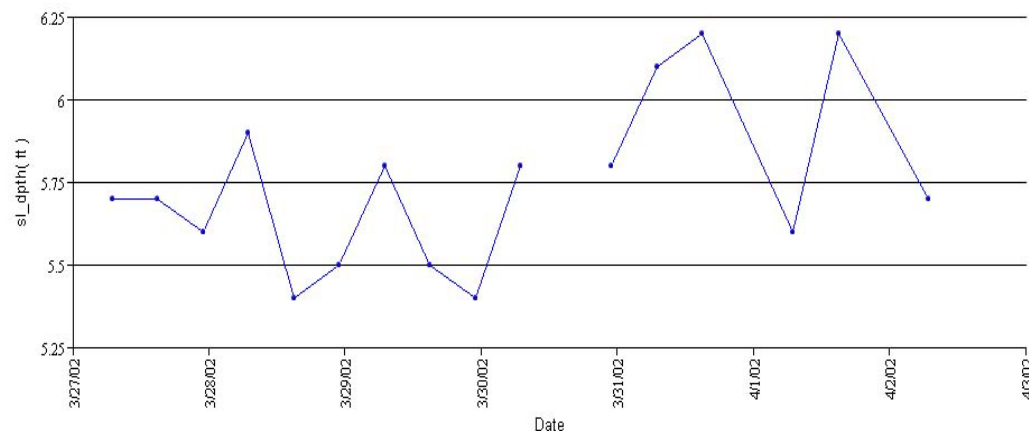
OBSERVATION TREND



Alert details:

Tag: Avg Sludge Depth
Alert condition: Target High Violated
Target value: 5
Observation date: 3/31/2002
Observation shift: M

Avg Sludge Depth
Trend for last 7 days



From date: 3/27/2002 [Select Date](#)

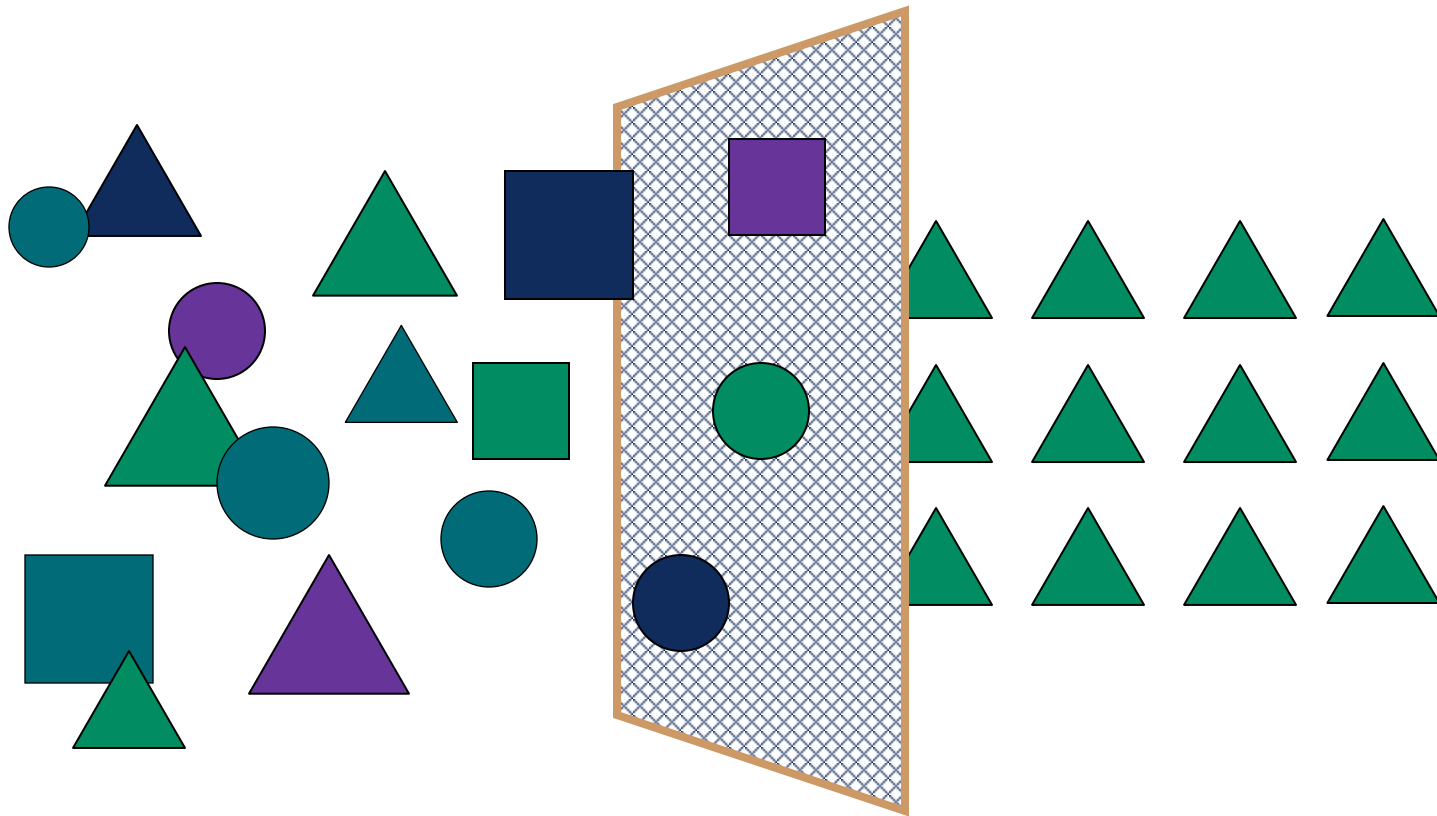
Through date: 4/3/2002 [Select Date](#)

Chart type: Date Line

Display Graph

Knowledge Principle #3

Filter Relevant Information



[Top](#) > [Cyber/SCADA](#)

Profile

Hom

Name

Author

Last Modified

SCADA Attacks

admin

11/6/02 1:04 PM

ASA/GTI SCADA

This site describes the
relating to SCADA Te
standard.

 BEST PRACTICES
VULNERABILITIES

This web page from the
increase usage of wireless
vulnerabilities to wireless
securing Wi-Fi. The Wire
Wired Equivalent Privacy
this web page has a link

 Cyber Protests: The

This web page from the N
2001, discusses how cyber
sophisticated and, most like
perform denial of service at
service attacks incidents inv

 Cyber Protests: Relate
(NIPC)

This paper gives a general overview of the situation in the world that has occurred since September 11, 2001. Pakistani and Afghani web sites, countries. This paper accompanies "Information Infrastructure" local

DOE SCADA Best Practi

The President's Critical Infrastru
provide in this document 21 step

 Draft of the National Strategic Plan for the President's Critical Infrastructure

Developed by the President's Council on Cybersecurity, the strategy outlines the administration's initiatives to protect information systems from deliberate and malicious disruption. Its strategy is to protect the IT networks and systems that are vital to the nation's economy, defense, and critical services to operate. This document discusses six major tools to use that will empower the nation to secure cyberspace.

 [Instrument Society of America](#)

admin

11/6/02 1:05 PM

Content Publisher - Microsoft Internet Explorer

File Edit View Favorites Tools Help

WATERISAC
★★★★★★★★★★★★

Information Sharing & Analysis Center

Welcome metro water [Back to Library](#) - [Help](#) - [Sign Out](#)

[Top](#) > [Cyber/SCADA](#) > [SCADA Attacks](#) >  [1994 Salt River Project SCADA hacking incident](#)

1994 Salt River Project SCADA hacking incident

Author: admin

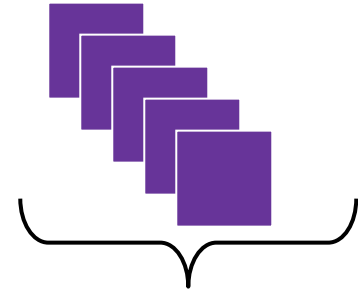
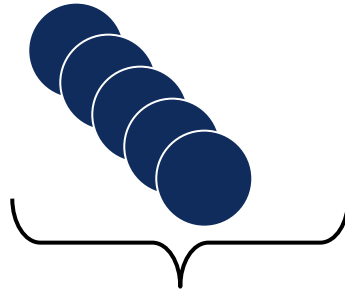
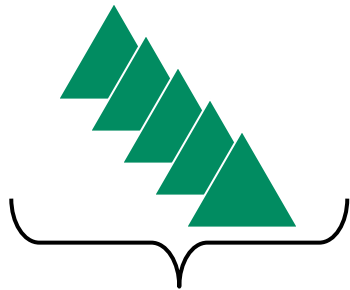
Last modified: 10/21/02 9:44 AM by admin

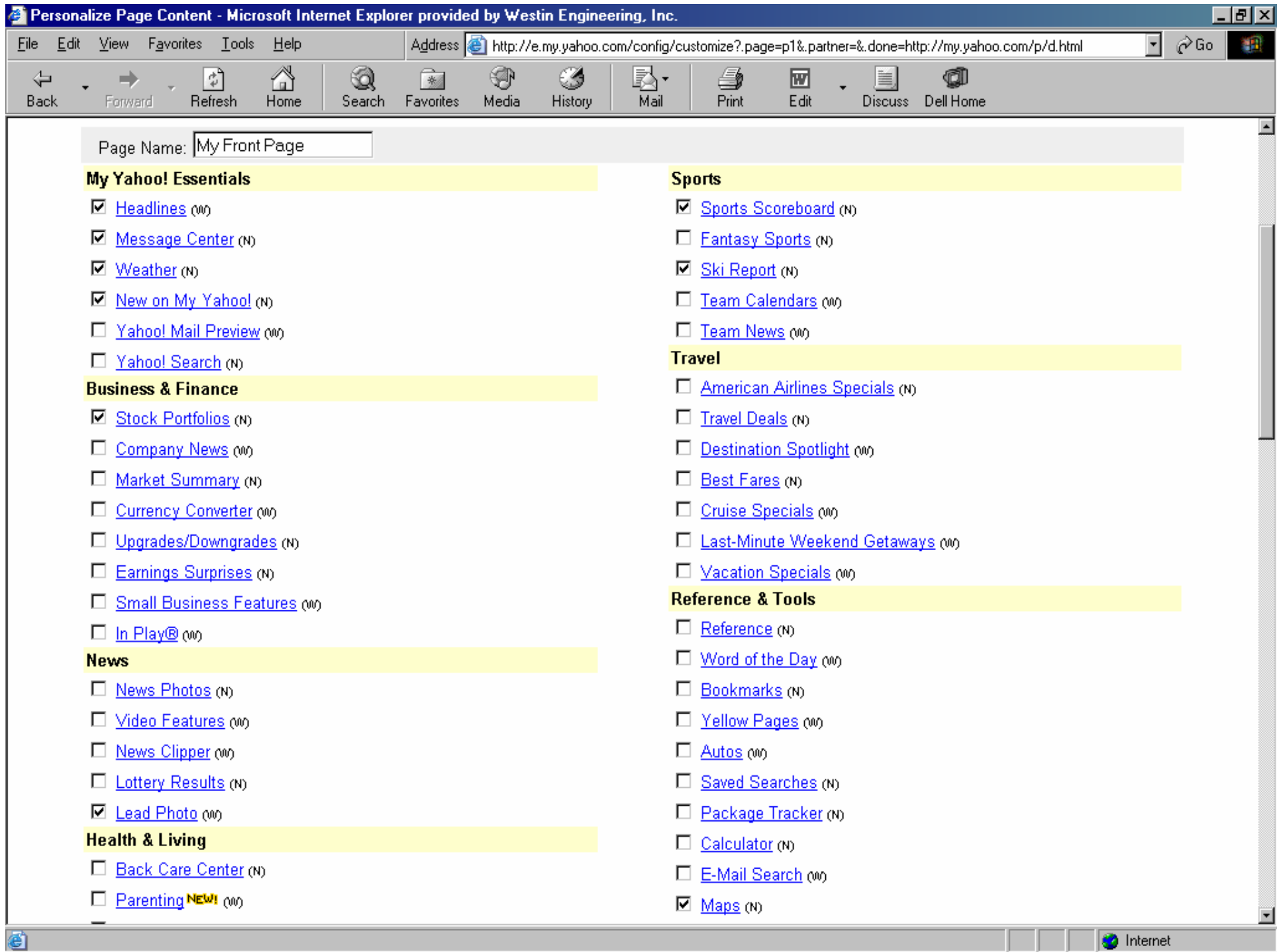
Description: This article refers to the false report of a 12 year old hacker who broke into the computer system of the Theodore Roosevelt Dam in Arizona and had the ability to control gates and flood neighboring cities. In actuality, it was a 27 year old hacker and authorities stated the hacker could never have controlled any dams or facilities. The main subject of this article discusses two different types of cyber attacks (attacks on data and control systems) and details the consequences of attacks, vulnerabilities of systems and the complexities of hacking into a system.

<http://www.zdnet.com.au/newstech/security/story/0,2000024985,20267698,00.htm>

Knowledge Principle #4

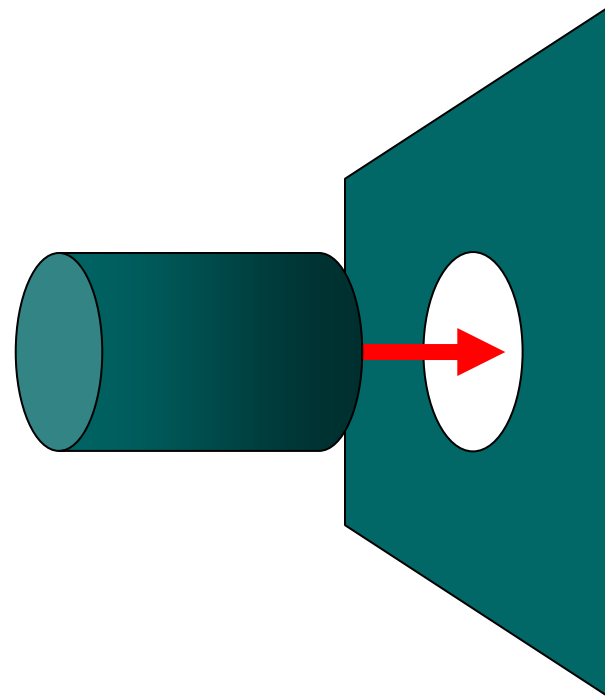
Personalize to User's Context





Knowledge Principle #5

Present
Intuitively



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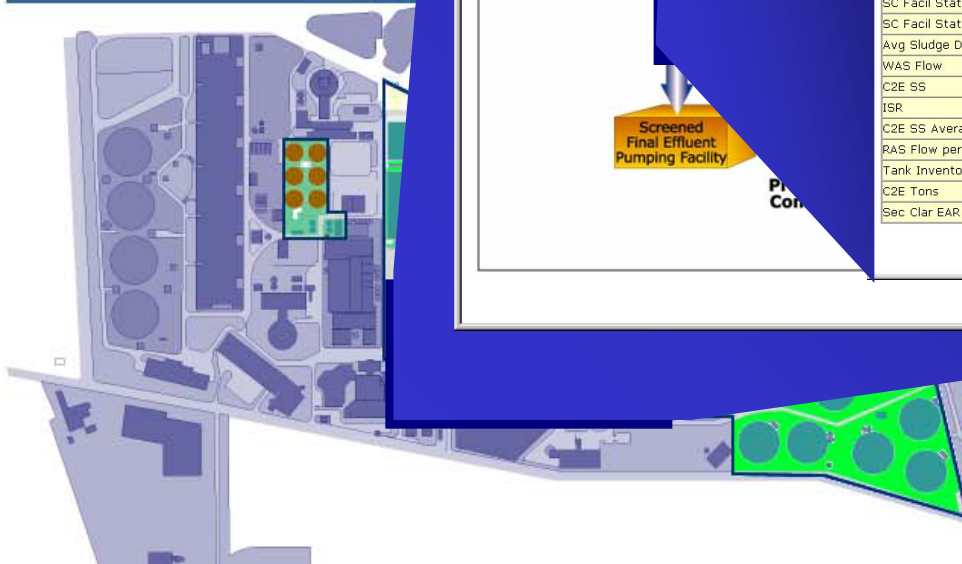
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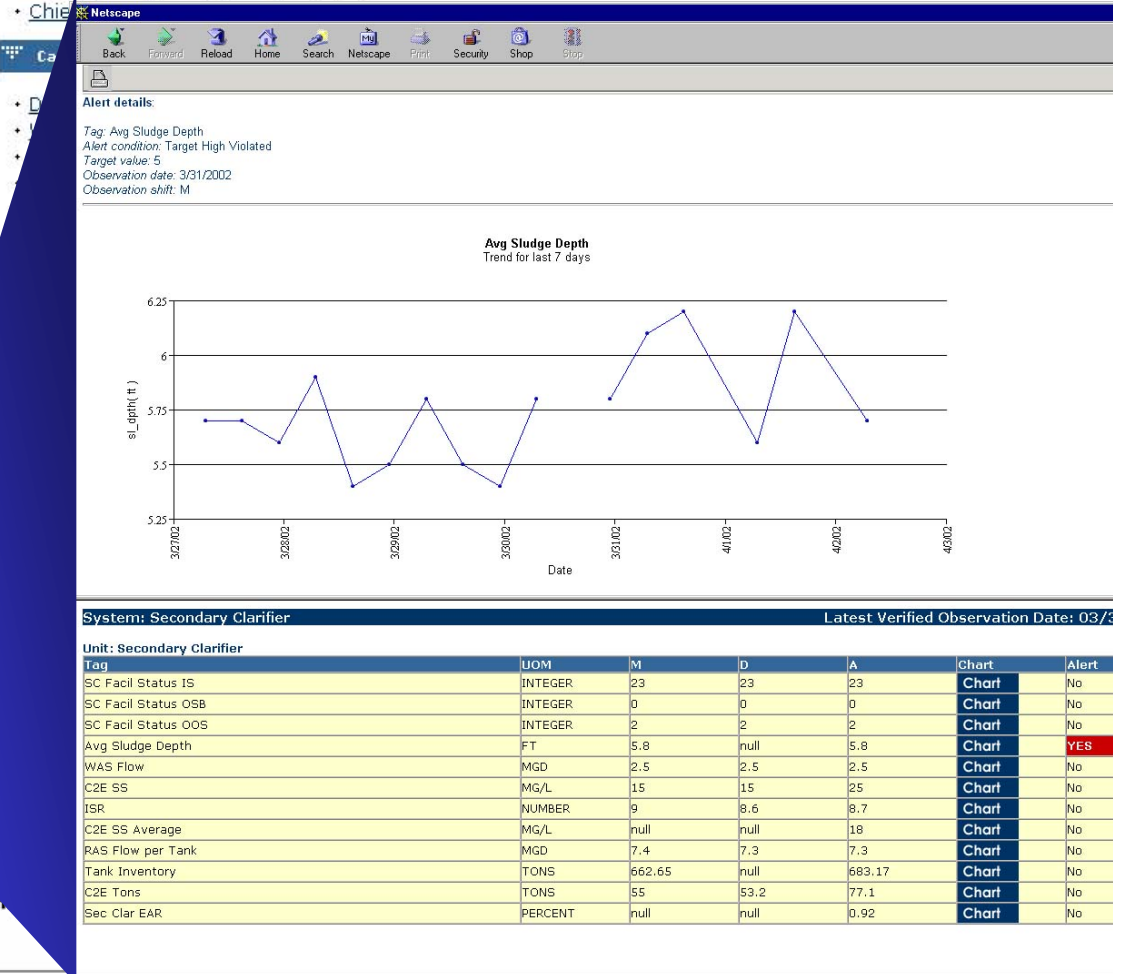
Visual Drill-Down



- [Order Continuing Special Administratorship](#)
- [Order Appointing Special Administrator](#)
- [Special Administrator Orders](#)
- [Special Administrator Monthly Reports](#)
- [Chief](#)

- [Key Indicator Reports](#)
- [SECPAR Reports](#)

Weather Detroit



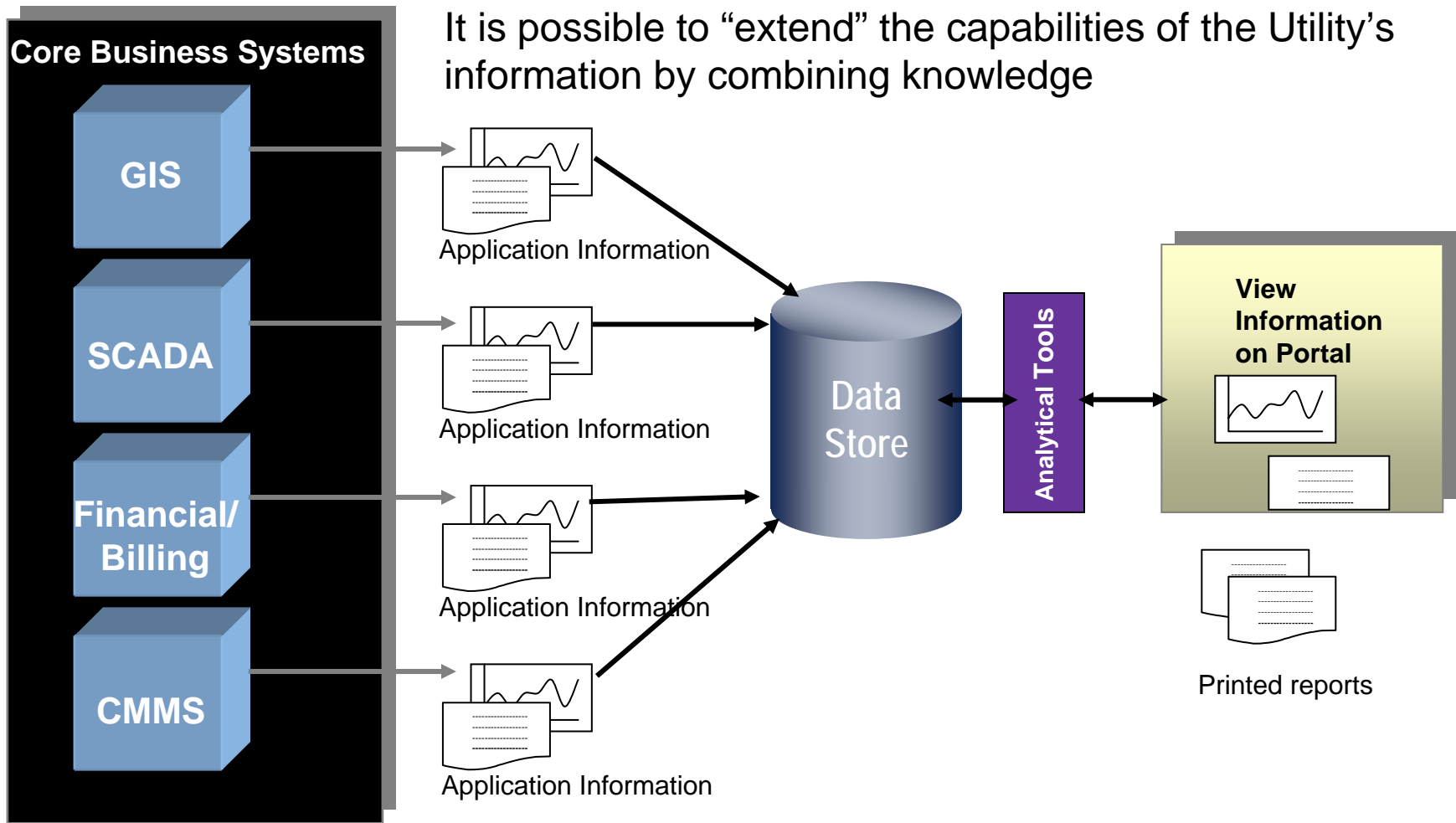
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Knowledge Principle #6

Make it Collaborative

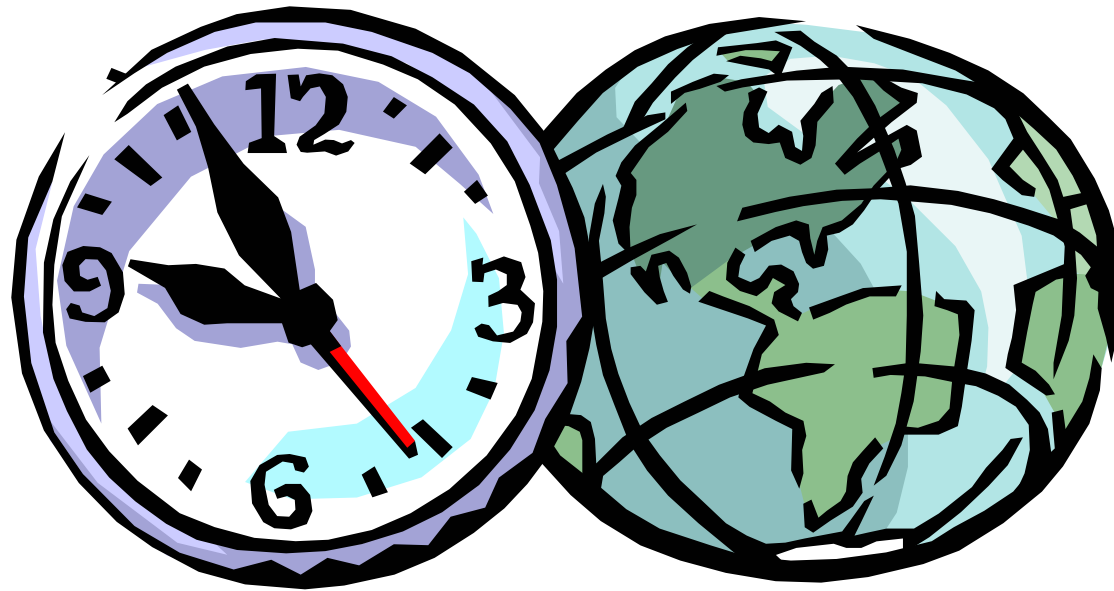


Collaborative Decision Support



Knowledge Principle #7

Ubiquitous Access



When

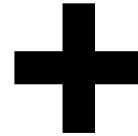
Where

Principle 7: Access Anytime, Anywhere



Knowledge Management Strategy

Leveraged Knowledge



Principles

Context

Simplify

Filter

Personalize

Intuitive

Collaborative

Ubiquitous

Wastewater Utilities become

Efficient. Effective. Adaptable.

Sustainable

Collaboration will Leverage KM

- The wastewater industry embraces and promotes the notion of a collaborative community to share solutions for the betterment of all of its members.
- Knowledge Management-based strategies, standards, and solutions are applicable to all utilities, regardless of their individual characteristics.

Steps to Address KM



- Develop a common language and framework for KM
- Surface “best-in-class” KM applications from outside and within the industry
- Develop strategies for the effective retention of knowledge
- Define Taxonomy standards
- Define and pilot “Communities of Practice”
- Develop Knowledge Life Cycles for core processes
- Align KM strategies with business and technology plans



Make Knowledge Management a Process

- Assess your readiness
- Develop the strategy
- Start with some Pilot Projects
- Get the technical infrastructure in place
- Deploy and train
- Refine and evolve into your culture



Evolution – Adapting to Change

- Evolution is critical to sustainability (survival)
- Knowledge Management is an organizational evolution, encompassing people, culture, processes, and technology, aligned with business objectives
- Philosophically, KM strategies must be embedded into each initiative the utility undertakes, and done as “normal” business

Knowledge Management is a Journey



***“A journey of a thousand miles
begins with a single step.”***

Lao-tzu





Thank You

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