Hawkes Learning Company: The Transition from Traditional to Agile Governance

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Effective and responsive governance can be the key to a company's ability to deliver value and competitiveness. This case study explores Hawkes Learning Company making the switch from traditional software governance to semi-agile governance. The research questions addressed in this case identify the challenges and complexities that can exist in an organization that has adopted agile. The company saw favorable results after operationalizing agile in several of its project teams. Leadership methods included a combination of servant style leadership and others, depending on the personnel and operational environment.

Keywords: Agile Project Management, Hawkes Learning, Leadership, Project Management, Scrum, Governance

INTRODUCTION

A significant, ongoing problem in project management is the decline in the number of successful projects meeting original goals and intent, being completed within budget and on time, and increasing in scope (2014 – 2016, *PMI's Pulse*, 2016). Only approximately 30 percent of reported projects are successfully completed on time, within budget, and within the original goals and intent. Many software development companies are adopting agile governance in an effort to combat these issues.

Agile governance (agile) has become a popular methodology for software development organizations. The Project Management Institute (PMI) reported 38 percent increase in the use of agile with an 8 percent increase in the span of only two years (2013 – 2015, *PMI's Pulse*, 2015). The incremental and iterative project management processes of agile are intended to make organizations more successful in effectively and efficiently completing projects (Gablas, Ruzicky, & Ondrouchova, 2018; Hidalgo, 2018).

This study examines the adoption of agile by selected teams at Hawkes Learning Company. More specifically, this study explores how Hawkes Learning uses agile to lead, plan, prepare, and conduct

software development projects. The following sections provide a background of Hawkes Learning and the adoption of agile, describe the case study, and provide an analysis of the findings.

BACKGROUND OF HAWKES LEARNING

Hawkes Learning Company traces its origins to 1979 and a company named Quant Systems, where Dr. James Hawkes, a former statistics professor, founded Quant Systems from his home (Hawkes Learning, 2016). Initially, Quant Systems produced only application software, but then Quant Systems expanded from software programming to mathematical and statistical software development and educational publishing in the 1990s. In 1994, the company added Quant Systems India specifically for programming teams. Quant Systems became the holding company for Quant Systems India and the newly formed Hawkes Learning Systems in 2004 and in 2015, Quant Systems changed names to become Hawkes Learning (A. Rierson, personal communication, May 9, 2016).

Hawkes Learning continues to expand and innovate, where currently, the company offers software packages for introductory, intermediate, and business statistics, all levels of mathematics through calculus, and developmental English. The software is available for course support of self-learning at both secondary and higher education institutions (Hawkes Learning Products, 2016). Students may complete courses with an accompanying textbook or as a supplement to an instructor's other course materials. The Hawkes Learning content is available through an internet-based Web platform.

Hawkes Learning is a privately held company with a relatively lean organizational structure designed to make the company flexible and responsive (See Figure 1). Prior to adopting agile, the company used a traditional waterfall method to manage software development projects. Under the waterfall method similar to that as shown in Figure 2, developers and project managers conduct steps sequentially with a majority of the planning conducted at the beginning of the project with an emphasis on accurately predicting costs and schedules (Gablas, Ruzicky, & Ondrouchova, 2018; Hidalgo, 2018; Adnan & Ritzhaupt, 2018). To agile proponents, the traditional waterfall method creates a "Dilbertesque" organization in which management heavily controls projects through rigid processes (Highsmith, 2001). The results is an organization that lacks flexibility and responsiveness. Consequently, in 2009, Hawkes Learning implemented the use of agile to increase the speed and quality of software development after the company's leaders realized that the traditional waterfall method was hindering the company from meeting customer needs.

THE CASE STUDY OF HAWKES LEARNING

The case study of the adoption of agile by teams at Hawkes Learning examined whether the transition from the traditional waterfall method to agile impacted the speed and quality of software development. The case study is interesting in that agile is primarily used by organizations that develop software for external customers (Conforto, et al, 2014). Hawkes Learning, in contrast, creates, updates, and maintains software for internal use to support the educational packages provided to customers.

The study consisted of an initial visit by the research team and then a follow-up on-site interview with the vice president for product development, two years later. This study focused on two teams within the Hawkes Learning Development department: Team Atlas and Team Hyperion; who develop new software as well as troubleshoot and update existing software. The teams occasionally coordinated with Quant Systems India. However, the staff from Quant Systems India were not included as members or stakeholders of either Team Atlas or Team Hyperion for the purposes of this study.

Data was collected through formal planned activities and spontaneous events occurring during the site visit to Hawkes Learning's North Carolina location. Observations, interviews with key personnel on the teams, and focus groups were planned well in advance of the site visit. During the site visit, unplanned opportunities presented themselves such as a 15 minute meeting with the company president in the parking lot.

FIGURE 1
HAWKES LEARNING ORGANIZATIONAL CHART

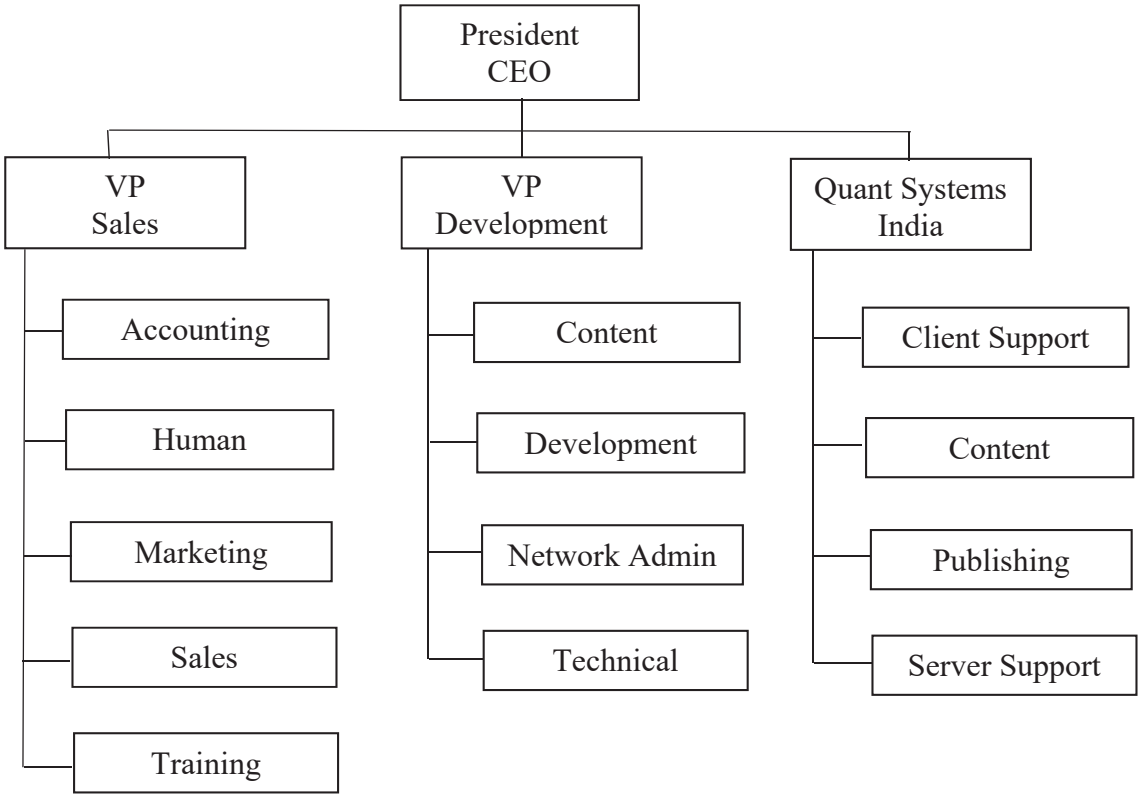
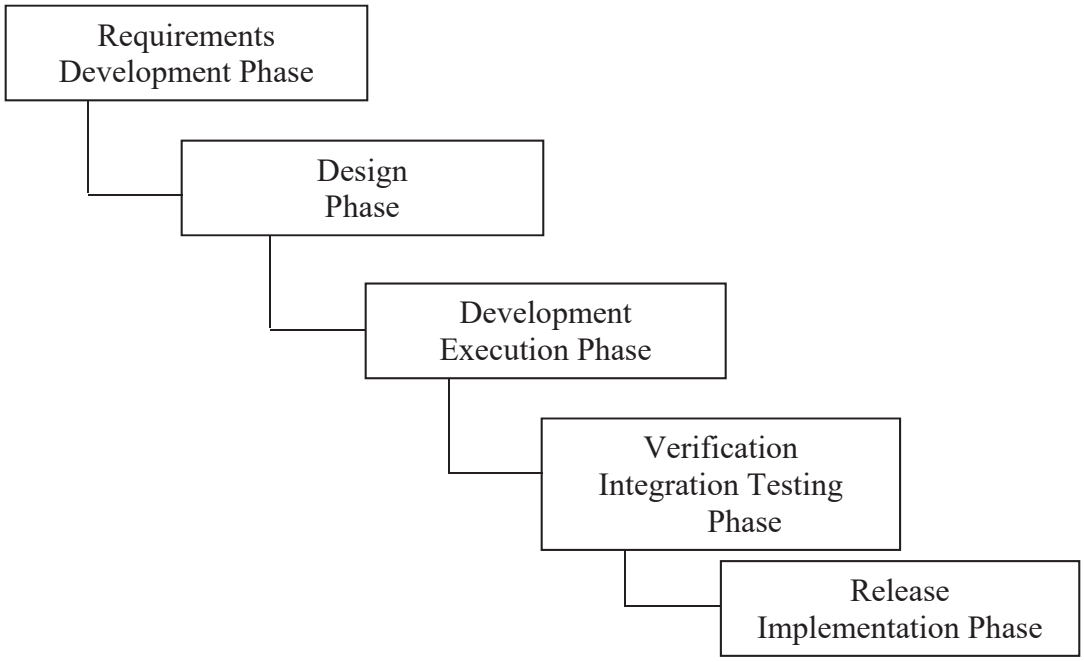


FIGURE 2
WATERFALL METHOD FOR SOFTWARE DEVELOPMENT



Initial focus group meetings were divided into two parts following the method used by Dingsøyr and Lindsjørn (2013). The meeting included no more than ten participants and included at least one member from each team, a ScrumMaster, and a product owner. For the first part of the meetings, participants were divided into two groups to brainstorm questions related to the study's purpose; Exhibit 1 details the resulting questions. The second part of the meeting was a roundtable discussion where all participants were encouraged to participate in a dialogue around the planned questions in Exhibit 2. The roundtable discussion was recorded and transcribed for analysis.

Both Team Atlas and Team Hyperion's application of agile was observed in real time. Observers were careful not to interfere with the teams' normal routine except for asking for points of clarification. The teams' applications of agile were carefully observed, recorded, and reviewed for accuracy.

Three individual interviews were conducted with senior executives. The first was a spontaneous meeting with the company president in the parking lot. In addition, scheduled interviews were held with the vice president of the Hawkes Learning Development department and a software developer who held an unofficial position as the liaison between Hawkes Learning and Quant Systems India.

A final focus group was conducted on the last day of field data collection. The participants included three ScrumMasters, one product owner, one team member, and a training and support representative. The participants represented the observed agile teams. The focus group was again divided into brainstorming and roundtable sessions.

ANALYSIS AND RESULTS

Observations indicated that the implementation of agile evolved over time. Fully trained ScrumMasters were initially hired, then through attrition and turn-over, employees were trained and placed in Agile positions. However, the vice president for product development described the requirements for more training, as some teams were outperforming other teams (M. Prevuznak, VP Product Development, personal communication, March 19, 2019). Initially the ScrumMasters used a large storyboard hung in a prominent location allowing team members to easily view and track progress through the product backlog work board (Hawks, D., 2014; Yishuai, Descamps, Gaud, Hilaire, & Koukam, 2015). The storyboard had been abandoned in favor of a digital backlog and project tracking system. However, in 2018, the storyboard use was revitalized and is now an integral management tool, along with the digital backlog and project tracking system (M. Prevuznak, VP Product Development, personal communication, March 19, 2019). The digital system, though not immediately and prominently visible to team members, was more readily accessible by computer at their work stations.

Both Team Atlas and Team Hyperion initiated plans as scheduled. The plans were divided into two sessions, which were conducted sequentially (sprint planning I and II). The time allotted for Team Hyperion was one hour for both sessions. Team Atlas was given an hour and a half to cover both sessions.

During Team Hyperion's planning I stage, the product owner of product owners (an unofficial title given to the supervisor of the product owners within the development department), the team's product owner, the ScrumMaster, and three team members discussed and developed the new sprint backlog. This included incomplete stories from the previous sprint. All members, including product owners, voted to approve the current sprint backlog. This concluded the first session. The product owners were released after this 30-minute session. An additional team member then joined the meeting. During the week, this member missed days of work, which resulted in his/her resignation from the company.

Team Hyperion conducted the planning II session, in which tasks were identified and assigned to team members. Similar to the process described by Yishuai, Descamps, Gaud, Hilaire, & Koukam (2015), the two-week sprint used time boxes based on the t-shirt size method (small/medium/large) of determining effort levels required to complete tasks. At the session's conclusion, the ScrumMaster, who was certified as both ScrumMaster and ScrumDeveloper, explained that the team was in a norming stage of team development due to recent turnover. As a result, the ScrumMaster noted that she was in a coaching mode with her team members. She stated that the team velocity was highly variable and

required several sprints to establish team velocity. Finally, she stated that all work efforts were based on an approximate six-hour workday, including account breaks, meetings, and distractions.

Using a previously completed sprint, Team Atlas conducted a sprint review with the team and two customers. However, the product owner was unable to attend. The review included a product demonstration to the customers; they accepted the product as complete. After the review, the team began its first sprint planning session. The product owner of product owners arrived after attending the Team Hyperion sprint planning session. The product owner of product owners represented the team's product owner and assisted in creating the sprint backlog, which consisted of approximately 50 stories. At the end of the planning session, the ScrumMaster noted that there might have been too many items placed in the sprint backlog. Changes were not applied to the backlog; all in attendance accepted it. After the product owner of product owners departed, Team Atlas began their second sprint planning session.

During the planning II session, Team Atlas, like Team Hyperion, aligned tasks and efforts for each story. During both sessions, the certified ScrumMaster retained control of the meetings' facilitation. The team members appeared comfortable when working together. They participated and collaborated in all discussions and team decisions.

Each team held their daily scrums the day after the sprint planning sessions. This was their workday's first task. As stated, the teams had different ways to conduct their scrum meetings. Team Hyperion conducted a stand-up meeting in their work area. Team Atlas conducted a semi-stand-up meeting in a team conference room. Team Atlas updated the digital backlog during the scrum meeting. The timings of each meeting were offset by 15 minutes so the product owner of the product owners could be in attendance (Hyperion at 8:45, Atlas at 9:00). The daily meetings included ScrumMasters, product owners, and team members. However, one team member from Team Hyperion resigned from the company at the end of the observation week.

During the scrums, members from both teams discussed their previous day's work, accomplishments, and impediments. Potential mitigation strategies were also discussed. In one instance, cross team coordination and assistance took place to mitigate an impediment. Finally, members informed their team of the current day's work. For both teams, it appeared that the members would separate after the meeting and perform individual tasks. Initially, a specific individual could only perform these tasks. Evidence indicated that inter- and intra team coordination and assistance took place throughout the day and during daily scrums. During most of the observation time, the large work area was designated as "church quiet".

The interviews revealed a mixed reaction to agile among company leadership. The vice president of Hawkes Learning Product Development department advocated for agile. He noted his largest challenge was the translation of work effort in terms of cost and time to be understandable to executive leadership. He also noted that he was a buffer between the agile teams and leadership. In contrast, the company president clearly did not fully support agile. He stated the company used both agile and waterfall methods. It appeared that agile did not provide him with the information to translate work effort on a project into cost and time. The unofficial liaison between Hawkes Learning and Quant Systems India reinforced that there was a disconnect between product development teams and senior leadership. During a revisit interview with the vice president of product development, this research team learned that the executive leadership still do not fully embrace the ideals of Agile, however; the company does continues to experience improvements in financial performance as a result of improved task completion (M. Prevuznak, VP Product Development, personal communication, March 19, 2019).

As part of the brainstorming session, the focus group was questioned about leadership characteristics that foster or hinder the execution of a project. The top four characteristics the focus group participants cited for fostering project execution were: (1) open communication; (2) clear understanding of goals; (3) compassion; and (4) earned respect. The top four hindrances to project execution were: (1) micro-management; (2) reluctance to take responsibility for failure; (3) hesitance to share success; (3) unavailability of project resources. Although the literature stated that servant leadership was the appropriate method for agile, no member of the focus group mentioned or hinted at their leadership style following the servant leadership methodology.

During observations, the ScrumMasters did not exhibit specific leadership characteristics. However, teams followed the ScrumMasters' instructions and demonstrated general respect. The team Hyperion ScrumMaster stated that due to the turnover of her team, she had assumed a coaching role for her new team members, and a facilitator for the team as they work through their *storming* stage of teaming. The final research subquestion showed that leader characteristics within the Hawkes Learning organization changed based on personnel and environment. Team Atlas team members used the servant method, understood the tasks, and immediately set to work. As discussed, Team Hyperion evolved through the storming stage of teaming. The ScrumMaster for Team Aurora assumed a directing role in establishing the new team.

Agile should support project governance and thereby influence the project development process and ultimately project success (Joslin & Muller, 2015). Although the president of Hawkes Learning is not an avid supporter of agile, he has empowered the project development teams to conduct agile projects using the scrum methodology. Hawkes Learning consistently hires staff with agile and scrum experience, and encourages team members to become scrum certified. The team empowerment and hiring practices have allowed the agile teams to follow agile as described in the literature.

Team Atlas and Team Hyperion both functioned as self-directed and self-supported teams. The teams delivered adaptable and flexible product increments after a previous sprint and subsequently conducted the planning and establishment of their next sprint. Observations revealed that team members were motivated to provide the team with working deliverables, ask for assistance as needed, and render assistance to others. The ScrumMasters maintained working hours based on required team member absences and a sustainable pace through each sprint. Observed teams were collocated to allow for immediate intra- and inter team communication and coordination.

An unobserved (or unfamiliar) area in the study was the agile teams' definition of "done." The team members did not discuss the definition during planning or scrum meetings. There may have been a defined definition discussed prior to the observations conducted as part of the study. It appeared that the teams assumed "done" equaled the working product increments observed in the study. During the revisit interview, the vice president for product development disclosed that although all teams had improved in project completion, there was a "need to work more on [product] release", which can be attributed to not understanding the definition of "done" (M. Prevuznak, VP Product Development, personal communication, March 19, 2019).

CONCLUSIONS

This study explored the adoption of agile by Hawkes Learning and the effect of agile on project success. Results show evidence that the teams benefitted from the use of agile and were able to successfully manage software development projects. Although they faced challenges, both Team Atlas and Team Hyperion showed that scrum methods of agile are successful for managing the scope and budget of projects. Additionally, through the use of Agile, the company did improve its ability to complete projects and to realize directly related financial gain.

The company did face some challenges in the use of agile. For example, teams lost sight of organizational goals which made it difficult to align operational decisions intended for short-term progress vs. long-term thinking. This could be due to the lack of support for agile from senior management. Initially, senior management empowered the teams to adopt agile, but the teams had no high level involvement or direct support. The support from the executive leadership, although not fully embracing Agile, continues through the empowerment of the vice president for product development.

Management at Hawkes Learning admitted to struggles adapting to company growth and the related change. Company leaders have recognized the benefits of agile based on the effectiveness of scrum within Team Atlas and Team Hyperion. In both teams agile resulted in improved team communication and cooperation as well as improved productivity and responsiveness. Additionally, the senior leaders understand the requirement for continuous training of its agile teams to ensure continued improvement of project completion and smooth transitions of power during times of employee turnover. Finally, the scope

of this study was limited to two teams at Hawkes Learning. Additional research involving other organizations is necessary to generalize the results showing successes and challenges of agile methods. Certainly, research documenting other firms' experiences transitioning from traditional waterfall methods to agile would be beneficial.

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