Gardner Denver

Project Management for EPC contractors.

A Guide to reduce risks, cut costs and improve success rates

Power Generation Industry

Introduction

Project management plan and strategies reduce risks, cut costs and improve success rates. Project management teams control the whole process from the design, through assembly, to commissioning.

This white paper outlines tips in project management for EPC contracts, which need compressed air and vacuum equipment. These include:

- Importance of project management
- Tips in specification analysis
- Tips to reduce costs in the Project Management Life Cycle

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Chapter 1. The importance of Project Management and its benefits

A thorough understanding of the project management process of compressed air and vacuum systems in EPC contracts is indispensable when EPC contractors or engineering companies are awarded contracts from important end-users for engineering, procurement, and construction management services.

Improvement of productivity

Project management leads to improved productivity as there is no ambiguity when technical specification defines what a particular compressor, blower or vacuum system should be doing at any given time. The project management team is critical in analysing all technical requirements to deliver projects efficiently. Create a plan to reduce costs and engineering hours to maximise productivity.

Deliver projects without extra costs

Having an exclusive project management team in EPC contracts helps Gardner Denver create a strategic value chain that gives companies an edge on their competitors, particularly in complex contracts and special applications. This is also a benefit for EPC contractors. Being able to deliver projects on time and without extra costs often determines whether a company will be awarded the project.

Deliver projects ahead of schedule

Anticipating the special needs required by compressors, vacuum pumps and blowers, will save valuable time. Analyse the machines in advance and establish continuous communication with suppliers to ensure delivery times and progress reports to keep the customer up-to-date.

Enhanced Customer Satisfaction

Effective project management and good customer service is reliant on one another. Ensure that the project produces the policies, objectives, and responsibilities expected. For that, communication is vitally important. The majority of friction between the different EPC companies and suppliers in a project is caused by unforeseen delay and unclear or outright lack of information necessary to progress the project. Although this is not easy in international projects, efforts to get closer working relationships, will undoubtedly deliver an atmosphere of openness and trust.

Chapter 2. Tips in specification analysis

Managing a project can be a challenging task. Putting together a well-crafted document that includes all necessary detail, including areas that require special attention based on initial analysis of the customer specification, will be helpful in project management.

The process of studying and analysing the technical specifications is crucial for delivery of the client requirements. The most important content for analyse is as follows:

- **Project description**

Pay special attention to environmental conditions. Site altitude, ambient temperature, typical weather or humidity among other things, have a direct impact on machine selection and customisation options: special packaging, paint, material, special motors and so on. In addition, studying the technical requirements: scope of supply and pressure etc. is fundamental to the correct specification of machinery.

- **Quality Standards**

In general, design, manufacturing and testing methods of plants have to conform to different codes and standards. A thorough understanding of compressed air quality and testing standards is therefore indispensable when designing your system to achieve the purity levels your application requires. The international standards you should apply will depend on the specific contaminants the client needs to remove and the purification equipment you will rely on to do so. In addition, you should take into account the local / international regulations for manufacturing, materials, etc.

- **Explosive environments certification**

If required by the end-user, the machines should be designed to provide air for a multitude of applications in complex conditions and hazardous environments. As with quality standards, ensure your vendor has the necessary certification.

- **System requirements**

This part is of the utmost importance, as vendors are expected to comply with the requirements of the specification. Deviations or exceptions to these requirements must be clearly defined in proposals. Technical requirements are as follows:

- Compressor, vacuum or blower technical description
- Instrument air requirements & service air
- Connections
- Type of refrigeration equipment
- Motor requirements
- Surface preparation and painting
- Electrical requirements
- Instrumentation and
- Control (I&C) requirements

- **Inspection and testing**

Within this section, you will find information on routine tests carried out at the manufacturer’s works in accordance with relevant standards. For the most efficient and timely delivery, you should ensure that an inspection and test plan checklist is implemented.

- **Spare parts and guarantees**

Engage a company that does not require pre-commissioning or commissioning spare parts. Ensure that post-commissioning spare parts in the contractor's scope of supply are available during the construction and commissioning period. Regarding guarantees, the vendor will guarantee compliance of the requirements defined in this specification relative to the following concepts.

- **Documentation**

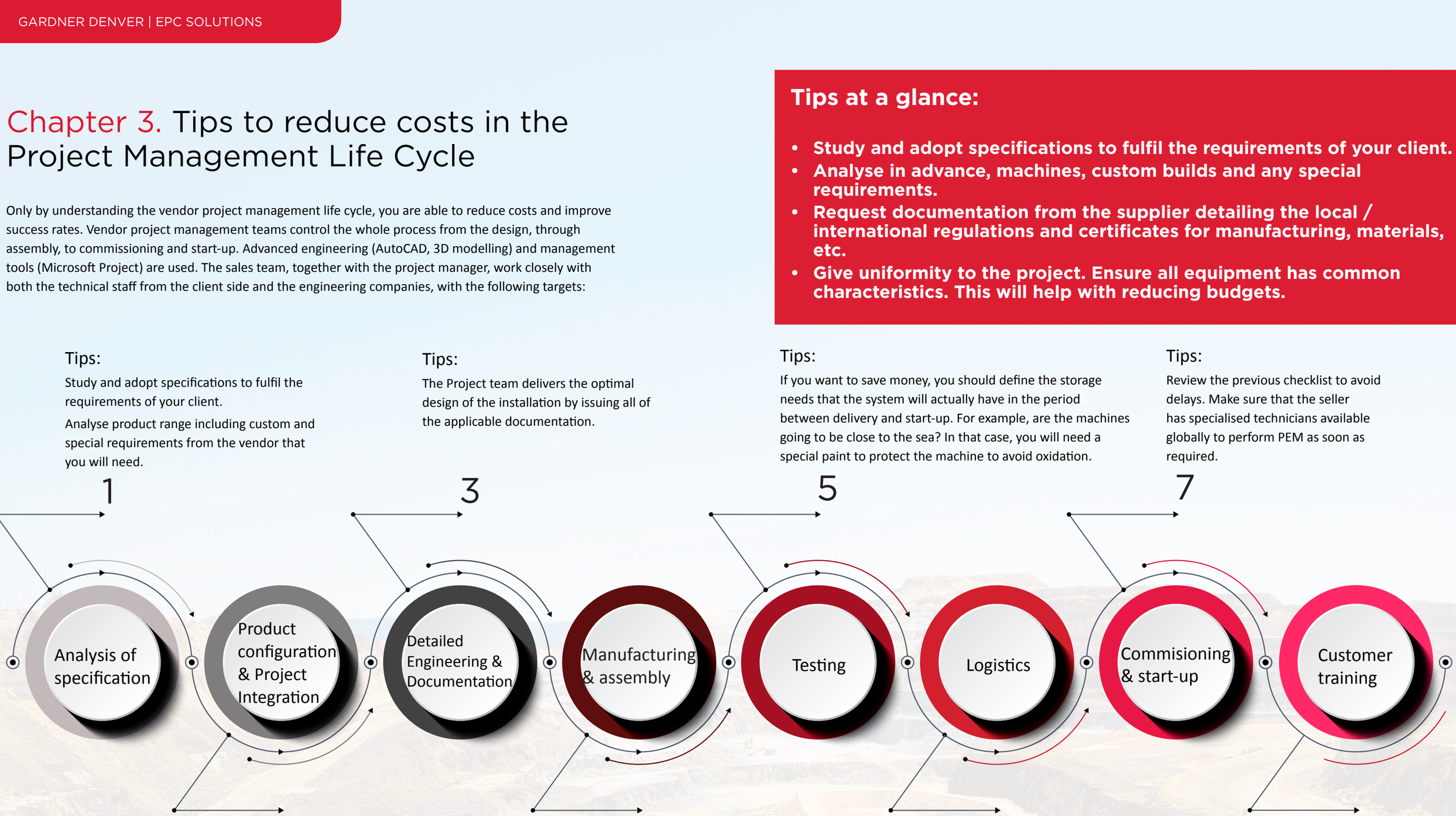
Ensure that all shall submit: technical, quality, logistics & expediting, OSM, PEM...

Chapter 3. Tips to reduce costs in the Project Management Life Cycle

Only by understanding the vendor project management life cycle, you are able to reduce costs and improve success rates. Vendor project management teams control the whole process from the design, through assembly, to commissioning and start-up. Advanced engineering (AutoCAD, 3D modelling) and management tools (Microsoft Project) are used. The sales team, together with the project manager, work closely with both the technical staff from the client side and the engineering companies, with the following targets:

Tips at a glance:

- **Study and adopt specifications to fulfil the requirements of your client.**
- **Analyse in advance, machines, custom builds and any special requirements.**
- **Request documentation from the supplier detailing the local / international regulations and certificates for manufacturing, materials, etc.**
- **Give uniformity to the project. Ensure all equipment has common characteristics. This will help with reducing budgets.**



1

Tips:

Study and adopt specifications to fulfil the requirements of your client.

Analyse product range including custom and special requirements from the vendor that you will need.

2

Tips:

Product configuration should be simplified as much as possible: mark the critical points and focus on them. In addition, analyse the operating parameters, power supply, space required, maintenance and control requirements.

With regards to project integration, be very clear about the needs of the global project, to include the compressed air or vacuum system.

3

Tips:

The Project team delivers the optimal design of the installation by issuing all of the applicable documentation.

4

Tips:

Ensuring that where possible, equipment has common characteristics will deliver uniformity, for example: that all connections are the same or all pipes must be equal. This reduces pressure drop.

5

Tips:

If you want to save money, you should define the storage needs that the system will actually have in the period between delivery and start-up. For example, are the machines going to be close to the sea? In that case, you will need a special paint to protect the machine to avoid oxidation.

6

Tips:

Make sure that the vendor is responsible for the entire process and that documentation of packaging and transport is in accordance to the corresponding ICOTERM. This will save time and avoid problems.

7

Tips:

Review the previous checklist to avoid delays. Make sure that the seller has specialised technicians available globally to perform PEM as soon as required.

8

Tips:

Determine and document the duration of the project and its scope. Check the technical documentation for all the equipment and the inspection reports.

Global Expertise

Industrial Segment

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The Gardner Denver Industrials Group designs, manufactures, markets and services rotary screw, reciprocating and sliding vane compressors in addition to multistage and positive displacement, centrifugal and blowers.

Our global offering also includes a comprehensive suite of aftermarket services to complement our products. Gardner Denver Industrials Group, part of Gardner Denver Inc., is headquartered in Milwaukee, Wisconsin, USA. Gardner Denver was founded in 1859 and today has approximately 7,000 employees in more than 30 countries.

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