

MANAGING PROMISES WITH THE LAST PLANNER SYSTEM: CLOSING IN ON UNINTERRUPTED FLOW

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ABSTRACT

The Last Planner System has been in use for about 10 years. During that time the basic structure of the system is unchanged. However, the practices for using the LPS have continued to evolve. In our paper *Linguistic Action: Contributing to the Theory of Lean Construction* we showed how the structure and usual practices of the LPS creates the situation for making promises reliably. In a following paper *Leadership and Project Management: Time for a Change from Fayol to Flores* we introduced our understanding of management and the actions needed to change to support operating a project as a network of commitments.

In this paper we build on the language-action perspective to propose a key set of distinctions and set of practices for delivering promises on a reliable basis; we call that *managing promises*. The combination of promising reliably and managing promises creates a basis for designing production systems that are robust to the remaining breakdowns in the project setting bringing us closer to the *lean thinking* ideal of uninterrupted flow.

KEYWORDS

Language (linguistic) action perspective, Network of commitments, Project flow

INTRODUCTION

The Last Planner System of Production Control™⁴ (LPS) is producing far superior project results when compared with the usual critical path scheduling-based methods (Ballard and Howell 2004). We speculate that the principal reasons for this improvement include collaboration, planning as an on-going practice, and reliable promising. As a design, the LPS is also an approach that incorporates measuring planning system performance as a key component for improving follow-on planning (Ballard and Howell 2004). Surprisingly, we see few projects that take advantage of a systematic approach using this measure for improvement. Yet, the projects still get good performance compared with normal practice.

In the current practice of the LPS we observe project teams continuing to chase the completion

of tasks. The unpredictability of completion is high enough to keep a following crew, trade, or team from tightly coupling the beginning of their work to the planned completion of the prior performer's work. The result is an interruption to the flow of work. The ideal that work will be pulled in continuous flow looks beyond reach in these project environments.

Applying pull and improving the predictability of flow is less apparent during the design of construction projects. Geography and specialization often prevent design team members from working in close proximity. One designer completes a detail that will be used as a basis for another designer's work. That first detail might be "checked in" when complete however the next designer is not in a position to quickly check it out or reference the work. Flow through design looks to be only a theoretical possibility.

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4 The Last Planner System is a trademark of the Lean Construction Institute.

There is a set of practices that can change that situation. It starts with making promises reliably and is supported by practices for managing those promises and preparing for breakdowns.

KEY DISTINCTIONS FOR MANAGING PROMISES

CONDITIONS OF SATISFACTION

A completed task results in an outcome. The description of that outcome is the conditions of satisfaction (COS). Those conditions are described with nouns and adjectives. A good description of the conditions of satisfaction allow the performer and the customer or next performer to observe the moment of completion leaving little room for interpretation. COS coupled with a completion time constitute the what and when of a promise (Winograd and Flores 1987).

MAKING RELIABLE PROMISES

The LPS provides a mechanism that prepares performers for making promises reliably. It starts by engaging the performers in the crafting of the request. This usually happens in a collaborative pull planning session. Those requests are then analyzed through the look-ahead planning process to address all the issues and wherewithal (constraints) that would keep a performer from making and keeping a promise to complete. The last planners and or performers make their promises in the weekly work planning process. The performer makes reliable promises based on a mutual understanding of the COS, availability of wherewithal, estimates of time to perform, and by allocating capacity for each task.⁵

ASSESSING PROGRESS

Most construction projects are continually being assessed: Project managers and superintendents regularly ask, "How are you doing?" The question calls for an assessment. Replies vary from polite "Ok's" to indifferent grunts. The nature of the reply helps the PM and superintendent form their opinions about how the project is going. But this is not enough. We need different assessments: assessments of the likelihood of completing as promised, of obstacles to success, of help that is required, of new opportunities, and new risks.

RE-PROMISING

The future is uncertain and unknowable. We cannot keep all of our promises, nor do we want to keep all our promises. As circumstances vary from those anticipated, our actions need to change, as well. Keeping the big promise of the project requires a practice of re-promising at the task level on a regular basis. Re-promising takes the form of first assessing that either the promise is in jeopardy or it is no longer appropriate to fulfill the task promised. It follows with an offer of a new set of conditions of satisfaction, a new completion date, or both. The new promise is then accepted, rejected, or counter-offered by a project participant acting as the customer.

DECLARING COMPLETE

The most critical action that contributes to uninterrupted flow is letting the next performer in line know that you are done. As one's ability to predict completion increases, pre-announcing completion allows the next performer to mobilize in advance to keep work flowing. Depending on the circumstance, the declaration of completion may trigger an acceptance process such as a quality control check or release the next task to begin. On a usual project the way completion will be declared, the work accepted, and the next activity triggered does not assure continuous flow. Lacking well-established hand-off criteria and practices to assure they are met, work may not be declared until the next project meeting, or the declaration is not made at all. The superintendent must walk the job to discover what was accomplished and what work appears to be ready to proceed.

TIMELY ACCEPTANCE OF COMPLETED WORK

One reason work doesn't proceed is that we have not determined if the prior work is acceptable. This is particularly troublesome when work is accepted after the next activity begins. On most building projects, work is accepted in batches. The architect comes to the job once each week to review what was completed in the last week. Any work that depended on the tasks that are to be accepted is either delayed or it proceeds at risk. A process is required to get timely acceptance of work.

⁵ The distinction *reliable promise* provides a basis for assessing the quality of the promise at the moment of promising. The distinction provides the promiser and others in a promising conversation a shared basis for exploring the promise and for making contingent promises. That we characterize a promise as made reliably doesn't guarantee that the promise will be fulfilled just as promised. There remains the possibility of misunderstanding and that the future is different from what was anticipated.

SHARING PPC

Percent of Plan Complete (PPC) is the measure used in the LPS for assessing the reliability of task or promise completion. PPC is an all or nothing measure calculated based on the reported completions versus the promised completions. One reason for calculating PPC is for improving individual and system performance.

Sharing the PPC measure with all last planners also provides a basis for establishing buffers between a series of tasks appropriate for the reliability of those performers. When we know how reliable other performers are we can incorporate that in our promising and increase the flow of work.

EXCEPTION REPORTING

On all but the smallest projects no one person can be in all situations to observe what is going on, going well, needing attention, etc. To keep the project work moving we need warnings that what we want to happen is about not to happen. Reporting after-the-fact misses the best opportunity for corrective steering.

HOW MANAGING PROMISES WORKS IN ACTION:

DAILY PROMISE MANAGEMENT MEETING

Many project teams have a daily project meeting. The session occurs either at the beginning or end of the day. Good practice is to have a standing meeting—no chairs, no refreshments, no chit chat—to focus on the issues of the day. Teams use these sessions for last-minute coordination. We propose using the stand-up meeting to manage promises.

The purpose of the Daily Promise Management Meeting is to provide a forum for mutual adjustment of the network of commitments to maintain coherence with the overall promise to the client. We can not count on a forum of this sort to develop on its own. Nor can we expect that once started it will continue on its own. Organizations must be deliberate in designing this structure and continuing to lead it (Weigand et al. 2003).

The daily meeting starts by having the last planners or performers report on the promises that were due in the last day. Completed promises are tallied and the PPC is recorded. For each promise that was not completed a reason is identified and recorded. The performer is also asked to make a new promise. The group assesses the impact to others of that promise not being completed and the performer is encouraged to take care of any

consequences that occurred for others. Next, performers reconfirm the promises that are due for the current day. All last planners or performers are given the opportunity to request help from the leader or the group. New promises are made when the promise cannot be kept. Finally, the meeting ends by giving performers an opportunity to re-promise for the next three days. Consequences are explored.

SYSTEM THAT CALLS THE PERFORMER'S (AND CUSTOMER'S) ATTENTION TO THE IMMINENT PROMISED COMPLETION DATES

When people are involved in more than one project it is easy to miss promised completions. A network of commitments is only as strong as the least reliable member of the network. While planned tasks might be easy to track, we have seen that in some phases of a project there are as many or more ad hoc requests and promises as there are planned tasks. This is why it is impossible for any centralized function or system to manage a project by planning.

Each agent in the network of commitments needs help—something that keeps their attention on the coming commitments. In today's world, at least 3 people on the project can be watching the up-coming planned commitments—the performer, the customer, and the performer's supervisor. But who monitors ad hoc commitments? Ad hoc commitments are not recorded in a way that is visible at the project level. Developing skills at eliciting and making commitments will help and there needs to be an easy way for performers and customers to connect those ad hoc commitments into the larger network of commitments. Doing so with a computer system could bring attention to imminent commitments, past due events, and the timely acceptance of completed work.

DISCUSSION

When introducing the Last Planner System, we regularly hear people say, "We do that." and "There's nothing new here." To be sure, many companies use look-ahead plans. But they do not use them to drive a make-ready process to prepare performers to make reliable promises. Many companies use daily stand up meetings. They use them to address urgencies and to give direction—the superintendent's orders of the day. They do not use these meetings to bring resilience to the network of commitments. Many companies use systems for tracking and reporting performance in terms of progress, cost, and productivity. None of these reports make it easy to continuously add to, modify, and report completion in the network of

commitments. We need systems and practices that bring attention to the action needed next to stay on plan.

The daily process of managing promises raises how performers engage in the project. Performers become members of a team that is intent on fulfilling the overall promise to the client. Project performers cite the effect of peer pressure from the public daily managing promises meetings. They also demonstrate initiative in keeping their promises and adjusting to the changing performance of others so that the overall project is a success.

The daily process works best when the last planners have been involved from the start of pull planning. The shared background and context provides a basis for adjusting that is otherwise costly when starting from scratch (Weigand et al. 2003). With practice, the daily managing promises meeting becomes the routine way project performers communicate for coordination.

This is a paper on pursuing uninterrupted flow on projects. However, in the project world, unlike the more stable manufacturing world of production, there will always be breakdowns—interruptions to the commitments that we make. We cannot anticipate all problems and opportunities we will encounter nor can we engineer our processes to be robust enough to maintain themselves. But we can conduct ourselves so our networks of commitments and the people in them are able to tolerate the inevitable breakdowns and take advantage of the opportunities.

BREAKDOWNS ARE INEVITABLE

We offer a simple definition of a breakdown. We say we have a breakdown when we are interrupted while in the midst of fulfilling a commitment to such a degree that our commitment is now in jeopardy. We know breakdowns are inevitable because we have been in breakdowns (Winograd and Flores 1987). Projects are full of breakdowns. It is constitutive to a project—projects themselves are responses to larger breakdowns and opportunities.

STRATEGIES FOR MINIMIZING BREAKDOWNS

The basic strategy is to reduce what has to be tolerated by not making commitments (promises) that don't need to be made at that time. The more commitments outstanding the greater the opportunity for any single commitment to be interrupted in a network of commitment. We speculate there is an exponential effect of increased commitments on the probability of breakdown. Dependence is the norm in the project environment. One breakdown leads to another and then another.

New users of the LPS are taught to make decisions at the last responsible moment rather than the usual practice of making decisions at the earliest moment (Ballard and Zabelle 2000). The conventional wisdom is to get decisions behind us so that we can narrow in to the final solution. The current practice is a significant contributor to rework in the design phase of the project. The lean wisdom is to make choices (decisions) after considering design or solution sets.

Committing the team to an early schedule produces similar negative consequences. The corollary to deciding at the last responsible moment is to commit to action at the last responsible moment. Phil Clampitt and Bob DeKoch urge us to embrace the always-uncertain future (Clampitt and DeKoch 2001). One way we do so is by keeping our options open. The risk, however, is that we act just a little too late. Doing so can create waste, costs, and delays for oneself and others. Making appropriate and powerful assessments is the key to timing decisions.

We can never be right or wrong in our assessment of the future. There is no before-the-fact knowledge that we can assert as true or false. We can only predict. Predictions are a class of assessments that are either effective or ineffective for preparing to take action to keep our commitments (Budd and Rothstein 2000). We bring power to those assessments when we broaden the perspective and basis for making the assessments. The key to acting at the last responsible moment is to include key performers and constituents in recurring conversations to assess “Is it time to act?” While we answer that question with yes or no, we bring our judgment rather than our ability to ascertain truth.

SUCCESSING IN THE FACE OF REMAINING BREAKDOWNS

EXPAND THE GROUP OF PEOPLE WHO CAN ASSESS AND DECLARE BREAKDOWNS.

The simple rule “no commitment, no breakdown” guides us here. Only people who share in the commitment to the client and are engaged in project work are in a position to assess the situation and declare a breakdown. One responsibility of project managers and clients is to create broad commitment to the promises of the project coupled with specific commitments from each project performer. It is not sufficient to be well-intended. It is not sufficient to dutifully take assignments giving it ones best. The act of promising creates the condition for a person that is interruptible. Interruptions without commitments are not breakdowns.

EMPOWER THOSE PEOPLE TO TAKE COMPENSATING ACTION.

We now have a broad group who is committed to the promise of the project and makes their own commitments in support of the overall promise. Something happens that puts a commitment in jeopardy. What can you do? In many project settings individual performers lack a context of the overall project. They are not in a position to assess jeopardy, nor are they likely to speak about it. The project needs all of that and more. It needs those people to act in the moment to adjust to the situation and take corrective action. Waiting for the next weekly project meeting, toolbox talk, or visit by the superintendent only makes the situation worse. To act effectively, performers need to know what the plan is, their role in that plan, and be competent to redirect the work within the limits of their roles.

MANAGE THE NETWORK OF COMMITMENTS WITHIN PERFORMER ACCOUNTABILITIES.

The network of commitments⁶ is fragile unless attended and adjusted. It is always changing and evolving as the planned and ad hoc work are promised, completed, and re-promised. Tending the network requires people to act within described accountabilities. We can't have plumbers redirecting the work of electricians. Nor can we have architects telling masons how to mix mortar. Yet, anyone in a position to assess a breakdown needs to be authorized to declare that breakdown and initiate a conversation to redirect the action for the team.

ORGANIZATION DEVELOPMENT

The usual project team is a temporary organization convened for the special purpose of fulfilling a promise to a client. In some cases people have been together operating as a team. In other cases calling them a team is an expression of hope. People start out as strangers. They might become mates and they might leave the group well before that happens. The project needs a stable platform for recurrently promising and fulfilling those promises. The routine of the LPS—pull planning, look-ahead planning, weekly work planning, and managing promises daily—creates the platform for developing an organization that reliably prom-

ises, manages those promises, and deals with remaining uncertainties.

Fulfilling commitments inevitably depends on taking action that is neither on the plan nor already promised. The platform provides a basis for people in the organization to respond in the moment with improvisations to avoid breakdowns (Dunham 1997). Doing so maintains the flow of work.

DISCUSSION

Breakdowns are inevitable and we don't need to be victims to uncertainty. We can take actions to minimize the interruptions that put projects in jeopardy. We can also learn to bring control to projects that keeps action proceeding in fulfillment of the overall promise. However, none of us can be everywhere we want to be to catch the promise that is about to be missed. Project team members need help. They need help individually and as a group. Centralized reporting has been insufficient.

CONCLUSION

Uninterrupted flow is within the reach of every project manager operating on the Last Planner System. Three new practices are necessary. First, there must be a practice for project performers to continuously update their promises and declare complete. The second practice is a system that calls attention to what action is required to keep the promises that are outstanding. The third practice is the development of the project organization so people are in a position to declare breakdowns and initiate compensating action.

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6 Fernando Flores said the business of the firm is making and keeping commitments. He coined the expression network of commitments to refer to the organization of work to keep the overall commitment (promise) to the client. In the everyday business setting processes are represented as a flow chart of commitments rather than operations or activities. Work steps are not predictable in the project setting. As the project unfolds the network continues to change as new promises are added and others changed.

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