

A Winning Bet: Communication Processes at the Core of Agile Pilot Projects

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Abstract

Harrah's Entertainment, Inc. is betting that Agile methods can help their Enterprise IT Team deliver faster and better results to their business stakeholders, ultimately improving the gaming experience for the millions of people who frequent Harrah's properties in Las Vegas and other major markets around the globe. Starting in July 2006, Harrah's IT began piloting Agile, as part of a two-year plan to put in place an alternative approach to waterfall, for projects where it is relevant. This report describes the ups and downs of two pilot projects, through the lens of key communication processes being used by the teams. Both teams are using a hybrid approach combining aspects of SCRUM, RUP, XP, and Lean. So far Agile is working for these projects, but with some genuine hiccups that have led some to consider even abandoning the pilots.

1. Introduction

Harrah's has successfully operated in a waterfall model for as long as anyone can remember. An IT force of nearly 500 people across the continental U.S. is complemented with consultants from multiple firms, all of whom freely co-mingle on projects. Business users as well as technology teams are familiar with detailed specification documents, lengthy signoff processes, and painful user acceptance phases where the disconnects between what was specified, delivered, and needed become clear.

The Enterprise IT Team wanted to improve the speed and experience of delivery to their business sponsors – primarily marketing teams responsible for applications that manage customer interactions at slot machines, on casino floors, on the internet, and other touch points (including its loyalty program).

Agile methods appealed: high value, short timeframes, increased interaction – all of these indicated a better end result and happier business people. Hence, IT initiated an Agile Initiative to explore the potential expansion of their existing delivery methodology into Agile.

The Initiative selected two projects to act as pilots. In this report we use the lens of Agile communication processes to explore what is working well and where the teams are finding struggles. Our roles include: the Development Lead for one of the pilots and co-Lead for the Agile transformation; the Harrah's Quality Group Manager and co-Lead for the Agile transformation initiative, and the Agile coach (from Sapiient).

We provide background on the methodology used, and the process for selecting the pilots. Then, we will explore the benefits, struggles, and current approach being applied for the following four processes:

- Start of Iteration Tasking Meeting
- Daily Standup Meeting
- War Room Meeting
- End of Iteration Checkpoint

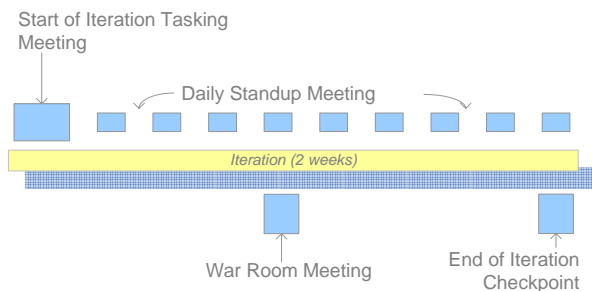


Figure 1. Communication processes during an iteration

2. Background

The objectives of the Agile initiative at Harrah's are to determine a) if Agile could work at Harrah's, and for what type of engagement, b) what flavor of Agile would work best, and c) what changes would be necessary to make it work. Because of the variety of work conducted at Harrah's, the choice of methodology to pilot was unclear.

2.1. Selecting an Agile methodology

Because Sapiant was already working with Harrah’s on a number of projects, and because Sapiant has moved to Agile for all its development work, Harrah’s chose to leverage Sapiant expertise and people. In the past few years Sapiant has built a distributed Agile delivery model called Sapiant|Approach, a methodology that borrows extensively from SCRUM, RUP, XP, and Lean ideas, and builds upon Sapiant’s distributed project development and facilitated workshop experience. Because of the wide range of influences on Sapiant|Approach, this would also give the pilots (and hence Harrah’s IT) exposure to a wider variety of Agile methodologies than they would have received with a single methodology.

Both pilots operate using two-week long *iterations*. *Stories* are the fundamental unit of work used by both teams to plan, track progress, and communicate with the client. The teams use *tests* primarily to define when the story is truly “done” – they are the contract between the team and the business sponsor. For development stories the testers on the team execute these and then work to automate them and add them to a regression test suite.

For each story, the team generates a list of *tasks* needed to complete the story. The tasks are the means for the team to estimate and track progress to completion for the stories. For each task, team members continually update the *estimate to complete* (ETC) to allow a compound ETC to be calculated for all the stories in the iteration in the form of a *burndown chart*. All this data is tracked in Sapiant ResultSpace^{RM}, a collaborative development environment based on VA Software’s Source Forge Enterprise Edition that Sapiant has extended to include Agile planning and tracking features.

2.2. Selecting the pilots

Selecting the pilot projects for the Agile Initiative has also required careful attention. Pilots were selected based on a range of criteria such as team size, technical complexity, and business complexity, to help determine if the data collected is going to provide a suitable sample for decision-making.

The first two pilot teams were selected to provide good breadth of coverage across the different characteristics (see Figure 2). Importantly, the projects were selected to be business-critical applications so that the new processes could really be “put to the test.”

Pilot team #1 is code-named “Slot Marketing” for this report. The team is working towards periodic

releases of functionality to Las Vegas and other markets. This pilot began in July 2006, released early functionality in October 2006, and more releases are planned through the end of 2006. This project has approximately 12 team members, of which a majority are Harrah’s employees. Half the team is based in Las Vegas, Nevada, half in Memphis, Tennessee (2 hours time difference).

Pilot team #2 is code-named “Web Marketing.”. This project began in late summer 2006 and will continue into early 2007. Because of the scope and desired delivery timeframe, the Web Marketing team is larger: 20 team members, of which a majority are non-Harrah’s contractors. Approximately half the team travels to Las Vegas on a weekly basis, with a small subset (including the Test Lead) in Memphis, and another small group working from New Delhi, India.

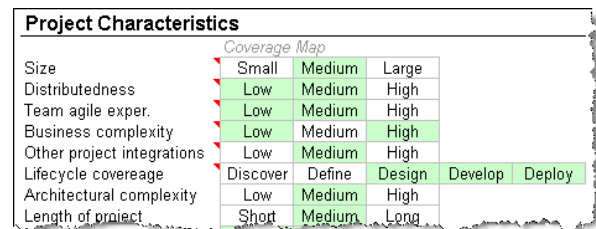


Figure 2. The pilot coverage mapping shows the range of criteria used to select the pilot

The Agile coach from Sapiant is based in Cambridge, Massachusetts, and travels regularly to Las Vegas and Memphis, participating remotely at other times. The Harrah’s authors of this report are based in Las Vegas but travel regularly to Memphis.

Unless otherwise noted, both projects follow the same set of processes and approaches, as we have outlined below.

3. Start of Iteration Tasking Meeting

Both teams finalize a set of stories during the End of Iteration Checkpoint (see section 6), and then kick off their iteration with a Start of Iteration Tasking Meeting on the first day of the iteration. In both cases the iteration boundaries are not on traveling days to maximize productivity.

3.1. Summary

Description	Validate the planned scope, get the team aligned, and ramp up new team members, by clearly articulating and exploring the scope for the iteration
Objectives	o Full team is aware of the scope

	<ul style="list-style-type: none"> for the iteration Each story is detailed out -- detailed analysis is performed and tests are identified to clearly articulate the goals of the story Each story is estimated -- detailed task list is produced by the team that will own the story resulting in an overall estimate to complete for the story Story target adjustments -- based on any knowledge gained in the detailed session, adjust target stories, also with the client
Attendees	Full team, then split into tracks. Distributed team members involved via phone
Timing	2-8 hours, start of iteration
Entry criteria	Complete story list, approved by business sponsor
Exit criteria	Tests and tasks loaded into ResultSpace ^{RM} and Quality Center TM , decision on any story adjustments for the iteration, list of dependencies for the iteration (e.g., meetings that need to be scheduled for later in the iteration when the need is expected)

Table 1. Summary of Kickoff Iteration Tasking Meeting process

3.2. Benefits

- Team member rampup: new team members listen actively and then participate in group sessions. In the Web Marketing project a small core team of three or four people had to rapidly transfer knowledge to the remaining 15+ people. This meeting provided an effective forum for this
- Clear expectations for the iteration: the understanding of what must be completed for the story to be deemed complete is extremely clear (tests are defined and loaded into Quality CenterTM). This is especially helpful for more junior team members
- Issue surfacing: to successfully articulate the actual tests used to bound a story, ambiguities in wireframes and other understandings surface, are collected, and can be reviewed with the key business sponsors
- Team member visibility: because the full team participates, leadership can easily identify team member strengths and weaknesses

- Accurate estimates: detailed task-level estimates give better insight into the ability to meet the iteration targets

art437373	Install WPS to staging environment (includes support team ramp up)	Infrastructure	Data/Infrastructure	Anoop K.	In Progre	36
task40401	Update WAS to version 5.1.1.12			Shaun B.	Complete	0
task40403	Install WebSphere Business Integration Server Foundation with required fixes			Shaun B.	Complete	0
task40405	Perform Install of WPS			Shaun B.	OK	2
task40406	Create WPS Database instances			Jayasree	Complete	0
task42211	Provide Shaun with LDAP groups for project			Brent Har	OK	2

Figure 1. Partial task list (created during Tasking meeting) with estimate to complete for story

3.3. Struggles

- Definition of a test: team members did not know how to articulate a test. Tests generated included “Screen must work as expected”, and “The tests must pass.” Without constant oversight and guidance, the list of tests and tasks developed was not at a useful level of granularity. Once they were reviewed by the team leadership there was a large amount of rework
- Maintaining list of tests: the teams use Quality CenterTM for tracking defects and ResultSpace^{RM} for monitoring the progress. Entering data in multiple tools and linking that data effectively is a major pain, leading to rework
- Oversimplification: Everyone had a tendency to over-simplify tests or tasks, either using very generic tasks, or very simple tasks (“Write code”). Simple tasks leads to bad estimates; simple tests lead to difficult discussions with the business sponsor
- Conflicting projects: some people on the project were staffed to multiple engagements, and sometimes should be pulled into another project, effectively bottlenecking the pilot project(s)

3.4. Current approach

The team has developed the following best practices to execute an Iteration Tasking Meeting for the Agile pilots:

- Walk-throughs early on: to help clarify the concept of tests versus tasks, the Agile coach and / or Development Lead sits through a full-team exercise to fully define the tests and tasks for a definitive story.
- Target stories that can be completed in three days: this means that in a two-week iteration, progress

can definitely be made before iteration end. This is not always possible but it is a goal. (Note, three days applies to duration, not effort.)

- Review all stories as a team: spend time up front as a full team to acclimate and understand the level of detail of all stories
- Review cycle: expect a review of the tests by the Test Lead, Architect, PM, and a cycle of adjustment -- this may take time, but is worth the effort in clarity of objectives. A test such as “Test Logic” would be expanded to articulate the actual logic to be tested
- Business sponsor expectations: set expectations with the business, and block out time such that the team can checkpoint these tests -- so that teams have unambiguous definition of closure with the business
- Document all tests and tasks: by the end of the tasking meeting, all must be documented in the agreed upon format (in this case within the two tools used by the projects)
- Leverage highly detailed wireframes: the Web Marketing project had been producing highly-detailed wireframes articulating the unit-level tests for each screen. The team will reference these in the story tests
- Identify dependencies: identify all the stories which have tasks that contain date-based dependencies so the team can focus on these tasks immediately (even before starting the story)
- Identify stories that will require demos: identify the stories where the client will engage in hands-on testing or demos

4. Daily Standup Meeting

Both teams follow a standard standup meeting. Because of its size, Web Marketing conducts separate track standup meetings, and then Track Leads meet outside this meeting in a separate Track Leads standup meeting.

4.1. Summary

Description	Keep a pulse on the team health and progress with a daily review of where the team is against the planned iteration
Objectives	<ul style="list-style-type: none"> o Everyone is made aware of what's going on in the iteration o The Development Lead is made aware of any issues blocking the team's progress

	<ul style="list-style-type: none"> o Focus is maintained during the iteration o Communicate key messages to the team (from anyone)
Attendees	Full team, though may be conducted on a per-track basis. Distributed team members involved via phone
Timing	10-20 mins each day
Entry criteria	ETC and tasks updated in ResultSpace ^{RM} for each story in the iteration
Exit criteria	Blocking issues surfaced, key messages communicated, any next steps assigned

Table 2. Summary of Standup Meeting process

4.2. Benefits

- Lightweight meetings: developers rave about the lack of long laborious meetings: “We have so much more time to code”
- Drop-ins are doable: based on an Internet-accessible toolset, (ResultSpace^{RM}) it's possible for those not directly in the core project team to stay connected to the project with minimal effort. Online reports allow drill-down into velocity issues which can be raised at standup meetings
- Engaged remote team members: the full team can effectively understand what they are working on with minimal effort. Using a common tool during the standup engages everyone.

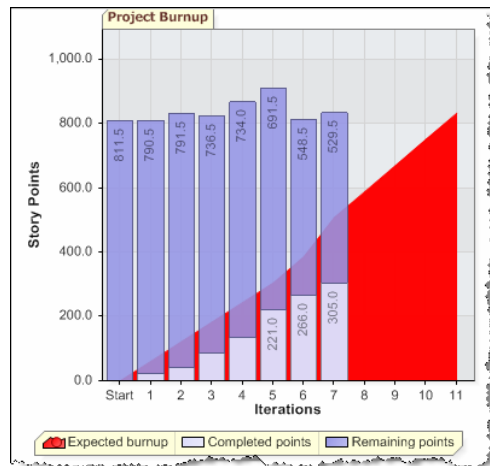


Figure 2. Project burnup for Slot Marketing project

4.3. Struggles

- Rigor in preparing for the meeting: often, data such as ETC and task completion was not accurately updated in ResultSpace^{RM}. Because of this, the true project status was often in question. Soliciting this information during the actual meeting made the meeting too long. Early on, many stories were poorly articulated, or left without tests or tasks, making tracking impossible
- Consistent attendance: in particular on the Slot Marketing project, some team members are staffed to multiple projects at once, which made it difficult at times to get consistent attendance. In particular, the Development Lead was not able to attend all sessions which led to inconsistent facilitation of the meeting. Also, members often miss standup calls the beginning of the week when they are in transit
- Focus: early on, focus was too much on tasks and often tests were overlooked until too late in the iteration. Or, focus was too much on individual stories and not enough on the overall story targets and burndown.
- Team coordination: basic issues regarding a story often surfaced between team members in the standup meeting, indicating a lack of communication happening as part of the daily work routine between people working on a story
- Remote people: some of the people located in Memphis had joined later in the project and had missed in person training. They found it hard to engage and follow along
- Traveling team: members often missed standup calls at week start when they were in transit

4.4. Current approach

The team has developed the following best practices for the Agile pilots:

- Backup facilitator: have a main facilitator but also backup facilitator to run the meeting
- Rigor: define all tasks and tests by the end of first day of the iteration. Complement this with continual emphasis on the rigor of updating ETC while running meetings
- Shadowing: the Agile Coach attended the standup for a while, sending feedback to the Development Lead, or making comments real time on the usage of tools
- Shift start time: of standups for Monday call to accommodate travelers

4.5. Outstanding issues

- Netmeeting: the team identified that sharing software such as Netmeeting or WebEx would help remote members be more focused during meetings. This has yet to happen consistently

5. War Room Meeting

The War Room meeting was not originally part of the Agile methodology introduced to Harrah's by Sapient. The idea for this meeting was introduced by a member of the Harrah's team based on past Agile experiences. Both Agile pilots are currently utilizing this meeting, however, Web Marketing has named this a Mid-iteration Working Session.

5.1 Summary

Description	A working session with the business. Review questions, issues, and demos for the current iteration, and discuss story choice for the next iteration
Objectives	<ul style="list-style-type: none"> ○ The business gets visibility into the progress of the iteration and starts thinking about stories for the next iteration ○ Teams remove blocking issues that require business input
Attendees	The Business sponsor(s), Project Manager, Dev Lead, Test Lead, and those team members with questions and/or demos
Timing	This is a one hour session that was intended to occur on the 3rd and 8th day of a two week iteration
Entry criteria	<ul style="list-style-type: none"> ○ Agenda and reading materials distributed ○ Blocking issues/questions identified ○ Identified stories ready for demo
Exit criteria	Blocking issues and outstanding questions resolved, and those stories demoed are closed

Table 3. Summary of Standup Meeting process

5.2. Benefits

- Face Time: team members are able to spend time throughout the iteration with the business to answer questions and validate the fact that they're still on track

- **Time Savings:** by demoing stories throughout the course of the iteration, the End of Iteration Checkpoint meeting is not bogged down with too many demos and allows time for more lessons learned and closure on stories for the next iteration. It also allows the team to close stories with dependencies early in the iteration.
- **Expectation Setting:** a solid list of stories for the next iteration is agreed to on Day 8 of the iteration rather than Day 10. This allows planning for the Tasking Meeting to occur early.

5.3. Struggles

- **Business availability:** our business sponsors are often unavailable for these sessions due to conflicting project priorities. Their participation is key to the success of this session, as we can't close on issues, questions, and stories without their input
- **Redundancy:** the team felt, early on, that there was redundancy in the materials covered in the Day 3 War Room meeting and that which was covered in the previous Iteration Checkpoint meeting. This led the team to cancel this session, however, as we moved through iterations the face time required from the business led us to reinstate this session
- **Clarity:** the business raised concerns with the fact that they were not clear on the purpose/objective for this meeting. This lack of clarity led to their lack of diligence in attending these sessions

5.4. Current Approach

The team has developed the following best practices for the Agile pilots:

- **Facilitation:** each of these sessions requires one person to take on the facilitator role. Without a strong facilitator, the session was often not covering all of the topics required. More often than not we spent too much time on one topic and/or failed to capture items in the “parking lot” and move on.
- **Prep:** by not providing the agenda and materials for the session early, the business was unclear about who to send and what we were covering. We have now made a commitment to provide the business with the agenda and any reading materials at least a day prior to the meeting.

6. End of Iteration Checkpoint

“The moment of truth” comes every two weeks for the two Harrah’s Agile pilots. The business sponsor for each project sits down or dials in to hear and see how successful the team has been against the targets set ten days earlier. Though not intended as a frightening experience, it is a tense meeting sometimes, as each team is very open about the progress made in the iteration. These meetings have been one of the more difficult aspects of Agile to execute smoothly.

6.1. Summary

Description	Report and engage business around iteration just completed, and plan for the following one.
Objectives	<ul style="list-style-type: none"> ○ Business sponsor experiences and learns from work completed ○ Agree upon plan for subsequent iteration(s) ○ Resolve outstanding issues
Attendees	Business sponsor(s), full team, distributed team members involved via phone
Timing	1.5 – 2 hours, last day of iteration
Entry criteria	<ul style="list-style-type: none"> ○ Updated list of completed stories ○ Demos / test drives prepared ○ Proposed list of stories for subsequent iteration ○ Key issues and risks for review outlined
Exit criteria	<ul style="list-style-type: none"> ○ Confirmed list of stories for subsequent iteration ○ Updated issues based on input ○ Feedback or defects captured against completed stories ○ Feedback on meeting

Table 4. Summary of End of Iteration Checkpoint meeting

6.2. Benefits

- **Transparency:** for better and worse, the project is fully exposed. One of the pilots targeted 105 story points in the second iteration, but could only claim actual completion of 45. The causes were critical environment and team process issues that had to be addressed quickly for the team to get back on track. With issues plain for all to see, the team is motivated to take immediate corrective actions.
- **Self-assessment:** the team was able to recognize issues and resolve them on their own. With a scheduled “pause” after each two-week iteration,

both pilot teams have an opportunity to step back and evaluate their situation and take action.

- Influence: the business sponsors have been able to influence the direction of their respective projects

6.3. Struggles

- Process resistance: In both pilots, the business sponsors believed early on that Agile was “an IT process” that they must live with. To some degree they are resistant or do not engage with terminology (“velocity”, “backlog”), core concepts such as “stories,” and getting incremental closure on completed work
- Meeting focus: because of increased involvement, executing the meeting effectively is critical to convey information, get information, and not waste the time of very busy people (who are not used to interacting this often)
- Sugar-coating: because a waterfall phase is long and allows for a lot of message “massaging,” a team used to working in this manner can resist being as open as Agile encourages. In one example the team presented a buggy demo out of the desire to present some form of progress, making it hard for the business sponsor to then accept the concept of incremental signoff
- Operating at different levels: the team worked at the story level, while the business sponsor operated at the requirements level – leading to an inability to agree on what was actually completed
- Technology issues: because of technology issues outside the control of the project teams, in some cases testing against a stable environment became problematic. Because of this, large numbers of stories could not be completed because they could not be successfully tested, putting the foundation of incremental development at risk

6.4. Current approach

- Mentoring business sponsors: The transition to Agile for a business sponsor is considerable, and the development team recognized that the amount of training, ramp up, and support given to the business sponsors was far less than needed. Hence moving forward the Agile coach will spend

dedicated time with the business sponsors on education and coaching

- Meeting discipline: in the context of an unfamiliar methodology, well-structured and executed meetings help focus efforts for all parties. Similar to the War Room Meeting approach, a strong facilitator, solid agenda, and effective and visible note capture is essential
- Stress terminology: while the new terms seem unintuitive to some business people, we find it important to encourage both the team and the business sponsors to use “stories,” “velocity,” “story points,” and “ETC.”
- Escalation: the key technology issues pose a real threat to a successful adoption of Agile at Harrah’s; we’ve escalated these concerns
- Development team involvement: to encourage open dialog, and also to maximize the impact of the delivery team, we limit the involvement of team members to those who will present at the checkpoint

7. Conclusion

We expected challenges when rolling out Agile to Harrah’s. We feared that if we selected projects too critical to the business, that the risk was too great for Agile “taking the blame” if the projects experienced problems. At this point the benefits of Agile are outweighing the drawbacks, but not by much. The risk still exists that Agile will not go forward. Our focus remains on continually feeding back what we learn and adapting Agile to make the pilots as successful as possible.

We have exceeded our expectations about how much we could learn about rolling out Agile at Harrah’s. The “real” projects have provided real situations that show us where Agile can work and where it has trouble within the Harrah’s environment and culture. This knowledge (and we will continue to get more) will help us be well-prepared to roll out Agile on a larger scale to the greater Harrah’s community.

Stay tuned for a follow up report in six months!