

Costs generated by poor Operational Integrity in Process Automation

The ability to achieve consistent and maximum asset performance is not based on random selection or luck. It is based on a planned and structured approach aligning needs during all phases of your asset's life cycle.

A key element in asset performance is its' Operational Integrity (OI), which is ***the measure of how well people, processes, and assets deliver the desired outcome***. In this context, automation is not just the control equipment but includes how people and the process interact with the automation system.

Automation and OI

A well-implemented automation system will have high OI and deliver a steady output if it is operated consistently. It will achieve target outcomes if not immediately, early in its operation.

The result of having low operational integrity will see outcomes vary significantly. The impact will depend on the criticality of the controls and costs associated with diminished performance, but it can be expected that low OI will result in an unnecessary 10%-30% downgrading from target performance at startup. Later in the plants' lifecycle typically OI will improve, but not always. If it starts with low OI, it usually leads to a compromise on potential output throughout its life.

Costs of low OI

The resulting costs can be demonstrated by deviations in production quality and output. Examples of costs in just lost production include:

- Unacceptable quality, lowering actual production below-processed output or loss of value in output.
- Unnecessary delays in operations. Complex tasks, lack of confusing information and poor engagement with staff can all contribute to poor results and additional costs.
- Poor control system design adversely affecting production. There can be a broad range of reasons including poor or insufficient sensors, inappropriate control devices, lack of functional definition, and poor control implementation and validation.
- Downtime due to trips and out-of-range events. A well-implemented automation system will provide warnings of issues, direct identification of faults/failures and in the modern world, alert potential issues that will disrupt production.
- For businesses seeking incremental process output improvements, poor OI will be a severe barrier to achieving this objective and limit gains achieved.
- In certain cases, a lack of compliance due to low OI can generate unwanted interest and outages.

Poor results can be attributed directly to the implementation approach, and lack of consideration and value attributed to OI from the commencement of any project.

Other savings and benefits of having good Operational Integrity include meeting Environmental, Social and Governance (ESG) needs, improved operator engagement, optimising personnel resources, and more effective engagement of outside expertise.

For more information visit our website at www.triplei.com.au/operational-integrity/.

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