Typical control performance

- 10%-35% of control loops are in manual
- 30% of control valves have problems
- 1.5M to 5.3M in under utilized assets by running in manual in a 1000 loop site
- Are you focusing on the right field devices?
- 30% of control loops are tuned incorrectly, increasing variability in the process
- A tremendous amount of money can be saved by understanding the control loop interactions and implementing corrective action

Optimized process controls for optimum performance
Set performance goals and KPIs

- Establish performance goals and KPIs
- Metso experts will provide key performance indicators (KPI) and set an initial performance benchmark. This helps you to quickly and easily measure the performance of your process controls.

Measure and report on performance and profitability

- We monitor performance over time, and identify the controls that have a negative impact on process performance. Using this in-depth information, we provide regular reports identifying control issues and potential solutions, track the results of corrective actions and highlight progress against the agreed KPIs.

Getting to the core of the problem

- PlantTriage software quickly identifies poor controls. Our experts assess the likely root cause and, where necessary, visit your site for verification. We then recommend corrective actions which can include repair, upgrade, a new control strategy, or optimizing the control response.

Prioritized corrective action

- We prioritize corrective actions to the areas that have the most significant impact on production efficiency, where economic value is greatest, and where you will get the fastest payback.

Corroborated corrective action

- We corroborate corrective actions and controller tuning to ensure an optimal control response. We identify potential parameter changes, simulate the controls to test the impact of the changes and, when verified, work with you to implement the changes in the live system.

Controls are tuned to meet the demands of your process, whether that means improving stability or reducing variation, or increasing speed of response. We also suggest setpoint moves that capture the business value from these improved controls.

Concrete results, fast payback

KPIs: Optimized control systems can deliver significant improvements in:
- Manufacturing efficiency
- Production output
- End-product quality
- Water management
- Energy and raw material costs

Although the goals are clear, they can be difficult to achieve due to:
- Too much process data
- Limited manpower
- Skill shortages
- Too many day-to-day tasks to handle

Metso offers a complete control performance optimization package:
- Access to world-class expertise
- Award-winning smart tools (PlantTriage)
- Optimization activities focused on controls providing the greatest return
- Identifies the root cause of control issues
- Prioritizes corrective actions
- Regular reports and automatic notifications
- Track record of controls optimization

A positive impact on the entire plant

An increased focus on performance and profitability across an entire business can mean:
- Improved manufacturing efficiency
- Increased production output
- Higher end-product quality
- Improved water management
- Reduced energy and raw material costs

Platform

- Site evaluation
- PlantTriage software
- Hardware
- Implementation
- Training

Surge

- Detailed site evaluation
- Baseline
- Corrective actions
- Value documentation

Sustain

- Continuous improvement
- Repair and correct issues
- Identify additional surges

Through the surge performance assessment package, we can help you improve performance in:
- Improved manufacturing efficiency
- Increased production output
- Higher end-product quality
- Improved water management
- Reduced energy and raw material costs

Although the goals are clear, they can be difficult to achieve due to:
- Too much process data
- Limited manpower
- Skill shortages
- Too many day-to-day tasks to handle

Customer case with proven results

Challenge

- Improve energy efficiency in production lines
- Reduce disturbance upset to production lines
- Identify and fix control loops
- Choose KPIs to measure performance on different types of loops and control objectives
- Use KPIs to benchmark performance at different sites

The Metso Solution

- Install monitoring tool on 500 control loops
- Train staff
- Analyze and diagnose performance issues identified
- Document problem and resolution method
- Integrate process into routine maintenance

Results

- Furnace general thermal balance improvement = 2.73% reduction in natural gas (Plant V)
- Gas pressure control = 3.69% reduction in natural gas (Plant VI)
- Temperature control = 1.35% reduction in natural gas (Plant VII)
- PID controllers’ tuning and the consequent reduction of the average control error of the loops at each unit operation
- Increase in the operators’ response time to disturbances in the process
Establish performance goals and KPIs
Metso experts will provide key performance indicators (KPI) and set an initial performance benchmark. This helps you to quickly and easily measure the performance of your process controls.

Measure and report on performance and profitability
We monitor performance over time, and identify the controls that have a negative impact on process performance. Using this in-depth information, we provide regular reports identifying control issues and potential solutions, track the results of corrective actions and highlight progress against the agreed KPIs.

Getting to the core of the problem
Plant Triage software quickly identifies poor controls. Our experts assess the likely root cause and, where necessary, visit your site for verification. We then recommend corrective actions which can include repair, upgrade, a new control strategy, or optimizing the control response.

Prioritized corrective action
We prioritize corrective actions to the areas that have the most significant impact on production efficiency, where economic value is greatest, and where you will get the fastest payback.

Corrective actions can be carried out by Metso’s service team. Alternatively, we work with your suppliers to ensure the appropriate repairs, upgrades, or control strategy changes have been implemented. The impact of the corrective actions is measured by continuous monitoring of control performance.

Ongoing performance improvement
We identify appropriate corrective actions and control tuning to ensure an optimal control response. We identify potential parameter changes, simulate the controls to test the impact of the changes, and work with you to implement the changes in the live system.

Controls are tuned to meet the demands of your process, whether that means improving stability, reducing emissions, or increasing speed of response. We also suggest on-site changes that capture the business value from these improved controls.

Sustain continuous improvement
We prioritize corrective actions to the areas that have the most significant impact on production efficiency, where economic value is greatest, and where you will get the fastest payback.

Corrective actions can be carried out by Metso’s service team. Alternatively, we work with your suppliers to ensure the appropriate repairs, upgrades, or control strategy changes have been implemented. The impact of the corrective actions is measured by continuous monitoring of control performance.

Continuous performance improvement
We identify appropriate corrective actions and control tuning to ensure an optimal control response. We identify potential parameter changes, simulate the controls to test the impact of the changes, and work with you to implement the changes in the live system.

Controls are tuned to meet the demands of your process, whether that means improving stability, reducing emissions, or increasing speed of response. We also suggest on-site changes that capture the business value from these improved controls.

Fast identification of areas having the greatest production impact
KPIs: Optimized control systems can deliver significant improvements in:
- Manufacturing efficiency
- Production output
- End-product quality
- Waste management
- Energy and raw material costs
Although the goals are clear, they can be difficult to achieve due to:
- Too much process data
- Limited manpower
- Skill shortages
- Too many day-to-day tasks to handle

Metso offers a complete control performance optimization package:
- Access to world-class expertise
- Award-winning smart tools (PlantTriage)
- Optimization activities focused on controls providing the greatest return
- Identifies the root cause of control issues
- Prioritizes corrective actions
- Generates reports and automatic notifications
- Track record of controls optimization

Concrete results, fast payback

Platform
- Site evaluation
- PlantTriage software
- Hardware
- Installation
- Training

Surge
- Detailed unit evaluation
- Baseline
- Corrective actions
- Value documentation

Sustain
- Continuous improvement
- Baseline and correct issues
- Identify additional surges

Additional sustain profit

Customer case with proven results

Vale S.A. Brazil
Challenge
- Improve energy efficiency in production lines
- Reduce disturbance upsets to production lines
- Identify problem control loops
- Choose KPIs to measure performance on different types of loops and control objectives
- Use KPIs to benchmark performance at different sites

The Metso Solution
- Install monitoring tool on 500 control loops
- Train staff
- Analyze and diagnose performance issues identified
- Document problem and resolution method
- Integrate process into routine maintenance

Results
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- Gas pressure control = 3.69% reduction in natural gas (Plant VI)
- Temperature control = 1.35% reduction in natural gas (Plant VII)
- PID controllers’ tuning and the consequent reduction of the average control error of the loops at each unit operation
- Decrease in the operator’s response time to disturbances in the process

Platform
- Site evaluation
- PlantTriage software
- Hardware
- Installation
- Training

Surge
- Detailed unit evaluation
- Baseline
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Sustain
- Continuous improvement
- Baseline and correct issues
- Identify additional surges

Platform Surge Sustain
1-2 Months 6-12 Months 3 Years

A positive impact on the entire plant
Establish performance goals and KPIs
Metso experts will provide key performance indicators (KPI) and set an initial performance benchmark. This helps you to quickly and easily measure the performance of your process controls.

Measure and report on performance and profitability
We monitor performance over time, and identify the controls that have a negative impact on process performance. Using this in-depth information, we provide regular reports identifying control issues and potential solutions, track the results of corrective actions, and highlight progress against the agreed KPIs.

Getting to the core of the problem
PlantTriage software quickly identifies poor controls. Our experts assess the likely root cause and, where necessary, visit your site for verification. We then recommend corrective actions which can include repair, upgrade, a new control strategy, or optimizing the control response.

Prioritized corrective action
We prioritize corrective actions to the areas that have the most significant impact on production efficiency, where economic value is greatest, and where you will get the fastest payback.

Corrective actions can be carried out by Metso’s service team. Alternatively, we work with your suppliers to ensure the appropriate repairs, upgrades, or control strategy changes have been implemented. This impact of the corrective actions is subsequently followed by continuous monitoring of control performance.

Ongoing performance improvement
We identify appropriate corrective actions and control tuning to ensure an optimal control response. We identify potential parameter changes, simulate the controls to test the impact of the change and, when verified, work with you to implement the changes in the live system. Controls are tuned to meet the demands of your process, whether that means improving stability, reducing variation, or increasing speed of response. We also suggest setpoint moves that capture the business value from these improved controls.

Controls are tuned to meet the demands of your process, whether that means improving stability, reducing variation, or increasing speed of response. We also suggest setpoint moves that capture the business value from these improved controls.

KPIs: Optimized control systems can deliver significant improvements in:
- Manufacturing efficiency
- Production output
- End-product quality
- Water management
- Energy and raw material costs

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- Award-winning smart tools (PlantTriage)
- Optimization activities focused on controls providing the greatest return
- Identifies the root cause of control issues
- Prioritizes corrective actions
- Regular reports and automatic notifications
- Track record of controls optimization

Concrete results, fast payback

Results
- Furnace general thermal balance improvement = 2.73% reduction in natural gas (Plant V)
- Gas pressure control = 3.69% reduction in natural gas (Plant VI)
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- Decrease in the operations’ response time to disturbances in the process
- Decrease in the operation’s response time to disturbances in the process
- Increase in the operation’s response time to disturbances in the process

Customer case with proven results

Platform
- Site evaluation
- PlantTriage software
- Hardware
- Installations
- Training

Surge
- Detailed root cause evaluation
- Baseline data
- Corrective actions
- Value documentation

Sustain
- Continuous improvement
- Baseline and correct issues
- Identify additional surges

Additional sustain profit

Surge profit
Typical control performance

- 10%-35% of control loops are in manual
- 30% of control valves have problems
- 1.5M to 5.3M in under-utilized assets by running in manual in a 1000 loop site
- Are you focusing on the right field devices?
- 10% of control loops are tuned incorrectly, increasing variability in the process
- A tremendous amount of money can be saved by understanding the control loop interactions and implementing corrective action
Typical control performance

- 10%-35% of control loops are in manual
- 30% of control valves have problems
- 1.5M to 5.3M in under utilized assets by running in manual in a 1000 loop site
- Are you focusing on the right field devices?
- 20% of control loops are tuned incorrectly, increasing variability in the process
- A tremendous amount of money can be saved by understanding the control loop interactions and implementing corrective action