

ABB Inc.
Consulting



**Enhancing the Asset
Management Function...**
**...With the Right Information at
Your Fingertips**



Focus of This Presentation

1. Enhancing the Asset Management Function

- Review of Critical Issues

2. ABB – The Asset Management Enabler

- Your Partner in Improving Asset Management

3. Advise^{IT} Asset Sentry

- An Asset Information System for Improved Decision-Making



1. Asset Management Issues

- Cost-Reduction Pressures
- Loss of Expertise
- Aging Infrastructure
- Quantifying Investment vs. Risk Relationship
- Costs of Equipment Failures
- Additional Assets Acquired Through Mergers and Acquisitions
- Unorganized Asset Data and Information

More Difficult to Make the Right Decisions

2. ABB - The Asset Management Enabler

Asset Ownership

Holding Structure

- *Equity vs. debt*
- *Leasing vs. own*

Asset Management

Manage Decisions & Returns

- *Planning*
- *Design*
- *Inventory*
- *Maintenance Planning*

Asset Services

Work Management

- *Projects/Retrofit*
- *Operations*
- *Maintenance/Repair*
- *Outsourcing*

Objectives:

- Achieve return on investment
- Government & society goals

- Optimal choice of CapEx/O&MEx
- Control of risk / reliability of supply

- Getting the job done efficiently and safely
- Optimal use of resources, perhaps across many utilities



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The Asset Management Process

Data Collection

- Installed equipment database
- Inspection and maintenance history
- Control & monitoring system data



Integration & Analysis

- Integration of data and information
- Equipment condition assessment
- System-wide summary of asset performance



Work Execution

- Preventive & corrective maintenance
- Project & work order execution
- Management of outsourcing



Decision-Making

- System planning & risk analysis
- Maintenance, inspection, and inventory policies
- Investment & maintenance prioritization

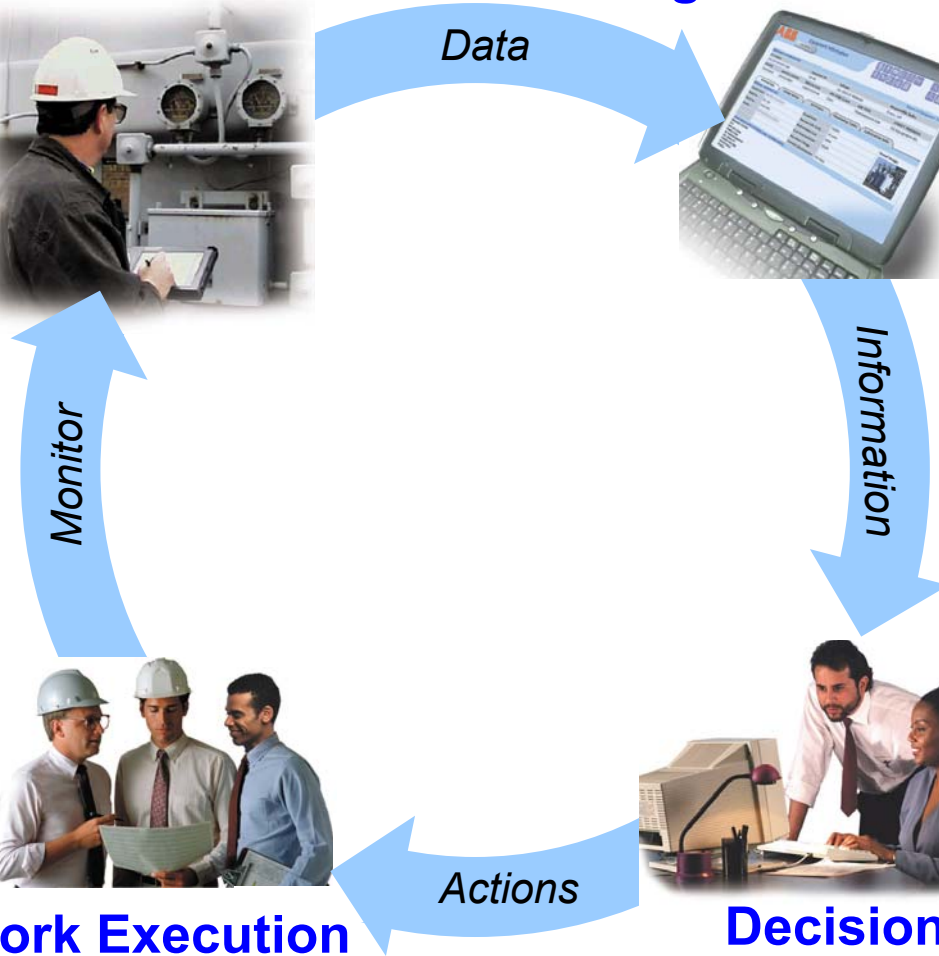


ABB...Providing Support At Every Step

Data Collection

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- Inspection and maintenance history
- Control & monitoring system data



Integration & Analysis

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- Preventive & corrective maintenance
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Work Execution

Services

ABB Is Your Partner In the Asset Management Process



Decision-Making

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- Maintenance, inspection, and inventory policies
- Investment & maintenance prioritization

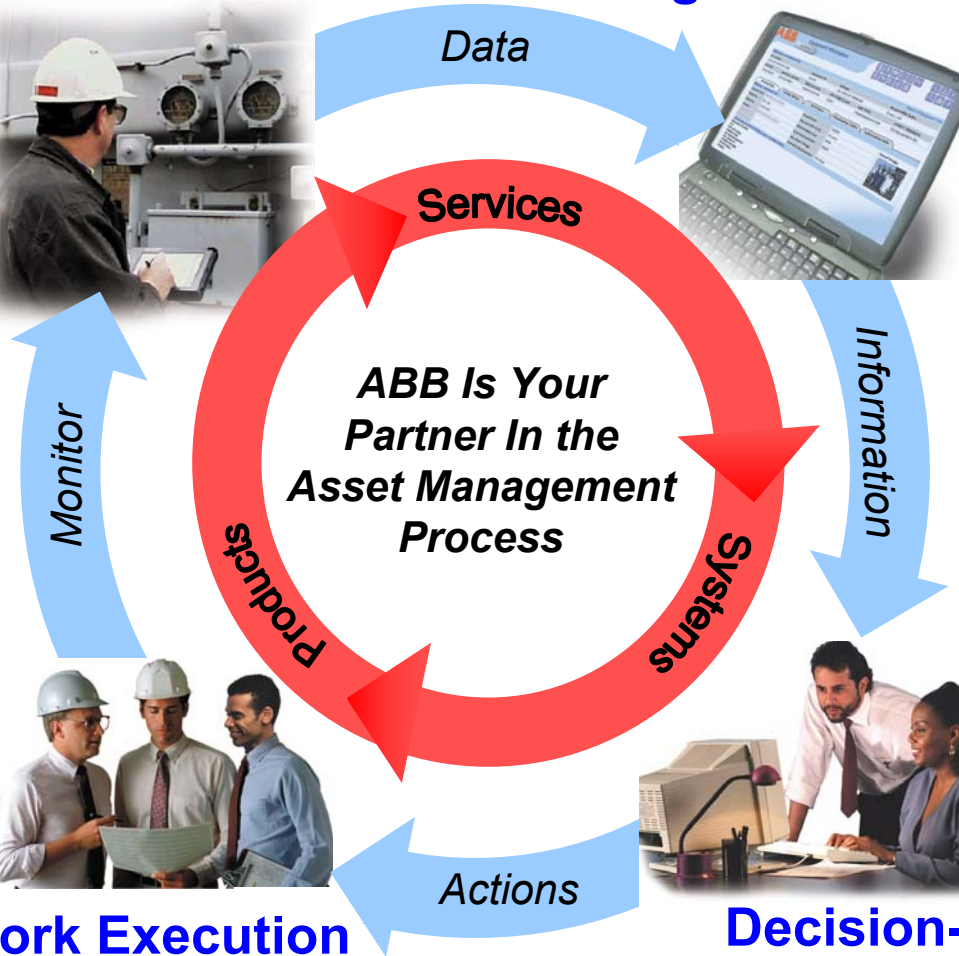
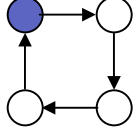


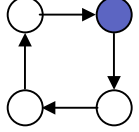
ABB...Assisting with Data Collection



- Control and Monitoring Systems
 - RANGER SCADA System
 - Distributed Control Systems (DCS)
 - Substation Automation
 - CADOPS™ Outage Management System
 - Equipment monitoring systems
- Inspection and Equipment Testing Services
- System Audits and Due Diligence
- Portable, Hand-Held Data Collection Devices
 - Integrated to asset information management system - Asset Sentry



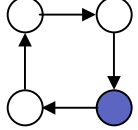
ABB...Assisting with Integration and Analysis



- IT System Integration
 - Integration of CMMS and ERP with Asset Sentry
 - CADOPS™ and CADPAD® integration
- ABB Equipment Expertise
 - Equipment design expertise
 - Condition assessment of ABB and non-ABB equipment, including life assessment and advanced diagnostics
- Advise^{IT} Asset Sentry
 - Data integration, trending, rule bases, and reporting
 - On-line assessment of equipment via internet



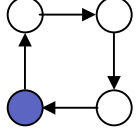
ABB...Assisting with Decision-Making



- System Planning
 - Capacity and reliability/risk
 - Software: CADPAD[®], Power Delivery Optimizer
 - Life extension studies
- Improvement of Maintenance and Inspection Policies
 - Appropriate intervals for time-based maintenance
 - Condition-based maintenance (CBM)
 - Reliability-centered maintenance (RCM)
- Prioritization of CapEx and O&MEx



ABB...Assisting with Work Execution



- Infrastructure Projects
 - Design, engineering, construction, testing, commissioning, project management
 - Turnkey greenfield, retrofit, and system extension projects
- Regional Equipment Service Centers
 - Equipment Repair
 - On-Site Equipment Service
 - Skilled and Unskilled Labor
 - Facilities Management
- Vendor-Managed Inventory



3. Advise^{IT} Asset Sentry

...Enabling Improved Decision-Making in Asset Management



*Experience the power of
web-based asset management*



The Cornerstone of Asset Management...

...is Data Management

How can an organization effectively integrate, manage, and utilize all its data to make the best decisions about its assets?

The solution requires a platform that...

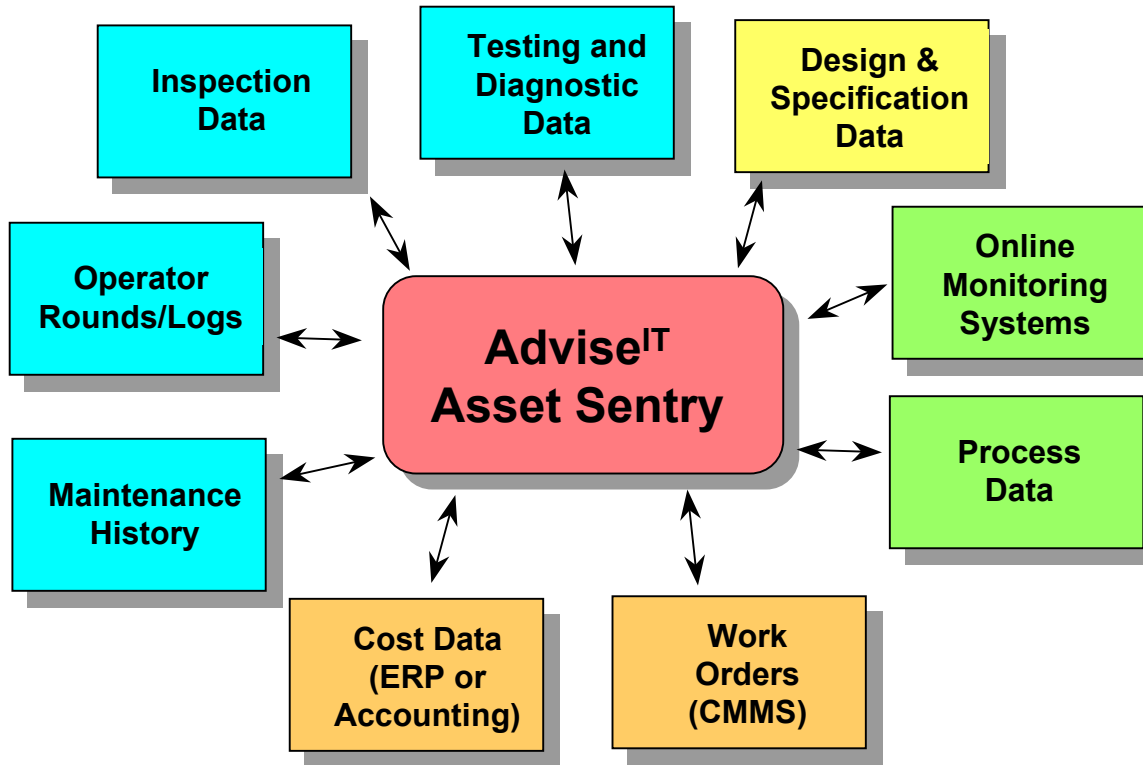
- ▶ Integrates all historic and current asset data...
- ▶ Provides basic decision-support tools...
- ▶ Requires minimum upkeep, and can be easily accessed by all personnel...
- ▶ Provide data to support changes in asset management policies...

Advise^{IT} Asset Sentry

- A New Breed of Asset Information System
 - Web-based decision-support system
 - Makes all the right data and information accessible to decision-makers
- An "Enabler" to Gain Improvements Throughout the Asset Management Process
- Best When Utilized With Other Process Improvements
 - Reliability-based planning and risk analysis
 - Re-examination of maintenance policies
 - Prioritization of CapEx and O&MEx

Tying Your Business Together...

...With Advise^{IT} Asset Sentry



Integrates Islands of Information So That
Timely, Accurate Decisions Can Be Made

Providing Accurate, Timely, Accessible Data...

...With Advise^{IT} Asset Sentry

- Access to data and information, anytime, anywhere through the Internet
- Multiple data entry methods makes data capture easy
 - Upload of data from existing databases
 - Keyboard entry through PC
 - Download of data from mobile hand-held data units
 - Continuous monitoring systems (such as power transformer monitors or circuit breaker monitors)
 - Interfaces with other IT systems (SCADA, DCS, CMMS, etc.)

Bottom Line: Improved Decisions Across
Widely-Dispersed Personnel and Assets

Improving the Inspection Process...

...With Advise^{IT} Asset Sentry

Hand-Held Data Collectors

- Replace check sheets, test forms, and use of paper in the inspection process
- Capture field notes & equipment deficiencies
- Bar-code reading

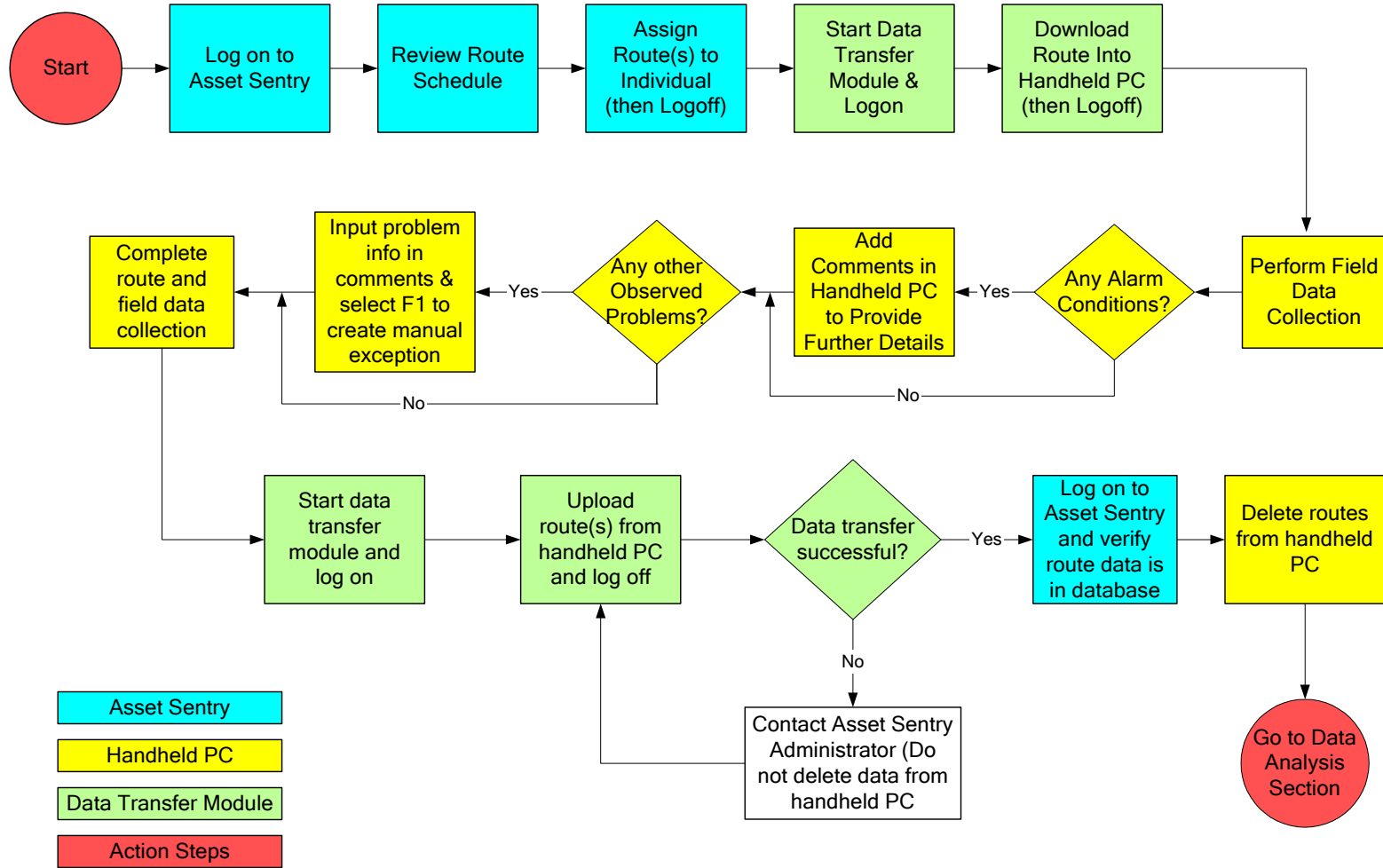
Benefits

- Increased efficiency
- Improved data accuracy
- Reduced input errors
- Alarming for "out-of-spec" conditions
- Easy access to data
- Increased data utilization



Formalizing the Data Collection Process...

...With Advise^{IT} Asset Sentry



Providing Decision-Support to Personnel...

...With Advise^{IT} Asset Sentry

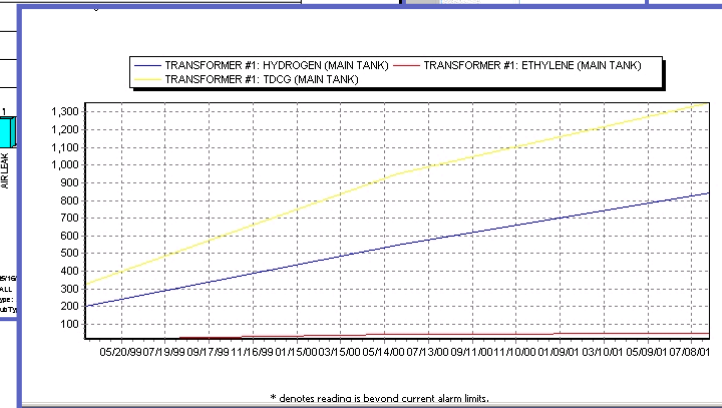
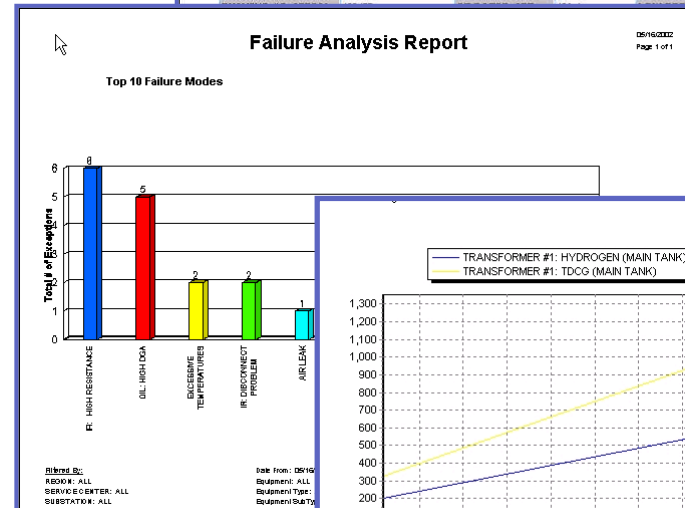
- Integrated Analysis & Trending
- Detailed and Overview Reporting
- Rules & Algorithms
- Automated Notifications Via Pagers and e-mail
- Exception Tracking
- Failure/Root Cause Analysis
- Cost Benefit Analysis
- Document Management
- CMMS Interface Capability

ABB Advise IT™ AssetSentry powered by Webview 2006™

Equipment Information
No Alerts Editing is OFF

EQUIPMENT INFORMATION						Return to Equipment Tree
Description	Equipment ID	Subtype		Responsible Indiv.		
CIRCUIT BREAKER #105	CB-105	OIL CIRCUIT BREAKER		Evans, Jeff		
REGION	SERVICE CENTER	SUBSTATION	VOLTAGE CLASS	SUB TYPE	STREET ADDRESS	
NOR THEAST	MONTGOMERY	SUBSTATION #1	220KV	TRANSMISSION SUB	333 RIDGEVIEW RD.	

General Info	Design Specs	RCM Data	Monitoring Tasks	Lubrication Info	Visual Image Upload
DESIGN SPECIFICATIONS					
# OF TANKS	3	BUSHING TYPE	TYPE U	INTERRUPT TIME	5 mSEC
BUSHING #1: SERIAL #	123456	CONTROL VOLTAGE	120 VOLTS	LOW PRESSURE ALARM	100 PSI
				RE	85 PSI
					75 KV
				AIR	
				PER	200 GAL
				T	5
				ROL	12 AMPS
					600 GAL



Leveraging the Power of the Internet...

...With Advise^{IT} Asset Sentry

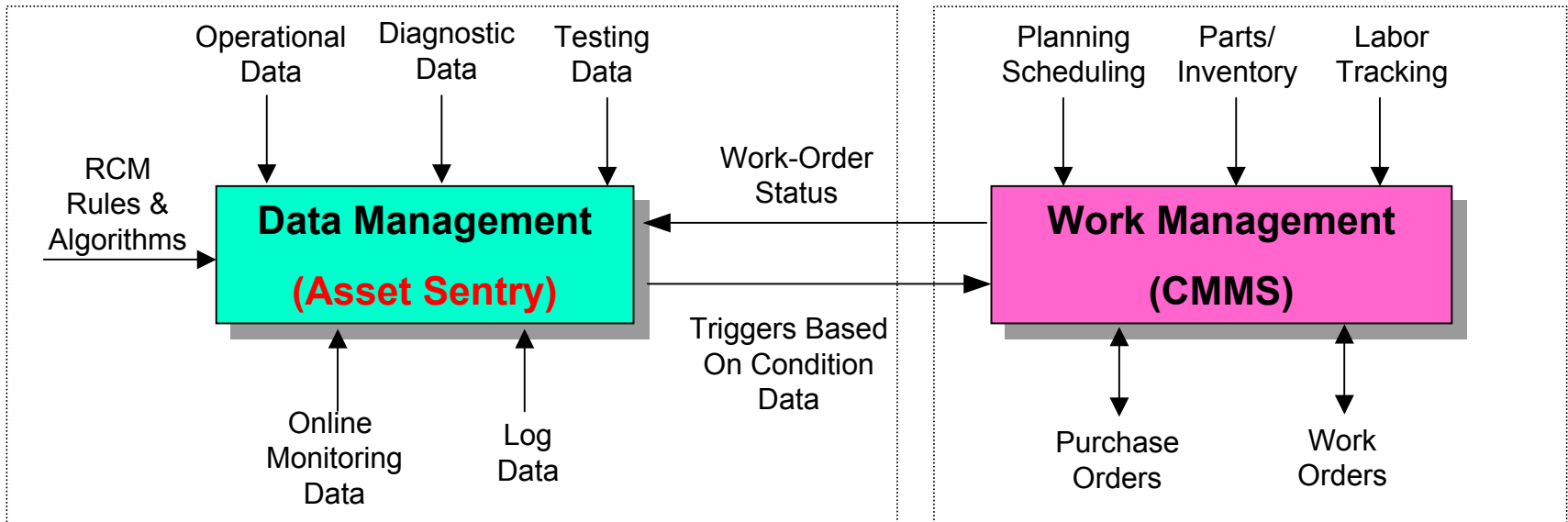
- Easy access to data...anytime...from anywhere
- Lower total cost of ownership
- Zero client side support
- Improved communication & data sharing
- Ability to provide centralized decision support across multiple facilities
- Ability to collaborate with equipment manufacturers & technology experts



Driving Your Work Management System...

...With Advise^{IT} Asset Sentry

Data → *Integration & Analysis* → *Information* → *Action*



Focus is On:

- **Assets - Their Condition and Criticality**
- **What Work is Needed and When**

Focus is On:

- **Work Execution and Resources**
- **Performance of the Work**

Providing the Data Security You Need...

...With Advise^{IT} Asset Sentry

- Daily backup of all data
- All database access is password-controlled
- Single connection to the Internet
- Cisco PIX firewall that inspects each data packet for suspicious activity
- Data transmission uses HTTPS
 - Encrypts with a 128-bit key, assigned by a third-party vendor (Verisign)
 - Ensures the highest possible level of data security and integrity

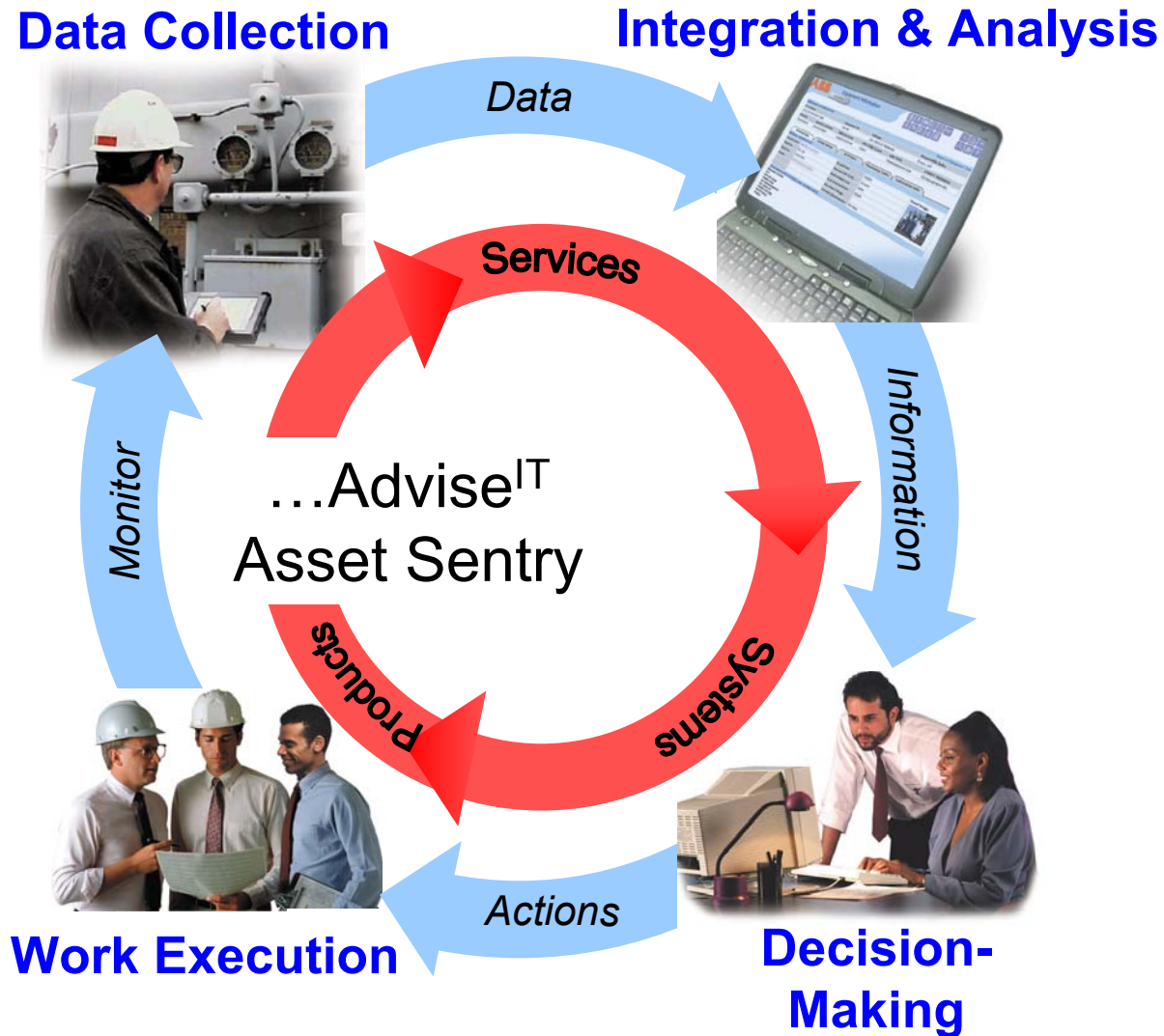
Benefits of Advise^{IT} Asset Sentry

Asset Sentry Enables...

- Improved management of maintenance and capital budgets
 - Data centralization and integration
 - Asset condition and performance tracking
- Improvements to maintenance policies
 - Justify changes based on past results
- Reduction in equipment forced outages
 - Equipment condition tracking
 - Automatic notification of escalating problems possible
- Improved decision-making in the asset management process

Advise^{IT} Asset Sentry

...Assisting With Every Step of the Asset Management Process



Asset Sentry - Initiation, Setup, and Training

ABB assists in a short start-up phase, consisting of the following:

- Assessment of existing inspection and maintenance processes
- Mapping of the data/information collection and utilization processes
- Configuration of the information management system
- Creation of data collection routes and monitoring points
- Loading of historic equipment data and test data
- Identification of alarming and automatic notification features
- On-site user training

Pricing

■ Initial Setup Fee

- Covers the activities listed on the previous slide
- Partially dependent upon number of years of data to be loaded into the system, as well as number and type of interfaces to other IT system to be established

■ Annual Subscription Fee

- Based upon the number of assets and the number of monitoring points

Summary

- ABB's Goal: Enable Improvements Throughout Your Asset Management Process
- Advise^{IT} Asset Sentry - A platform for increasing the effectiveness of your processes
- For more information, contact:
 - Your local ABB sales representative
 - www.abb.com/utilityconsulting
 - Tim Taylor
Executive Consultant
(919) 856-3884
tim.taylor@us.abb.com



Advise^{IT} Asset Sentry



*Experience the power of
web-based asset management*