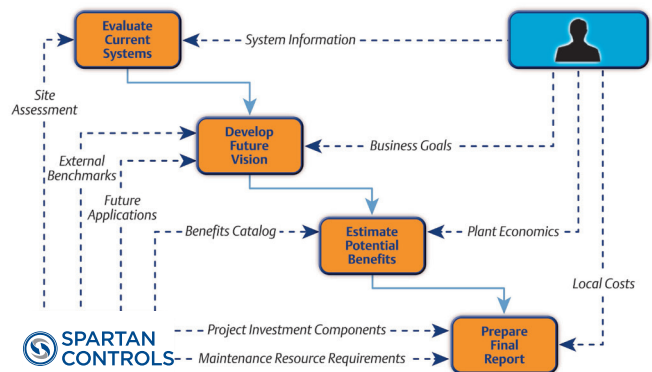


OPPORTUNITY MAPPING

Operational Excellence Solutions

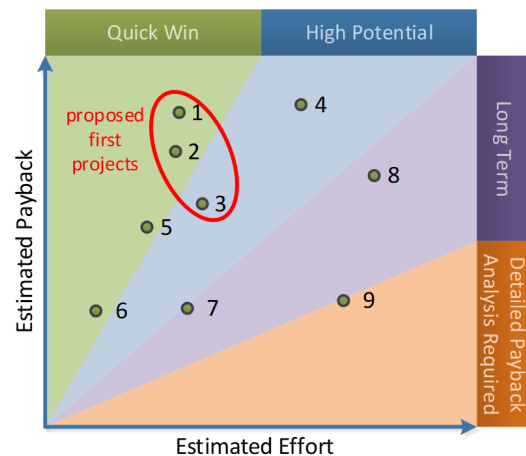
Achieve ROI and meet your objectives with Spartan's opportunity mapping consultations

Opportunity mapping is a structured, consultative process conducted by our experienced engineers to identify and prioritize optimization opportunities to help the facility owners understand where to best invest their resources and time. By leveraging industry and technology best practices, it provides a plan for automation investments with a clear view to a return on investment (ROI) and alignment with organizational objectives.



Opportunity mapping process

By the end of the opportunity mapping process, a road map for optimization will be included as part of the opportunity map report. Each opportunity will be analyzed in terms of **Estimated Effort** and **Estimated Payback**. An assessment of risk level is also conducted. The identified projects with lower effort/risk and higher payback are identified and highlighted as potential first projects.



Each opportunity will be analyzed in terms of Estimated Effort and Estimated Payback

OPPORTUNITY MAPPING

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Opportunity mapping engagements are customized to meet the requirements of our Customer's objectives. In many cases, the focus is on unit performance and application of advanced control for optimization. However, this can be expanded to build a more comprehensive automation master plan. The following are some of the typical areas of study:

Unit Performance

- Controllable parameters
- Unit availability
- Unit maneuverability
- Heat rate
- Environmental emissions
- Start-ups/shut-downs
- Energy reduction and optimization

Operator Effectiveness

- Operator culture
- Graphic user interfaces
- Automated operator guidance
- Alarm management
- Plant-wide systems integration

Information Management

- Data historian
- Information accessibility
- Systems integration
- Decision support tools
- Operations management

Control Design Philosophies

- Control equipment
- Control design
- Automatic sequencing
- Safety shutdown
- Third party device interface

Advanced Control & Optimization

- Process unit analysis
- Powerhouse, boiler and steam systems
- Pulp and paper processes
- Mining grinding and flotation processes
- Chemical processes
- Oil and gas processes
- SAGD oil sands process

Field Equipment & Instrumentation

- Instrumentation
- Valves
- Drives
- Asset management
- Asset reliability

Maintenance Practices

- Spare parts inventory
- Preventative maintenance
- Software back-ups
- System security
- Documentation control
- Software levels and migration plan
- Troubleshooting tools
- CMMS integration