



PayPal Enterprise Transformation

I. Executive Summary

In May, 2013 PayPal launched a “Big Bang” enterprise transformation to address business imperatives for increasing customer focus and pace of innovation. As a result, today PayPal is experienced in the practice of Agile at enterprise scale, with over 400 product-aligned teams delivering customer value every two week sprint. Critical to the transformation were decisions taken to aggressively launch all teams at once and introduce enterprise standards for planning, tooling, and assessing progress. While enterprise transformation is an ongoing journey, PayPal has built a solid foundation that it will leverage as it emerges as an independent company that is transforming the way the world views and uses money.

II. Introduction

This paper shares the story of the PayPal Transformation, a radical rethinking of our business, from the initial impetus for change through the transformation to the challenges we still face today. Our real-life, multi-year journey can serve as a reference for other large-scale enterprise transformation efforts. We provide the industry context, transformation goals, operational approach, results to date, and work remaining. We hope to expose the rationale behind key decisions so that others can learn from our experience. In the end, we believe that we have not just transformed the company, but transformed the way that large scale transformations are done.

PayPal is a rapidly growing, multi-billion dollar world-wide leader in on-line, off-line, and mobile payments. There are a number of well-established competitors and innovative upstarts disrupting the payments industry. PayPal has maintained its’ position as a payments leader through aggressive growth in product capabilities and expansive reach to consumers and merchants across the globe.

III. The Burning Platform

PayPal was acquired by eBay, Inc in 2002. At that time the technology organization was small and nimble and rapidly building payments solutions positioning PayPal as a leader in the payments industry. By 2008, innovation began to decelerate and product release cycle times started to increase dramatically, increasing from weeks to months, then to many, many, many months! There were 6 key drivers to the slow down;

- **Detailed Requirements Documents:** To enable annual planning, projects needed to be defined and documented in a “Product Requirements Document” (PRD) long in advance of actual work commencing. These documents could take months to create, and were often out of date before coding began.
- **Complex Quarterly Planning:** To provide more flexibility in planning the Technology Quarterly Planning (TQP) process was developed. While the process added more flexibility, it also added complexity and work to an already difficult process.

- **Domain Bottlenecks:** To create deeper skill sets and improve the quality of the code base, PayPal divided the environment into 85 unique domains, aligning developers to each domain. While domain expertise deepened across the organization, an unintended consequence was the creation of discrete domain bottlenecks within key areas (e.g. risk, compliance, core payments) that were required for almost every project.
- **Developer Context Switching:** To enable more projects to start in any given quarter, the planning process would often allocate individual developers to multiple projects at the same time. The context switching required as a developer moved from project a to project b led to reduced productivity of the individual and the entire team working on a given project.
- **Traditional Waterfall Development:** To facilitate coordination across the teams and domains the enterprise needed to use a very traditional waterfall development methodology. While some groups had developed grass roots agile efforts, these teams were still forced to fit agile practices into the waterfall cycles of documentation, development, testing, and release.
- **Integration Testing Cycles:** To ensure the quality of each release rigorous testing was required. As the long-lived code branches grew, so did the integration testing cycles. Even the smallest change required a 6-week integration and regression test to ensure the change would not break the site.

The combination of all of these factors led to a high level of frustration across the organization. Developers were frustrated because they would work for months and not be able to see the results of their efforts. They were often pulled in many different directions as their work spanned across many projects. Product managers were frustrated because they felt that they spent more time documenting what they wanted built than the time it took to build the request. Rarely would Product spend time with customers, their focus needed to be internal to get the work done. Executive management was frustrated because “everything took so long”. There was little confidence in the technology organization’s ability to deliver. Customers were frustrated because the PayPal customer experience was not keeping pace with changes in the payments industry. Something had to be done or PayPal would lose customers and critical talent.

In 2012, PayPal promoted David Marcus to be the new President following Scott Thompson’s departure. David came to PayPal in 2011 through the acquisition of his start up Zong. David quickly focused on the customer experience and the need for new product innovation. He could see the challenges the organization faced. He brought in a new team of leaders to help transform PayPal and fundamentally change the way the company worked. Kirsten Wolberg joined PayPal in the summer of 2012 to lead Technology Business Operations, part of her charter was to figure out how to make it easier to get stuff done at PayPal. At that time the problems were well known, but the solutions were still to be determined. Within a few months Kirsten, who had experience with agile at scale from her time as CIO of salesforce.com, had collaborated across the organization to define an agile path forward. At that moment, executive sponsorship aligned with visionary leadership and a broad base of employee support to enable PayPal to embark upon a radical transformation.

IV. The Transformation Process – The Big Ideas

PayPal Executive Staff sponsored a Core Team made up of senior leaders in the Product and Technology organizations. The Core Team made a number of key decisions to set the foundation for the Transformation. An enterprise-wide transformation, or “Big Bang”, was scheduled, an enterprise sprint cadence was defined, an enterprise agile lifecycle management tool was investigated, chosen, and configured, and an enterprise transformation dashboard was established to assess progress.

A. “Big Bang”

Against the prevailing wisdom in the industry, PayPal chose to use a “Big Bang” approach rather than a gradual transition to change. This decision was due to the high degree of interdependency between teams and the need to establish an enterprise operational framework for staffing, delivery and governance. Many changes needed to be made quickly, so over 150 employees formed multi-disciplined teams to tackle challenges in product architecture, delivery team formation, enterprise planning, end-to-end process, engineering practices and tools, KPIs, finance, talent, training & coaching, change management, and facilities to feed the “Big Bang”.

PayPal formed over 300 cross-functional delivery teams with the required product and technical domain competencies from employees in eleven world-wide development centers. Teams adopted Agile Scrum as the execution model and were trained in Agile practices and Customer Driven Innovation (CDI). Scrum Masters and Product Owners received additional, role-specific, training.

Organizational scale was achieved through careful adaptation of public frameworks such as the Scaled Agile Framework and Large Scale Scrum. Teams were organized by a new Product Architecture model of 17 Product Lines, 31 Sub-Product Lines, and 87 Delivery Groups. The new structure strongly encouraged team co-location, dedication, and stability. The coaching organization was expanded from 4 agile coaches to a team of over 20 coaches so that every development center had at least one on-premise coach and all product lines had one or more coaches accountable for their success.

The official “Big Bang” launch of the PayPal transformation occurred on May 8th 2013. On that date, all but a few in-flight teams began Sprint 1 as team members rolled off completed projects.

B. Enterprise Sprint Cadence

Prior to the “Big Bang”, some teams at PayPal used ad-hoc Agile techniques introduced through grass roots efforts of engineers, in some cases with the sponsorship of a local leader. There was high variability in the practices from team to team as they each attempted to learn how to operate in an enterprise based on waterfall methodologies for planning, coordination, and release. Teams used sprints starting on different days and running for different lengths of time, which made it difficult to coordinate cross-team ceremonies.

With the “Big Bang”, teams at PayPal were aligned around the same two week sprint cycle, reflecting an emerging consensus from ad hoc practices. While some teams had been practicing longer sprints, the transformation included an emphasis on short cycles to avoid the practice of mini-waterfall projects and reinforce focus on user stories. All teams adjusted to match the new cadence at launch.

Numbered sprints began on a Wednesday and ended on a Tuesday so that team members who were not co-located could participate in starting and ending ceremonies. Mid-week sprint boundaries also allowed joint planning across teams that are in different countries where product or technology expertise was localized. Today, sprint numbers are the short-hand for communicating timing of dependencies across teams and deliveries to customers.

C. Enterprise Agile Lifecycle Management Tool

Teams practicing ad hoc Agile before the Transformation adopted a variety of approaches to track their work. Most teams created Sprint Planning boards in their team areas, which were physical representations of their planned work. Many teams eventually adopted some form of automated tool to allow them to more easily keep track of their backlog and facilitate communication with teams outside their area.

PayPal decided to provide the large number of new teams with immediate access to tool support, so experienced coaches and developers conducted an evaluation of available agile lifecycle management tools. The primary decision criteria was to provide value and limit overhead for teams, but also enable the coordination of many teams towards higher level business objectives. Candidates were identified based on tools that teams had already begun using as well as industry review.

PayPal chose a single tool to manage the work of all agile teams and established an enterprise partnership with the vendor. All teams were required to use the same tool to plan, manage and report their work. The tool was configured to align with the enterprise sprint cadence and new product structure. Each team was provided with an area to manage it's own backlog, had visibility into the plans of other teams, and could establish and track inter-team dependencies within the tool. Interactive tool training was offered to teams, along with coaching support and training videos highlighting PayPal's specific tool configuration.

D. Enterprise Transformation Dashboard

The transformation represented one of the most significant changes in PayPal's history. Not only were teams being radically reorganized and their day to day practices changing, but new aspects of the corporate culture were being introduced. It would be impossible to assess the progress of the transformation without defining measures that tracked the emerging maturity of teams and organizations across the company.

The Core Team approved an Enterprise Transformation Dashboard which tracked how well teams across PayPal were adopting the new practices. The dashboard included measures for team co-location, size, and Scrum Master/Product Owner support to ensure that managers across the company were staffing and forming teams to be successful.

Other measures tracked team practices through tool data, such as sprint Say/Do ratio. In addition, teams completed periodic interactive assessments.

The team data was rolled up to an overall score at the Sub-Product Line level (typically ten teams or more), which provided leadership with the appropriate visibility to identify impediments to adoption and effective practice. Executive transformation sponsors linked goals for their leaders to transformation progress as evidenced by the dashboard.

V. Transformation Rollout and Results

PayPal employees are accustomed to driving and negotiating change, yet large scale change to a successful, rapidly moving organization is always hard. The motivation for change was communicated across PayPal as new teams, structures, and standards were being defined. Leaders and employees across the company heard about and discussed the major changes in PayPal's culture, language, and operations.

WHAT WAS...	...WILL BE
Project Driven	Product Aligned
Waterfall	PayPal Agile
Feature oriented requirements	Customer driven solutions
Project based planning	Planning by team, group, and product
People assigned to Projects	Stable Teams aligned to Product
15 Dedicated Teams	Delivery Teams and Delivery Groups
Phases and Phase Exits	Roadmaps, Release Plans and Sprints

Each team brought a different challenge during the rollout. Some had no experience with Agile and would be starting from scratch. These teams benefited from training and coaching that allowed them to get rolling. Others practiced their own brand of Agile with three-week sprints or tools that they secured and configured themselves. It took some time for these teams to appreciate the value of an enterprise standard since they were used to doing their own thing within a waterfall company. Meanwhile, their input was rolled into the evolution of the standard tools and processes. On demand support was made available through videos, training materials, and multiple channels for feedback and questions.

In 2014, PayPal felt like a very different place than just two years earlier. Leaders now focused on product roadmaps and "Team Sprints" have replaced "Dev Days" as the new currency for size estimates. Team members worked together for longer periods of time and if product priorities changed, they took on work in the new area more quickly. Teams used Agile Scrum practices learned from PayPal coaches and training to plan and complete work based on the product backlog, which was built to realize the product roadmap. Teams gathered customer insights, which were incorporated into dynamic, iterative solution concepts rather than static documents. Sprint Planning occurred every two weeks and, depending on the technology, code from each sprint was more quickly delivered to customers.

VI. Ongoing Transformation

As PayPal continues transforming, emerging practices target improvements in operating at enterprise scale and in moving at internet/mobile speed. Product roadmaps are emerging from customer insights and strategic direction in a continuous flow rather than static, disconnected documents. Groups of teams working in related product areas have begun joint, multi-team, multi-sprint Release Planning based on upcoming roadmap items. User Experience teams are developing a Lean UX practice, with minimum viable products securing additional customer insights. Enterprise Continuous Integration is bringing more teams the capability to deliver independently on their own cadence. End to end traceability improvements allow us to track roadmap progress by understanding which product features have been delivered to customers. The activities are all guided by a strategy designed to enable mature teams to deliver products valued by customers in support of PayPal business and strategic objectives.

Our vision is not limited to becoming an agile enterprise, but rather a transformational enterprise that is willing to disrupt itself for significant gain just as we disrupt the way people view and use money.

VII. Conclusion

PayPal has undergone a major internal transformation to operate as an Agile enterprise. There have been fundamental shifts in how teams work and how they work together, resulting in a PayPal that is stronger than ever. The flow of innovation has increased and many hurdles that teams had to navigate have been removed. However, the need for ongoing change continues, as new leaders take PayPal on the journey to become a great independent company and realize the PayPal vision to transform money. By the time you read this, PayPal may have transformed itself again.

VIII. Appendix

From; Kirsten Wolberg
Date: Monday, May 20, 2013 11:18 AM
Subject: Congratulations On a Successful Release 1!

PayPals,

It's time to celebrate the successful completion of Release 1 of the Agile Transformation! The launch marks the beginning of our journey as 304 scrum teams begin using Customer-Driven Innovation (CDI) and the Agile product development methodology to create solutions that delight our customers.

A team of over 150 PayPal volunteers are behind this outstanding effort to transform the way we build products at PayPal (nearly everyone still had a "day-job"). I am so proud of the team and the statistics achieved are truly amazing:

Transformation by the numbers:

- 17 product lines, 31 sub-product lines, and 87 delivery groups defined
- 304 Agile scrum teams formed
- 17 two-week sprints completed
- Over 550 daily stand ups held
- 2 release planning sessions executed
- 1 product model adopted
- 22 teams achieved Continuous Integration maturity level 4, 257 teams in various stages of evaluation and progression
- 500+ Change Champions and 165 Transformation team members driving communications and change management across the organization
- 2,484 employees trained
- 663 employees passed the agile assessment (and didn't have to take the training!)
- 192 Agile & CDI training classes held (across 15 cities globally)
- 33 "Change Champion" training sessions held
- Unlimited [tool] licenses procured [...]
- 1,247 [...] projects mapped to migration plans
- 500 desks in the new workspace in SJN to date with 1066 on track for Q2

What's Next

In Q2, as we migrate to our new way of working, we will continue to iterate to improve our processes, tools, and support model. Learn more about the Transformation.

They Said It Couldn't Be Done

Every "industry expert" we consulted told us we couldn't transform at this scale in this timeline. Those experts clearly don't know PayPal and the kind of people driving change here!

Please join me in congratulating the Transformation Team for a truly legendary achievement.

KOW