

Software Development in Fun, Game Playing Workplaces

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Abstract

Recently, helping software developers enjoy their workplace, particularly in the form of allowing game playing at work, has become a trend. More enjoyable workplaces are expected to result in higher productivity and other benefits for the company, but there has not been much scientific documentation of these effects. In this paper, many software developers at various companies are examined with specific focus on the effects of game playing on the overall productivity, team cohesion, dedication to the company, and satisfaction. I found that, overall, workplace game playing can foster harmonious relationships between employees, improve the applicant pool for an employer, and allow employees to perform their jobs better. From this we conclude that companies should allow and even encourage game playing, though more focus on getting employees to regularly play games together could reap better results than what employers are doing now.

1 Introduction

Software developers are well known for enjoying games of many varieties: video games, board games, juggling type games, et cetera. This hobby has drifted over into the work place. I can't remember a software company I've been in, whether to work or interview, that didn't have some form of entertainment. Often, these break rooms are set up with ping pong tables, video game consoles, and other el-

ements of diversion that the hiring manager made sure to show me if it was during an interview. These companies have been startups and monoliths including Lulu.com, IBM, NetApp, Verizon, Microsoft, as well as other small startup companies. Indeed, many software developers have games such as chess at their own work space.

In this paper, the purpose and effect of these games is examined. Some employers allow their employees to play games at work. Others encourage it by providing money for game playing at work. One job listing even lists playing video games as being "part of the team." [3] However other employers disallow these practices all together. What effect on employee productivity, happiness, team cohesion, and team productivity does game playing have at work?

To investigate each of these questions, I administered a survey to software engineers. Game playing is permitted and, at times, encouraged at some companies. Participants were asked questions regarding the types of games they play at work, whether these games are played in a group or alone, what impact they think game playing at work has, how often they play games, as well as other supporting questions.

The remainder of the paper is divided into 4 sections. First I will go over some previous work on the subject. Then I will present the questionnaire, how the questionnaire was done, and the results. I then discuss validity, and finally I will discuss the meaning of these results and any conclusions that can be drawn.

Based on what I've found in anecdotal reports on-

line and further supported by my own findings, workplace gaming is not universal, it does exist. Typically, where it does exist, it is a good thing that promotes employee function and morale. In this paper I give the results of my work that show that is the case.

2 Previous Work

Game playing in software engineering seems to be something that has been around for a while. It reached a peak in the Dot Com Bubble of the early 2000s. Aside from concierge services and gourmet food, the ubiquity of the "fun" work environment was solidified during this period, and the trend lives on in software engineering environments today. [1] Studying this phenomenon has not been a priority of academia, though it is widespread enough that it must be doing something good for companies. Though the academic literature is sparse there are over 100 "pop knowledge" books on Amazon about creating fun workplaces and having fun at work.

In a published Communication of the ACM, Jo Ann Oravec acknowledges the benefits of playing games on the clock. She suggests that games can encourage creativity and states that gaming can be used in a way that results in an overall net benefit for the employer and employee. She cites the need for children to use play for intellectual and social development and suggests similar things, particularly social development, may be important to adults. She describes managers who now have another tool for encouraging employees by using corporate sponsored play as a carrot. Overall, Jo Ann sees play as a positive, though warns that a perfect balance between work and play is best, though it is difficult to attain[2].

In his article in IEEE's Engineering Trends, Todd Yuzuriha suggests that fun at work is not just good for the group, but that creating fun at work can be good for one's career. By creating fun at work you allow yourself to be visible in a way that everyone enjoys. This was particularly good, he said, in the case of one new hire who organized a ping pong tournament and was instantly well known by half the company. [4] Though this enthusiasm is dampened by

Cali's statement: "In this economy it would be suicide if my boss saw me playing video games at work", Yuzuriha points out that not all game playing has to be on company time, and that organizing games after work can be beneficial as well.

3 The Questionnaire and Results

In this section I describe the survey, the results of the survey, and do some question-level analysis on the data. In the following section I analyze the data from multiple questions to tease out what higher order patterns may be emerging from this data.

The questionnaire was done online as a form in Google Documents. It consisted of 19 questions aimed at developers who do play games at work. After the survey was complete I determined that more focus on developers who do not play games at work would have been better, because if the developer answered they had never played games, the survey ended without asking any questions. The survey was primarily distributed to participants via contacts I have at companies. My contacts would take the survey, and hopefully pass it on to other developers they know. For each question of the survey I included an optional "Other" section where participants could clarify their answers, should they so choose. Some did use this section, which I will discuss later.

There were 22 respondents total, 21 of which indicated they were software developers. For the purpose of the survey I will look at only the 21 which indicated they were software engineers. There were respondents from at least seven different companies.

Once participants got past the first question asking if they were software developers they were asked how often they play games at work. Possible answers included: Never, Rarely, Once Per Week, Twice Per Week, Once a Day, For the purposes of the study I described that games were "things such as chess, crosswords, acting, online games, console games, juggling, nerf gun wars, etc. However, just socializing/talking for fun is not considered a game."

Ten of the respondents indicated they never play

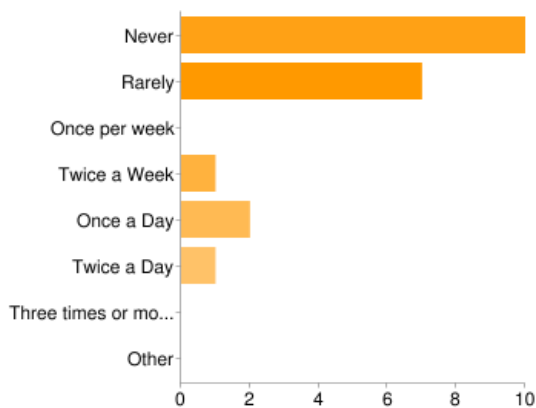


Figure 1: How Often Do You Play Games at Work?

games at work, therefore 11 do play some amount. From Figure 1 we can see that, for the most part, people indicate they hardly ever play games at work. Only four of those who do play games play them regularly.

The next few questions focus on what interpersonal relationships game playing may be building. For this question a colleague is considered someone who is employed by the same company as you, though there is no indication of how "close" that person is to you in the company. The first question in this series asks who people are playing games with.

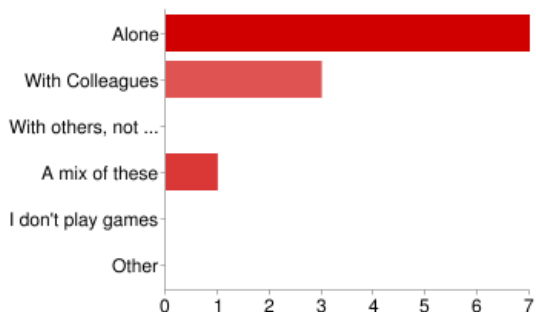


Figure 2: When you play games at work would you say you typically play alone, with colleagues, or with people outside the office?

This data indicates that most people are playing games by themselves. Initially this seemed surprising, as I had perceived an acceptance to game playing in general corporate culture. After all, such acceptance would enhance relationships between employees and increase morale. However, upon considering this data further, it seems reasonable that many folks may play alone to "hide" the fact they are game playing so they don't get a reputation for being someone who plays games and doesn't do their work.

The next question asked game players to describe what games they are playing at work. This question provided a textbox for respondents to fill in, so I will summarize their responses. Eight respondents indicated they play electronic games, e.g. Facebook games, other internet games, iPhone/iPad games. Four respondents indicated they play non-electronic games like pool, foosball, and ping pong. Interestingly, these four were the ones who indicated they play games with colleagues or a mix of with colleagues and alone. Pool, ping pong, and foosball all require large furniture to play so game playing in these environments must be, at least partially, promoted by the employer. Only one person indicated they were playing games with colleagues online, and since it is unlikely that the employer promoted a companywide crossword (the game they were playing) competition, it appears that game playing with colleagues typically only takes place if employers encourage it.

The next question focused on how close game playing partners were to the respondent. The question

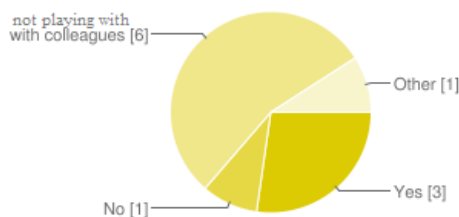


Figure 3: If you are playing with colleagues, are these people you work closely with (i.e. Working on the same project as you, or directly related to the project you're working on)?

Most people who play with colleagues are playing with people who are close to them in the company. For the respondent who marked they were not playing games with people close to them in the company, it appears that there is a group of people who show up at the pool table and play pool against each other. You may notice that there are four people from the last question that indicate they are playing games with colleagues, and five from this question who indicate they are playing with colleagues. I attribute this to the fact that the previous question asks whom the developer is "typically" play games with, and this question specifies only during times when you are playing games with colleagues.

The next two questions are aimed at discovering what effect having a game playing culture will have on the applicants that apply to that company. The idea here was that by having a fun atmosphere, more developers might apply to the company and therefore the company has more opportunity to hire better developers because of the increased applicant pool. The first question asks if respondents knew of their employer's stance on game playing before they started working there.

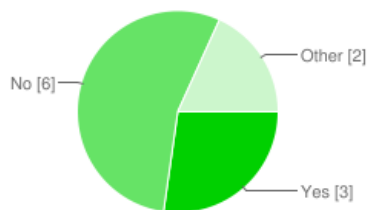


Figure 4: When you started work with your current employer, were you aware of their attitude towards game playing?

By the responses given, it seems most people are not considering the fun environment an employer offers. However, there is some evidence that people are aware of the overall attitude a company takes towards fun at work. In a larger selection this may have implications when people are applying to jobs.

The next question asks how important the employer's stance on game playing was when the re-

spondent applied to the job. Interestingly, seven respondents selected the least value of importance. One respondent indicated a seven out of ten level of importance. This respondent also indicated that he or she knew their employers attitude towards gaming before starting with the employer. This indicates that at least some people consider their employers attitude towards games. For large companies who get thousands of applicants, this percentage may add a substantial number of applications.

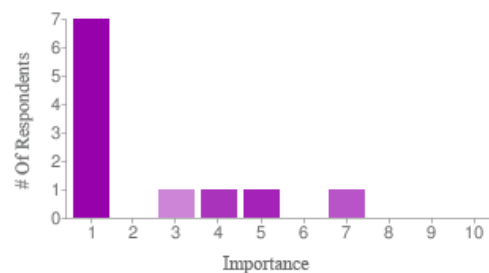


Figure 5: How important was your employers stance on game playing in your decision to work there? 1 is not important, 10 is very important.

The next several questions are focused on programmer productivity and how games affect it. The first question asks if the respondents think they can perform their job better after playing games. Interestingly, seven responded yes, only two responded no, and two chose other. One of the developers who responded "other" said that its taking breaks that helps him do his job better, and it just so happens that he is playing games during some of these breaks.

The next question asks if people ever find themselves discussing work while playing games. Interestingly, seven said yes. This number doesn't immediately make much sense since only four people said they play games with colleagues. Perhaps people are, somewhat rudely, carrying on conversations with someone while watching a screen playing a game. The only situation where I can see this making sense is if people are playing games while they are on conference calls. Aside from that, I can see no reasonable

explanation other than people answered one of these questions incorrectly. If people are discussing work while playing games then it is reasonable that game time is not necessarily "wasted" company time and may be a plus for the company. If people are playing games on conference calls, this may be a negative for the company.

The next question asks if communication is easier with colleagues that you play games with. The responses to this question suffer a similar oddity that appeared in the previous question. Five people indicated that communication is easier, two said it is not, two said they do not play games with colleagues, and one left the question blank. It is possible that the question was phrased in a way that confused the respondents, but given that some do indicate they communicate with colleagues, its not very clear what is going on here. Two of the respondents said it's easier to communicate with colleagues they play games with, and they also said they don't play games with those colleagues.

Following that, I asked if people thought they would be better, worse, or the same when it comes to productivity if they were not allowed to play games. Seven of the eleven who play games said they feel they would have the same productivity. Three think they would be less productive if they were not allowed to play games. Interestingly, two who said they would be less productive play games once a day, and one plays twice a day. This indicates that game playing is so essential to these people that they do it a lot, and would be poorer workers without it. Three out of eleven, while not definitive, is still a sizeable portion of the population that depends on games to perform well.

A question with a very interesting result, Have you ever spent more time in the office because you thought you should to compensate for time spent playing games, was asked next. For this question, six people said they had not and five people said they had spent extra time in the office to compensate for playing games. This would be an interesting detail for employers, as many employers would like their employees to stay at the office longer.

The last question I asked about effects on productivity requested that people submit some of their

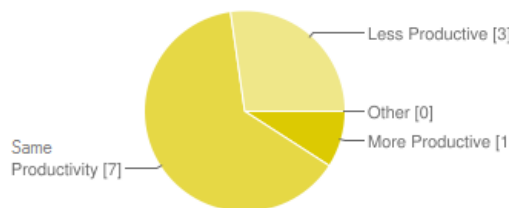


Figure 6: Imagine you did not play games at work because game playing was not allowed. Would you imagine that you would have a change in productivity?

opinions on what effect game playing has had between the respondent and his or her colleagues. This was an optional question and six people replied. Of these six three were just saying they don't play with co workers, but all three who responded otherwise said it was a way to bond with coworkers and improve relationships. One respondent indicated that while work was often a topic of conversation during game play, personal conversations arose as well. Though the respondent isn't working with that person any more, he indicated they are still friends and still speak.

The final questions of the survey were just general questions to get a sense of the population we're dealing with. On average, each participant had been working with their company for 2.45 years. However, the range of this data was from 3 months to 12 years. On average, each respondent had been a software developer (at any company) for 6.22 years.

4 Validity

While I trust the data from this survey to be accurate, there are some concerns that should be considered when generalizing from this population. Firstly, all but one respondent lives and works on the east coast of the USA. The one respondent who doesn't lives and works in England. I hypothesize that overall in America the overall average of game playing in the workplace is higher, as the east is generally con-

sidered more formal or strict when compared to the west coast.

A second consideration is the age of the respondents. Most have been software developers for under ten years, which suggests they are most likely young. If, as Cali suggests, game playing at work reached a peak during the Dot Com Bubble, then game playing may be familiar for younger developers but may not be customary for older developers. [1]

Many of the surveys I know to have been filled out at work. This seems likely to skew the data towards indicating less game playing. This is probably because people are concerned about someone discovering their responses to the survey.

After the survey was complete, it was suggested that I should've done the interviews in person. I'm not sure how this would have affected results, but I'm told that talking things through with people causes them to give fuller answers than they would for an online survey.

Finally, the sample size here is not exceptionally large. While the sample is not small enough to make the data meaningless, it would be better to have more participants.

5 Conclusion

From these results we can see that game playing is thoroughly a part of software developer culture. Over 50

Because we know people are playing games any way, it would make sense for companies to focus efforts on getting people to play together. It seems obvious that playing games with other people would ease tension and break down barriers that keep them from communicating ideas or concerns. Presumably people play games alone because "doing it in public" involves risk of becoming labeled lazy. Fostering an honest environment that recognizes people use games to work better and more collaboratively would likely serve and employer well.

Some respondents indicated that things other than games often serve the same purpose as games. Examples such as reading online, walking to the water cooler, and doing personal things like checking

email were said to provide the same "relax period" that developers found useful. These activities do not encourage interaction with coworkers, however. NetApp offers beer to its employees on Fridays which is the only other good solution, other than games, that I can think of that allows employees to socialize and work on work related problems.

It does not appear that game playing, alone, provides much incentive for people to choose one company over another. However, most developers recognize the attractive environment companies like Google offer, part of which includes game playing. Because of this, we see another reason why fostering a game playing environment makes sense for employers.

For the three key reasons of 1) It allows employees to get their jobs done better 2) It can be used to attract better applicants 3) It creates a more productive environment by fostering communication, it seems reasonable and beneficial for employers to allow and encourage game playing at work. None of the employers in the survey strictly forbid game playing, and so it seems the benefits are recognized. Now all that remains is for employers to get a better handle on how to use game playing at work to better their company and their employees.

Finally, I have made my survey data available online at <http://dzoba.com/gameplaying.html>. Some data is removed for privacy purposes.

References

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