



Active Fantasy Sports

Analysis and opportunities

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April 2015

About the author:

Darren Gene Peterson is an innovation consultant based in Chicago, Illinois.

He has played in a couple different fantasy sports leagues, and tried out several activity trackers: a Nike Fuelband, a Garmin Vivosmart, and a Fitbit Surge, for a short period of time.

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Contents

Active Fantasy Sports

Background
Research

Findings

Motivation
Fairness
Community

Opportunities

Game Design
Service Design
Website Design

Next Steps

Immediate Timeline
Open Threads

Background

There are many types of activity trackers on the market today. The purpose of them all is to help you become more active by giving you information about your activity, and encouragement through rewards. The information is typically a count of the number of steps you take. The reward a small celebration for meeting your daily step-count goal.

Anyone who has owned such a device knows that once the novelty of the device has worn off, the reward is not enough to keep you keeping active. The purpose of Active Fantasy Sports is to help people affect long term behavior change by linking the activity goal to something more valuable: your fantasy sports team.

Active Fantasy Sports (AFS) is a game that combines activity tracking with fantasy sports. In AFS, participants track their activity using an activity tracker. Their activity is compared to a goal, set at the beginning of the competition. The amount of activity that a participant records during a week affects the results of his fantasy sports competition. The participants are motivated to be active, because they care about their fantasy sports league.

Purpose

This is a study of a study. The research presented here is a qualitative analysis of an ongoing study on Active Fantasy Sports. It is based on interviews with participants of an

Active Fantasy Sports Fantasy Football league research study conducted by Dr. Arlen Moller at the Illinois Institute of Technology.

The end goal of this study is to create a qualitative description of the perceptions of the people who are participating in the ongoing Active Fantasy Sports study, to analyze the findings, and to make recommendations for the future of Active Fantasy Sports.

Ongoing research

Over the course of the last year, Moller has been testing Active Fantasy Sports on different groups of participants, in different fantasy sports leagues. At the time I was engaged, Moller had an ongoing study on a group of fantasy football gamers. He created his own league and solicited people around the Illinois Institute of Technology campus to join. It was from this group that I selected participants to interview. For more information see Moller's paper: *Active Fantasy Sports: Rationale and Feasibility of Leveraging Online Fantasy Sports to Promote Physical Activity*.¹

1. Moller et al. Active Fantasy Sports: Rationale and Feasibility of Leveraging Online Fantasy Sports to Promote Physical Activity. JMIR Serious Games 2014;2(2):e13

Active Fantasy Sports

Proposal

At the beginning of the research I laid out my plans in a proposal to Dr. Moller. I defined two paths for the project, with three deliverables. From the original proposal:

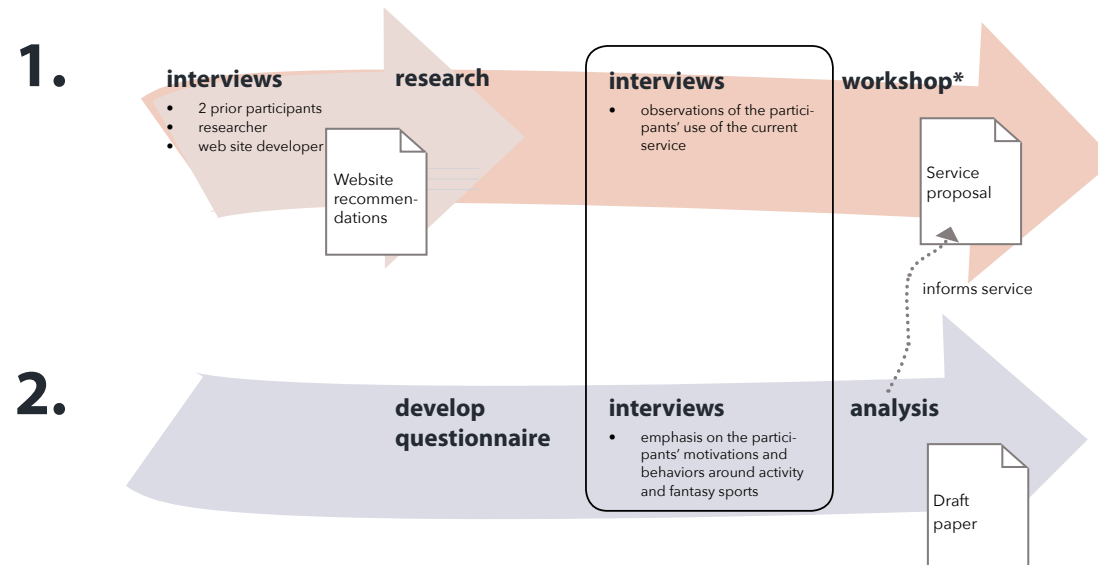
First, I will evaluate the service for Active Fantasy Sports participants. This will be comprised of two parts. Early on I will evaluate the current AFS website in development, and give recommendations on how to immediately improve it. Later I will present a vision for the future of the service.

Second, I will write a draft of a paper detailing the results of qualitative research on Active Fantasy Sports participants. This will be a description of the research and methods, some direct observations and insights, and an analysis of the research.

In this report I have combined the end deliverables of both paths of the project.

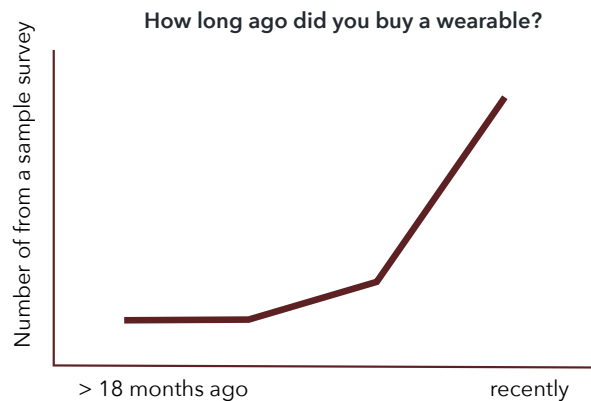
Contents

This report has four parts. First, I give an overview and explanation of Active Fantasy Sports: what it is comprised of and how it works. Next, I present the findings of the research project, including a description of the research and methods, and an analysis of the findings. Third, I give suggestions on what can be done in the future with Active Fantasy Sports. I conclude with some possible next steps for the service.

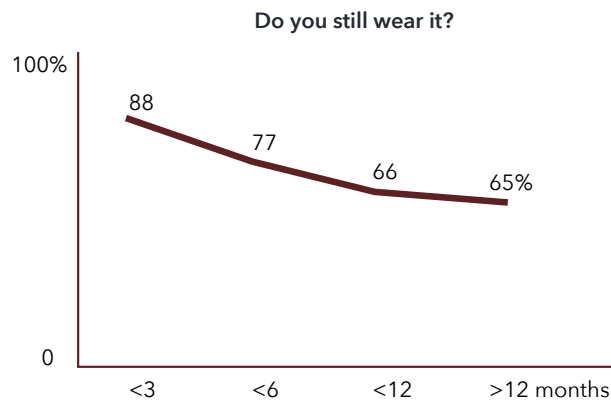


Active Fantasy Sports

1 in 10 Americans owns a wearable, and the market is growing



1/3 of wearables purchasers stop wearing it after 6 months



Activity tracking

With recent improvements of sensor technologies, people can now own sophisticated devices that track their motion. These devices, most commonly called wearables, track the amount of activity that a person does in a given day. To motivate people to be more active, the devices are often paired with a service that provides goals, and rewards for achieving those goals.

The technology and application of such devices are exciting. Wearables have the possibility to engage sedentary people and encourage them to be more active—increasing physical fitness, and improving their quality of life. More and more people are buying the devices for these reasons. Unfortunately, people stop using them shortly after purchasing them.

The current state of the wearables market can be summarized in two important observations from a pair of recent reports.²

- 1 in 10 Americans over the age of 18 owns a wearable and the market is growing.
- 1/3 of wearables purchasers stop wearing their devices after 6 months.

Activity tracking is popular, and there is clearly a desire among people for technology to help motivate them to keep physically fit, but the current solutions do not hold a person's attention for long.

2. Ledger, Dan; McCaffery, Daniel. Inside Wearables, January 2014, Endeavour Partners LLC.
Ledger, Dan. Inside Wearables, Part 2 July 2014, Endeavour Partners LLC.

Active Fantasy Sports

Fantasy Sports

Fantasy sports is a game where participants compete to get points based on statistics from real sporting events.

How it works

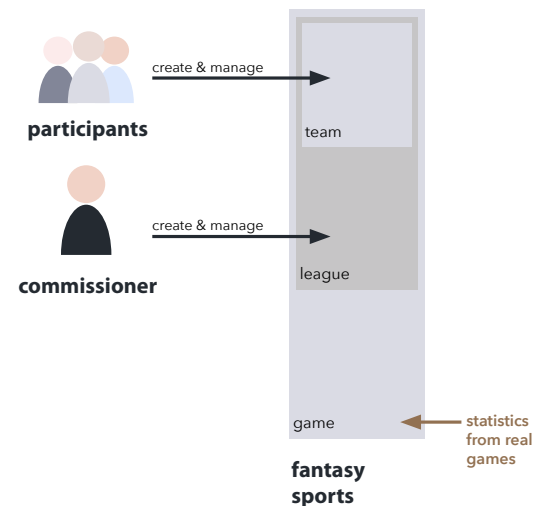
Fantasy teams are made up of real sports players “drafted” at the beginning of the fantasy season. Every week, two participants’ teams match up in a competition. The team with the players that perform best gets the most points, thus winning that week’s contest. Statistics derived from the performance of real players in real games determine how many points the participant’s fantasy team scores.

For example, in fantasy football, participants draft a roster of players: a quarterback, a runningback, and so on. On Monday, when the week’s NFL games have completed, points are tallied for things like passing yards, receiving yards, and touchdowns. A participant gets the sum of the points of all of his players, depending on which players were active on a participant’s team’s roster.

This repeats weekly, with each participant playing against different people in his league. At the end of the season, the participant who wins the most weekly match-ups wins the league.

A platform

Fantasy Football is a platform. Individuals create teams in leagues defined by a commissioner. The leagues in turn are created on a platform hosted by a game site, such as Yahoo Sports.



Participants draft a team, and manage their rosters weekly. They adjust based on changes to the players, and their own predictions of sports outcomes.

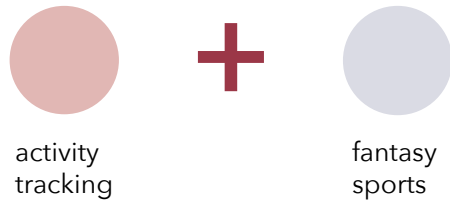
A commissioner sets up a league. He sets the rules of the league, within the constraints of the game, and modifies the teams when needed. Typically a commissioner is also a participant.

The game is created by a developer, such as Yahoo Sports. There are different versions of the game, based on multiple choices available to commissioners. The game cycles with the addition of new statistics from real sport contests.

Active Fantasy Sports

Active Fantasy Sports

Active Fantasy Sports is a game that combines activity tracking and fantasy sports. In AFS, each participant's weekly activity affects their fantasy sports team.



How it works

Participants upload their data to an outside service. Tracked activity is tied to a participant's fantasy football team through two mechanisms—a punishment and a reward. First, if the participant does not meet his goal for the week (typically 60,000 steps) then he has a player dropped from his team. The player is dropped at random.

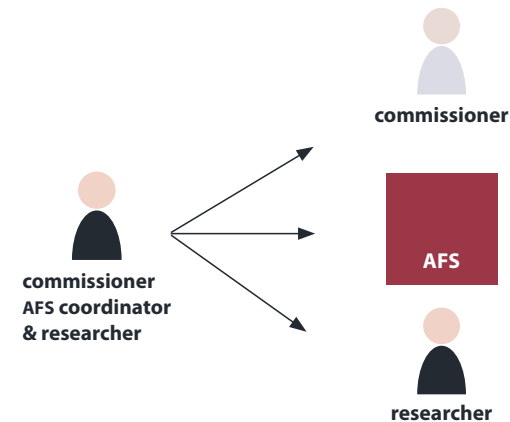
Second, the waiver wire is reordered according to the rank of the participants' activity. The waiver wire is the order that participants get to choose a player to their rosters. The participant who surpasses his goal by the greatest percentage wins the first choice of player.

In the current design of Active Fantasy Sports, one person plays the role of both commissioner and researcher. The researcher pulls the data manually from the activity tracking service. He computes what reward or punishment each participant is to receive. Then, in his role as commissioner, he modifies the teams in the league. The researcher must calculate the activity data and modify the teams every week.

Near Future

The desired first step in improving Active Fantasy Sports is to automate the process of downloading data, calculating rewards, and implementing them in the league.

An automated system would allow a participant to perform the duties the commissioner, while the researcher would be able to stop supervising the mechanics of the game and allow him to focus on research.



How Active Fantasy Sports works

The researcher sets a goal for each participant.

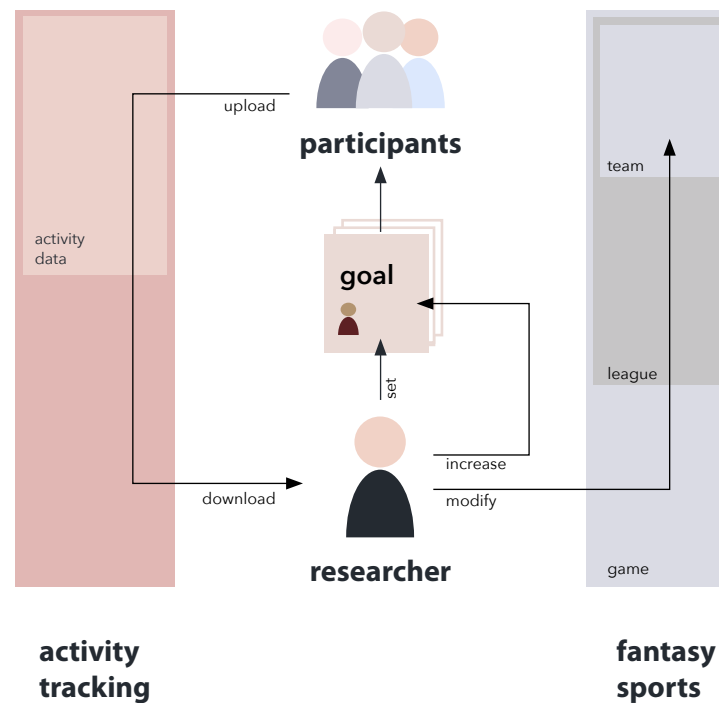
Participants upload their weekly activity data to an outside service.

The researcher compares the activity of the participant against his goal, and uses the commissioner tools to change the participant's team roster.

If the participant meets his goal, his goal is increased by 10 percent. If he doesn't meet his goal, a player is dropped from their fantasy sports team's roster. The dropped player is chosen at random.

In addition, the waiver wire is reordered according to the percentage above the participant's goal.

The participant who has the highest activity doesn't lose a player, plus he gets the first choice of other players that were dropped.



Research

From the 16 participants in the ongoing fantasy football study, five agreed to be interviewed. I met with one, Joshua, for an hour-long face-to-face interview. Four others participated in a week-long email activity. Of the five participants I spoke with, there were two separate pairs who knew each other outside of the league.

The participants that I spoke with were new to activity tracking, but all were avid fantasy sports players. Most are currently in more than one fantasy sports league. Several are in leagues where they have been members for many years.

I talked with both winners and losers. Two of the participants made it to the playoffs: Marty placed first in the regular season and lost the championship game. David lost his first match in the playoffs but won out in the consolation bracket. The other participants placed 10th, 11th, and 15th.

The interviews were conducted in the third week in November, which was week 12 of their season.



Joshua

friends with David

daily step goal at baseline (at end):

9769 steps (10,000)

missed goal:

7 times

team rank (of 16):

15th



Jon

daily step goal at baseline (at end):

7192 steps (9572)

missed goal:

10 times

team rank (of 16):

11th

Active Fantasy Sports



Marty

works with Son

daily step goal at baseline (at end):

missed goal:

team rank (of 16):

8557 steps (10,000)

1 time

1st



Son

works with Marty

daily step goal at baseline (at end):

missed goal:

team rank (of 16):

7970 steps (10,000)

1 time

10th



David

friends with Joshua

daily step goal at baseline (at end):

missed goal:

team rank (of 16):

12079 steps (same)

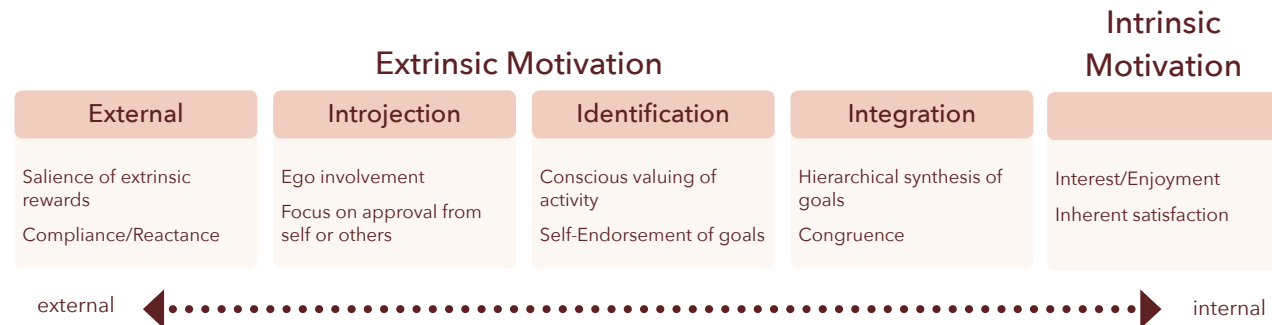
1 time

8th

Findings

Self Determination Theory

The following chart and text are from Deci and Ryan's description of Self Determination Theory³



In Self-Determination Theory (SDT; Deci & Ryan, 1985) we distinguish between different types of motivation based on the different reasons or goals that give rise to an action. The most basic distinction is between intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation, which refers to doing something because it leads to a separable outcome.

Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome. Extrinsic motivation thus contrasts with intrinsic motivation... SDT proposes that extrinsic motivation can vary greatly in the degree to which it is autonomous.

A category that represents the least autonomous forms of extrinsic motivation ... we label **external** regulation. Such behaviors are performed to satisfy an external demand or obtain an externally imposed reward contingency. Individuals typically experience externally regulated behavior as controlled or alienated.

A second type of extrinsic motivation is **introjected** regulation. Introjection describes a type of internal regulation that is still quite controlling because people perform such actions with the feeling of pressure in order to avoid guilt or anxiety or to attain ego-enhancements or pride. Put differently, introjection represents regulation by contingent self-esteem. A classic form of introjection is ego involvement.

A more autonomous, or self-determined, form of extrinsic motivation is regulation through **identification**. Here, the person has identified with the personal importance of a behavior and has thus accepted its regulation as his or her own. A boy who memorizes spelling lists because he sees it as relevant to writing, which he values as a life goal, has identified with the value of this learning activity.

The most autonomous form of extrinsic motivation is **integrated** regulation. Integration occurs when identified regulations have been fully assimilated to

the self. This occurs through self-examination and bringing new regulations into congruence with one's other values and needs. The more one internalizes the reasons for an action and assimilates them to the self, the more one's extrinsically motivated actions become self-determined. Integrated forms of motivation share many qualities with intrinsic motivation, being both autonomous and unconflicted. However, they are still extrinsic because behavior motivated by integrated regulation is done for its presumed instrumental value with respect to some outcome that is separate from the behavior, even though it is volitional and valued by the self.

Intrinsic motivation is defined as the doing of an activity for its inherent satisfactions rather than for some separable consequence. When intrinsically motivated a person is moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards.

3. Richard M. Ryan and Edward L. Deci. Contemporary Educational Psychology 25, pp 54-67 (2000)

Motivation

The purpose of Active Fantasy Sports is to motivate participants to be more active by tying activity tracking to a game that the participants like to play. One goal of this study was to determine how the participants are motivated—if they are intrinsically or extrinsically motivated.

In this section of the report, I use the Self Determination Theory framework to discuss the observations from my interviews. I organize the sections by type of motivation defined in Self Determination Theory. I discuss an aspect of AFS for each type of motivation. Later in this report I will use the framework again to discuss opportunities and solutions.

Self Determination Theory

In Self-Determination Theory, Ryan and Deci define five types of motivation. They arrange the types of motivation on a spectrum from externally to internally motivated, beginning with four extrinsic motivations: **external regulation, introjection, identification, integration**; plus **intrinsic motivation**. See the figure on the opposite page for Deci and Ryan's own descriptions of the different types of motivations.

For each type of motivation, I found an aspect of Active Fantasy Sports that fulfills that type of motivation. There are aspects of AFS that fall into each of the five categories of motivation. They are: the **cash prize, winning, physical fitness, skilled self, and fun**.

1. External

In Active Fantasy Sports, there is a cash prize for the top eight finishers in the league. This cash prize motivates through external extrinsic motivation.

"I'm externally motivated."

-Son

The participants all reported that they are not motivated by the cash prize. This seems plausible, because the prize was small compared to the effort they would have to put in to win it. The prizes for the top three places were about \$300, \$200, and \$100.

A cash prize is common in fantasy football leagues. I believe that it is used mostly as an ante. Putting some money up at the start of the game keeps you interested, and helps motivate you to follow through to the end of the league. But it is not a strong motivator.

2. Introjection

A stronger motivator in Active Fantasy Sports is winning. Participants want to win, and when they do they feel good.



Extrinsic Motivation				Intrinsic Motivation
External	Introjection	Identification	Integration	
Salience of extrinsic rewards Compliance/Reactance	Ego involvement Focus on approval from self or others	Conscious valuing of activity Self-Endorsement of goals	Hierarchical synthesis of goals Congruence	Interest/Enjoyment Inherent satisfaction
Cash Prize	Winning	Physical Fitness	Skilled Self	Fun!
Fantasy Sports	Fantasy Sports	Activity Tracking	Fantasy Sports	Fantasy Sports

Active Fantasy Sports

"I like to win...and I usually do."

-Jon

According to SDT, motivation regulated by **introjection** is motivation defined by the ego. People are motivated through introjection when they seek to avoid guilt or attain pride.

The aspect of Active Fantasy Sports that leverages introjection is the desire to win. One of the reasons that the participants in this study are motivated to get their step-counts is because they are competing against each other. It is the main game mechanism of AFS.

If the participant doesn't reach his step-count goal he loses a player; if he loses a player, his chances of winning the game are reduced.

Some participants reported that they did not feel strongly motivated by this system. To them, the chance of losing a player is too low. They identified two barriers to motivation: Luck and Tempo.

Luck

Losing a player should hurt a participant's chances of winning the league. In practice, only when a good player is dropped does it hurt a participant's chances of winning. Since players are dropped at random, the player that is

"I figured there are only a few players on my team that I would be upset to lose and since it's random there's a high chance that none of those players would be dropped."

-Son

dropped is a matter of chance. Several participants were willing to take that chance. They reasoned that if they did not have many star players, then there is not a great likelihood that the punishment will be significant.

Tempo

Another barrier identified by the participants is the time between the activity performed and the effect on the participant's team. The punishment that a participant receives for not meeting his goal is not implemented until the following week. The delay between the action (not meeting goals), and outcome (losing a weekly match) is long. The participants were aware of this, and identify it as a flaw in the game.

"If you don't meet your goals for the week it affects your team for the following match up, not the current one. That might be a downfall of the study."

-Marty

There are other ways that participants are motivated by competition. One is through the direct comparison of step-counts.

Every week, a list of goals and results was posted to the league message board. In the post, participants could see every player's goal and whether he achieved it or not.

Some participants reported being motivated by the comparison their of goals and achievements. They got immediate satisfaction by seeing where they placed on the leaderboards, for example.

Active Fantasy Sports

"I do genuinely get a sense of satisfaction and accomplishment in exceeding the goal on a weekly basis, it is especially rewarding when my steps count rank in the top 3 of the group."

-Marty

3. Identification

A more internal form of extrinsic motivation is identification. With **identification**, a person sees the value in a behavior. They identify with the behavior as something that they strive for.

"The prospect of being healthy encourages me."

-Jon

Active Fantasy Sports's tie to the identification level of extrinsic motivation is physical fitness. The participants are motivated to get their step counts because it helps them meet their goal: being more healthy and physically fit.

One of the participants, Jon, was more talkative about his motivation to be healthy. He is a busy graduate student, also working full time. He signed up for the study to help him find motivation to stay fit. In the end he found that he

"I actually feel bad about missing my goals. Not so much for my team, but that they should be reasonably attainable for me."

-Jon

wasn't motivated enough.

Jon did poorly in the contest. His team placed 11th in the rankings, out of 16. Worse, he only met his activity goal 2 weeks out of 12.

This is of interest because it seems that Jon was motivated more by the desire to be healthy than to win the fantasy football game.

4. Integration

The type of extrinsic motivation nearest to intrinsic motivation is **integration**. Integration occurs when external regulations are integrated within the self. In this case, the behavior is so valued as to be integral to the self, but it is still extrinsic in that it is done for some external outcome.

The feature of Active Fantasy Sports that leverages integrated motivation is the skill involved in playing fantasy sports.

Fantasy football is a game of skill. It involves complex tactical and strategic moves, based on knowledge of real-world circumstances. It rewards participants who keep

"The little nuances of trades, waivers, and injuries really provide an interesting set of variables that can be hard to pin down but reward you when you do."

-Jon

abreast of happenings in the NFL, and participants who make frequent tactical moves to maintain the best roster.

I believe that the participants in this study all were motivated by their belief that they are skilled at strategic games. Jon declares that he is more lucky than good at

Active Fantasy Sports

fantasy football, but then goes on to point out his wins. Jon tells us straight out that he wins his leagues. It is Marty however who most clearly exemplifies this:

"I really wish I was a general manager for a pro sports team, or at least in management. I love the strategy involved in drafting, and I love building a team early in the season and strategically working out trades throughout the season ... I love strategizing in the off season how my favorite teams can get better. I like to think about it as if I was in management."

-Marty

5. Intrinsic Motivation

The last type of motivation in self-determination theory, separate from extrinsic forms of motivation, is **intrinsic motivation**. With intrinsic motivation there is no external source compelling a person. You are intrinsically motivated if you do it simply for the fun.

"Fantasy sports are fun."

-Jon

Active Fantasy Sports is fun. All players reported that they enjoy playing the game and say that they would play again if given the chance.

The participants did have some small complaints. Almost all of the participants voiced concerns about the commissioning of the game. There were too many teams, and the

setup of the teams not ideal. Early on there was a complication with the execution of a week's punishments. That complication was eventually resolved, but not to everyone's satisfaction. These small complaints add up to make the game less fun.

Active Fantasy Sports has different elements that motivate participants in each of the five ways identified by Self Determination Theory. As we will see in Opportunities, these elements could be maximized or minimized in order to change the way AFS motivates, and to change the experience of the game.

"For me, tying the activity/performance to something I enjoy (i.e. fantasy sports) with sometimes harshly enforced penalties (losing WR DeAndre Hopkins reaaaaalllly hurt!) for failing to meet goals did give me a spark to be active. Several Saturday/Sunday mornings or afternoon I'd be out walking/jogging just to make that weeks step count because of it was tied to my fantasy team."

-David

Fairness

The participants all had opinions on fairness of the game. Their concerns fell into three categories: the accuracy of the activity tracking, the method of setting the baseline, and the possibility that other participants are cheating.

Accuracy

The Fitbit trackers in this study are accurate at counting steps. But besides the accuracy of the device, there is also the question of what it measures. The activity trackers only measure step-count, which is not indicative of activity or energy expenditure.⁴

"I wish there was a way that effort could be taken into account, instead of just steps."

-Marty

The participants would prefer that all of their activity be recorded. Some participants suggested heart-rate monitoring, others wished that the tracking devices recorded biking and running more accurately.

4. R.J. Gusmer, et al. Comparison of FitBit® Ultra to ActiGraph™ GT1M for Assessment of Physical Activity in Young Adults During Treadmill Walking, The Open Sports Medicine Journal, 2014, 8, 11-15

Baseline

In the week before the league started, the participants recorded their activity. The week's data was used to set a baseline—an estimation of how many steps the participants take normally. The goals for the season were set from this baseline.

None of the participants questioned the concept of the baseline—they all seemed familiar with this handicapping method. Nor did they question the need.

Yet there were several complaints. Participants questioned the method of setting the baseline. They felt either that their baseline was set too high—that they had an unusually active week the week of the baseline—or that other participants' baselines were too low. One participant even suggested that some other participants "sandbagged" during the baseline week in order to get lower goals.

Overall, the participants do not feel that the baseline recording is accurate. They feel that the period for recording the baseline is too short. Some participants suspect that it is an area where cheating may take place.

Cheating

The possibility of cheating in Active Fantasy Sports is

Active Fantasy Sports

limited to activity tracking. There are ways to artificially raise step-count: sandbagging during the baseline period, or finding a way to fake steps. There is even a way where you can directly add steps to your count on the Fitbit site.

No participant admitted to cheating in the surveys. Joshua had his roommate offer to take the Fitbit with him on his run, but declined the offer. Jon would try to trick the device by taking shorter steps in order to get more, or by walking in place while doing other activities. David discovered that he could get more steps by keeping the tracker in his pocket, instead of on his belt.

There is no need to try to enforce rules to prevent cheating, since the participants remained honest, and, in any case, there is no obvious way to police it.

Overall, the participants felt that the game was fair. They were willing to overlook inaccuracies in recording activity, because they understood that the game is a work in process. They are comfortable with the baseline concept, but have concerns about the method. They did not cheat, and don't believe that others did (much) either.

Community

Conversations within the league

When the participants spoke about the difference between good and bad fantasy sports leagues, they told how they care more about a fantasy league when they know the people they are playing against. The leagues that they speak most highly of are leagues founded by friends. They tend to stay in these leagues for a long time.

Joshua is in a few leagues, one with his brothers that he has been in for more than a decade, another with college friends that he has been in for nearly as long. One of the reasons he plays in these leagues is to maintain connections to people who are no longer geographically close.

"It also provided a sense of community above the day to day of work or school. It helps develop friendships."

-Jon

Jon says that one of the reasons he likes to play fantasy sports is to develop friendships.

In Active Fantasy Sports, no community formed. There is a message board system on the fantasy football host site, but the participants did not use it much. The conversations held on the message board were typically with the

commissioner about the implementation or the design of the game.

However, the participants spoke to each other via other channels. Marty and Son talk about their activity with each other at work. They check in together weekly. Joshua and David, friends outside of the league, chat about AFS and other fantasy sport leagues, just not with any tools involved in AFS. They keep their trash-talk confined to private text messages or instant messages.

In the other leagues where Joshua participates, he chats regularly with the other team owners. The difference is that he is friends with the majority of the league members.

Contests have more value the more tight-knit the community. Participants put more effort into fantasy football when they have a rivalry with their opponent. For example, Joshua points out that since he doesn't know the other participants, he doesn't care if he beats them. But if he were playing against his brothers he would be more motivated.

"If it was me and my brothers in a league and we were competing...then I could see it potentially driving me."

-Joshua

Active Fantasy Sports

Son and Marty work together and squared-off one week in direct competition between their teams. In the week leading up to their head-to-head match-up they did not

"I don't consider myself as competing against Marty so it's not like if he says he's x percentage above his goal for the week that I'll extend my run later that day to outdo him."

-Son

engage in any extra rivalry. Both players agreed that there is little connection between the activity tracking and any particular head-to-head match-up.

Conversation outside of the league

Many of the participants had examples of communications with others outside of the league. They found support and encouragement from people close to them.

"Should we get a cab or should we walk to the train?... I'm like come on, lets walk to the train, get my steps up!"

-Joshua

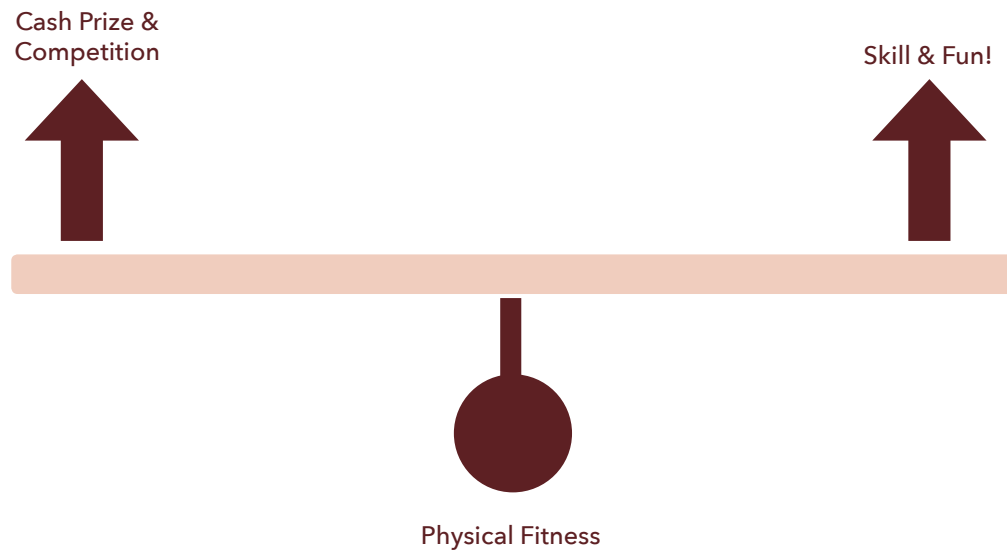
Joshua's girlfriend would talk to him in terms of AFS when promoting activity, suggesting he take a walk for the benefit of his team.

Joshua also found that counting steps for AFS is a way to bring "let's walk" into conversation. When the time comes to decide with a group of friends if they should walk or take a cab, he is able to use his fantasy football team as an excuse to walk.

Overall, the participants did not communicate much within the league, or through the league message board. They did communicate offline. Moreover, the participants talked about AFS to people outside of the league. These conversations helped to motivate the participants and trigger them to be more active.

Opportunities

Active Fantasy Sports



Game Design

Presented in this section are some possible ways to improve Active Fantasy Sports. During my interviews with them, all of the participants suggested changes to the game. I also bring some of my own thoughts on opportunities for the future of Active Fantasy Sports.

I break this section into two topics: Changes to the mechanics of the game itself, and opportunities for a future AFS service. I conclude with some possible next steps for the service.

To organize the discussion of the game mechanics, I return to the SDT framework I introduced in the Findings section. This time I use the model as a way to describe what I see as two different methods for change.

In the figure on the page opposite, I reduced the SDT model to a mechanical system. In the center is Physical Fitness. Improving physical fitness is the goal of the participants, and also the purpose of Active Fantasy Sports. The only link to physical fitness is through Activity Tracking.

On one side of physical fitness is external motivation from prizes and competition. On the other side are internal motivators such as skill and fun. Both are from fantasy sports part of AFS. Either or both of these types of motivation could be used as levers to motivate participants to track activity. In future versions of AFS the question is, which lever should we pull?

Tie To Physical Fitness

The goal of Active Fantasy Sports is to increase activity. This is done solely through the participant's identification with the value of being physically fit. This motivation is the reason that participants commit to playing AFS in the first place, rather than playing regular fantasy football.

To strengthen this tie, we should improve the feedback that the participants receive about their activity. Make connections in the minds of participants that the results of activity tracking have a real and timely effect on their fantasy sports teams.

In the Findings section, I identified two barriers for the participants in making the connection between activity tracking and their fantasy sports team: luck and tempo.

First, in the current version of AFS, the punishment for not meeting your goal is a player dropped, at random, from your roster. For this to be an effective motivator, the

I didn't think that even if I tried, I wouldn't be able to get above my goal enough to get a high waiver position. And again since the players are dropped randomly, there wasn't a guaranteed benefit."

-Son

Active Fantasy Sports

participant has to imagine that they won't meet their goals for the week, and that the dropped player will have a large enough effect to change the outcome of the week's match-up.

A better method would be to give the participants control over the dropped player. There are several ways to do this, such as telling the participant ahead of time which player is to be dropped, or by creating a mechanism that allows the participant to choose.

Second, In the current system, a participant's activity is not reflected on their fantasy team until more than a week later. This diminishes the perceived amount of loss.

Future versions of AFS should change the tempo of the game so that activity has a more immediate impact on the upcoming fantasy sports match-up. Make it so that the activity that is scored this week has an effect this week.

External Motivation

There is evidence that the participants are motivated to be active by the competition of fantasy sports. Here are some ways to further leverage external motivation.

Cash prize

One way to increase competition is to increase the prize, cash or otherwise. Give the participants something of real value for winning and they will try harder. Alternatively, the prizes could be small but frequent.

Direct competition on activity

Another way to leverage external motivation is to create competition between participants on their activity directly. Participants could win points, trophies, or bragging rights in direct contests on step-count.

This is something the participants do informally already. The participants demonstrated two ways to do this.

One way is to give more feedback. Provide the participants with their current activity information and compare it to the other participants in the league.

"It feels good to be near the top of the leagues step results, I like beating out some of the other participants."

-Marty

Marty checks the Fitbit site and compares his activity to other people in the league. Currently, feedback on activity is through the league message board in a post at the end of the week.

An improvement would be to send daily updates of everyone's activity and goals, highlighting the upcoming head-to-head match-up and the effect of activity on the results.

For example, if Son is competing against Marty this week, send Son a message showing how far along Marty is on his goals. Show Son his rank among everyone, and hint at the possibility that he might lose the match if he doesn't meet his goal.

Another way to increase direct competition would be to create mini-games, with many winners throughout the season.

Joshua told a story about a mini-game that he and a friend created. They kept track of days that they were active. For every day that one of them was active, he got a point. At the end of the game, the loser had to pay the travel costs for the winner to visit. They notified each other via text message when they were physically active, and tracked their points in a shared spreadsheet. The text messages

Active Fantasy Sports

usually included a little trash-talk to spur the friends on.

"As one person would start to pull away we'd be like 'Hey get on it. I'm pulling away.'"

-Joshua

Other mini-games could be tied more to fantasy sports. For example, winning the activity side of a weekly head-to-head match-up could have its own prize.

The importance of fairness

As the game becomes more about competition, fairness becomes more important. Among the concerns of the participants regarding fairness were the accuracy of the activity measurements, the possibility of cheating, and the methods for determining handicaps.

The problem of accuracy will most likely have a technological solution. As tracking devices improve, they will begin to track activity through heart rate or other means instead of just steps, negating the complaint that not all types of activity is being tracked.

There are immediate steps we can take to improve the method of setting baselines. Currently, the method is to take three data points from a week of activity, and use the average. It could be improved by taking more data points or by collecting data over a longer period. The best would be to use data from prior seasons to set a participant's handicap. Alternatively, there could simply be no baseline, or handicapping could be controlled by the commissioner.

In addition, we could make the baseline less prominent. If we were to report goals and activity as points, adjusted for handicap, participants would not be constantly reminded of their handicap. In this solution, all players would strive

for 10,000 points, but some participants would get more points per step than others.

	Steps	% of goal
Jon	8800	110%
David	9600	80%

For example, imagine that Jon has a baseline of 8000 steps and David has a baseline of 12,000 steps, and, in a particular week, Jon counts 8800 steps to David's 9600. Currently, this would be announced on the leader board as Jon making his 8000 step goal (110%) while David missed his goal of 12,000 steps (80%). Instead, both Jon and David's reported goals could be 10,000 points. In this particular week, Jon would earn 11,000 points while David would miss his goal with only 8,000 points.

	Points	Goal?
Jon	11,000	✓
David	8,000	✗

Participants could still know each other's handicaps, they just wouldn't be reminded of them.

To reduce cheating would require regulation and enforcement of rules, or leave it to the honor system.

The issue of fairness is more important to games built on competition than in social games between friends. When participants are motivated to win or earn prizes, they will be more likely to find advantages outside of the rules of the game. Whereas if the game is based on fun and mastering a skill, the rules will be self-enforced.

Active Fantasy Sports

Internal Motivation

Internal motivation is typically considered a better way to motivate. Two features of Active Fantasy Sports that motivate more internally are the skill involved in playing, and of course, the intrinsic motivation of the fun of the game.

Skill

Knowledge of real world conditions, care in attending to the team, and long-term planning are all essential for success at fantasy sports. These strategic and tactical possibilities make for a rich and rewarding gaming experience.

An advantage of creating an automated system is that more sophisticated game interactions can be added without over-loading the game administrator. We can make the game more complex by adding options to different elements of the game. A few small options, in combination, can create a large number of variations of play and strategy. Also, bringing skill to the activity side of the game could more closely tie the activity tracking to fantasy sports.

Variations could be applied to either how the goals are set, or to how punishment for not meeting goals are handled.

There could be more ways to achieve activity goals, such as tiered levels of goals with corresponding levels of rewards, or algorithms for punishments and rewards that change according to context.

When dropping players, instead of dropping at random, there could be other methods for executing the punishment. The participant could know ahead which player is on the line, the participant could choose, with restrictions, which of his players is dropped, or, when he meets his goal, he could choose to bench or drop a player on his opponent's team.

Punishment mechanism options could be used in

combination with goal options.

For example, a participant could have three levels of goals for a week. If he does not meet his minimum goal he loses a player. If he does not make his intermediate goal, he has a player benched for the game. If he makes all of his goals he is able to bench one of his opponent's players.

There could be more options for choosing the reward or punishment, besides dropping players. Activity could directly affect a team's score. When a participant earns points through activity, the points could be added or multiplied to his team's score, or the points earned for activity could be used to add players to the roster.

There is an existing precedent for this in some fantasy sports leagues. Some leagues have a Free Agent Acquisition Budget (FAAB). In this game structure, players are given a budget that they spend when drafting or trading players. In Active Fantasy Sports, this could be connected to activity. As a participant is active, he gains funds that are used to pay for his players. This solution more accurately mirrors real-world sports team ownership.

In all cases, we should give commissioners the ability to set how activity tracking rules affect the game.

One advantage of adding complexity is that it makes the game more challenging. The other is that it can tie activity tracking more tightly to the fantasy sport game.

The disadvantage is in the difficulty of setting it up. There are real-world constraints in creating the service, particularly whether to use an existing fantasy sport host or make our own. I will add more about this in the next section.

Fun!

To best leverage internal motivations, simply focus on fun. This can be an easy element to overlook, but it is possibly the most important.

Active Fantasy Sports

Perhaps Active Fantasy Sports will always be less fun than fantasy sports, since it is, in essence, fantasy sports with an element of punishment. But there are still steps that can be taken to leverage fun.

A general design principle is that the game should be as simple and easy to play as possible. Reduce or eliminate any sources of confusion, or places of discomfort.

The players complained about small things such as the number of teams in the league, mistakes in the punishment mechanism, and the resolution of the mistakes. Small annoyances such as these add up over time to give the impression that the game is less fun than it is. Minimize sources of complaints whenever possible.

What about the losers?

For those at the bottom half of the league, especially towards the end of the season, the game starts to lose its meaning. It becomes less competitive and less fun. Participants may start to drop out. Once participants can no longer win, how do we keep them motivated to participate? Can we keep them playing in the league and remaining active?

As the chance to win the league becomes more remote, the motivation for the bottom half participants should

"The league is a dead opportunity to me. I pull the time I could dedicate to it and put it into other things. I still want to be active, but I'm no longer regularly going out of my way to try and gain incremental step advantages."

-Jon

become more immediate. A good way to motivate these participants is through mini-games. Provide motivation by giving prizes to weekly winners in either fantasy games or directly for meeting activity goals.

Or use draft position in the next season to motivate players. The most active player that didn't make the playoffs would get the first choice in next season's draft.

The two options for increasing motivation—externally or internally—are not mutually exclusive. In fact, there should be a balance between external and internal motivations and between simple and complex game design.

There is an inherent tension between the design principles that add complexity and those to reduce it. Both should happen for the best game experience.

Service Design

Outside of the design of the mechanism of the game, there is the issue of the design of the service. How will participants hear of and sign up for the game? What will be the participant's experiences when interacting with the service? Where is the game located, and how much of it is under the control of Active Fantasy Sports?

Two options for a future service

Many of the decisions about the mechanics of the game are dependent on the choices we make about the service. If we want full control over the function of the game, then we will have to have more control over the service that runs the game. On the other hand, if we want a simple set-up, then we may have to accept limits to the design of the game.

Create community

People prefer to play fantasy sports with a community of friends. Fantasy sports is a way for friends to stay in touch. All of the participants' longest-running fantasy sports leagues are comprised of groups of friends.

Create community by providing tools for communication within the league, such as quick link tools for trash-talk with your opponent before a league match-up.

Further out, there could be tools that allow the community to help build the service, such as creating their own mini-games, or ways to link other existing games to activity tracking. Provide forums for the people who want to help to build the service.

Focus on commissioners

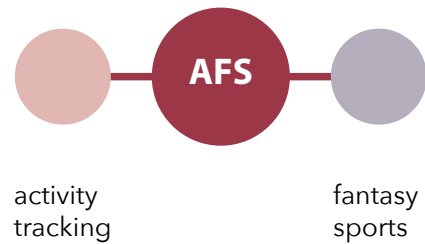
Commissioners are the key to any fantasy sports league. Not only do they manage the minutiae of a league, but they recruit friends and link together the community.

Future designs of AFS should provide commissioners the tools they need to control both the activity tracking and fantasy spots elements of AFS. In addition, provide commissioners with tools to promote AFS, such as ways to convert existing fantasy sport leagues into Active Fantasy Sports leagues.

Don't forget the fun!

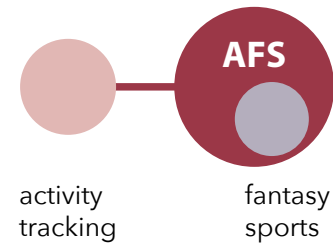
The fun of the game is what motivates players to be active. No matter what changes we make, it is important to always keep the fun. Beyond eliminating irritations, provide ludic experiences with every touchpoint. Maintain a tone and voice of the service that is fun.

Two options for a future service



Tie to external fantasy sports service

This method is quicker and easier, but limited. By linking to an external Fantasy Sports platform, we limit the options for the game mechanics to what can be accomplished on the existing platform. This means that the only methods available are those that are supported by the fantasy sports site: dropping players, changing the waiver wire order, benching players, and manipulating points.



Bring custom fantasy sports into AFS

By making a custom version of a fantasy sports service, we are able to have more control of the game, and to better integrate activity tracking with fantasy sports. Many of the mechanisms discussed in the previous sections require breaking from existing fantasy sports platforms.

A disadvantage is the effort needed to set-up and run a fantasy sports platform. Also, fantasy sports, in their current design, are successful. If you change it you might break it. New games are sure to arise from changes to the existing fantasy platform. Developing new could mean missing out on the evolution of fantasy sports.

Website Design

Presented here are two ideas for future website designs.

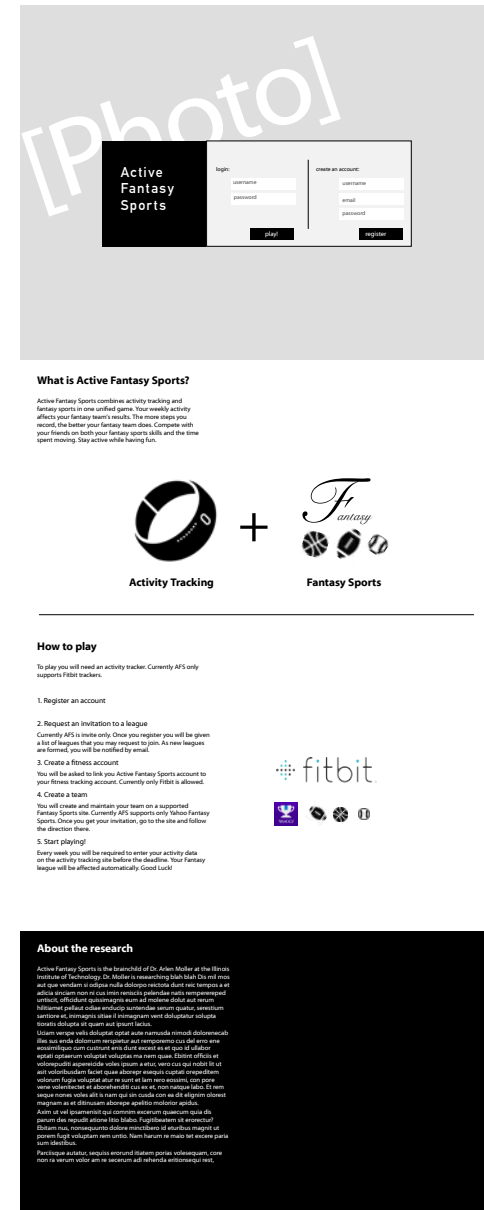
The goals of the website design are to:

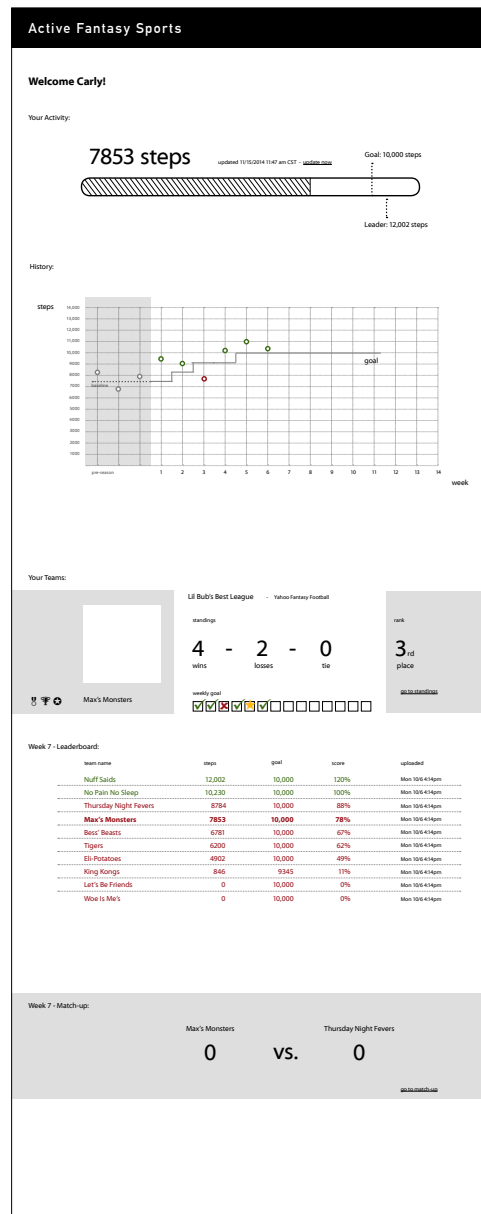
- Facilitate sign-up and league creation
- Provide an overview of AFS
- Provide information about activity and teams
- Keep participants returning to the website

The initial page allows sign-up and login. It gives an overview of the service and some history. It provides instructions on how to turn a fantasy sports league into an active fantasy league, including what services AFS works with and how to connect to them.

The first design (opposite page) is a simple website that can be used where AFS is only a tie between a fantasy sports site and an activity tracking service. When returning to the site, the site presents current activity tracking data and more detailed data, such as activity history and info about what is happening in the league. The upcoming match is highlighted, including how current activity will affect the match.

A second solution requires that the fantasy sports platform be brought into AFS. In this example "activation points," earned through activity, are spent in order to activate players on a participant's roster. More information is provided in the example on the following pages.





Example: Simple first-step website design

If we keep the current game mechanics, there are still ways to drive the participants to the website, so that it can be used for more than sign-up. In the simplest form, the website can collect data from both the activity tracking site (Fitbit) and the fantasy sports site (Yahoo Sports).

Overview of activity

On the site, participants could view their current activity and history. A simple interface would highlight only the most relevant information from Fitbit, leaving out the rest. For more information the participant would be linked to the Fitbit site.

League information

Participants could see their status in the league. They could see how their team is doing, and has done so far. In this section we could present them with the leaderboard of activity. If the participants are syncing their data daily, they could have an indication of how many steps they will have to achieve to keep up with the other participants in the league.

Upcoming match-up

Finally, there could be a section highlighting the participant's upcoming match-up. They could see who they are competing against this week, and how close their opponent is to reaching his goal.

Example: Activation Points

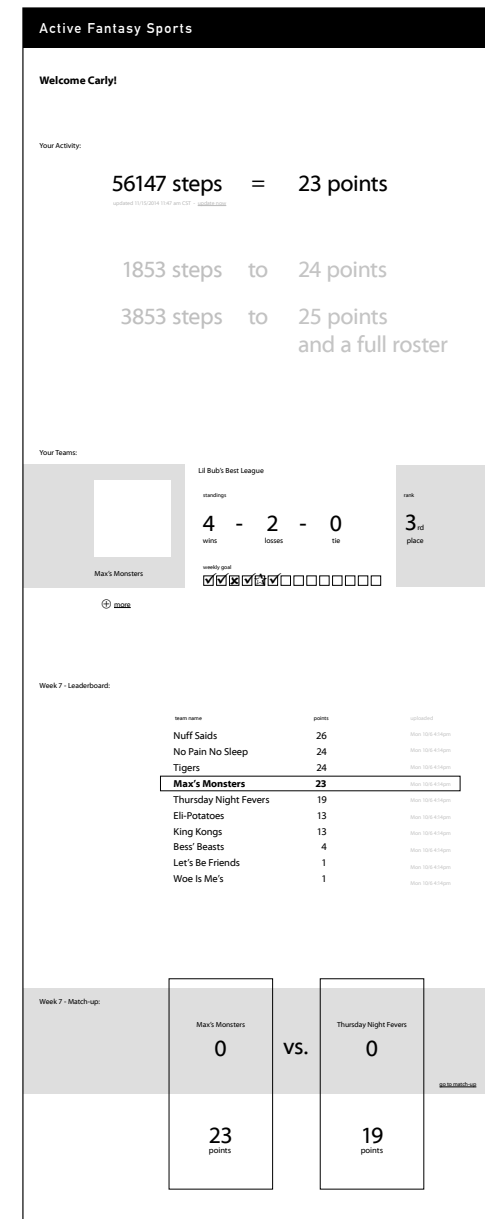
With the inclusion of fantasy sports into Active Fantasy Sports, we are able to make bigger changes to the game mechanics. Shown here is a solution called “Activation Points.” In this design, there are no set goals. Instead, each week players must pay for their players to play.

Participants get points for collecting steps during the week. Every week these points are used to “activate” players on the participant’s roster. Different players have different activation costs, depending on their expected contributions to the fantasy match. Expected point contributions can be found on many fantasy sport ranking sites. If a participant doesn’t collect enough activity points, he may have to leave some players on the bench, or activate lesser players.

For example, if a participant wants to include a high-scoring wide receiver such as Calvin Johnson, he would have to spend 5 activation points. But this choice might mean that the participant would have to activate Mike Tolbert instead Rashad Jennings at running back, because he does not have enough activation points for both.

In this method, instead of setting goals for the participant, the goals are self-selected. If the participant wants to activate all of his best players, he will have to achieve a high level of activity.

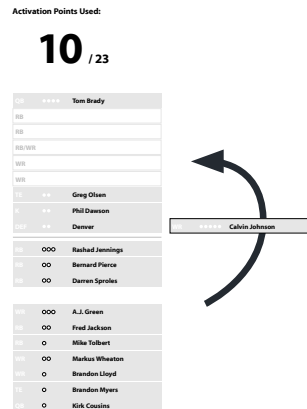
There is no baseline set, but a handicap could be included by changing the curve that determines the points given for steps. A participant that walks a lot normally could have a curve that requires more steps to get an activation points, compared to other participants who get more points for fewer steps.



Fantasy players have different activation costs, based on their expected point contribution.

QB	0000	Tom Brady
RB	000	Rashad Jennings
RB	00	Bernard Pierce
RB/WR	00	Darren Sproles
WR	00000	Calvin Johnson
WR	000	A.J. Green
TE	00	Greg Olsen
K	00	Phil Dawson
DEF	00	Denver
RB	00	Fred Jackson
RB	0	Mike Tolbert
WR	00	Markus Wheaton
WR	0	Brandon Lloyd
TE	0	Brandon Myers
QB	0	Kirk Cousins

At the beginning of the week the roster is emptied. The participant builds his team for the week by moving players up, from inactive to active.



Each player adds to the tally of activity points used. When activity points are used up, no more players can be activated. Extra activity points can be banked for later use.

Activation Points Used: **15** / 23

Active Roster:

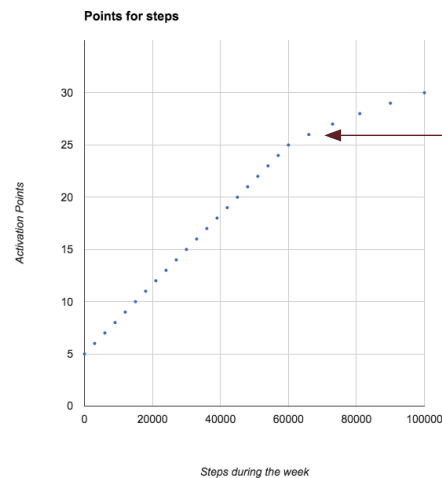
QB	0000	Tom Brady
RB	000	Rashad Jennings
RB	00	Bernard Pierce
RB/WR	00	Darren Sproles
WR	00000	Calvin Johnson
WR	000	A.J. Green
TE	00	Greg Olsen
K	00	Phil Dawson
DEF	00	Denver

Inactive Roster:

RB	00	Fred Jackson
RB	0	Mike Tolbert
WR	00	Markus Wheaton
WR	0	Brandon Lloyd
TE	0	Brandon Myers
QB	0	Kirk Cousins

Activation points are easy to achieve at first, but are harder to get once the participant reaches a healthy goal.

Curves can be adjusted to create handicaps for participants of different abilities.



10,000 steps/day (averaged over 6 days) earns 25 activity points.

Next Steps

Immediate Timeline

Step 1: Automate the current service

Right now all aspects of the service are being run manually. This method was a great way to prove that the game is both desirable and feasible. Now we should invest in tools to automate the running of the service. This will reduce the work load on the researcher.

To automate Active Fantasy Sports, use the APIs of the fantasy sport site, Yahoo Sports, and the activity tracking site, Fitbit, to automatically gather activity data and modify the fantasy teams. Push notifications of activity and the leader boards to the participants on the fantasy sport site. In addition, email notifications could be used to trigger more engagement.

With this method, punishments and rewards will still be enforced using the existing commissioner tools. Participants will continue to get their league and team information from the fantasy sports site.

Step 2: Commissioner-created AFS leagues

Commissioners play a big part of recruiting and maintaining fantasy sports leagues. Catering to commissioners has two advantages: 1. Control over leagues rules can be adjusted locally to fit the preferences of a particular community, and 2. Commissioners are a way to promote the game by recruiting participants to a league, or converting existing leagues.

Create tools that commissioners can use to create their own Active Fantasy Sports leagues. The site should give an overview of AFS, and provide a method for people to sign up for the game and invite their friends to a league.

Step 3: Provide a reason for users to return to the website

Add visualizations of activity and leaderboards to the site. Provide the relevant activity information and show how it affects the participant's teams. This will help tie activity to fantasy teams in the minds of the users.

Provide tools for managing fantasy teams on the website. Simple tools could be added that allow changes to fantasy sport rosters, without going to the fantasy sports host site. The changes are then pushed to the fantasy sports site through its API.

Information provided on the site can improve the user experience, but also, frequent engagement by the users provide an opportunity to generate revenue through advertising.

Possible additional Steps

- **Create an app**

Provide a place to do what the website can do, but mobile.

- **Incorporate fantasy sports site into AFS site**

Bring fantasy sports tools to the website and app.

Open Threads

Research

There are some areas of focus where additional research would be helpful, particularly on the researcher and commissioner.

Researcher's journey

What tools does the researcher need? In what ways could the researcher best be served by the service? Another study should include an investigation into the researcher and his needs.

Commissioner's journey:

An important way to generate new participants is through league commissioners. The experience of participants will be improved when the leagues are arranged by experienced commissioners. To this end, how can we best serve commissioners?

Next steps in research include:

- Commissioner's journey
- Researcher's journey
- Fantasy Football 2015 study
- Follow up to 2014 study

Design of service

In this report I've shown some potential solutions with recommendations. A next step is to design in detail the service. This includes the look and feel of the participant's interaction with the touchpoints of the service, as well as the back-end functioning of the service. Once we have decided which direction to go, the details of the service must be designed.

Create a plan for an online game service that combines

Communication to customers

- website - app - email

Experience design

Design of brand

Business plan

If the best way to get more participants for the purpose of research is to create a functioning service, then an important next step will be to create that business.

Can the service become self-sustaining? How do we reach people to join the game? Where can we get the resources to develop any service that we design?

The business plan will include:

Development plan

Revenue plan

Marketing plan