

VTScada

Software for Monitoring & Control

The 5 Most Common Topics at ACE 2015

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5 Most Common Questions at AWWA ACE 2015



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Agenda



Industry direction

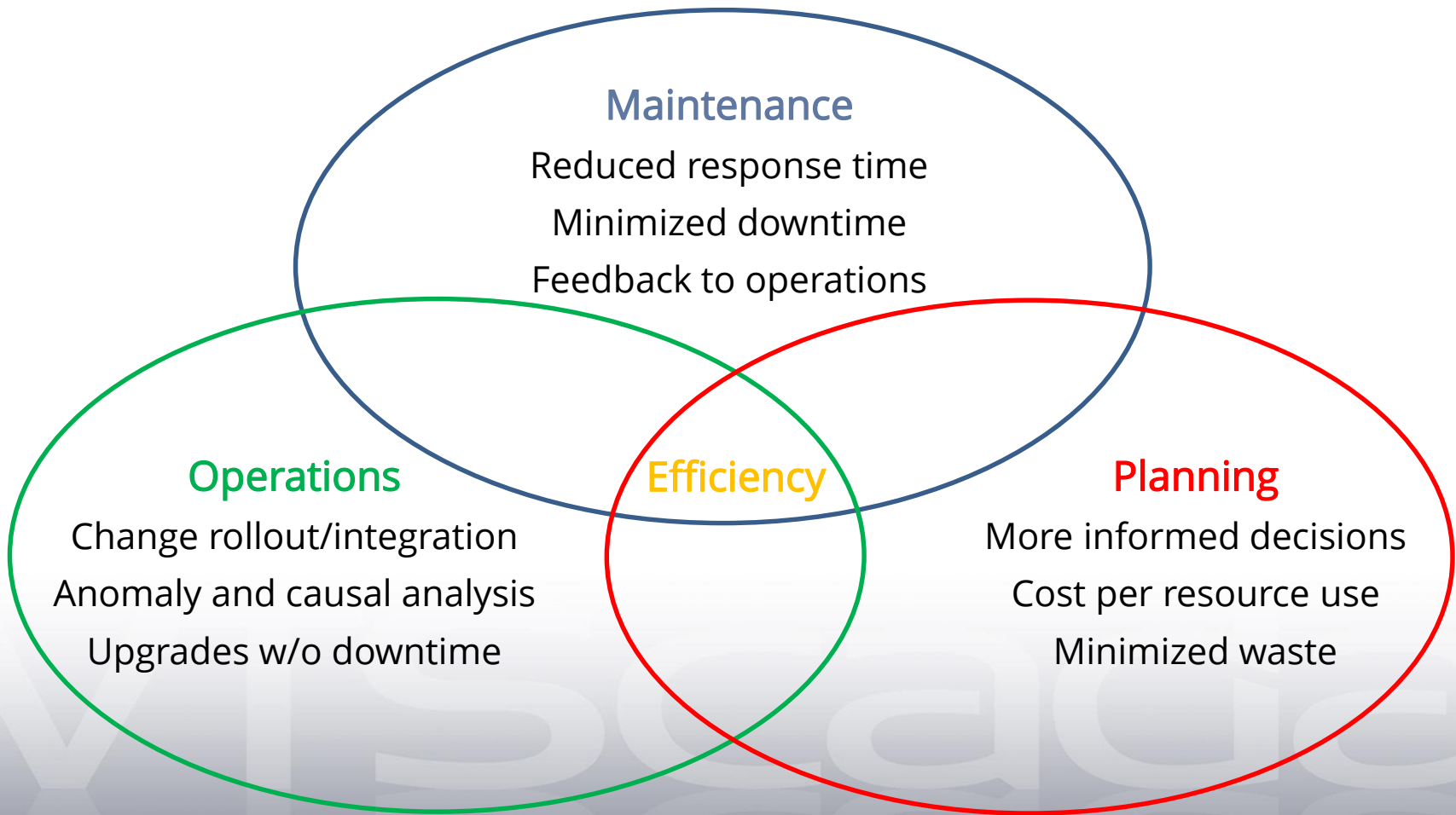
5 most common topics from ACE 2015

Lessons learned

Water/Wastewater Industry Direction



Where is the industry trending?



Common Questions

1: How do I get started?



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Build for today. Plan for tomorrow.

Every utility's expectations are different.

"I have nothing and need SCADA. What do I need?"

Advantage in standardization and wide selection of components.

Even with large capital budget, plan for progressive build with "adjustment" periods.

"I have a well established legacy system. It's too expensive to change."

What are the next 5 year's legacy software support costs vs the cost to migrate?

Software is the keystone. Choosing a flexible, scalable and open platform will ease the path to well organized migration.

First Steps

Define Goals

- What would you like to accomplish with SCADA?

Take Inventory

- What, if anything, is currently installed (controls, communications, computers, software)?

Evaluate

- Identify costs and risks.

Plan

- Create a rollout plan to match the resources (time, budget and people).

Understand Open Architecture and Open Source

Open Architecture (OA)

- Open Architecture software allows easy integration of a variety of components
- Most utilities have migrated from proprietary to OA platforms
- Often includes adoption of current standards. Common ones include:
 - I/O drivers for many manufacturers' components
 - Data connections to other software systems

Open Source

- Open Source refers to a software licensing methodology
- Software can be freely used, shared, and modified
- Caution: May be subject to diverging functionality paths and Open Source licensing

Keeping the Check in Check

The REAL costs of maintaining your SCADA software:

- SCADA software license support and upgrades
- Computer hardware
- Operating system licenses
- Networking
- Security appliances

Efficient software platforms use computer resources more efficiently. Cost savings opportunities:

- Less expensive server computers
- No need for dedicated Historians or I/O Servers computers (and OS)
- Less networked computers = less network connections = simpler security mgmt.

Common Topics

2: Standardization Options

Thoughtful Upfront Design

Standardization is key

- Standardize on labels and color meanings (red = hot OR off OR alarm?)
- Develop data structures, graphic layouts and menu flow around common use-case scenarios
- Create reusable data and graphic templates
- **NOTE: Not everything can be standardized! Be ready to adapt!! Rigid enforcement of rules can hinder future supportability.**

To apply “High Performance HMI” techniques or not

- Concepts for easing recognition of anomalous conditions
- Focus on standardization, decluttering and easy deviation recognition
- Best for continuous process with little variability

The Benefits of Continuity

Standardization creates continuity. Continuity creates confidence.

Continuity across the plant or telemetry application

- Simplified training for onboarding employees
- Consistency minimizes confusion during high stress situations
- Simplified deployment of new assets (i.e. pump N similar to pump 1, pump 2, etc)

Continuity across the utility

- Reduces cross-training time in multi-plant environment

Templates and the VTScada OEM Layer

Templates enforce consistency. An OEM layer is a set of templates and tools upon which other applications are based.

Features

- Templates supported for data, graphics, displays. Deviations are supported.
- Nested templates (i.e. common station includes 2 or more common pumps)
- All changes saved to VTScada's Version Control system

Benefits of rolling templates into an OEM layer

- Templates are developed and maintained by separately authorized users
- OEM layer templates and tools are available to all utility applications.
- Changes and new tools to templates are automatically deployed utility-wide

Common Topics

3: Security

Balancing IT and Operational Demands

Securing water infrastructure is a Department of Homeland Security priority

Security Management

Interest in migration of SCADA and operating system security paradigms

SCADA/business integration is driving greater IT involvement

Greatest concern is mitigation of potential “disgruntled employee” risks

Remote Access

Remote access is unavoidable due to a variety of factors

- Operators have gone mobile. No longer sitting in front of a console
- Quicker problem response expected by public
- Culture of connectivity - BYOD (Bring your own device)

Concerns

- Most SCADA operations teams unfamiliar with encryption methods
- Users want to minimize security login interruptions

Applied VTScada Security

Features

- Assignment of user roles within SCADA security
- Authentication of roles within Windows security environment
- Privilege assignment to roles retained within SCADA environment
- Security changes applied immediately to all SCADA network nodes
- Card reader support for login

Benefits

- IT manages Authentication. SCADA admin manages Authorization
- Accounts can be quickly disabled by IT across all systems
- Higher security with minimal operational burden

Common Topics

4: Scalability

Scalable Architecture

SCADA requirements evolve. Systems must expand to meet demand.

Hint: Remember Open Architecture??

Requirements at the single plant or telemetry system level

- Add new instrumentation
- Incorporate new packaged processes
- Add remote stations
- Implement redundancy

Requirements at the utility level

- Migrate additional plants/telemetry systems to the same SCADA platform
- Utility-wide reporting
- Integrate SCADA and planning/billing software systems

Enhanced Planning and Decision Making

Utilities are realizing the power of centralized data, however, adoption is slow.

Requirements

- Early problem recognition/improved reaction
- Seamless integration of operations and maintenance
- Minimizing non-revenue water

Data sources commonly available

- Computerized Maintenance Mgmt/Work Order Mgmt
- Geographical Information Systems
- Advanced Metering Infrastructure
- Lab Information
- External data, such as weather

Applying VTScada's Distributed Architecture

Features

- Leverage standardization and use of templates
- Redundant servers easily deployed.
- Distribute services across networked SCADA nodes, even geographically separated
- New plants integrated into centralized application but act autonomous
- Standard M2M connectors (ODBC, OPC, SOAP) for software interconnectivity

Benefits

- Quick expansion with minimal errors
- Enhanced reliability
- Centralized management for changes, security and M2M interconnections

Common Topics

5: Sustainability

Maintaining vs Integrating

Some utilities want the power to configure their SCADA software internally. Many rely on integrators for major enhancements.

How utilities see it

- Self sufficiency. Ease-of-use tools for basic tag and graphic changes
- Responsiveness. Remote support preferred over on-site

How Integrators see it

- Remote support options reduce travel. Software must support this
- Remote access for monitoring is essential to responsiveness

The Out of Business Problem

Some large California utilities face a relatively unique problem. Software vendors are either very small or have gone out of business.

Situation

- Early adoption of non-mainstream software
- Standards developed around adopted platform
- Technology abandoned by manufacturer
- Change is seen as either too expensive or too disruptive

VTScada Support and Upgrades

Support

- 28 years developing and supporting a single, evolving software platform
- Technical support is actually technical
- Remote access to most client applications

Version Upgrades

- Customer's product enhancement requests define product development path
- Upgrades available on-demand
- VTScada globally used & NOT part of a company with competing software products

Benefits

- **Short term:** Responsive, reliable support
- **Long term:** Confidence in future continuity of upgrades and service

Lessons Learned

Summary

- Industry is trending toward efficiency. Existing problems impede progress
- Good upfront planning creates a scalable foundation for long-term build-out
- Need to balance culture of security and operational effectiveness
- Software system interconnectivity is upon us. What do we want to do with it?
- Integration roles are changing. Customers want self-sustainability
- Customers realizing the value of long-term supportability

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