

Agile Practices for Families: Iterating with Children and Parents

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Abstract— After Dad's success with agile practices in his workplace, the Starr family borrowed lessons learned at work to form a highly effective iterative model of management for their home life. This agile-inspired methodology keeps a family of six organized and working together with less friction for more than three years.

I. INTRODUCTION

When the events described in this report began, David Starr had been practicing agile for a little over 2 years in his workplace. He was Director of a department of 40 engineers, testers, and other technical specialists who had successfully adopted Scrum and many XP practices [1].

After initial success within I.T., resulting in fewer shipping defects and more frequent on-time deliveries, Scrum was adopted in other non-technical teams within his workplace. This included Scrum teams specializing in bio-sciences, content development, operational support, and other activities.

The transformational nature of agile adoption was successful beyond the stated goals of approving business agility. Team members genuinely seemed happier with their professional life, and much of the past bickering dissipated as teams re-focused on the work surfaced by the process. "If these techniques work so well here," David reasoned, "why wouldn't they help make the business of running our household better?"

A. Cast of Characters

The Starr household consists of six members; four children (Mason, Cutter, Isabelle and Bowman) and two adults (David and Elle). The current ages of the kids are 12, 11, 9 and 8 years old. The family has been using agile techniques of work management for three years.

B. Attitudes

David was a dogmatic agile zealot, fully embracing anything that might improve the family dynamic, and started the process without a full buy-in from Elle. Elle was not openly welcoming of this idea; she finally agreed to participate as long as it was kept relatively simple, but resented the entire process as an intrusion into her workspace. The two younger kids were wildly enthusiastic about the idea, while the two older boys were skeptical of change.

C. Pre-Conditions

Before implementing the techniques described in this paper, the family lacked a system for managing the activities in the household; with four kids and eight pets, life was chaotic. Individual chores were often performed poorly or not at all, with no standards of success or way of confirming completion. Family members were unclear about their personal responsibilities and expectations.

Chores weren't getting done, both by kids and adults, and it wasn't uncommon for arguments to occur when kids were asked to work together. Family members were not held to account for commitments; both kids and adults alike were increasingly frustrated by the noise level.

D. The List

The family sat down together one night in 2006 and created a simple check list, "The Self-Directed Morning List." This simple artifact listed what every Starr kid needed to accomplish to get ready for school each morning. The list included such bizarrely obvious things as: get dressed, eat breakfast, and brush your teeth. The list was posted prominently on the kitchen wall and became a simple and effective Information Radiator.

Now, when any individual family member diverted into unproductive activity (initially every 30 seconds or so) they were told to "go check the list." The kids were incredibly responsive to this technique and began to reference the list themselves and to each other.

This immediately reduced Elle's frustration and the need to repeat directions; it also produced a stunning change in the kids' behavior. They were now focusing on a single task at a time until it was complete. The youngest child, Bowman, was unable to fluently read at this time and icons were added to the list items for his benefit. The List granted the children the independence they need to successfully complete their morning activities.

Although slightly evolved, the Self Directed Morning Checklist is used to this day and is shown in Fig. 1.

The success of The List lead David to conclude that introducing other techniques held promise for further streamlining activities of family life.

II. WORKPLACE AND FAMILY DYNAMICS

David experiences with agile practices in the workplace resulted in less confusion and conflict. Teams became less

SELF DIRECTED MORNING CHECKLIST

1. Take vitamins or medicine
2. Eat breakfast
3. Shower or wash face and neck
4. Take care of your hair
5. Do morning chores
6. Brush your teeth (2 minutes)
7. Backpack, shoes, and socks
8. Update information boards

What are you having for lunch?

What are taking to school today?

What are you forgetting?

Figure 1. The List

focused on issues unrelated to product delivery. Excruciating transparency was fostered and increased the level of group accountability. Team members began functioning beyond their defined roles and everyone stayed committed to an increment of software until it was delivered to the customer.

Most parents want to promote similar experiences within their families. Teamwork makes family life more pleasant for everyone and fundamentally defines a healthy family. However, parents know that group commitment is extremely difficult to manifest in a group of myopic, self interested children.

A. Different Types of Work

Product development teams usually have new activities with each development cycle. Team members are typically on the same schedule, and the team is expected to cooperatively deliver an increment of software. Household work, however, is not usually creative and often repetitive. This is much more akin to a helpdesk team.

Even with these differences, our fundamental belief is no one wakes up thinking, "Today I'd like to do a terrible job." This desire to succeed individually is fundamental to the success of the team.

B. Personal and Team Incentives

The incentive model in a family is fundamentally different from that of the work place. In an employment setting an individual is paid for doing well, receiving a reprimand is a very big deal, and in a worst case scenario you could be fired.

At home, the reward for doing well is often simply not being punished. Despite ongoing poor performance, no one can vote a family member off the island. When the entire family is tasked with cleaning the kitchen, for example, the same 1 or 2 kids will slack off regardless of reprimand.

C. Personal and Team Responsibilities

In a family, individual responsibilities necessarily exist and family members often move on individual schedules throughout the day. Some of the work switches between group members, and some of it belongs to specific individuals. Some things need to be done every day, such as homework. Some tasks need to be performed only once per iteration, like cleaning a bathroom.

III. INCENTIVE MODELS

Although the parents desire to have a group accountability model, it is all but impossible to hold a group accountable for a single outcome when the group has no recourse for holding an individual accountable beyond yelling at him. Because of this, a system of individual performance recognition proved necessary and effective.

A. Daily Points

Daily points are awarded by the group based on the individual's performance for that day. A majority vote by the group that a person has performed well earns a point, which is noted on a special card for each individual as shown in Fig. 2. If promised work is not completed, points are withheld.

When 30 points are accumulated, the card is considered a coupon good for one new book costing \$10 or less; 30 points for a full card enables each person to earn approximately one book each month. Dungeons and Dragons (D&D) handbooks don't come cheap, so book cards may be accumulated to purchase a book which cost more than \$10.

This incentive model encourages reading with the kids and has developed a reverence toward book ownership. It also allows the grown-ups to pick up a few things as well. Further, the majority vote requirement to earn a point ensures each individual is held to account by the group.

B. Cotchas

A separate incentive model is based on Cotchas, which is short for "Caught You Doing Something Good". This is a simple way of reinforcing desired behaviors immediately when they happen. When a positive behavior is noticed, a card is handed out with great fanfare. When a negative behavior is performed, a Cotcha may be taken away.

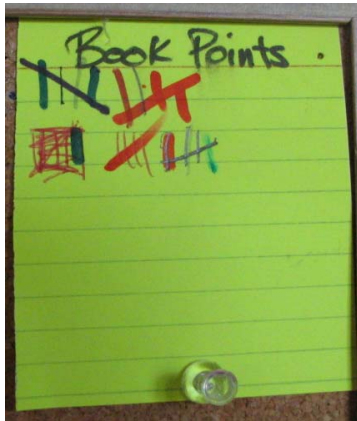


Figure 2. A Daily Points Card

Cotchas are held in an envelope for each child until they accumulate 20, at which time they may be redeemed for a family activity. This is an activity of that child's choosing that the whole family participates in. Typical family activities include:

- A trip to the roller rink
- A picnic
- Going fishing
- Playing D&D all night until mom is done

Cotchas are extremely prized and children nearing 20 in their bag will often count them several times a day. Each child typically knows exactly how many they have at any one time. Losing one is significant to them.

Mom and dad can award and take away Cotchas as they see fit. The kids can award or penalize each other as well, with a vote of 2 or more. This promotes self organizing behavior and enables the children to police themselves in many conflicts.

IV. THE FAMILY METHODOLOGY

With the kid's collaborative participation, the Starrs implemented a more sophisticated Information Radiator and formal methodology. The goal for the process was to promote cohesion within the family structure while reinforcing some of the core Starr family values.

Borrowing heavily from Scrum, components of the Starr Family Methodology include:

- Weekly Family Meeting
- Daily Family Stand-up
- Task cards
- Task boards with swim lanes for individuals

A. Vocabulary

Phrases such as "acceptance criteria" aren't terribly meaningful to a six year old, so mapping common agile terminology over to simplified common language was necessary, as shown in the Table 1.

TABLE 1. AGILE TO FAMILY VOCABULARY MAP

Agile Term	Family Term
Iteration	A week
Acceptance Criteria	Can pass inspection
Task	Responsibility or Chore
Daily Scrum	Family Stand-up
Review and Retrospective	Weekly Family Meeting
In Process (workflow state)	Promised

B. Information Boards

Four cork boards were installed in the family room, providing enough space for a swim lane for all 6 family members. In addition to task cards, the boards also provide space to post other relevant content for the family. The boards are in full view of the kitchen table, where the family meets during Weekly Family Retrospective and Planning meetings.

When David screwed the four cork boards into the studs, Elle was not happy. She found this act incredibly intrusive and irritating, and it took her a while to see that the positive changes were worth the disturbance of the décor.

C. Artifacts

The task boards and other useful information are on the wall in the most prominent room in the house. Various types of tasks are put on the boards. The data model reflected in the task boards has been evolved by the children.

- Daily and personal tasks - These tasks always stay with one person; e.g. feeding your own pet.
- Daily and shared tasks - These tasks rotate every planning meeting; e.g. emptying the dishwasher or sorting the laundry.
- Weekly and personal tasks - These tasks stay with one person; e.g. cleaning the cage for your rats or cleaning your room.
- Weekly and shared tasks - These tasks rotate every planning meeting; e.g. sweeping the driveway or cleaning the guest bathroom.
- Ad-hoc responsibilities - These tasks are added at any time and thrown away upon completion. They serve as a simple representation of any item of work to be performed.

Weekly tasks are represented with index cards, white for individual and pink for shared as seen in Fig. 3. Daily tasks are displayed in a checklist, allowing everyone to see execution patterns over the course of a week as seen in Fig. 4.

Daily points tracking cards and envelopes for holding Cotchas are also attached to each swim lane.

	Parent	Child
To Do		
Promised		
Done		

Figure 3. Sample task board showing 2 swim lanes

A large calendar was added near the task boards. This calendar is updated any time to show all sports practices and competitions, business trips, vacations, house guests, and ad-hoc kid activities like birthday parties. Family members are encouraged to add any new events to the calendar before Family Stand-up begins.

D. Daily Family Stand-up

Daily stand-up meetings were instituted to reduce the friction being generated by unclear expectations. Because individual work accomplishment is made clear at the daily stand-up, it's easy for the group to see whether any given member has met their commitment to the group.

The Family Stand-up occurs after dinner each night except Friday and Saturday. Rather than a central facilitator, the family passes the role of asking and answering questions until each family member has been called on. The questions asked and answered are:

- What did you do today?
- What weeklies will you promise to do tomorrow?
- Do you need any help?
- Who thinks <Name> deserves a point for today?

Recently the kids have enjoyed a pass-the-token technique of wearing a goofy hat. The rule is that only the person who is wearing or has just worn the hat may speak.

Family Stand-ups are not held on Friday or Saturday evenings. This provides a break from the process and avoids conflict with non-typical events scheduled on these nights.

Negative behavior during a family meeting; reading, talking out of turn, playing Rubix cube, or any other behavior that prohibits listening, earns the perpetrator 10 pushups, executed immediately while the family waits.

The standup on Sunday nights is held with an eye toward performance over the week. Each person is asked "How do you think you did this week," as a mental shift into Weekly Family Planning, which will occur shortly.

E. Weekly Family Planning Meeting

At the weekly Family Planning Meeting, the family prepares the work for the next week. Deliberate planning

reduced the number of "run-time surprises", examples of which include:

- "Mom, today's my day to bring snacks and I need 29 healthy snacks at the school by 10:00."
- "The school play is at 1:30 today. Can you come?"

Weekly Family Planning Meetings provide family members an opportunity to see all they accomplished and to be appreciated for it; it also allowed kids to have a voice in the planning process.

Weekly Family Planning Meetings take place on Sunday nights, and can last up to an hour. The meeting is broken into 3 distinct phases: a retrospective, allowance, and planning.

1) Retrospective

Any topic of family life is open for discussion at this meeting and typical retrospective learning includes events from the week parents were previously unaware of, such as:

- "I didn't like it when Mason hit me."
- "Bowman was really annoying when my friend was over."

The retrospective elicits answers to the following questions. Not only is the process itself open for discussion, but also the behaviors and experiences of the individuals.

1. What went well this week?
2. What things should be improved next week?
3. What will we commit to changing next week?

Everyone is called on in turn with these questions ensuring participation by all family members.

Resulting commitments get posted on the wall above the boards so everyone can see them all throughout the week. The list includes commitments by the group and individuals. A very common item on this list is, "I will exercise 5 days this week - Dad".

The process of the retrospective was transformational for the kids, who immediately sensed an expansion of their locus of control. In this meeting it is possible for them, with respect, to criticize mom, dad and each other; this is a helpful skill to have, and is one that most people don't learn until adulthood. They can affect change in the plan for the next week, and they can influence others to their positions.

2) Allowance

We then take a break for allowance. The time spent paying allowance is used as a mental shift point from Retrospective to Planning.

Allowance is not tied to anything in the family process. Each child receives 1\$ for every year old they are, and then is required to work out the Give, Invest, and Spend formula for themselves.

a) Give

A minimum of 10% of all allowances are contributed to the communal charity jar, which is distributed bi-annually by the kids to a charity of their choice.

Cutter the Putrid							
	M	T	W	Th	F	Sa	Su
Morning							
Morning Checklist	✓	✓	✓	✓	✓	✓	✓
Feed cat	✓	✓	✓	✓	✓	✓	✓
Wash laundry	✓	✓	✓	✓	✓	✓	✓
Evening							
Homework	✓	✓	✓	✓	✓	✓	✓
Practice Bass	✓	✓	✓	✓	✓	✓	✓
Clear table	✓	✓	✓	✓	✓	✓	✓
Wash laundry	✓	✓	✓	✓	✓	✓	✓
Anytime							
Exercise	✓	✓	✓	✓	✓	✓	✓
Allow list	✓	✓	✓	✓	✓	✓	✓

Figure 4. A Daily Task List

b) Invest

A minimum of 10% must be put into the savings account, from which funds may be accessed to make stock or other investment purchases. Most weeks kids elect to save anywhere from 50-80% in this account.

c) Spend

The remainder of the money is for discretionary funds. While this may seem like a lot of money, kids must cover many of their own expenses with their own money. They purchase all birthday and Christmas gifts for family and friends, pay 10% of any sport or activity they are involved in, and pay for their own movies, junk food and video games.

It really is amazing how often they won't chase down the ice cream truck because they know it's coming out of their own pocket. Using this model each of the kids has been able to save well over \$100 a year.

3) Planning

During the Planning phase, any new calendar events are added, the task boards are reset for the next week, and all shared chores are rotated to the next person.

This is also a time for David and Elle to deliberately plan out deliverables for themselves for the week, which are added to the task boards in the parent's swim lanes. Kids often have ad-hoc weekly deliverables to add during this time, like a particular report due in school this week or shopping for a birthday gift for a party next weekend.

V. PROCESSING MODELS

The parents use a Continuous Flow model for processing their work, while the kids use an iterative model. Regardless of the processing model used, all family members share at the Family Stand-up and their swim lanes are made accurate on the boards at this time.

A. Continuous Flow for Parents

Elle and David use a continuous flow model, enabling work plans to change to meet evolving reality on a day-to-day basis. The "Promised" queue is limited to 3 items in progress at any one time, and each item in the queue must be executable within 2 days. Parents also have daily task lists, which include items such as feeding the dog (David's pet)

and exercising. Things that won't fit into a day are broken down into smaller tasks. Parents must be able to explain all work items to the kids in a meaningful way.

Elle's significant work items are primarily non-repeating work items of less than 2 day duration. For her, this is a centralized, public to-do list. Everyone gets to see what she does with her secret mom life. It's a venue for the kids and David to understand exactly how much of her time she spends helping them.

The nightly stand up helps remind Elle of things that are due for other family members, upcoming meeting and appointments, and helps her manage tasks for her sewing business, kid's school projects, and assistance with David's consulting business.

Recently self employed for the first time, David uses the process to manage business work items. "I find it very helpful to be accountable to someone", said David. "Especially the people who get to eat if my work items are executed well. They care about my progress." Kids withhold daily points when he failed to complete his promised tasks.

B. Iterative for Children

The kids use a more iterative model. There is a weekly rotation of shared tasks and an individual checklist for daily chores. They add in the occasional ad-hoc item, such as "make awesome birthday present for Mom".

The kids remain engaged participants, except for the grumpy pre-teen, who regularly spends more time doing punitive pushups than sharing. They've learned to add ad-hoc items to the boards during planning and stand-ups, and can be seen checking the boards periodically throughout the day.

Initially, all kids executed their weekly deliverables in a single large batch at the end of the week. This resulted in an entire Saturday or Sunday being spent doing chores. For some of the kids, their thinking has become leaner.

The two younger kids tend more toward doing a single item per day throughout the week. In this fashion, all their weekly tasks are usually done before the weekend rolls around. The two older kids still tend toward a large batch process at the end of the week. This is commonly known as procrastination, and is a great source of frustration for them.

Cutter waits to execute his tasks and uses his Sunday Pokemon tournament as motivator to complete his whole batch on Saturday.

Mason, on the other hand, puts it all off because he'd rather be reading and then stomps around because he's the only one with work to do on Sunday. So far, there seems to be no logical explanation for this behavior.



Figure 5. Family Task Boards

VI. DAILY LIFE AND OUTCOMES

A. What Works Well

Our kids really don't like change, and this system has proven an effective way to introduce change with little disruption. The kids perceive their larger locus of control because they contribute to designing changes in the Weekly Family Meeting.

Not receiving a daily point, or worse still, losing a Cotcha, is a significant loss of face in the family. The kids work hard to avoid this and do well in their commitments to the rest of the family.

There has been a dramatic increase in the amount of tasks accomplished in a given day. Most things can now be independently accomplished, and with a much lower level of frustration. There is a marked decrease in the amount of arguing. Blissfully, for everyone, mom yells a lot less.

B. Where We Struggle

Skipped Family Stand-ups remains a common failure. Kids remembering to start the meeting now receive a Cotcha and this has helped keep the meetings occurring. Often the missed meeting is due to a conflicting commitment like a

school or athletic activity. Even when these conflicts occur, we try to hold a very brief standup just before bedtime.

Forgetting to reward good behavior with Cotchas is detrimental to their effectiveness. Remembering to use this tool remains a struggle for everyone in the family. Allowing the kids to administer Cotchas has demonstrated to them how hard it is to remember to reward good behavior.

Sometimes events occur, such as a sick kid or a forgotten meeting, that require real time adjustments in the work flow. It can be a challenge to change up the tasks without abandoning the system altogether; keeping the system working simply requires persistence.

C. How We Rubbed Off On Others

People come into our home, see our information radiators, and either think that they're awesome or we are totally insane. A number of parents have copied bits and pieces, such as allowance or the self directed list, with a good measure of success. One child has been here for a number of stand-ups and weekly meetings, and is now trying to convert her disorganized parents over to a more agile existence. A few have tried a full implementation and had varying levels of success. One major impediment to success is that this process of organization takes time and commitment, and is not static once the boards go up.

VII. CONCLUSION

While increased productivity is a valued outcome of this process, the real value has been in the increased communication between family members. Setting aside time to talk about how we function as a family has been instrumental in improving behaviors and satisfaction with being part of a family team.

Discussing common dysfunctions, like arguments or raising one's voice, together as a family has genuine impact on individual behavior. Openly managing an individual's behavior in a structured group setting is a powerful tool to promoting more positive team behavior.

When parents encourage kids to become part of the process of change, kids become less fearful of it. After a few iterations where changes have been made with positive outcomes, kids will start generating their own ideas for change.

To remain relevant, the process must always be open for change. Expect and encourage evolution, keeping in mind that the goal is a happier, healthier family.

VIII. REFERENCES

- [1] Starr, David; Long, Ken;. "Agile Supports Improved Quality and Culture for Healthwise." Agile 2008 Conference. Toronto, Canada: IEEE Computer Society, 2008. 160-165.