Automation as the Profit Engine of your Business

EcoStruxure Profit Advisor - Turn industrial automation into the Profit Engine of your business

Kevin Fitzgerald, Director - Global Solutions Architect: Process Automation, Industry Business
Trends and Needs

- Industrial Operations and Power Generation/Distribution are changing at breakneck speeds
- Disruptive forces of change are everywhere
  - Speed of Business (any business!!) continues to increase
  - Technology Changes are driving innovations
- Automation that unlocks new business models and SIGNIFICANT POTENTIAL for our End User and System Integrator customers in four key areas
  - Operations
  - Safety
  - Asset/equipment Reliability
  - …. Profitability!
Turn Industrial Automation into the Profit Engine of Your Business

To Drive Measurable Operational Profitability Improvements – Safely

Uniquely Powered by Schneider Electric

Built on the EcoStruxure Platform

IIoT, Connected Assets, Big Data Analytics Engine, Edge and Cloud Computing

Predicated on Effective Real-Time Process, Reliability and Safety Control

Extends Process Control to Real-Time Profitability Control
Measuring the Benefit from Automation

Turn Industrial Automation into the Profit Engine of Your Business
Profit Engine Functional Architecture

- Profit Measurement
- Profit Control
- EcoStruxure Profit Advisor

- Profit Empowerment

- Profitable Safety
- EcoStruxure Safety Advisor

- Profitable Efficiency
- EcoStruxure Control Advisor

- Profitable Reliability
- EcoStruxure Maintenance Advisor
EcoStruxure Profit Advisor
Drive Measurable Operational Profitability Improvements – Safely

**Calculates**
real-time accounting factors from standard process historian data

**Measures**
Operational Profitability
Contribution:
Equipment - Unit – Area – Plant assets
Enterprise & Value Chain

**Roll-Up**
Accounting Models

**Industry Specific Versions**
EcoStruxure™ Plant

Apps, Analytics & Services
- The most comprehensive asset performance management system

Edge Control
- The first PAC with built-in Ethernet capability

Connected Products
- The first services-oriented variable speed drives

Profit Engine

Customers
- Food & Beverage
- Water & Wastewater
- Mining, Metals & Minerals
- Oil & Gas
Profit Advisor Differentiators

- Only generally available Real-Time Accounting tool
  - Patent protected
  - Built on Big Data analytics engine (SEEQ)
  - Cloud or on premise
- Works with all major process historians
- Provides Multiple Analytical and Visual Options
- Provides the basis for Measureable Business Value Improvement
- Key Component of Value-based IIoT
An empowered workforce makes better business decisions

Profit Advisor determines how each action and asset affects real-time operational profitability and potential savings, enabling a 3% improvement in production value and 5% reduction in cost per year.
Examples of Prior Real-time Accounting Diagnostic Successes

Use of Real-time Accounting with Dynamic Performance Measures in a Diagnostic Approach…

- Eli Lilly- Kinsale Solvent Recovery Plant
- African Rainbow Minerals
- Cleveland Cliffs
- Reliance- Jamnagar Refinery- CDU and Power Plant
- BASF- Freeport Complex: Anone 1 and 2 Oxidation and Distillation Areas
- Sasol- Sasolburg, SA: Chemicals Steam Plant
- Lubes Additive Plant- Beaumont Refinery
Measure, Empower, Improve
EcoStruxure Profit Advisor Capabilities

• Historical Data Review & Analysis
  • Past Operational Profitability Profile
  • Golden Operation

• Real-Time Performance Indication
  • Continually Displays Operational Profitability
  • Engine for Workforce Empowerment
  • Operations, Maintenance, Engineering, Supervision & Management

• Profit Planning
  • Projects Profit Potential into Future
  • Combined Simulation & Modelling Tools
EcoStruxure Profit Advisor Technology

Profit Advisor

INDUSTRY SPECIFIC PLUG-IN

SeeQ ANALYTICS ENGINE

Process Historian
SEEQ – Partner Technology Capabilities

Key to empowering the Profit Advisor….

- Connect to data - time series and other sources for context
  - Concept of capsules
- Large data sets - characteristic of process time series data the norm
  - Big data at its heart….
- Rich calculation and formula development
- Asset and process segment modelling
- Compelling success cases across many industry segments
  - Pharma
  - Chemicals
  - HVAC

Empowering Performance
Enhancing Insights from YOUR data assets….
Real-time Accounting Decomposition

- Identify process logical and process steps

**Process**

- converts inputs to an output via the use of energy and chemical transformation with other materials possible along the way...

- The Process Model...

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<th>Production</th>
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Possible CHP Model
HVAC Performance Management

Equipment acts to remove evaporative load/ambient humidity prior to main Building complex Chillers

• Pay for performance contract to insure unloading of chillers in summer months and $$ savings

Demonstrated 72.5 MW reduction in power use via SoCal Edison results

Use of underlying Profit Advisor SEEQ tool to identify and aid in rectifying issues associated with underlying equipment performance

Engineering analysts use repeatable and re-usable assessment capabilities to track and RCA potential bad actors, ensuring sustained, “optimal” performance
Utility Wind Power Curtailment Impact Analysis

- Large IOU with considerable renewables footprint - mostly wind turbines
- Wind Power curtailment due to supply constraints is common issue
- Cost Recovery possible with supporting analysis
- Underlying Profit Advisor SEEQ engine used to identify curtailment impacts and allow monetization
- Complex analysis from multiple data sources insured cost recovery across fleet

EcoStruxure Profit Advisor Value

- Enables Effective Business Diagnostic of Profit Constraints
- Empowers Workforce to Learn how to Drive Operational Profitability
- Makes ROI of Improvements Measureable and Visible
- Repeatable and Scalable – Time to Value

1% to 3% production value improvements
3% to 5% energy and material cost reductions

Value-focused IIoT
Patented Real-Time Accounting
World Leading Safety, Process and Reliability Control
Profit Control Cascaded to Process Control
We turn our customers’ industrial automation investment into the Profit Engine of their business

• Value-focused IIoT solutions, expertise enabled by EcoStruxure Plant