

Managing project

[Business](#), [Management](#)



GILL-alienation Group for Lean Construction (1993) proposed the concept of lean construction, because of the report- 'Application of the New Production Philosophy to Construction' which was written by Laura (1992). Howell and Ballard (1997) set up LLC-The Lean Construction Institute and Introduced Lean Project Delivery System (LAPS) in order to reduce the waste at each part of project. This article will discuss on diversity contents in LAPS such as its principles, theory, 'OFF analyses another approach, which is mentioned in the MAMBO, being used in construction as well. . Discussion . 1 the application of LAPS in construction industry LAPS consist of 4 major parts which are project definition, lean design lean supply and lean assembly. Moreover, different parts internal with each other in these 4 major parts (Ballard 2003). Project definition are required to contain all stakeholders aims and values, the concept of design as well as the criteria of design. Lean design not only needs to reflect the values, concepts 3 and criteria but also saves time to develop and explore alternatives.

Lean supply is definite as an effective system which includes detailed engineering, fabrication and livery. Lean assembly consists of how to deliver the materials and how to install them. Deeply, there are 6 principles being used to guide the implementation of LAPS. These principles contain eliminating waste, build quality in, create knowledge, deliver fast, respect people and optimize the whole. They result in 5 lean approaches to management. Firstly, specify values from the perspective of the ultimate customer. Another approach is identifying the value streams meaning all steps should create value.

Thirdly, creating flow is making the value-creating steps flow. Fourthly, the customer should be guided to actively pull the product from you. Finally, insistently implementation former approaches until a state of perfection is reached. According to these principles and approaches, James (2008) analyses the whole process of construction and then make the procedure quantization in order to improve the productivity. However, the production process in construction differs from manufacturing industry in that it is more complex and unpredictable.

Slake(2000) found transformation flow value generation (TFH) theory which can implement LAPS into construction industry. This theory seems construction as a special kind of manufacture. So the method we used to manage construction is called lean construction. It is a continuous process around value stream in order to satisfy all stakeholders demand and eliminate waste (Dickinson et. Al, 2004). According to the definition of lean construction 4 and TAP' theory, the application of lean construction theory can divide into maximize value, minimize waste, stream management and projects delivery.

Woman et al (1996) believe that the most important thing of maximizing value is finding out what stakeholders are. During large engineering project construction, stakeholder is a complex and dynamic system (Bertelsmann, 2002). According to Ballard and Howell (2003), the production design and process design should be integrated in order to reduce variation in the construction process. Maximizing value means fulfilling the propose value in

an acceptable cost instead of reaching the goal with the lowest price (Bertelsmann 2002).

Waste can be conclude as defective product, supply more than demand, inventory, unnecessary working procedure, useless staff movement, unnecessary transportation of goods and waiting (Non, 1978). The eighth kind of waste was found that the design and service are not accord with costumer's waste. Macomb and Howell (2003) considered the information is not received which is a waste as well. Stream management has a significant influence on construction. There are 7 kinds of streams in the procedure namely, preparation work, site, staff, equipment, material, information and external conditions.

In order to manage these 7 streams, people need to set up a buffer which can make the stream work effective and efficient. Project delivery is used in construction which is based on the LAPS. Ballard and Howell(1993) found the Last Planner System (PICTURE 1) which was design 5 on the rational of LAPS. In the Last Planner System, the last planner such as site administrator will be responsible for planning the resource requirement for next week. Then, manager will use Per Plan Completed (PC) to evaluate the weekly plan.

Design criteria Master Schedules & Phase Schedules Work structuring
Selecting, sequencing and Current situation & sizing work we think can
prediction Information Preparation Order Selecting, Ranking, Workload
production Weekly Schedule Resource Look-Ahead Plan be done Production
Feedback Completed Work PICTURE 1 MAMBO There are several project
managements are introduced in the MAMBO. Namely project integration

management, project time management, project cost management, project quality management, project human resource management, project communications management, project risk management, project procurement.

Firstly, project integration management means the 6 method integrates consolidation, articulation, combinational characteristics as well as integrative actions which are important to complete the project, meet the customer, achieve stakeholder requirements and manage expectations.

Secondly, project time management can be defined as identifying and estimating diverse schedule activities in order to timely complete the project. Thirdly, project cost management contains planning process, estimating process, budgeting process and controlling costs which can result in an appropriate budget.

Fourthly, project quality management can be divided into quality planning, perform quality assurance and perform quality control. Fifthly, project human resource management require planning the staff resource so that it can determine and improve the project team, furthermore, using the feedback to manage the team. Sixthly, project communications management is a method that sufficiently conveys the useful information to stakeholders.

Seventeenth, project risk management means to predict and analysis the possible risk so that planning the response and the preventive method.

Finally, project procurement management consists of planning procurement processes and communicating with sellers, buyers and administrations.

2. 3 Comparison Current management methods regard the project as a

sequential, simple and predictable producing system. Furthermore, they decompose the project into activities, work package, mission and so on, every mission can be implemented independently as well. These methods all use a top-down management. Planning and present under the best of circumstances. As a result, the plan does not reflect complexity, high uncertainty and dynamics of the construction.

It leads to the initiative can not be well-planned and well-executed. In contrast, LAPS seem the construction as a complex, dynamic and nonlinear producing system. The LAPS focus on the whole production system that it sets up a series of goals. LAPS underlines integrating product design and process planning, controlling them in the all product life cycle stages as well. The major preferences between LAPS and current project management focus on nine aspects. In the focus of attention aspect, LAPS more focus on the production system, but the method in MAMBO pay attention on transactions and contracts.

For management object, lean project delivery looks at transformation, flow and value objects, however the current management in MAMBO focus on transformation goal. For decision making right, LAPS support to the foundation certificate in construction should take part in the decision making. In contrast, management methods in MOBS prefer to make decision follow by top-down management control system. In the design order aspect, product and process are designed together in LAPS. In MAMBO, process design will start until product design finish.

For product design, designer should consider the whole product life cycle stages in LAPS. In MAMBO, designer can consider the partial product life cycle stages. For collaboration approach, all the firms in construction supply-chain should initiative cooperate with each other in LAPS. The enterprises relate with each other through the market and only supply what the market demand in MAMBO. For planning, the schedule is planed from bottom to top in LAPS, but the schedule is landed from top to bottom in MAMBO. In learning aspect, learning is integrated into construction, company and supply-chain management in LAPS.