PROJECT EFFICIENCY

Generally, **43%** of all project activities add value to a project, while **57%** is Waste.

According to Matt Knight, a speaker at the Vancouver Regional Construction association (VCRA), 60% of construction projects come in over budget or behind schedule.*1

One of the main causes is the lack of proper Project Control. Other causes are poor Analytics, delay of information provision, and design changes.

Waste

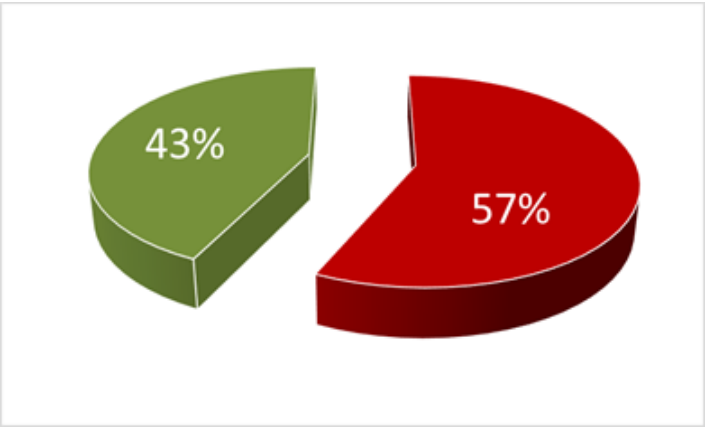
As stated, in general 57% of all construction activities don't add value to the project.

UK studies indicated that up to 60% of the inefficiency is created by labour inefficiency and 30% by rework. Other "contributors" are waste of material and accidents*2

If the Manufacturing is considered the waste percentage is 12%, which is considerable lower than the waste percentage in construction projects (57%).

The obvious reasons for this are:

- A project is a temporary organization;
- One project organization is different from the other (the next project);
- There are more stakeholders involved in a project organization, compared to an industrial organization;
- Stakeholders do not have the same interests.



Lean

Another important reason is that the industry has long been working to optimize processes according to Lean philosophy.

The lean ideal is to provide a custom product exactly fit for purpose and delivered instantly with no waste to the customer. To do so the following actions are necessary for projects, according to Remon Fayek Aziz and Sherif Mohamed Hafez *2:

1. Select suppliers who are willing to adopt lean project delivery;
2. Structure the project organization to allow money to move in pursuit of the best projectlevel returns;
3. Define and align project scope, budget, and schedule;
4. Explore adaptation and development of methods;
5. Make design decisions, with explicit alternatives against stated criteria;
6. Practice production control in accordance with lean principles;
7. Build quality and safety into projects;
8. Implement JIT and multi-organizational processes after site demand;
9. Use evaluations and planning on process that transform materials;
10. Use computer modelling to integrate product and process design;
11. Use 5S workshops: a tool for workplace organization and promoting teamwork.

Information

Information is one of the most important assets for successful Lean Projects, however project management and project staff often get so engrained in maintaining the day-to-day operations that they forget to gather all appropriate information. And when they try to do so they lost a significant part of their time in compiling reporting. This lost time cannot be spent on managing the project.

Construction Project Inefficiency

Jeff Collins from IMS mentions four key causes of Construction Project Inefficiency [*3]:

1. Poor Analysis and Planning Prior to Starting a Construction Project

Before beginning a project, construction managers must review all blueprints, available resources, and costs of such resources. However, this grouping of events includes the analysis of hundreds of different factors, including political, environmental, investor, and regulatory concerns. Furthermore, construction projects can fall behind due to the impact of weather on a construction site, which must be considered in the preparation of deadlines.

By performing a thorough analysis of a project before beginning, the project manager can reduce added expenses and improve efficiency.

2. Unfinished Designs

Although no investor wants to invest monies into an unfinished design, many construction projects may involve innovative, unusual designs, or other parts of a construction project may require custom fabrication of materials. Furthermore, some projects may not have definitive plans for the entire project, especially in cases where a consumer is involved in the design process of individual areas in a project. For example, newer high-rise condominium complexes may allow future occupants to design their own homes, which results in many different layouts planned after the construction has already begun.

Construction project managers can avoid this pitfall of inefficiency by collecting as much information as possible about a project prior to beginning. One of the best ways of preventing this issue is to create fixed deadlines for all design submissions before beginning.

3. Owner Versus Contractor Unified Partnerships

Similar to the above example, owners and contracts may have poor communication about the expected progress and plans for a given construction project. Construction project managers need to have an open pathway for communicating with owners about a project's progress, future plans, and any information resulting in changes to the original construction design. For example, a limited resource may be unavailable for use in a planned construction project.

Therefore, the construction manager may need to reach out to owners and determine the best course of action to proceed.

4. Poor Project Controls

Typical project controls include risk assessment, management of resources, and schedule creation. However, project controls can easily become inefficient when not used properly or inaccurately. Project controls rely on project managers to input data, which is then used to determine potential project risks, schedules, and resource assignment. However, a project manager should ensure any relevant data is included within project controls, which will assess a project's progress. Furthermore, some project controls may not include report generation.

Therefore, a project manager will need to take additional time to create such reports, which results in missed deadlines, communication failure, and investor back-out. By using efficient project controls, a project manager can reduce the amount of inefficient work performed.

All in all, it appears that transparency, integrated databases and timely information are essential for successful projects.

**1 Source: http://goproductivity.ca/blog/1693/efficiency-construction*
**2 Source: Applying lean thinking in construction and performance Improvement; Remon Fayek Aziz and Sherif Mohamed Hafez*
**3 Source: www.ims-web.com/blog/four-key-causes-of-construction-project-inefficiency*