A Case Study: Project Scheduling on Quick Serve Tenant Improvement Projects

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Scheduling is the basis for nearly all construction planning. For small tenant improvement projects, time is often of the essence. However, often times the project's schedule is not closely followed, monitored, or updated. Discovering why the project's schedule has not been followed, monitored, or updated will illuminate potential ways to improve the efficiency of planning and managing a quick serve construction project. This report will provide this information through a series of in-depth interviews, as well as, observations from a three McDonald's tenant improvement projects on the California Central Coast. From these interviews, the interviewee's perspective of the project's progress and schedule is important in gaining a wide perspective of this unconventional form of project management. From the observations of project's, an outsider's perspective is necessary to develop and research the potential efficiencies and deficiencies of this style of project management. The combination and analysis of this information provides the construction industry with new knowledge on how to manage and maintain project schedules on quick serve tenant improvement projects.

Key Words: Construction Planning, Tenant Improvement Scheduling, Project Management, Schedule Control, Quick Serve Tenant Improvement, Project Controls

Introduction

Project controls on an accelerated quick serve tenant improvement project are crucial to defining the success of the project. To further define the success, we need to look at the needs of the owner. Typically, the owner of a quick serve (also referred to as fast food) type of business, has the following goals in mind for a project: fast pace construction activities, minimal daily business interruptions, and no complete closure of the business. As a construction or project manager, we look to achieve these goals through project controls. A well-defined and assessable project schedule is the cornerstone of all coordination on the project. The problem is maintenance and adherence to the schedule. We are striving to see why these small projects will often lose track of the schedule, and to see how we can change or better understand this phenomenon.

This paper is created from a series of observations and in-depth interviews of several quick serve projects completed on the Central Coast of California. These observations had the objective to closely track the project's schedule. The observations looked at the project's schedule from different perspectives: as a construction manager, as a project manager, as a subcontractor, and as an owner. The interviews gathered information from key personnel running the construction of the project, and from the owner/operator of the restaurants. Together, this information provides an insight on both the issues and assets of how the schedule on these projects was ran.

In general, the three observed projects had a scope of work that consisted of a complete and complex modernization of the customer facing points of a McDonald's restaurant. Included with the modernization of the restaurants comes a standardization of the facilities. The tenant improvement includes construction activities such as demolition, framing, roofing, plumbing, electrical, HVAC, drywall, paint, tile, solid-surfaces, furnishings, concrete, asphalt, signage, and more. The contractor awarded to these project's was Highland PM, LLC, and the project management of the project's was awarded to Avanti Development Partners, Inc. Two of the three projects were in Paso Robles,

CA, and the final project was in Atascadero, CA. Looking at financial scale, the projects ranged in size from $280,000 to $750,000.

Literature Review

In the research paper titled "Disturbance Scheduling Technique for Managing Renovation Work," the author shows how to manage a project schedule with minimal impact to the running business. What is presented in this paper is a four phase disturbance scheduling technique. This technique is described as "a systematic means for dealing with the unique constraints associated with renovation projects, particularly for those buildings which continue to be occupied during construction" (Irwig, 191). Looking closer, the technique integrates traditional construction logic with new precedence relationships and procedures. As a result, the schedules have a reduced construction time and better organized flow (Irwig, 191). The key of this techqnique is the flow of the activities. By providing more efficient sequencing of specific work tasks and less interruption the project will run much smoother. On quick serve projects, this would prove to be a resource since the schedules are very accelerated. Additionally, these projects are occupied by customers and restaurant employees alike.

The paper shows how unique scheduling is for these renovation projects. The key difference is coordination is because "the renovation planner must also coordinate and accommodate the schedules of owners and tenants who will continue to operate and occupy the building" (Irwig, 192). Also, looking at the site physically, having "Limited access to the site is a paramount concern" (Irwig, 192). These disturbances are only the beginning for the concerns on the occupants, like having disruptions in utility service, disturbances from the construction activities, and limited access to their facilities.

As a result of these disturbances, the four phase disturbance technique was developed. The four phases of this techinique are as follows: Phase 1 – Establishing Initial Logic-Network, Phase 2 – Information Gathering for Disturbance Scheduling, Phase 3 – Application of Disturbance Scheduling Algorithm, Phase 4 – Resource Allocation Planning (Irwig, 193-200). Each of these phases play a unique and important part of the technique as a whole. To better understand this technique, please see figure 1.
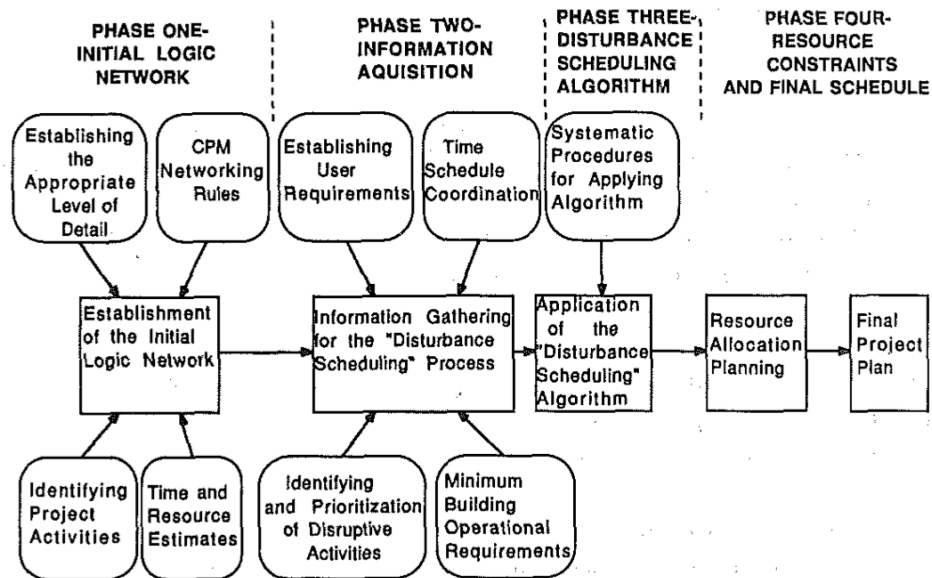

Figure 1: Disturbance Scheduling Technique (Irwig, 193).

Methodology

The data for this case study was collected via two mediums. The first being a series of structured and in-depth interviews with key players from all three projects. They key players chosen for these interviews were the projects managers, Chris Lisle and Robert Lisle, and the project owner, Ciro Marino. These interviews were completed both in person and through telephone conference. Data collected from these conversations was either distilled into a set of analytical notes, or a complete transcript of the conversation. The second method was regular observations of the project schedule over a period of several months. These observations were completed both onsite, and through online project controls resources. The two methods of research were chosen in order to compare and contrast the project members' perspective of the schedule versus the actual measurable schedule success.

The interviews completed for this research was done in a structured question and answer format. The questions asked can be seen below in figure 2. These questions were chosen to pinpoint importance of the schedule on these projects, the success of the schedule on these projects, and to identify any tools used to maintain the schedule on these projects. This information is needed to help better define the role of scheduling on these projects, as well as, better define the perspective each interviewee has on the schedule. An analysis of these findings is usefully to the industry because it provides insight to the coordination of these projects, in addition to the measurable success of the means and methods used throughout these projects.

Interview Questions:

1. Can you describe the general scope of projects that you are working on?
   a. An executive overview of the schedule of activities
2. What tactics do you use to create your schedule?
3. How do you manage the schedule?
   a. Activities
   b. Float
   c. Master schedule
4. How often do you distribute or broadcast your schedule?
   a. Too who?
5. How much do you value a schedule in a project?
6. How do you handle and adapt to changes?
   a. Delays
   b. Subcontractors
7. What software's do you use to help with scheduling?
   a. What strengths do you see?
   b. What weaknesses do you see?
   c. How has this affected your communication?
   d. Other comments
8. Looking at these small-scale TI projects, what information in regards to scheduling do you know now, that you wish you had known at the start of the project?
9. In terms of scheduling, what strengths does your company employ?
   a. Areas for improvement?
10. How do you meet your client's expectations schedule wise?
    a. How do you communicate delays?

Figure 2: Questions prepared for interviews about McDonald's tenant improvement project schedule.

In collaboration with the series of interviews, continuous observations of projects' schedule were conducted. The data was collected in the form of daily and weekly logs. The observation period began in March of 2017, and concluded in May of 2017. In this period, all three projects were observed and a variance of stages of construction were seen. The documentation held by Avanti Development Partners, Inc was utilized in these observations. Their use of the online project management software, Procore, was the basis for the majority of daily and weekly logs. Additionally, photos from their dropbox account gave a quick update on the progress of the construction activities. The data collected here provides us with a historical account of the projects' schedules and a basis for success on the projects'.

Results

Interview Results

The most informative and engaging information gathered from the interviews showed knowledge regarding the management of the schedule, the software used, how client expectations were meet, and the overall importance of scheduling. Looking first at the management of the schedule, we see some key differences between a small scale and large scale project. On this project, the schedule was maintained and adjusted on a daily basis. Construction activities on a project change in priority rapidly to meet the demand of the milestone dates. From an executive level, the project managers on these jobs found it easier to broadcast a milestone to the client. This helped keep the more detailed and ever-changing daily schedule from confusing the client on what construction activities they should be expecting to see on a day to day basis. In terms of broad casting the schedule to subcontractors, Chris Lisle had the following to say on the topic "[it is the responsibility of the] general contractor to create a schedule of tasks for each subcontractor, and to pay attention to how those tasks overlap and connect with other trades." Mr. Lisle further explains that the schedule of tasks should be highly detailed in order to eliminate any miscommunication. Mr. Lisle also clarifies that this distribution of tasks and schedules occurs on a daily basis with his subcontractors: "your supervisor who is onsite, has that master schedule and it is their responsibility to make about 20 phone calls a day to every single sub in order to get everybody to show up."

In order to coordinate this schedule efficiently, the team at Avanti Development Partners, Inc needed to employ multiple forms of computer software. Specifically for scheduling, the project managers choose Smartsheet. This is a software as a service type of program, meaning that you pay monthly for the service subscription to the program and no downloads or licensing of the program must be made to your computer. Rather, you log in to the online based software. The program "allows all of your subs [or clients] to login to the Smartsheet portal and view your schedule, and view their assignments and tasks. And Smartsheet will actually send notifications to each of those subs via email, notifying them of their assigned tasks" (Lisle). This program can prove to be a significant asset when it comes to communication, yet the communication components may not be right for this type of project. Mr. Lisle finds that "In concept I think it is a great tool, and has worked great as kind of like a back-up in case we did not have the time or forgot to call a certain sub. However, I think it is much easier for subs to ignore emails, than to ignore phone calls. So, I think really the solution is a combination of the two."

On these projects, an ideal schedule of 55 working days was used to achieve the client's, Ciro Marino of McDonald's, expectations for the entire construction project. Meeting, maintaining, and exceeding this expectation proved to be a challenge for the project managers. Mr. Lisle adapted to change and delays by "try[ing] to pick up time if you can in another area of your schedule. Sometimes that includes spending more money to pick up time in other areas of your schedule." By staying true to the original 55-day schedule, the project management team at Avanti Development Partners, Inc developed the trust and respect in their relationship with the client. In general, Mr. Lisle feels that client satisfaction "just comes down to providing regular updates on the schedule. And providing explanations as to why the schedule has lengthened, or why it has shortened. I find it best to break those off into more bitesize portions." These "bitesize portions" help the client see the reasons for delays in a more upfront and transparent manner.

Looking at the project as a whole, the question of where scheduling stands as a priority was asked. Mr. Lisle felt that "for all projects, [the budget] is extremely important. Obviously first is money, you can't spend more than you are going to take in. Then, your schedule has a big impact on that as well." By looking at the financials of the project is the first priority, and scheduling is the second, Mr. Lisle shows that these projects would be considered a budget based project. With that being said, Mr. Lisle makes the case to show how the budget and schedule are linked to one another: "Whether people meet their schedule or not, has significant financial impacts on the project. Whether or not you are having to spend additional money in other places to maintain schedule, or your extended overhead and extended supervision that come with increases in the schedule."

Observation Analysis

The online application, Procore, was used as a form of communication between the general contractor, Highland PM, LLC, and the project managers, Avanti Development Partners, Inc. Due to the logistics of the project, the general contractor had little onsite contact with the project. The project managers improved this complication through the use of Procore. The program allows for the project managers to make daily reports, and store daily site photos. Through this information the general contractor can monitor the speed and responsiveness of the construction activities. Specifically in terms of the schedule, Procore was not utilized for its scheduling features due to its lack of sophistication. These daily reports were used as an observation to compare the scheduled activities to the actual day's activities. Since the schedule was closely maintained, the daily reports mostly should true to the activities scheduled for that day.

Another application used to track and observe the progress of the project was dropbox. Daily updated photos of the site would be added to the dropbox account. From these photos, the project managers were able to broadcast and document that exact progress of the project for that particular date. Similar to the daily reports created in Procore, the photos saved to dropbox were crucial in determining the success of the project schedule. The daily photos were compared to the construction activities scheduled for the day. Like the daily logs, the progress photos showed that the schedule was correctly in sync with the construction progress. However, if the photos were compared to the original project schedule, or even a project schedule from one to two weeks prior, the photos and schedule would not be in sync. The consistent maintenance to the schedule is what proves to be the key to having successful planning and coordination.

For the schedule itself, observations were made through Smartsheet. The application allowed for the project to be broken down into specific tasks and dates, see figure 3 for a generic schedule of activities. The duration, start date, and completion date were observed for changes. Over the course of these projects, each task made a change at some point in the project. At times, the project would be accelerated in response to a delay. In contrast, the schedule would be extended due to an unforeseen delay. This caused for a forward and backward motion of the task dates on the projects. This motion however did even out and keep the final project completion date on track. Yet, in one case this proved not to be true. At the Atascadero project, the schedule was significantly pushed out due to delays from the heavy rainfall and unforeseen structural issues. These majors delays derailed the project and the final completion date was ultimately pushed out.

	Task Name	Duration	Start Date	End Date	Predecessors	% Complete
56	Landscaping	6d	01/03/17	01/10/17		100%
58	Wallcoverings	2d	06/02/17	06/05/17		0%
59	Dining Room Wallpaper	2d	06/02/17	06/05/17	78FS -3d	0%
60	Dining Room Graphics	1d	06/02/17	06/02/17	78FS -3d	0%
61	Concrete	9d	02/01/17	02/13/17		100%
63	Paint	2d	06/01/17	06/02/17		0%
64	Interior Paint	2d	06/01/17	06/02/17	55	0%
65	Corian	73d	02/28/17	06/08/17		75%
66	Measure	1d	02/28/17	02/28/17		100%
67	Install	2d	03/16/17	03/17/17		100%
68	Complete Hand Dryer Backings	1d	06/08/17	06/08/17	25	
69	SSBB	4d	01/23/17	01/26/17		100%
70	Mechanical/HVAC	95d	01/27/17	06/08/17		33%
71	Install Remote Condenser Units	1d	01/27/17	01/27/17	69SS +4d	100%
72	Replace Interior Air Registers	1d	02/14/17	02/14/17		100%
73	Repair Rooftop HVAC Units	2d	06/07/17	06/08/17	78	0%
74	Install Unisex & Drive Thru HVAC Registers	1d	06/01/17	06/01/17	54, 55	
75	Install HVAC Controls & Temp Sensors	1d	06/07/17	06/07/17	78	0%
76	Roofing	74d	02/23/17	06/06/17		74%
77	Inspect and Price Existing Condition	1d	02/23/17	02/23/17		50%
78	Roofing Install	35d	04/19/17	06/06/17		75%

Figure 3: This is the basic layout of a schedule created in Smartsheet.

To broadcast these delays, Smartsheet's notifications and sharing features were utilized. The program allows for users to be notified when a change to the schedule has been made. As the project began to fall behind the anticipated schedule, the client and subcontractors were kept informed via weekly automated emails of the project's schedule

changes. Figure 4 shows how the parameters of the notification system can be set. The concept behind this tool was thought to be an improved from of communication; however, as the schedule continually became delayed, the weekly automated began to increasingly become ignored. This resulted in the project manager's to revert to traditional phone calls to inform both the client and subcontractors of upcoming construction activities.
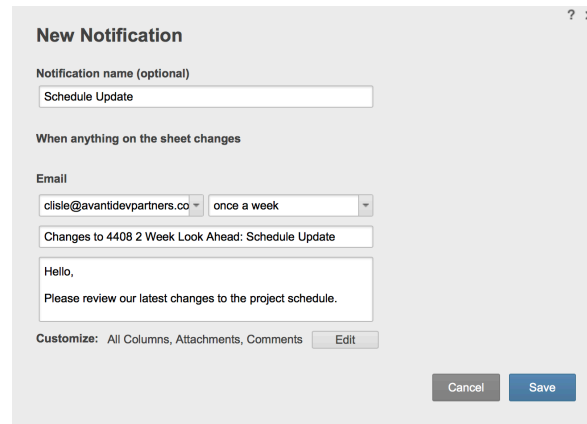

Figure 4: The parameters of a notification in Smartsheet are set using this worksheet.

Conclusion

From the interviews conducted, we see these McDonald's tenant improvement projects have been strongly influenced by the project's budget and schedule. The schedule takes a unique twist due to its accelerated nature. The project managers for these projects maintained the project schedule daily due to the schedule of activities often changing. This was done to keep the clients milestone dates on time.

The project team at Avanti Development Partners, Inc was observed via three forms of documentation. The first was through a series of daily logs created through the project management software Procore. These daily logs were then compared to the dates schedule of construction activities. Also used for observation, were the daily site photos posted to the company's dropbox account. Similarly, these photos were compared to the day's scheduled construction activities. The scheduling software, Smartsheet, was used to observe the schedule and monitor any changes made.

This research provides knowledge for professionals in the construction industry want to complete a quick serve tenant improvement project. The key lessons from the research are to utilize technology in project planning, maintain an in-depth project schedule and a milestone project schedule, and to always work towards achieving your client's expectations. This method of planning and project controls are the keys to having a successful project.

Future Research

Beyond the project managers and client on this project, there were several other key players on this project. The McDonald's corporation employs their own construction managers to facilitate these projects. In a future study, getting the perspective on the construction manager can better define the expectations of the client. The construction manager has been on a larger variety of these projects, and has a better insight as to what is a realistic schedule. Similarly, McDonald's employees a proxy to do quality control checks on the projects. This agent's insight would be helpful in providing further information as to how the projects are typically ran, and what a realistic schedule looks like. More players found on these projects would be subcontractors. The subcontractors receiving these schedules would have a unique approach to actually meeting the deadlines set by the project manager.

At the same time the McDonald's was completed in Paso Robles, a Taco Bell went under a similar renovation across the street. These restaurants under went a similar scope of work, yet the Taco Bell completely closed during the

construction. This resulted in a much quicker overall project schedule. Comparing and contrasting the schedules of these different project could provide further information on the project schedule of quick serve tenant improvement projects.

Resources

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