Professional management of Palletising projects

How to control the process steps needed to realise a complex palletising project

palletising

January 2022

Projects aiming to realise complex systems for automated palletising are often difficult and risky. How can you mitigate the risks and stay in control?

CONTENT

Introduction
Essentials of project management
Gatekeeping process
Conclusion
How can we help you?

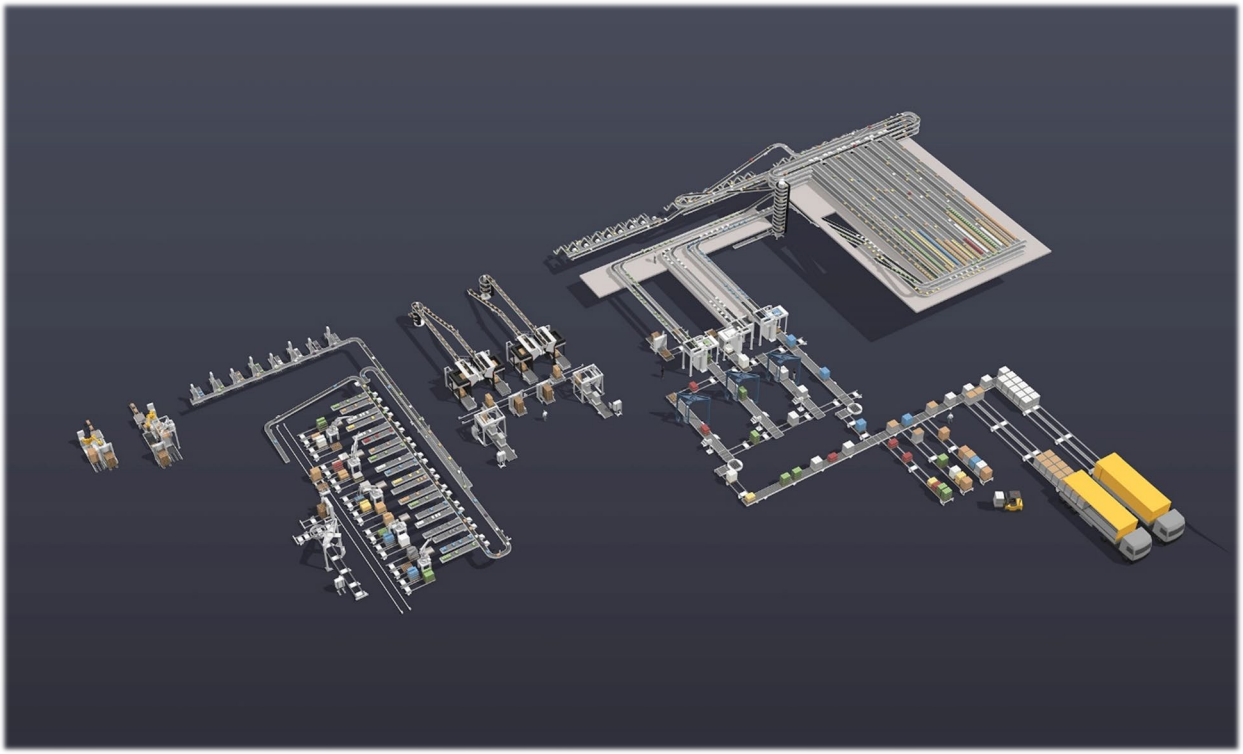
© 2022 CSi palletising

Introduction

Projects to put in place palletising automation typically require an investment of between 600,000 and 4,000,000 euros, with the aim of achieving a return on investment in 2 to 3 years. Successful execution of these projects is key in order to minimise the investment and maximise the benefits.

In most cases, the technical solutions in an automated palletising system are not particularly difficult or risky. However, the number of variables that can influence such a project is immense, and the complexity of such projects stems from these variables, as well as the level of detail that needs to be managed in order to be successful. This is often underestimated and can lead to projects that take too long, run over budget or do not meet the KPIs that are necessary to generate the expected benefits.

In the many years of executing these types of projects, CSi has continuously been learning and improving its project management skills to a level that we are confident to state that we have mastered engineer-to-order palletising projects. In this white paper we want to share our expertise in the field.



Essentials of project management

In successful projects the key elements will have all been handled correctly, based on a thorough risk analysis. The five important elements are:

C = cash/money/budget: prepare an adequate budget and guarantee realisation within that budget. The commitment of people who have non-fixed process timing (e.g., development) is key to be able to meet the overall budget.

S = speed/time: recognise all the risks related to planning, mitigate them and realise all activities in the agreed timeframe

i = information: make sure the information flow in the project and from the project to the external environment is such that mistakes and information flaws are prevented. At every moment during the project, the project manager should know very clearly who to inform about which subject.

O = organisation/structure: the way the project team is configured and the way the environment around the project is organised are decisive for success. Having the right people with the right expertise in the right place in the project structure is another key factor for success. All CSi Project Managers are IPMA certified.

Q = quality/reliability: the equipment and the project process must be of a high level in all aspects. Flaws, especially in the beginning, must not be accepted, because they can influence the whole chain of events in a project.

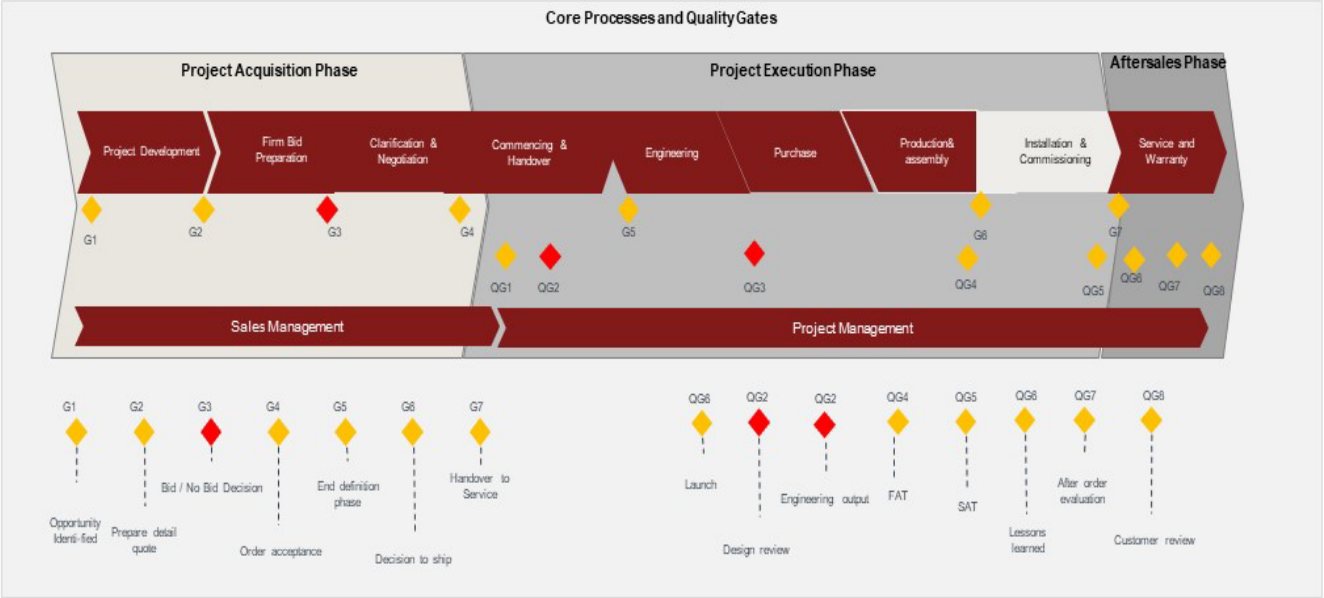
The way to manage successful projects is by carrying out and repeating risk analyses of the five CSi OQ elements in every project phase. Analyses should not be just general, but an in-depth investigation of everything that could influence the project.

This subsequently leads to a number of risk mitigation measures. The earlier in the process this is carried out, the better the quality of the execution will be. A rule of thumb for this is: '**1-10-100-...**'. Meaning that, if needed, it is better to spend 1 hour extra in the project preparation phase, because that will save you 10 hours during engineering, 100 hours in production/assembly — and possibly a great deal more if an issue is discovered during on-site work or in after-sales service.

Gatekeeping process

Within CSi, the challenge of executing projects has led to a structured process from start to finish. This is termed ‘Gatekeeping’ and is based on a stage-gate structuring of the development process (see the ‘process model’ image).

Basically, there are three phases: the acquisition phase, the execution phase and the aftersales phase. In each phase, several milestones (‘G’ = ‘GATE’) and checkpoints (‘QG’ = ‘QUALITY GATE’) are built in. The person responsible for any phase (sales engineer, project manager or customer service manager) must present their proposal to the Project Board. The proposal is based on several templates, and will be given a ‘GO’, ‘conditional GO’ or ‘NO GO’. For every milestone, documents have been developed which are regularly updated to include new learning.





Gates 1 and 2

A project starts when an opportunity is identified. Either a customer has forwarded a request, or our sales team has defined a possible solution for a customer's operational problem. A decision must be taken regarding whether we want to quote (G1). The criteria that are considered are the product fit, relationship with the customer (group), strategic fit and importance, competitive position and marketing opportunities. After a 'GO', a budgetary quotation is prepared.

If the customer enters his decision-making process, with the aim of placing an order, CSi will begin the process to prepare a detailed quotation. More time needs to be spent in this process, and several people have to be asked for input and to be aligned regarding the solution. Therefore, the proposal to start the detailed quotation is discussed in the Gatekeeping meeting (G2). The criteria of Gate 1 are reviewed in greater depth, and in addition, we need to be certain that the customer has indeed approved a budget. A first, approximate risk analysis (with the risk analysis template) is carried out. After a 'GO', the quotation team/future project team is formed.

Gate 3

Just prior to sending the final quote and entering into negotiations, Gate 3 needs to be passed: bid/no-bid. The team prepares a thorough risk analysis, a cost calculation with the commitment of the team, an internally approved project resource plan and a cash flow forecast based on a detailed technical solution for the whole project and the relevant contractual basis. The risk analysis in particular can lead to changes and additions to the quotation.

Gate 4

Hopefully, all the preceding work will lead to an order from the customer. A final check (Gate 4) is performed on the output from the negotiation phase and the action points after Gate 3. The scope, revenue and conditions may have changed in the negotiation. Moreover, contract clauses have most probably been discussed. Although this is more of a formal gate, it is an important one, as from that moment onwards the order is accepted by CSi and the commitment of the organisation towards the customer is formalised.

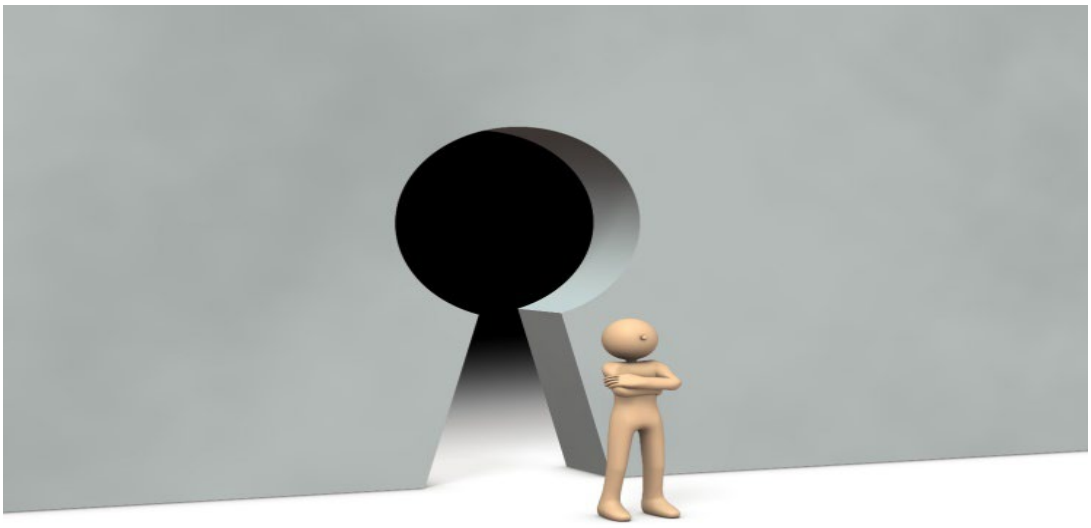
Gate 5

The project team starts with an internal launch (QG2), in which the sales team transfers the order to the execution team. They will have already been involved in the preparation and review of the quotation (QG1), and will be aligned on the solution. In the definition phase, the complete project is defined together with a team from the customer. The project scope will preferably be completely fixed, including any necessary amendments, at the end of this phase. The goal is not to change anything after the milestone, so the team can focus on flawless execution of the predefined work. This marks the start of engineering (mechanical, hardware, PLC, robot and PC-based software). In order to start with engineering, Gate 5 must be passed. For that gate, there are ten mandatory deliverables related to scope, safety, finance, opportunities, planning, transport and service. Everything is prepared in such a way that all identified risks are mitigated.

When the design concepts are available, the design is judged by means of a peer review (GQ3) before entering detailed engineering. In addition, when engineering presents its output, the system integration engineer performs an output check (QG4), before sending it to the (internal or external) production location/supplier.

Gate 6

Components are bought or produced in-house and sent to the CSi assembly facilities in Romania. At the end of the assembly and internal testing, a Factory Acceptance Test (FAT; QG5) is planned on site with the customer, though virtual presence via remote connection, or without a customer. Based on the FAT results and a check on the preparedness of the site team, a decision is taken to ship the equipment (G6).



On site at the customer, the site supervisor takes control to guarantee the smooth installation and commissioning of the equipment and software. At the end, a Site Acceptance Test (SAT; QG6) is executed, based on a predefined test protocol. The timing of this final test can be shortly after end of commissioning or sometimes a few months later, to have reached a stable production scenario.

Gate 7

After a successful SAT, the system is transferred to the service department, which has already been involved in the commissioning and training phases. The project team carries out a session to bring together any lessons learned and publishes them to the other teams and management (QG7). When all the administrative formalities have been finalised, documentation is complete, and the punch list has been dealt with, the project can be presented for closure to the Project Board (G7).

Approximately three months after the SAT, a final customer review is carried out. In addition, customer reviews can be undertaken during the whole project to establish if we are on the right track with everything we are doing. As a professional organisation, CSi continuously wants to collect input both internally and externally, to further improve its processes, its knowledge and its products.

Conclusion

Palletising projects are challenging, as there are many key factors for success. Sometimes they seem to be small details, but they cannot be underestimated. It never becomes easy, and therefore the project management process must be run in a consistent and strict way to guarantee the execution of successful projects.

Unfortunately, within our industry there are many examples of unsuccessful projects to be found, but CSi with its processes and controls is committed not to add to that list!

How can we help you?

CSi has almost 60 years of experience in realising all sorts of projects around palletising and conveying equipment. Based on that history, CSi is very capable of executing these projects in a controlled manner, thus achieving the benefits for our customers in a smooth and predictable way.

The way CSi handles projects can be explained in much greater detail for anyone who is interested.

If you would like to receive more information, do not hesitate to contact us.



CSi palletising

Lissenveld 39

4941 VL Raamsdonksveer

The Netherlands

Tel. +31 162 575 000 or info@CSiportal.com