Developing a Corporate Wellness Application for Providing Employees with Health Knowledge
(Technical Topic)

Protecting Employee Data Privacy without Sacrificing Corporate Wellness Program Function
(STS Topic)

A Thesis Project Prospectus Submitted to the

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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Introduction

In today's working world, especially the United States, many people receive health insurance coverage from their employers. Baicker, Cutler and Song (2010) claim that 60% of Americans main provider of health insurance coverage is their employer. This means that health insurance claims made by employees are a direct cost for many companies. It is therefore in a company's best interest to reduce these medical costs as much as they can. Beyond just insurance claims, studies have also shown that healthier employees are more productive. Healthier employees show less absenteeism and presenteeism where presenteeism is defined as time spent at work doing tasks that are non-work related (Aldana, 2019a). A company with healthy employees is able to cut costs stemming from health insurance claims as well as absenteeism and presenteeism. Investment into corporate wellness programs therefore present an opportunity to decrease costs in more than one way. The money saved for each dollar invested into corporate wellness programs, on average, is $3.27 in medical costs and $2.73 in absenteeism costs (Baicker et al., 2010). Additionally, the increased rates of presenteeism found based on the existence different health related problems can be found in Figure 1. However, it is difficult to scale common corporate wellness plans to national or even internationally sized companies. Because of this, companies struggle with maintaining user engagement in these health and wellness platforms as employees do not always feel like it benefits them. Without user engagement in these programs, employees do not gain the knowledge they need to become healthier and lead more fulfilling lives. Companies thus continue to suffer the costs that are associated with unhealthier employees while also paying to support the wellness program (Baicker, Cutler, & Song, 2010).

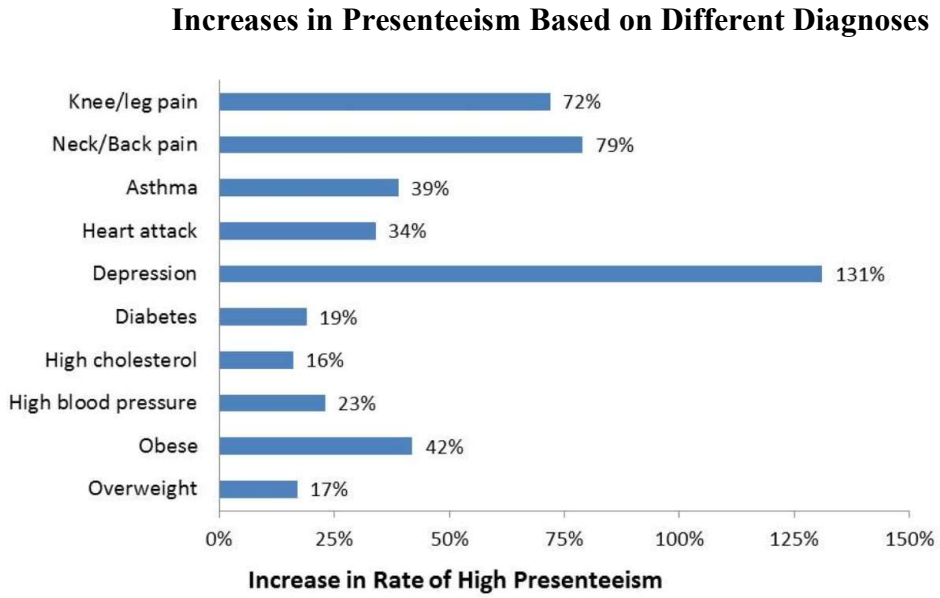

Figure 1: Percentage increase in presenteeism based on a variety of health factors. All of the above can present opportunities for a corporate wellness program to lower costs for the company (Aldana, 2019a).

The technical project described in this prospectus will create a corporate wellness application that allows companies to send engaging content to all employees. Employees will be provided information that is more accessible and therefore feels more personally beneficial making the program more attractive (Aldana, 2019b). At the same time, the STS research of this prospectus will focus on possible reasons for patient distrust in organizations using medical information for research purposes and how to best approach the idea of personal data collection. The reasoning behind such distrust will be studied and methods from adjacent research fields will be considered in order to determine how to effectively collect employee information in this application (Ajunwa, Crawford, & Ford, 2016; Kelders, Oinas-Kukkonen, Oorni, & van Germert-Pijnen, 2014).

Technical Topic: Developing a Corporate Wellness Application for Providing Employees with Health Knowledge

We are helping Medella design a corporate wellness platform to help improve companies' employees' health. The goal is to provide educational content to employees and statistics to employers to indicate overall health in the company. A successful product will help employees control their health while giving businesses feedback on their overall health. Figure 1 shows an overall layout of how all the users will use the system.

Data Flow Between Different Users of the Application

Figure 3: The administrators of the application will be responsible for facilitating the information flow from the Companies to Employees. Content will be curated by the application administrators for different employee groups. Personal data will always be aggregated before being shared with the company as well (created by Author).

One existing workplace health product is a mobile-first platform called Limeade ONE. Limeade uses a gamified approach involving assessments and rewards (*Limeade*). While Limeade provides many services, these are complicated and result in a steep learning curve. It can take time to learn to navigate the various features (Desai & S, 2019). Furthermore, using Limeade requires knowledge of its file-sharing system, Sharepoint, which adds more complexity (Desai & S, 2019).

Our product will serve as a platform that employees, employers, and the Medella team interact with. Employee health will be tracked to provide personalized resources. The platform will include quizzes with questions like: "How many cups of water should you drink in a day?" Employers will see aggregated employee data to learn how Medella has impacted the company's

overall healthcare costs. Medella employees will be able to use the application to create content. There will be forms within the application to create quizzes, upload videos and write newsletters.

Gathering system requirements is vital to the development process because it ensures the client and developers have the same expectations for the finished product. Below is a list of our system requirements.

Minimum Requirements

- Businesses, employees, and the Medella team should be able to securely login.
- Businesses should be able to view aggregate health data points of company employees.
- The Medella team should be able to create quizzes and blog posts.
- Employees should be able to click on quiz links, view questions, submit answers, and receive a score after submission.
- The Medella team should be able to view aggregate and individual results for each quiz
- Businesses should be able to view aggregated results for each quiz.
- The Medella team should be able to input YouTube links into a form to display them in users' content feeds.
- Employees should be able to watch videos through the platform.
- The Medella team should be able to send emails to employees to inform them of relevant content.
- Employees should be able to opt out of receiving all information from Medella.
- Users should be able to view a page with a mission statement and contact information when going to the webpage without a log-in.

Sample of Desired and Stretch Requirements

- The Medella team should be able to use a newsletter builder form to add text, images, and links to health-related topics to newsletters, as well as publish the newsletters to employees.
- Employees should be able to view previous quiz submissions.
- The Medella team should be able to track clicks by users and businesses on the website in order to monitor user engagement.
- The Medella team and businesses should be able to see a graph depicting how Medella has impacted healthcare costs.
- Employees should be able to opt out of receiving only one type of content (quizzes, blogs, videos, etc.)a
- The Medella team should be able to limit content to specific users.
- Businesses should be able to view the dashboard data broken down by department.

STS Topic: Protecting Employee Data Privacy without Sacrificing Corporate Wellness Program Function

With web applications touching so many aspects of life today it is becoming more concerning to users how their information is utilized by third parties. Many people are starting to become wary of this and are not comfortable with personal information being given so freely. This is especially true when it comes to sharing health related information (Westin, 2010). In the context of this project, it is easy to assume an ideal scenario where all employees will be willing to share whatever they are prompted for within the application. However, failing to understand how employees feel about their personal health data being collected would exhibit a classic case of “thintelligence”. The corporate wellness application must be thought of as an artifact that will

be a part of a company's community not just an add-on component that exists outside the already established norms and beliefs held within the company (Neeley, 2010). Developing an application that does not consider employees feelings surrounding personal data collection will lead to many employees refusing to use it. In turn, this will lead to returns on investment much lower than what is projected. When this happens, costs will not be reduced at the expected rate leading to an overall less worthwhile investment made by the company into a corporate wellness program.

A survey conducted by Westin (2010) shows two important statistics regarding who people trust and what entities people trust with their health data. When asked if people would be comfortable letting health researchers see their data, 66% of people said yes in some capacity. However, just below 58% of those who said yes, desired the purposes of the study to be shared with them before they would give consent for their data to be used. Arjunwa, Crawford and Ford (2016) make a similar claim in stating that it is important to make transparent the reasoning for collecting data in order to make those participating feel comfortable. This aligns with the techniques presented in a similar area of research called Behavior Change Support Systems (BCSS). In BCSS persuasive explanation, or describing why doing something will be helpful, is very important (Kelders et al., 2014). Therefore, it seems that exploring how to make the developer's intentions known to employees when collecting personal information will be an important consideration. Another key feature in many BCSS that is not included in this project is gamification (Kelders et al., 2014). Using the framework presented by Latour (1992) it is possible to consider this gamification first with a human actor replacing the application. Were some human actor to attempt to collect health information through a process that felt similar to a game, an employee may feel like they are being tricked. They may feel that the game is a veil

being used to entice the disclosure of information that otherwise would not have happened. Taking this into consideration, it is still may be possible to find a more effective method for incorporating gamification concepts into this application. By comparing the key aspects of BCSS with this corporate wellness application, conclusions can be drawn about what methods will be the most effective in making employees feel comfortable sharing personal health information.

By making it known to employees that the information they share will be used to provide more meaningful content for them to consume they will be more likely to participate (Westin, 2010). Beyond that, making clear that employers will have no access to employee's personal data and only those working on the application will be able to associate specific pieces of health information with individuals is important. Employee's fears that this information could potentially be used discriminatorily by their employer is something that must be recognized. Finally, as a development team being open about committing to all of the best practices in data collection, use and storage in order to maintain the data's safety is important in gaining employee trust (Ajunwa, Crawford and Ford, 2016; Stovall, 2019).

Conclusion

Expected results from the technical project include a functional web application that will allow companies to distribute health related content to their employees. This application will have all the functionality required for a business to be set up by the administrators of the system and then for businesses to add all of their employees as users. After these set-up stages the administrators of the system will be able to distribute content to employees of different businesses. The STS project will deliver a set of best practices to be used when communicating to users why sharing personal information is worthwhile for them. A standard set of guidelines will be developed for making it clear how users concerns regarding possible negative outcomes

that exist when sharing private information will be mitigated or avoided completely. By successfully completing both of the above aspects of the project a product will be created that both respects the wishes of employees while also allowing for companies to make the most out of their investments into corporate wellness programs.

Word Count: 1914

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