# comprehensive
## budgeting of your MES
### with the manufacturing IT scan

## Budgeting and planning your Manufacturing Execution System implementation

**Although the first decade of the 21st century has shown a rapid increase in the adoption of Manufacturing Execution Systems (MES), many global manufacturers still face the challenge of consolidating their manufacturing IT applications across and within their plants. The ability to accurately and comprehensively budget and plan an MES implementation or multi-site rollout is a skill that Atos has perfected and professionalized as a service over the last decade.**

Once the business need for implementing an MES has been established, a project plan needs to be created along with a budget, typically for project justification.

Since the requirements definition and specification phases are often part of the project itself, one of the most common challenges when estimating the cost of an MES project is defining the scope which directly affects the resulting budget.

Another challenge is to make sure that the MES will address the requirements of both the business stakeholders as well as the end-users, and to ensure they match: not only at project start but also during the project when scope decisions have to be taken.

### Typical MES budgeting challenges

- Insufficiently detailed scope
- Changing scope
- Changing business case
- Aligning user requirements and business objectives.

The manufacturing IT scan addresses these challenges by:

- Assessing requirements from four angles: business stakeholders, users, processes and IT
- Leveraging a parametric budgeting model that is based on our M4MES "Methodology 4 MES" framework and contains estimates based on best practices
- Providing a transparent budgeting model that breaks up the full project scope into individual functions
- Leveraging industry best practices from both our M4MES libraries and the ISA-95 industry standard.

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# The use of an established framework assures project scope integrity, completeness and consistency.

## Requirements gathered from the four concerned angles

After the preparation and kick-off phase, we start the analysis with a factory visit and interview sessions to assess MES requirements from four different angles: Physical process, business stakeholders, end-users and IT. Business stakeholders (such as plant, production and quality managers) are interviewed to assess their manufacturing objectives and requirements. End-users such as team leaders, operators and engineers provide the user requirements. IT representatives provide the IT requirements and details on the 'as-is' Manufacturing IT architecture.

During the definition phase, a solution is outlined based on a structured requirements model. The 'to-be' architecture is then defined taking into account the 'as-is' architecture and IT requirements.

In the final phase, required implementation effort, hardware and licenses are estimated and the results of the scan presented in a report.

## A project scope defined quickly with our M4MES framework

Rather than defining project scope with a set of requirements and specification documents that usually makes validation a challenge, our patented M4MES framework allows us to document and manage project scope using a single repository database.

The M4MES framework provides an instant parametric characterisation of the project scope, including the number of supported processes requirements, functions, screens and interfaces, and their complexity. Finally, using an established framework ensures the project scope integrity, completeness and consistency.

The resulting parameters then drive a budgeting model containing level of effort best practices. This approach not only accelerates the creation of an initial project budget, but also enables transparent scoping decisions throughout the project or programme lifecycle. This level of detail and transparency can also be applied to the project's business case as part of the cost-benefit analysis, since the framework links quantifiable business benefits to MES functions.

An additional accelerator is provided through our M4MES industry libraries which consist of pre-defined framework templates, such as requirements and MES functions, related to various types of production and business processes for each industry. These industry best practices can significantly increase MES awareness within your organization.

### M4MES: Atos's project methodology for MES projects
M4MES, Atos' Project Methodology for MES Projects, is tailored and optimized for MES projects and incorporates industry standards: ISA95, RUP/UML, BPMN and SCOR. It consists of three pillars:

- ▶ Industry libraries of industry best practice framework templates
- ▶ A modeling framework to capture solution best practices in templates
- ▶ A standardized, template based project methodology.

Lead-time: the manufacturing IT scan is typically executed in four to six weeks. The amount of effort depends mainly on the processes in the scope (production, quality, logistics, and maintenance), which is agreed upon and based on the ISA95 process model. Another important factor driving the lead-time is the quality and level of detail of requirements. To speed up the requirements definition process significantly, we can provide users with content from our M4MES best practice libraries.

**For more information, contact: dialogue@atos.net**