

On the Way to Meeting a Mandate: Transitioning to Large Scale Agile

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Abstract

Over the last decade, agile practices continued to gain a foothold in many companies. Many of the practices were first tried on a smaller scale, and tailored to green-field projects. But, as agile practices are adopted at multi-site, larger companies, with complex back office projects, they bring with them additional and unique challenges. Take for example, Cambia Health Solutions, a not-for-profit, health Solutions Company. Cambia has a relatively large IT group, which develops its own software solutions and integrates software from other vendors. It has a distributed workforce that spans four states with many work-at-home employees. Cambia's mainline business is regulated by various state entities and national agencies. Many of Cambia's projects are large, mandated compliance projects that have a fixed time box and a set scope. Missing either the deadline or scope could potentially mean losing a significant portion of its business or facing monetary penalties. Can agile practices work and scale to solve business problems facing the company? What if you also operate within an IT organization that is structured with functional silos? And what if you have reluctant business partners who define software requirements and perform final verification of software solutions? To tackle these challenges, Cambia organized an Enterprise Transition Community to lead the transition from a patchwork of agile practices to a large-scale agile implementation. Find out how we carried out this transition, what we have learned along the way, and how that might help organizations of all sizes take on a similar challenge.

Biography

Aashish Vaidya is a Technology Manager leading Specialized Teams at Cambia Health Solutions. He is a founding member of Cambia's Enterprise Transition Community, and other Best Practices Exchanges. He also serves as an internal coach on Agile and QA practices. Aashish has over 20+ years working in technology development and leadership positions for companies such as Compaq, Intel, and Kronos Incorporation. In 2011, Aashish was a panelist on Technology Association of Oregon's panel discussion: QA's Role in Agile. He is a graduate of Texas A&M University, and holds a Bachelor of Science degree in Aerospace Engineering.

Cathi Row is an IT Talent Development Program Manager at Cambia Health Solutions. Cathi brings over 25+ years of experience in organizational development, software training, and transition management. She has been with Cambia for over 15 years and holds a Bachelor of Arts degree in Education from Fort Lewis College in Colorado.

Mark Jackson is a Director of Technology at Cambia Health Solutions, currently overseeing the implementation of the ICD-10 federally mandated program. He is a founding member of Cambia's Enterprise Transition Community. Mark has 20+ years of software development and leadership experience. Mark holds a Bachelor of Science degree in Computer Science from California State University, Chico.

1. Introduction

Cambia Health Solutions is not-for-profit total health solution company dedicated to transforming the way people experience the health care system. Like many other health care related companies, Cambia faces constant market and internal organizational challenges.

Cambia, formerly known as The Regence Group, is a parent organization that comprises two groups of companies: Health Insurance Services (HIS) and Direct Health Solutions (DHS). Health Insurance Services is Cambia's mainline, regulated health insurance business. It was created as a result of the merger of four different Blue Cross Blue Shield entities from four states: Oregon, Utah, Idaho and Washington. The Direct Health Solutions group includes companies that provide various affiliated healthcare solutions.

The Cambia IT department is a shared services department, which provides software development, integration as well as IT infrastructure services to both HIS and DHS companies.

In order to better meet the external marketplace and internal delivery challenges, in July of 2011, Cambia IT went through a major department restructuring and initiated a large-scale effort to change from a traditional waterfall Software Development Life Cycle (SDLC) to Agile/Lean development methodology (Scrum/Kanban).

An Enterprise Transition Community was formed to coordinate and shepherd this large change management process across IT and other business units. This paper outlines how the Enterprise Transition Community has led the transition to large-scale Agile at Cambia.

2. Prior Organization Structure and Agile Practices

Prior to the reorganization in July of 2011, Cambia IT was organized into traditional functional silos: Architecture and Design, Software Development, Quality and Release, and Infrastructure. Enterprise Program Management Office (EPMO), which was outside this structure, provided traditional project management and business analysis services. Various business units also maintained their own business analyst and user acceptance testing (UAT) staff.

Over the last few years, various groups in the IT organization were increasingly adopting agile practices for development and delivery. However, project inception, the budgeting and business requirements gathering process, and the user acceptance testing before product deployment still followed traditional waterfall processes. Uneven application of agile processes created confusion between the IT department and other business divisions. This divide led to frequent issues with process and role confusion and delivery and transparency problems. Deliveries had quality problems; they missed customer requirements and deadlines. Frequently employees had to perform major heroics to meet business goals.

2.1. Workforce Makeup, Skills and Project Staffing

Using traditional project management practices, projects were initially staffed based on the resource availability of full-time, regular employees. As staffing for maintenance activities occupied a majority of the regular workforce, new projects were largely staffed with a contingent workforce.

To deliver large enterprise wide programs and fulfill its ongoing project needs, Cambia IT relied heavily on a contingent workforce. It wasn't uncommon to see the regular to contingent workforce ratio of 1:1 and in some cases it approached as high as 2:3.

Continual recruitment and retention of a large contingent workforce also meant software managers and development leads incurred additional contingent worker oversight responsibilities, further limiting their delivery efficiency and leaving them with little time to pursue any technical or process improvements.

Project work was estimated using a 3-6 month time horizon, and project suspensions and extensions were common occurrences. This required additional management oversight directed towards continual resource management. The constant churn on project suspensions and restarts meant constant forming and reforming of teams and loss of productivity. Project and maintenance activities caused tremendous strain on key personnel with certain rare skillsets.

Given that most of the project work involved new product development or integration of new technologies, the full time workforce working on maintenance activities found it difficult to acquire new technical skills. Additionally, balancing new development and maintenance work created unsustainable work pace, leading to employee dissatisfaction.

The transition from new development to maintenance wasn't always factored into project plans. Business justification generally trumped quality criteria and hence the support organization had to grapple with quality issues introduced during the project implementation.

2.2. Nascent Agile Efforts

Within IT, prior to the re-organization, there was an active grass roots group called the Agile Working Group that provided guidance on basic agile best practices. Cross-functional agile teams were formed and some of these teams even had embedded QA personnel. However, this agile movement was largely IT-centric and business partners still followed waterfall practices. Without active IT executive management support, it did not carry much weight in convincing EPMO, UAT, and other business groups to embrace agile techniques.

As a result, the IT agile development process remained sandwiched between Waterfall requirements gathering, design, and analysis work at the front end, and with UAT at the tail end of the delivery cycle. The hybrid approach worked in small pockets and had some limited success - when the IT and business stakeholders were more aligned and willing to experiment and collaborate. Unfortunately, the hybrid approach put a strain on the EPMO project governance structure that was oriented towards traditional waterfall practices.

Within IT, project teams were constantly forming and storming, due to heavy reliance on contingent workforce. This made it very hard for agile practices to take firm root and contribute positively towards software deliveries.

2.3. Larger Projects and Agile

On large projects, which required multiple IT teams, the process confusion was further magnified. Some IT teams used agile practices; others did not. This meant that Business Analysts had no common way to communicate project requirements to the IT team. Additionally, because IT teams were aligned to software subsystems, when a change in a single subsystem needed to be made, its impact to multiple IT teams and their stakeholders, weren't always well-understood or well-communicated.

The lack of a single consistent development process made it much more difficult for EPMO to create and track budgets, resources and project plans across software delivery teams. For the UAT group, different scheduling and delivery mechanisms created difficulties in coordinating and sourcing business testers in a timely fashion. Even within IT, process confusion was common. The deployment teams struggled with two sets of rules: one for those practicing Agile and ones that followed Waterfall staged-gate processes. Team members changing teams or projects would encounter a patchwork of practices from one team to

next, leading to higher ramp-up time and lost productivity. All this contributed to the mistrust between various departments and further increased the divide between IT and other business units.

Additionally, even as teams were experimenting with Agile and learning newer and better ways of doing things, these gains were localized and insulated from others in the company. There was no mechanism to spread these patterns and practices across the organization. Moreover, due to constant schedule pressures, it was difficult for agile teams to experiment and incorporate agile engineering practices, stunting their maturity.

3. Cambia IT Reorganization

The ability to deliver large multi-team, multi-site, mandated programs, with high quality, on time and on budget, still largely remained elusive. In July of 2011, the new CIO and his IT executive team undertook major structural changes in order to meet constantly changing business needs, delivery predictability and high quality.

Dean Leffingwell and many other agilists list the makeup of the organization along functional lines, instead of product or business application lines, as a major impediment to adoption of agile (Leffingwell, 2007, chap. 8, loc 2168 of 7271). Accordingly, Cambia's IT organization, which was composed of functional silos of architecture and design, analysis, development, quality and release divisions, was restructured. The new divisions at CIO staff level were aligned to provide services to corresponding business units. In addition, the decision was made to fully adopt agile practices across the delivery lifecycle.

To support this large cultural shift, a Talent Development Program Coordinator position was created and filled. And in the fourth quarter of 2011, best practices communities were launched to provide a means for functional groups to share best practices.

However, the best practices communities were focused on their functional areas. There wasn't an overall, coordinated process to rollout Agile across the IT organization and to business partners. In December 2011, the Enterprise Transition Community (ETC) was formed to help with change management and transition process to large-scale agile. The purpose of the ETC: provide a focus, coordinated effort to deal with the thornier issues of scaling agile to deliver large-scale, multi-team programs; to adopt agile practices throughout the entire SDLC; and to eliminate process, role and tool confusion. The ETC was tasked to pilot this transformational process on ICD-10, a large, multi-team, federally mandated program. ICD-10, which stands for the International Classification of Diseases, 10th revision, has a compliance deadline of October 2013. Within Cambia, the program is far-reaching and involves half of the software delivery and support teams in IT, and affects almost all business units in the company.

3.1. High Level Timeline of Reorganization

Here is a high level timeline for the Reorganization:

- May-June 2011 – New CIO and CTO hired.
- July 2011 – IT reorganized from functional silo based units to cross-functional divisions aligned to business units.
- August 2011 – Change initiatives launched; Software Quality Best Practices Exchanges (SQBPE) launched; Talent Management Program Manager position created.
- October 2011 – Talent Management position filled; Agile Working Group morphed to Agile Best Practices Exchange (ABPE).
- December 2011 – ETC was formalized; Companywide training initiative started.
- January 2012 – ETC tasked with leading change to Agile and ICD-10 chosen as the large-scale pilot program.

- January 2012 – First multi-team release planning session for ICD-10 program.
- March 2012 – Portfolio planning for ICD-10 introduced.

3.2. Agile and Shared Teams

After the reorganization, a cross-functional agile team, consisting of Systems Engineers, Systems Analysts, Developers, Testers, and Test Automation Engineers, became the fundamental building block for organizing work. Leffingwell calls this “the fractal unit of agile” (Leffingwell 2007, chap 9, loc 2277 of 7271). The IT department is organized into nine CIO staff level divisions, of which five have responsibility for software development. These software development related divisions are further split into more than 30 different agile teams. In addition to dedicated agile teams, a few shared services teams were also created. These shared services teams included a small number of employees who have specialized skills which couldn’t be distributed evenly within each IT division. These new shared services teams include:

- Specialized Skills Team: Provides performance testing, data validation, test data creation and QA test automation.
- Quality Focus Team: Provides services to promote, improve, share and implement practices that focus on building quality up front.
- Data Modeling Team: Provides data modeling work and guidance to agile teams.

The agile teams and shared services teams represent more than half of the 600 employees within IT organization. Another 250 team members are part of the infrastructure teams that provide basic IT functions including desktop and help desk support, release management, hosting, production deployment and monitoring, and other support functions. The rest of the organization consists of IT management.

Currently, only select shared services teams and infrastructure teams follow agile practices. More teams are slated for internal assessment and transition to agile practices during the latter half of 2012.

3.3. Enterprise Transition and Other Communities

For large scale agile changes, IT executives and other leaders knew that grassroots efforts, though effective on selected teams, would not scale systematically across and into the enterprise. In order for Agile to gain wider acceptance and overcome resistance within IT and with business partners, a consistent and focused change management effort was needed.

A coordinated community with passionate individuals working towards a common goal was required, since the patchwork of Agile implementation wasn’t effective. The Enterprise Transition Community was formed to lead and manage the transition and adoption to Agile. This community also needed the explicit backing of IT executives, so that they could provide “air cover” to augment the energy and drive of grass roots efforts. Both, Ken Schwaber (Schwaber 2007, pg. 9) and Mike Cohn (Cohn 2009, pg. 63), consider an Enterprise Transition team a keystone community that “initiates, encourages and supports an organization’s” transition to Agile. Both, Schwaber and Cohn recommend that the ETC be composed of the highest level executives from IT and other business partners.

However, Cambia’s ETC does not derive its core membership from senior leadership, but instead from leaders from IT divisions, EMPO and select business units. At Cambia, the ETC coordinates with other role-based communities and Best Practices Exchanges (BPEs) to roll out Agile across the enterprise.

The ETC is chartered to drive changes at team, program, and at portfolio levels. Generally, in major rollout situations such as this, textbook Agile would suggest trying new ideas on smaller, less risky projects. However, in a departure from standard practices, the ETC was asked to use ICD-10 as a pilot program. Cambia IT’s senior leadership felt that trying out newer practices on ICD-10 was the best way

for Agile practices to take hold and for the organization to develop institutional “know-how” of handling large complex programs.

The ICD-10 program is akin to the Y2K remediation software effort, as the ICD codes are central to Cambia’s business. A major change to the ICD code set format involves nearly every business units within Cambia. It requires use of 15 of the 33 software delivery teams, software suppliers, and it requires coordination with external business partners such as Blue Cross Blue Shield Association plan members, commercial service providers and medical partners.

In addition to the ETC, other communities were formed to target functional groups or roles:

- Agile Best Practices Exchange (ABPE) – Umbrella exchange for all things Agile.
- Software Quality Best Practices Exchange (SQBPE) – Forum for software quality engineers to create, share, and improve software quality best practices.
- Agile Coaching Community – Internal agile coaches coordinating with the ABPE and the ETC and other groups to provide Agile coaching support.
- Other groups such as Agile Training Community, Information Security Community, Product Owner Community.

These exchanges work in coordination with the ETC to help in the transition process.

3.4. Staffing Mix and Talent Development Program Manager

The IT Executive Team made another crucial and much needed structural change. The CIO staff worked with the Finance team to change the staffing and budgeting rules, which were skewed towards hiring of contingent workers for projects and regular workforce for maintenance work. The CIO staff wanted to make this change for few reasons: provide more opportunity for regular workforce to learn newer technology needed on projects; send a message that regular workforce is more valued than the contingent workforce; and, allow for retain knowledge of agile practices as opposed to having it walk away when the contingent worker leaves.

This led to an IT initiative to reduce contingent workforce relative to regular IT staff. An initial goal of approaching regular employees to contingent workforce was set to 4:1 ratio within two quarters. This target was achieved ahead of schedule.

The IT Talent Development Program Manager position was also created to assist the IT Executive Management and the Enterprise Transition Community in effecting the large scale transition and change management process. The position was also tasked with nurturing and formalizing best practices communities, and creating a strategy to drive learning and development throughout the organization.

4. ETC Initiated Practices

From January to June 2012, in coordination with IT, business leaders, and with other communities, the ETC has launched several coordinated initiatives to improve agile practices. These include: helping in creation and support of self-organizing agile teams; training; eliminating agile process, role and tool confusion; and, adopting agile practices throughout the software development lifecycle. The ETC is expected to be operational for additional two to three quarters to complete the transition process.

Through the ICD-10 project, the ETC is also developing program and portfolio level practices. After these practices are piloted on the ICD-10 programs, other programs are using these patterns to organize their own deliveries. The ICD-10 program, which has been operational since early 2011, and was considered off-track, has benefitted from ETC initiated practices in first two quarters of 2012. It is now back on-track and is better positioned to deal with schedule changes

4.1. Organization Wide Agile Training Plan

In the past, various groups arranged their own agile training plans. These piece-meal training plans were tactical and overlooked many people seeking the correct type of training. For example, Cambia IT has over 70 team members who have gone through certified Scrum Master training. However, only 15 of these trained Scrum Masters are leading teams, leaving the other 18 agile teams with Scrum Masters who have not received formal training. Additionally, the training plans did not include EPMO, UAT and other business partners.

The ETC was able to craft and fund a holistic training plan. The initial training plan included three different categories targeting different audiences:

- Basic Agile Overview – Full day training for all team members and anyone with general interest in learning about Agile.
- Product Owner Training – Two full day training targeted to product owners.
- Agile Overview Training for Managers – Half day training geared toward managers with team members participating in agile activities or any managers interested in learning about Agile.

These training sessions were designed to include team members from various IT and other groups. This has allowed for much livelier and productive interaction amongst the various groups during and after the training sessions.

During the initial training sessions, which were delivered by outside consultants, Cambia also developed a cadre of internal trainers through a train-the-trainer approach. These internal trainers are currently able to offer these courses regularly, allowing IT to stretch its training budget.

Apart from formal training, several BPEs hold educational events to supplement training. Some have taken on the task of developing self-service educational materials for employees.

4.2. Program and Portfolio Level Practices

The ETC also initiated practices that transitioned Cambia's agile practices from a patchwork to a more large-scale, enterprise-wide Agile, and introduced program and portfolio level practices such as:

- Enterprise wide synchronized sprint schedule (Cohn 2009).
- Multi-team Release Planning.
- Scrum of Scrum meetings (Schwaber 2007).
- Hardening Sprints, Architectural Runways, (Leffingwell 2012).
- Use of Portfolio Management to coordinate and track epics and themes at program level.

The new practices have been successful on the ICD-10 program, and plans are underway to roll these out to more programs. Discussion on these practices is out of scope for this paper; however, next year, we hope to make a complete report in this area.

5. Measuring the Progress

As ETC continues to shepherd the transition process, it has also developed ways to measure the progress of this transformation.

5.1. Agile Team Composition Scorecard

One set of measures is called Agile Team Composition Scorecard, illustrated with the following table, (Note: The table is truncated and modified from the original Scorecard used internally at Cambia)

Team Name	Manager	Scrum Master	Product Owner	Ratio of QA to Dev	SE / Architect	Team Co-Location Index	Size	Team Health Score
Team 1	Manager A	y	y	0.2	y	8	9	5
Team 2	Manager A	y	y	1	y	8	5	5
Team 3	Manager B	y	y	0.125	y	9	11	4
Team 4	Manager B	y	y	0.231	y	10	17	3
Team 16	Manager L	y	y	0.2	y	7	8	2
Team 17	Manager L	y	y	0.143	y	8	9	4
Team 18	Manager M	y	y	0	y	7	5	4
Team 19	Manager M	y	y	0.5	y	9	4	5
Team 20	Manager N	y	y	0.111	y	8	14	5
Team 29	Manager T	y	n	0.25	y	6	8	4
Team 30	Manager U	y	n	0.4	y	6	7	4

Table legend:

Green	Yellow	Red
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The measures on the Scorecard are derived from basic Scrum practices. The Scorecard uses traffic light colors. Below is an explanation of these measures.

Scrum Master:

- Each team must have a Scrum Master.
- Criteria: Green - if each team has a Scrum Master; otherwise red. Additional guidelines not captured on the score card: Scrum Masters are typically expected to spend 60-70% of their time towards the role; and they should serve on no more than 2 teams.

Product Owner:

- Each team must have a Product Owner.
- Criteria: Green - if each team has a Product Owner; otherwise red. Additional guidelines not captured on the score card: Product Owners are typically expected to spend 50% or more their time towards the role; and they should serve on no more than 2 teams.

Size:

- This measure tracks the size of the team. We are aiming for the proverbial “two pizza team.” (Cohn 2009, pg.177).
- Criteria: Green – for team size of 5-9, not counting Scrum Master and Product Owner; otherwise red.

QA:Dev Ratio:

- Set at 1:4. The CTO has set the QA:Dev ratio target to balance the functional skills on the team. The CTO feels the ratio should be even higher, to deliver high quality software that delights the customers, and lessens the burden on the UAT and business testers.
- Criteria: Green – greater than or equal to 0.250 (1:4); Yellow – greater than or equal to 0.143 (1:7) and less than 0.250 (1:4); Red if less than 0.143 (1:7).

SE/Architect:

- Over the two quarters, a Systems Engineer or an Architect is assigned to support 3-4 teams. Teams normally consult with their Architects for technical direction and for resolving cross-team issues, and seeking guidance on stories and epics during planning sessions.
- Criteria: If a team has a “named” assigned Architect for their team, they receive a green; otherwise red.

Team Co-location Index: Cambia is already a distributed company operating within 4 states in various locations throughout these states. As a cost-saving measure, prior to the re-organization, there was a corporate wide push to make employees become work-at-home, remote workers. Over time, though, the preference is to have more co-located teams. For now, the Co-Location Index provides visibility on the degree of distributiveness, on a team by team basis:

- $((\text{Total team members less \# of unique team member locations less one divided by the total number of team members}) \text{ multiplied by } 10)$
- An entirely co-located team receives a score of 10; completely distributed team receives a score of 0.
- Criteria:
 - Red - less than 4.
 - Yellow - less than 8, greater than 4
 - Green - greater than or equal to 8
- Team with office workers at a single site, even if they are spread out in different buildings are counted as co-located (Since the index was created, team members spread across various buildings are now consolidated at common team sites – called “agile towns”). Each remote worker is counted as occupying 1 location.

Combined, these six measures define the nature of the team - the “fractal unit of agile”. In the section on Takeaways, below, we discuss how the Scorecard has helped Cambia make an agile team, the fundamental work unit.

5.2. Other Metrics

In addition to the Agile Team Composition Scorecard, the ETC is also developing measures along three broad categories:

- IT Mission metrics - to measure whether IT is fulfilling its mission providing services to other business units. These metrics are constructed along the lines of customer value, quality, on-time delivery and budget. Currently these metrics are tracked by our release team and in our agile tracking software. We are making improvements to get them tracked on a per team basis, similar to the Agile Team Composition Scorecard. This way, the teams can use the metrics to make continuous improvements.
- Agile Practice metrics - to track adoption of agile practices and maturation. Many of the measures in this area are getting introduced iteratively. The ETC is putting in place a mechanism to track an initial set of measures: committed to completed story points; percentage of stories with acceptance criteria; “formal” sprint review with business stakeholders; team retrospectives.
- Business Values metrics – to measure how well the agile teams along with their partners are delivering business value through the use of Agile methodologies.

6. Takeaways

Transformation of Cambia’s transition to large scale agile is still a work in progress. However, in a year’s time, much progress has been made and there are important takeaways and lessons learned from this process. An organization generally faces two sets of hurdles – those that stem from company’s culture

and structure; and, those that stem from the challenges of scaling agile practices to work for large projects and programs. The following subsections describe how these are playing out at Cambia.

6.1. Enterprise Level Community and Change Management

Having an enterprise level community focused on the change management process has been crucial in this large-scale transition process. At Cambia, we have used change management models to aid in understanding and leading this type of transition. One such model is outlined in the book *Influencer: The Power to Change Anything* (Patterson, et.al. 2007) This model consists of two domains: motivation (“will it be worth it”) and ability (“can I do what’s required”), which is then further subdivided into personal, social, and structural sources. This model is illustrated with the following diagram:



As a transition community, the ETC taps into these six sources of influence to drive change and overcome the natural resistance encountered during the large scale transformation process.

6.2. Communities Reflect their Constituents

The core groups on ETC as well as the other Cambia communities (such the Agile Best Practices Exchange, the Coaching Community and the internal Agile Trainers Community) all have derived their memberships from the entire enterprise. Constructing cross-functional teams has proven very effective in influencing and building credibility with non-IT business units. For example, having ETC members from business units allowed us to fill the product owner gaps on teams. We think this closer collaboration of business involvement with the agile teams has been very impactful and will continue to pay big dividends in the future.

As each group has a stake in seeing the success of this transition, inclusion of team members from various groups allows each to have a voice in this process. From a change management perspective, the membership of these communities taps effectively into social motivation as a source of influence.

6.3. “Scrum is not a Synonym of Agile”

Though, many agile purists may feel that choosing a particular agile method stifles innovation on teams, Scrum as method of choice has so far proven very effective for Cambia. This decision to standardize on Scrum has allowed team members, and business partners to learn a single method together, and be conversant with it. This has allowed the organization to largely avoid unnecessary “method wars”, which

usually confuse and shut out more skeptical business partners. Scrum has provided the non-IT groups with a single, consistent interface with IT and vice versa.

That is not to say that there isn't any variation in practices. When it is warranted, Agile coaches have judiciously introduced Kanban to a handful of infrastructure teams. The guiding principle for ETC and other communities continue to be: encourage practices that are more suited to each team and enable it to become more effective.

6.4. “Do as I Say and Do As I Do”

Most of the communities, which are not software development teams, have now adopted agile practices for organizing their own work. Most of them maintain a product backlog, write stories, develop acceptance criteria, and conduct retrospectives. Many communities practice daily standups, create release plans and roadmaps.

This has been advantageous in a couple of ways. It enables ETC team members who lead the transition to develop an appreciation of the challenges and triumphs that software delivery teams and stakeholders face. Another benefit of the individual adaptation of Agile is it sends a message to all team members that “we are all in this together.”

The use of Agile in ETC and other communities also means that changes are rolled out at a measured pace, instead of in a torrent. Each community takes up only as much work as they are able to complete in a given Sprint. This allows time to develop consensus and incorporate any feedback. This largely avoids the “top-down”, command-and-control approach that generally meets heavier resistance and doesn't stress people out as much.

6.5. “Where's my Tribe?”

With the creation of cross-functional teams, members of the former functional organizations feared that they would lose their respective “tribal” connections. This was especially evident in many of the software QA Engineers. They felt that the emphasis on quality would diminish even further, as there would no longer be a collective voice speaking for their concerns. Fortunately, the formation of best practices communities, such as the SQ BPE, has allowed QA Engineers and members of other disciplines, to feel connected to their former “tribes”. BPEs serve as conduits for team members from former functional silos in maintaining cohesiveness in their practice, and establishing and sharing new practices. It also helps team members in cultivating a stronger voice of for their function in their own agile teams.

Best Practices Exchanges have also allowed for new “interest” groups to develop outside of the functional skills group. An example is Secure Coding Practices Community. The formation of this community and its activities has created greater awareness and traction on software and infrastructure security concerns.

6.6. “You Mean You Don't Have Time”

One of the bigger challenges has been obtaining consistent time commitment from team members allocated for work on the BPEs. The norm in most of the communities is for each core team member to allocate 10 percent or more of their time to BPE activities. Each BPE typically also asks for a commitment for three months. This has proven to be quite challenging for the team members as well as their managers. This slows down the pace of deliverables that the communities would like to actually produce from their activities.

For example, the agile coaches are not dedicated to coaching tasks alone. Many participate on other best practices communities, along with their main work related duties. Ideally, the ETC would prefer to have agile coaches assigned to support agile teams, much like we do with Architects. However,

availability of coaches does not keep up with the need, which in turn contributes to slow adoption of agile practice refinement and maturation on many teams.

6.7. Training Helps Lower Resistance to Change

Targeted and recurring training sessions have helped lower some of the resistance to change. Mixing attendees from various groups has also helped in chipping away at some of the barriers between previously adversarial groups, who may have been at odds with each other due to difficult projects and their experience with Agile.

Providing training to managers (via the Agile Overview for Managers) has also proven to be successful. As it happens many times, management can easily thwart team members, who are more receptive to change to Agile. Following the training, we were able to close the product owner gaps on many teams, as the corresponding business unit managers allowed their reports to take on the product owner role. Also, the managers are more supportive of business testers who are collaborating with the agile teams.

Training also taps into one of the fear that many team members face: “Do I have the ability to do this new thing?” Along with formal training plans, many Best Practice Exchanges have put targeted learning sessions together.

Formal training and other learning opportunities have also sent a powerful message to many regular employees, who felt the company in the past had under-invested in their career development.

6.8. “My Customer Won’t Talk to Me”

It is probably ironic and perhaps hard to believe that in IT organizations, such as Cambia, where customers are sometimes literally down the hall (as opposed to say, a shrink wrap software or an SaaS offering), many software delivery teams found it hard to engage customers in providing ongoing input and feedback during development process.

The use of Agile Team Composition Scorecard, which is reviewed with executives every sprint, provided the visibility and impetus to fill the product owner gaps for teams. Also, as one of its deliverables, the ETC produced a checklist for business stakeholders to secure a product owner for each team. Cambia started the year with close to 70% of the teams missing a “named, dedicated” product owner, but by the end of second quarter, more than 90% of teams now have one. What’s also encouraging to see is that many Product Owners have chosen to co-locate with their teams.

With better definition of the team structure within IT, the UAT group has assigned Test Coordinators and Subject Matter Experts to each of the agile teams. The continuing engagement of both the Product Owners and the testers from the business has allowed for ongoing input from the business during the development cycle. The use of Agile Scorecard has helped addressed one of the main issues that faced past agile implementation – the lukewarm engagement from the customers.

6.9. “When Data Talks, Opinions Walk”

Cambia’s CIO has a saying, “when data talks, opinions walk”. As the Agile Team Composition Scorecard provides the visibility and means to close the product owner gap on the agile teams, it is similarly shedding light on other measures as well. The Scorecard has allowed identification of gaps in roles, and facilitated proper make-up of the team.

For example, IT Executives have questioned hiring practices of IT Managers whose teams might have a lower than a 1:4 QA:Dev ratio. It should be noted that though we have made improvements in this area,

they are not as dramatic as Scrum Master or the Product Owner roles. We anticipate this measure to take longer to remediate.

The Scorecard has put subtle, but powerful pressure on many IT managers who may be resisting the change. No IT manager likes to see his or her team's score show up "red" for too long. There have been spirited discussions on whether the Scorecard measures make any sense or if they are effective. However, over time, as team managers have come to realize that the Scorecard isn't used as a punitive tool, they have been more willing to use the information from it to make changes. Many managers with teams that are too small or too big are looking for logical ways to consolidate or split their teams and backlogs. Many managers have used this information to adjust their hiring plans. Those who do not have open requisitions are looking for cross-training opportunities within the teams. Those teams with a low Co-Location score have also used it for travel budgeting so that they can co-locate teams for planning sessions.

7. Conclusion

Changing from the traditional waterfall method to Agile presents daunting challenges to many organizations, as this transition exposes existing, but largely ignored fundamental structural problems. In many instances, uneven application of agile adoption leads to other issues as organizations learn to deliver code faster and at set intervals, but unfortunately at the expense of software quality. Organizations move faster initially, only to slow down later under the weight of technical debt.

Scaling agile practices has been a challenging process at Cambia, and many challenges still remain as we continue to evolve these practices at the enterprise level. Delivering on fixed duration, fixed scope, and federally mandated projects may seem like an incompatible use of Agile. However, through the formation of the Enterprise Transition and other communities, Cambia is benefiting from a concerted effort to transition to Agile.

Along the way, we are discovering that driving transition activities through self-managed communities, and eschewing heavy compliance or governance structures, seems to lower the initial resistance and has made the organization much more amenable to adoption large-scale agile practices. Our efforts have also shown that use of effective measures such as Agile Team Composition Scorecard can lead to desired results. We think many of the things we have learned can apply to organization of any size or type, which is looking to change or is in the process of changing to Agile.

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