BROCHURE

Front end services
Protecting your future investments
Front end services

ABB has developed a suite of front end services to help operators scope, cost and plan capital projects effectively and efficiently during the early stages.

Building on our expertise and knowledge of front end execution, ABB has developed robust processes, which when combined with sector leading engineering software, provides clients with high quality designs that will successfully underpin subsequent project phases.

ABB’s front end services have been specifically designed to avoid the pitfalls of inexperienced project delivery. Our suite of front end services includes methodologies to assess front end designs and estimates for completeness and accuracy. With the objective to create greater certainty for our clients opposite their capital investment projects.

“Thanks to ABB for the effort in bringing this work to completion in a safe and effective manner. The professional manner with which you completed the work, in trying and sometimes frustrating conditions and circumstances, was good to see.”

Project Manager, SABIC

Capabilities
Process conceptual studies
The initial stages of any project are critical to its success. There are typically a number of alternative technologies or plant configurations that can satisfy the technical brief, however wider business objectives must also be taken into account in order to identify the optimal solution.

ABB’s process conceptual study methodology allows the operator to evaluate multiple options during the early stages of a project with minimal impact on project cost. We work closely with operators to acquire a precise understanding of what the project must achieve. Our experienced engineers will develop differing options and in conjunction with the client evaluate them against the stated project and business objectives.

Rapid and accurate project development
ABB combines its expertise and knowledge of front end engineering with Aspen Capital Cost Estimator, the industry’s leading estimating tool, to prepare accurate, rapid estimates for green field developments or major brownfield revamps. Our philosophy is the estimate should drive the engineering deliverables, thereby keeping the latter and their associated costs to a minimum. Our RAPID process develops sanction grade estimates from conceptual process definitions plus key plant layout data. The tool is particularly powerful at the conceptual stage of a project, providing cost data to support the optioneering required to identify optimal plant configuration. In this way cost is minimised whilst maximum flexibility is retained.
Value analysis
Value analysis is a structured approach to identifying the functional requirements of a project in order to optimise costs and ensure alignment of scope with the objectives. This process typically forms part of the front end development for a project where the greatest savings and value can be realised. ABB has developed a structured five stage approach to promote maximum value and benefit. By working through each stage we seek to challenge preconceptions and identify those areas of scope or execution which potentially could yield cost savings.

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ABB's five stage approach.

<table>
<thead>
<tr>
<th>Information</th>
<th>Creative brainstorming</th>
<th>Functional analysis</th>
<th>Evaluation</th>
<th>Implementation</th>
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Our experience
ABB’s unique capabilities stem from a proven track record in project development and design coupled with the fact our staff have an in-depth understanding of the operational issues faced by manufacturing organisations; indeed many of our engineers have worked on live assets for much of their careers. We work across the majority of sectors and are familiar with the codes, practices and plant operations in each. This leaves us well placed to apply the best practice and learning gained from cross sector working to benefit of all of our clients. ABB’s commitment to our clients is to provide a high quality service that doesn’t disappoint.

Benefits
Working with ABB’s functional engineers and designers brings a range of benefits including:

- Accurate project scoping and definition
- Services specifically configured to support organisations operating in the high hazard industries
- Access to the full range of technical expertise under the one roof
- Focus on delivering business benefits from an operator’s perspective
- Engineering specialists who can take a pragmatic, cost effective approach based on engineering judgement
- Accredited design processes that ensure high quality engineering and design deliverables