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## ANOTHER APPROACH TO TRANSFORMING PROJECT DELIVERY: CREATING A SHARED MIND

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### ABSTRACT

The principles and practices of lean project delivery can be difficult for successful managers to accept. As in manufacturing, the shift to lean in project settings calls for a deep change in perspective, understanding and practice: a paradigm change. Most efforts to implement lean construction begin with pilot or laboratory projects designed to put teams in action using the Last Planner System<sup>®</sup>. This process-centred approach, while successful in the short term, is difficult to extend or sustain as participants do not yet understand the extent and nature of the change necessary or the opportunities it offers. Too often, early gains are lost as teams using lean approaches layered on or attached to traditional practices drift back to their old ways. This paper describes the use of Study Action Teams (SAT) to create a new sensibility, a way of thinking, or indeed a “shared mind” in a project team.

The paper will discuss why a shared mind matters and how a SAT creates a shared mind, and will describe the SAT team and process. Participant comments and examples of resulting new leadership and team actions will be included.

**KEY WORDS:** study action teams, leadership, lean project delivery

### WHY A SHARED MIND MATTERS

In *Product Development for the Lean Enterprise*, Michael Kennedy compares two methods for implementing major change. An approach commonly used by larger organizations, which he calls the “define and convince” model, “*is slow, seldom winning widespread buy-in and often requires extensive infrastructure and procedural controls to maintain the change.*” (Kennedy 2003)

Kennedy prefers a “participative model” “*in which the leader defines the change goals and challenges the workforce to define and execute the changes.*” (Kennedy 2003) The participative model is fundamentally based on alignment with a shared vision. This

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model goes beyond the superficial to fundamental shifts in perspective and lasting change.

We propose that a study action team (SAT) is a tool for developing the shared vision needed to bring about deep transformation and sustained change. The participants in an SAT form the basis for an organizational paradigm shift. Beyond the initial paradigm shift, organizations that continue to use SATs as a learning tool will be practicing a fundamental lean principle of continuous learning.

In the construction industry, project teams are usually comprised of representatives from various organizations, professions, and trades to conceive, design, build and use buildings. Each team member arrives with a unique perspective, leading to multiple perspectives on a project. Surfacing, exploring and aligning these diverse perspectives does more than build relationships; it begins to establish a shared background understanding that serves as the foundation for concerted action. This process has implications which reach far beyond those produced by changing project processes alone.

We have come to understand a *shared mind* to mean members of a community agree on both the denotative and connotative meaning of distinctions. We also see it as a historical view on how we came to know what we know. Finally, a shared mind includes a view of what is possible. All of this exists for a particular community at a point in time. We are particularly interested in people who share a set of distinctions about lean construction; however, this concept can apply to any group of people who share an ambition.

The creation of a shared mind among the members of an SAT enables them to accomplish something big together, and often that is organizational change. It allows participants to realize the extent and nature of the change necessary and the opportunities it offers. As one participant reports:

*Lean project delivery requires a paradigm shift. As individuals, we hold tightly to our existing frame and often filter information to fit our existing mental models. The beauty of participating in a study action team is that it permits you to consider and speculate about the implications of new ideas outside the confines of your day-to-day work.*

*When participating with colleagues, it allows you to develop a shared vernacular and a collective understanding of fresh information. The setting allows us to "let our mental guard down" and permits new ideas to hop the fence into the realm of the possible. When we explore these possibilities as a collective, we often see firsthand the power of collaboration and the opportunities of a new shared meaning. It also gives us a unique set of shared experiences to both deepen our relationship with the other participants and use as reference points as we move forward in implementing these emerging ideas. (Lichtig 2007)*

Change is more likely to be sustained if the underlying principles are understood and accepted. Organizational alignment with reasons and direction for change speeds and extends change. Many manufacturing companies have implemented lean processes, techniques or tools without creating an underlying lean mind. Lean is dismissed as the organization drifts back to traditional practices. Worse, the organization's ability to change is reduced. (Liker 2004)

## **WHAT IS A STUDY ACTION TEAM?**

A Study Action Team (SAT) is first, a reading group that becomes a vehicle for continuous learning. It is based on the recognition that learning is principally a social phenomenon. In an SAT, people take an interest in both their own future and that of their co-workers and their organization. Second, the SAT is a prototype for making companies or project teams into collaborative, supportive environments for exploration and constant improvement. Third, the SAT is an agent for transforming organizations, breaking the inertia of the status quo by putting people into action as well as reflection (Macomber and Howell 2005).

## **PREPARATION FOR A STUDY ACTION TEAM**

The design of an SAT starts with consideration of the goals of the organization. In our experience, the goal is usually a lean transformation of the organization or at least the project. For such a goal to be achieved, it is important to choose a book which introduces the appropriate distinctions of lean design, operations, and management. We have successfully used books, including *The Toyota Way*, by Jeffrey K. Liker, *Lean Thinking*, by James P. Womack and Daniel T. Jones, and *Product Development for the Lean Enterprise*, by Michael N. Kennedy, as well as book summaries and articles.

The next step is an invitation to a cross-section of the people who will lead and be touched by the anticipated changes. More successful groups comprise a “diagonal slice” of an organization, including both different roles and different levels of responsibility and authority. SATs work well when participation in the SAT is voluntary, and the invited participants understand both the time and study involved when making their commitments.

Holding a kick-off session to announce the objectives for the group, explaining how the process will work and setting a schedule for reading and discussions are keys to a successful SAT. These actions set the ground rules, mood, and context for the new mode of learning together.

## **THE STUDY ACTION TEAM PROCESS**

In an SAT, the group reads a book or selected texts relevant to their goals and ambitions and discusses the assigned pages in a series of sessions, allowing time for assimilation and reflection between discussions. The participants learn to read with questions and to engage in reflective, exploratory conversations. Three key steps for the readers are:

- To note the author’s main points and the evidence offered in support of them.
- To reflect on the relevance or lack of relevance of these points to their personal, team, and organizational objectives.
- To speculate on what possibilities for action are opened for them based on what they are learning (Macomber and Howell 2005).

The role of the discussion leader is critical to the success of an SAT in two ways. First, the discussion leader must help the participants make connections between the text, which may describe a foreign environment, such as Japanese manufacturing, and their own specific world, which may be design or construction of a building or industrial structure. The discussion leader helps them see possibilities (for a lean transformation) and steps they would take to get started.

Second, in most facilitated meetings, the discussion leader’s goal is only to achieve a resolution, an agreement, or a plan of action. The meetings are a means to an end. In

an SAT, the discussion leader is also there to promote deep conversation through probing questions. His or her role is to get people to speak and to listen to what is being spoken. Through the use of follow-up questions, the discussion leader leads the team into deeper conversation. In this mode, the sharing of perspectives leading to the shared mind takes place. The deeper the conversation, the more the perspective is shared.

The power of the SAT is its ability to connect to the interests of the organization. People are inspired when reading for the purpose of accomplishing something together. They learn from and with each other, receive coaching from peers, and become more innovative and confident as they explore unfamiliar worlds together (Macomber and Howell 2005).

At the end of the reading, a closing session is held to combine perspectives and establish initial action steps. By this time, the team has developed a shared mind. The closing session is designed to move the team into action. The team sets its own agenda and establishes its own priorities. This session results in consensus for moving forward.

### **HOW A SAT CREATES A SHARED MIND**

The authors' experience is that learning through reflection and conversation is not a habit in organizations. We support this claim through our observations of how SATs evolve. Initially, teams share points and opinions in a rambling, disconnected way. They behave like they are reporting to the teacher, perhaps a carryover from their classroom days. Once they learn to reflect and to really listen to and respect each other's perspectives, they develop the ability to learn from each other.

Hal Macomber claims that two great wastes in organizations are *not listening* and *not speaking* (Macomber and Howell 2004). The SAT is an environment for producing habits of listening and speaking. The repeated practice of discussing and reflecting supports those habits. When successful, the team moves forward with new behaviours that are consistent with lean principles. Through listening and speaking, an SAT becomes a forum for mindful awareness that allows the group to create the shared mind. The group learns the skill of listening by giving full attention to the speaker and not attending to their own internal chatter. People start to feel more powerful, influential and competent when they realize they are being listened to, even when there is no agreement. Practice over a series of sessions creates the habit of mutual listening.

The participants in an SAT *create* the shared mind. This is why a diagonal cross-section of an organization can be so important. Bringing together differing roles as well as perspectives contributes to the results. This is particularly apparent when architects are matched with engineers and construction professionals. Architects learn to be architects in a practice described as *reflective practitioners* (Schon 1995). Engineers, and most of the rest of us, learned in a different manner. These differing styles of learning contribute to deeper understanding for all the participants. Furthermore, it is helpful to have sceptics on the team. The perspective of the sceptic can generate deeper conversation through their initial prove-it- to-me posture and they tend to freely state their minds. Their openness leads others to open conversation, which is a goal of an SAT.

*Everyone moves through the SAT process at a different pace, which at first can feel cumbersome, until someone on the team who seems to know nothing asks that one simple question. The question that stops us all, and as you look around at your other team members you see the light come on in*

*their faces and you realize that we are all learning to see from a new and sometimes common perspective. (Muxen 2007)*

One author has specific experience as a discussion leader with growth in a particularly resistant subgroup. The subgroup openly admitted to neither understanding nor embracing the objectives for the reading, referred to the group as a “book club”, and opposed changing the way they had been successfully delivering projects for years. This approach challenged their habitual thinking processes. Furthermore, like many participants, they had not read a book in a studious manner in many years. Participants exhibited unease, discomfort and a concern for looking foolish. By the end of the SAT, they were most enthusiastic about change, asking what they could read in a next SAT. They became quite open-minded and spoke energetically of ways to change and improve their organizations beyond the short term of a project. One participant commented that he “gained 30% from reading the book and 70% from the discussions.”<sup>4</sup>

An SAT can also bring to the surface dysfunctional behaviour within an organization that needs to change. A behaviour or cultural mindset that would not otherwise have been apparent was observed and reflected back to a group. SAT discussion leaders, in a listening mode, were able to notice the dysfunctional behaviour and bring it to everyone’s attention for reflection and action.<sup>5</sup>

We note one more significant change for SAT participants. People become friends as they spend more time with each other. Some of us thought that this outcome was to be expected, but it is by no means ordinary among co-workers. We see authentic respect for each other develop as we go from one chapter to the next. We attribute this to putting people in a recurrent practice that is new for them. As they learn, they see benefit from being with each other and this leads in turn to a desire for spending more time together. We see these results as examples of an increase in relatedness resulting from recurrent interaction. (Maturana and Varela 1992)

## **STUDY ACTION TEAM RESULTS**

In a client-assembled SAT, a project team comprised of architects, engineers, a general contractor, subcontractors and the owner successfully created a shared mind. The team was formed to develop a large hospital complex. They were asked to use lean principles to deliver the project from inception through construction and to be highly innovative. From the shared mind created through the SAT reading and follow-up discussion, the team shifted their paradigm. They collaborated to prepare a comprehensive, in-depth plan detailing how they were going to deliver the project. The plan served not only to align the initial project team, but as a vehicle to present the vision to the client and to align the project team as it broadened to include other members.<sup>6</sup>

*One of the most important and most difficult things that we have to accomplish when trying to bring a team together to deliver a project using a lean delivery model is to focus the team in the same direction, on the same value stream, using a common language. Active learning through use of study action teams creates that focus and fuses it with the specific project that you are working on. The SAT process has lasting effects and creates a bond that*

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*helps the team breakthrough the barriers that can derail the behaviour necessary to deliver on the promise of lean.* (Muxen 2007)

Having a shared mind based on *The Toyota Way* has definitely made it easier to implement the Last Planner System® for one of the authors working with a specialty contractor. He claims that the SAT gave his clients a “new set of glasses to view the world”, helping them to see new opportunities and set a direction for their transformation. This author explicitly tied key principles of the *Toyota Way* to the Last Planner System both during the SAT and later during LPS implementation.

One question that arises regarding SATs is, do they always work, and if not, what are the necessary conditions for success. We have observed several critical factors for success. First, the SAT members must participate willingly. Unwilling participants can disrupt the work of the group and prevent them from producing the necessary levels of trust and openness. Second, the SAT members must do their homework and attend the meetings. If they do not, they will not learn the new distinctions and share the experience of the group. Thirdly, management must support the work of the group, if not actively participate. Otherwise, the group will not be able to move into action to implement its ideas.

## CONCLUSION

Study Action Teams are a viable tool for bringing about the organizational transformation required for a sustained implementation of lean project delivery practices. The success of such teams depends on the proper selection of participants, activities to establish goals and plans for the group, skilful facilitation, and participation by the members of the group leading to new practices for shared learning and a shared open mind for continuing organizational change.

## REFERENCES

- Kennedy, Michael N. (2003). *Product Development for the Lean Enterprise*. The Oakleaf Press, Richmond, VA
- Lichtig, William, (2007) Private communication, wal@mhalaw.com
- Liker, Jeffrey K. (2004). *The Toyota Way*. McGraw-Hill, New York
- Macomber, Hal and Howell, Greg. (2004). “Two Great Wastes in Organizations.” IGLC, Denmark
- Macomber, Hal and Howell, Greg. (2005). “Using Study Action Teams to Propel Lean Implementations.” Lean Project Consulting Inc
- Macomber, Hal and Slivon, Christine (2007). “Study Action Teams: A Historical and Theoretical Perspective” *Lean Construction Journal*
- Maturana, Humberto and Varela, Francisco (1987). *The Tree of Knowledge*. New Science Library, an imprint of Shambala Publications, Inc., Boston. Pages 180-201
- Muxen, Scott, (2007) Private communication, [smuxen@herrero.com](mailto:smuxen@herrero.com)
- Schon, Donald (1995). *The Reflective Practitioner: How Professionals Think in Action* Basic Books, Inc., New York. Pages 79-104