Abstract

SolutionsIQ Professional Services dramatically improved project quality and productivity through the adoption of Scrum and Agile values, principles and practices. The original organizational structure was not designed for Scrum and Agile. This misaligned organizational structure created inefficiencies and obstacles in team and departmental function. In an effort to improve this misalignment, the authors designed and implemented an innovative organizational model based on Type C Scrum. Since this IT Services company is very different from Product Development and IT organizations, an organizational model that would support Agile and Scrum within the unique requirements of a consulting business had to be adapted from other business models. In designing this new organizational structure, Lean and Agile principles guided the processes supporting the new organizational model. The result is a more transparent and aligned organization that performs better and is considerably more fun to be a part of.

1. Recognizing the Need for Organizational Change

SolutionsIQ has historically provided technical staffing and outsourced software development project services, in addition to targeted consulting offerings. The Development Services organization runs many widely varied software projects simultaneously using multiple technologies. Prior to the recent reorganization, the matrixed, Functional Manager oriented organizational model was designed to ensure that there were multiple stakeholders in the process monitoring compliance and quality to ensure that project issues were quickly surfaced, so that management could address issues early before significant consequences accrued. Through better methodology, tools, and technical practices, those risks are now largely ameliorated, and greater benefits may be realized by implementing an organizational model targeted at leveraging our strengths.

The Development Services organization has evolved considerably since the Functional Matrix model was first implemented. Development Services officially adopted Scrum as its primary project management framework in December 2004. This was a deliberate decision, based upon the results of several successful Scrum projects. By that time, we had hired many experienced Agile team members, Extreme Programming practitioners, and had six Certified ScrumMasters.

While migrating from running multiple methodologies simultaneously across many projects to Scrum projects as a whole, we learned our organizational structure, the functional matrix, did not support our objectives well. As Ken Schwaber says, “Organizations are rarely optimized for productivity.” [1] Believing in an environment of continuous improvement, we started searching for ways to support Agile values and principles organizationally.

2. Goals and Objectives

All organizational models have significant strengths and significant weaknesses. No model is perfect in all ways for any complex organization. The organizational models needed to be reviewed against business goals and future plans to ensure the organizational model is the most positive model possible for the organization at the given time. In our case, the model needs to enhance the organization’s ability to maximize customer satisfaction, encourage employee retention, scale up, down, and across large
numbers of projects, maximize productivity and quality, encourage predictability and transparency, maintain aggregate utilization targets, and support an organizational passion for continuous improvement and learning. Is it possible to achieve all this simultaneously? We decided to try.

3. Organizational Review

Today stronger teams, processes, policies and tools have dramatically reduced the incidence and severity of “problem” projects that develop performance issues in the critical dimensions of financial performance, quality, delivery and customer satisfaction. While the positive aspects of the functional matrix model have become less critical, the downside aspects of the matrix model are negatively impacts to accountability, team member alignment to customers and individuals’ primary accountability to their project teams. It also created obstacles to team cohesiveness and self-organization; important factors in the organization’s ability to continuously innovate and improve. Other organizational models would also support better scalability as the organization is rapidly growing.

4. Defining a New Organizational Model

The principal change in the new organizational model is the move from a functional-manager-dominant reporting alignment, to a project-dominant reporting alignment. Olson and Eoyang define a container as a factor that sets the bounds for self-organization. Olson and Eoyang define a container as a factor that sets the bounds for self-organization. [2].

Examining our “software factory” through a throughput analysis paradigm, we recognized that while we felt we could not initially control workload coming into the department (and didn’t want to refuse attractive projects), we could dramatically improve the allocation of load into teams by implementing a team-based pull model. This also yielded a more linear capacity-scaling model by adding teams. We realized stabilized teams who work together longer have steady and predictable throughput, and their flow of work increases with the hyper-productivity of Agile. Thus our “software factory” could achieve greater throughput with much less waste. It could produce consistently higher quality product, and run at more consistent and predictable production levels, even through periods of dramatic growth.

The Organizational Chart (or reporting view) is one particularly conspicuous organizational change, but no organizational model is complete by merely defining who reports to whom. We developed several other views to address important components of the organization to ensure compliance with departmental critical success factors (project financial performance, customer satisfaction, innovation, and quality). In this situation where our financial goals are served by carrying a minimum of management overhead and administrative personnel, it is critically important to define what responsibilities are vested in what roles and what structures are in place to support each delegated function.

5. Individual Reporting Structure (Reporting View)

The reporting view is the formal reporting structure. Project teams have a Project Leader. Team members report to that Project Leader. The Project Leader (for the scope of that project) reports to the Practice Manager (or Director) who recognizes the revenue for that project. When it comes down to basic HR organizational functions like hiring and accountability, this is the chain of command. The other oversight views below clarify the organizational support provided to the reporting managers. This support includes, but is not limited to delegation of some activities like employee sourcing, QA oversight and auditing. Final accountability resides with the Practice Managers and Directors for: the outcomes of projects, customer satisfaction, employee satisfaction/retention, quality, and financial performance.

6. MetaScrum (Intra-Team/Project Statusing and Coordination Structure)

This organizational structure focuses on the operational excellence of teams delivering customer solutions. It also ensures organizational cross-fertilization of team innovation. Obviously as the volume of business increases and the organization grows, dynamic and complex functions like resource allocation, awareness of project impediments and issues, and financial performance must be shared throughout the organization via a structured forum.

This view shows the MetaScrum which is a collaborative team of Project Team Leaders and Practice Managers. Resource allocation occurs across practice boundaries, so a cross-practice collaborative (and hopefully fairly transparent) resource sharing model was developed.
The MetaScrum is based upon the six characteristics of managing highly productive teams in “The New, New Product Development Game” [3] and by Jeff Sutherland [4] that propelled Patient Keeper past Siemens and others into the Gartner Magic Quadrant for ability to execute and innovative vision. The MetaScrum provides a balanced view that complements the individual reporting structure and provides continuity, oversight and support into the organization. The reporting structure of the MetaScrum outlined in Figure 2: The MetaScrum Model provides a model that induces, “urgency, sharing, communications and honesty behaviors... company wide.” [5]

To optimize team size for Hyper-productivity, each Agile project team is recommended to be 7-9 people. Teams that are smaller than this usually lack some of the cross-functional skills and do not have enough members to help overcome this. Teams larger than 10 members introduce additional complexity to keep the team coordinated [6]. In order to maintain and improve productivity towards hyper-productivity, a project may need to have two or more teams.

7. MetaScrum Agenda

The MetaScrum should focus on actions needed by the organization to support the project teams by creating an “anticipating culture”. The organization and the project teams should leave the meeting with a clear sense of the business opportunities, release planning, project statuses, resource needs and budgets. Any actions from past MetaScrum meetings should have updates as well.

The MetaScrum is partitioned into daily tactical Scrum of Scrums meetings and Weekly MetaScrum meetings.

8. Infrastructure Improvement Team

The Infrastructure Improvement Team is comprised of all personnel (and any fractions thereof) not utilized by billable projects. The Infrastructure Improvement Team will work on various projects (as assigned and prioritized by the Product Owner) with one week sprint durations. The Infrastructure Improvement Team Leader will have a special role in resource allocation and candidate screening/hiring to assist the billable project teams in resourcing.

The infrastructure improvement team follows the project team model. This team may encounter wildly varying sizes, churn, and partial resources. All projects on this team will run in one week sprints, with sprint reviews on Friday. This team’s sprint schedule will operate as a metronome that will assist in coordinating resource moves between teams in a way that aids predictability and continuity of sprint execution for all teams.

9. Technical Quality and Standards Management Team

Transparency has its own set of challenges. According to Senge, “the fundamental ‘information problem’ faced by manager is not too little information but too much information.” [7] Primarily inspector; but operates where possible as advisors and mentors to project teams. Has absolute right to dig into teams’ “private project details” and evaluate/report on compliance with standards. This project team will be tasked with verifying technical quality and policy compliance for all billable projects in process.

Project teams will select from the Best Practices repository those practices appropriate to optimally fulfill the project. The Quality Team Leader will be the approver of what best practices and standards are appropriate for any given project, as part of project initiation.

This team’s assigned Backlog is in the form of a matrix specifying a project team on one dimension and a quality metric or standard on the other dimension. Note that not all projects will automatically have identical metrics (some metrics will not be relevant to a given project).

Any team issue that is identified as out of compliance will be reported to the MetaScrum as a “blocking issue” preventing completion of the Quality Team’s assigned backlog for that sprint. As with any such issue raised in a scrum meeting, the MetaScrum must address the blocking issue with the
offending team, thus removing the Quality Team’s impediment.

10. Managing Consultant Team (Billable Consultants and Internal Consultants, Business Development)

Provides business and process oversight and advice, and project issue intervention and recovery. They will be actively billing in consulting engagements with customers, and also assist internal teams as consultants on internal projects. They are advisors and thought leaders for continuous improvement in all delivery functions. The Managing Consultant Team, when not individually billable, is focused on ensuring consistent predictable delivery results for the customer, and ensuring that business opportunities are identified and exploited. When project issues emerge or customer sat issues emerge, one or more individuals on this team will be called in to assess troubled engagements and define project recovery plans. They will also have an important role in mentoring and counseling project management and consulting skills for project personnel. When not functioning as internal or external consultants they may work on project teams as line contributors working on backlog items until consulting work emerges.

11. Other Important Components of the Organizational Model

The organization is well optimized to support strong operational leadership, but administrative functions should be delegated from busy operational managers to HR and administrative support entities. Other HR areas have been deconstructed from, and reallocated to other organs. For example:

11.1 HR Support

In order to optimize the operational focus of managers in the reporting structure, the organization will require highly available and conspicuous support from an HR professional. The types of issues to be handled by the HR professional are those related to general policy, admin and benefits questions, support for benefits issues, HR complaints, generalized whining and sniveling, and assistance to the division in comp and performance evaluation processing.

11.2 Mentoring Program

The organizational design has a reporting structure that can support the setting of goals and objectives, and the measurement of personnel performance. Specific functional development goals and career-pathing guidance will be provided by senior personnel with those skills and experiences. The mentoring program assigns more senior personnel to mentor 1-4 more junior individuals each. Pairs are required to meet and discuss development and issues at least once monthly. With mutual consent up to two hours per week may be spent working within the pair to deal with short term issues. Issues requiring more time and support are probably reflective of project team issues that should be dealt with in conjunction with the team leader and team peers. Mentors and team leaders are encouraged to cooperate when an individual team member requires counseling and development. Mentors provide an avenue and viewpoint for support and advice apart from the project team structure. Mentors will produce a review of their mentored individuals’ performance.

11.3 Review and Performance Appraisal

The new organization will be structured on project team oriented evaluations. Since individuals may work on several project teams per year, it is important to be able to support several appraisal groups assessing each individual each year. In summary, the best option is to conduct quarterly reviews among team members, where each person produces an evaluation of all teammates, and is evaluated by all teammates and his mentor. If a person has been on more than one project team in a quarter the team project they spent the most time on will conduct the review. Mentors will also produce a review of their mentored individuals’ performance.

12. Our Experience to Date

This organizational model has now been in place for several months, and the new responsibilities, teams, and interactions have settled into patterns of self organized (and mostly self-optimized) behavior. By and large, the goals of the model are being realized. Customer alignment is better, teams are more empowered, innovation and creative energy are at a new peak, and project results continue to be excellent. Several parts of the program, like the mentoring program, need some additional support to fully realize their potential. The review program is
being implemented with some newly acquired tools, and we’re examining our compensation programs to bring incentives into better alignment with a team based organization, and our customer service and project performance goals.

Type C Scrum behavior is increasingly efficient and productive. The higher executive offices and several internal departments are now also using Scrum and parts of this model as a project management wrapper.

While we must reiterate that no organizational model is perfect, at this point in the evolution of our consulting company, this organizational model has produced breakthrough improvements in several critical areas of success. One of our core organizational principals is constant self-evaluation and improvement, also known as inspect and adapt. Consistent with this principal, SolutionsIQ will never be finished with its organizational improvements, but we have realized great benefits from our innovations to date.

References


http://wiki.scrumalliance.org