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MEASURING EMPLOYEE ENGAGEMENT AT THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Abstract

The USPTO is facing the challenge of improving employee engagement among employees who work both in the office and from home. Using interviews, surveys and a focus group we developed an Employee Engagement Metric System that allows the USPTO to measure employee engagement and provides a framework for future engagement measurement and improvement. Using this system, we were able to calculate a baseline engagement score for the USPTO to use as a comparison for future years.

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**It is important to note that Alula and Andrew worked closely with the analysis of data collected through surveys and USPTO contacts.		

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Acronyms

USPTO – United States Patent and Trademark Office

PEET – Patent Employee Engagement Team

EE – Employee Engagement

EVS – Employee Viewpoint Survey

BPW – Best Place to Work

DOC – Department of Commerce

SPE – Supervisory Patent Examiner

TC – Technology Center

WPI – Worcester Polytechnic Institute

Executive Summary

In order for organizations or companies to succeed, it is essential that they make employee engagement a central part of their mission. However, just having an employee engagement plan does not guarantee the success of the organization. It is vital for a company to find effective methods to measure the success of employee engagement initiatives so that those initiatives can be improved.

Project Background

Employee Engagement is especially important to companies that have employees in remote locations. Companies across the country have developed systems for increasing engagement with employees working in different office locations as well as from home. Employee engagement defines the state of existence where employees feel committed to their workplace, competent in their job, valued by their organization, and are in tune with the mission of their respective company. Some of the methods used to identify indicators of engagement include gathering employee opinions through surveys, interviews, and focus groups, and collecting quantitative data such as the number of sick days taken by employees each year. The USPTO has developed such an engagement system, and has expressed an interest in measuring the success of newly implemented engagement programs and the engagement of teleworking employees. Analyses of current programs are required in order to develop an appropriate set of metrics.

Project Focus

The goal of our project was to propose a feasible system for measuring the effectiveness of current and future employee engagement at the USPTO, as well as providing an example of how our metric system is to be used. We established specific objectives in order to attain this goal. First, we acknowledged that there were no previous measurement systems established for employee engagement at the USPTO. Second, our group identified potential methods for measuring effectiveness of future and current employee engagement, created and implemented WPI Team Patent Examiner and Managerial Surveys to collect engagement data from USPTO employees, and prioritized those findings to create the metric system. Fifty percent of the data collected and used in the metric system came from the surveys created by the WPI Team. Finally, we determined how to measure the current employee satisfaction level through the use of our employee engagement measurement system.

Outcomes

Our objectives were met by utilizing survey questionnaires, one-on-one interviews, and a focus group. We established a metric system comprised of five categories, as seen in Figure 1.

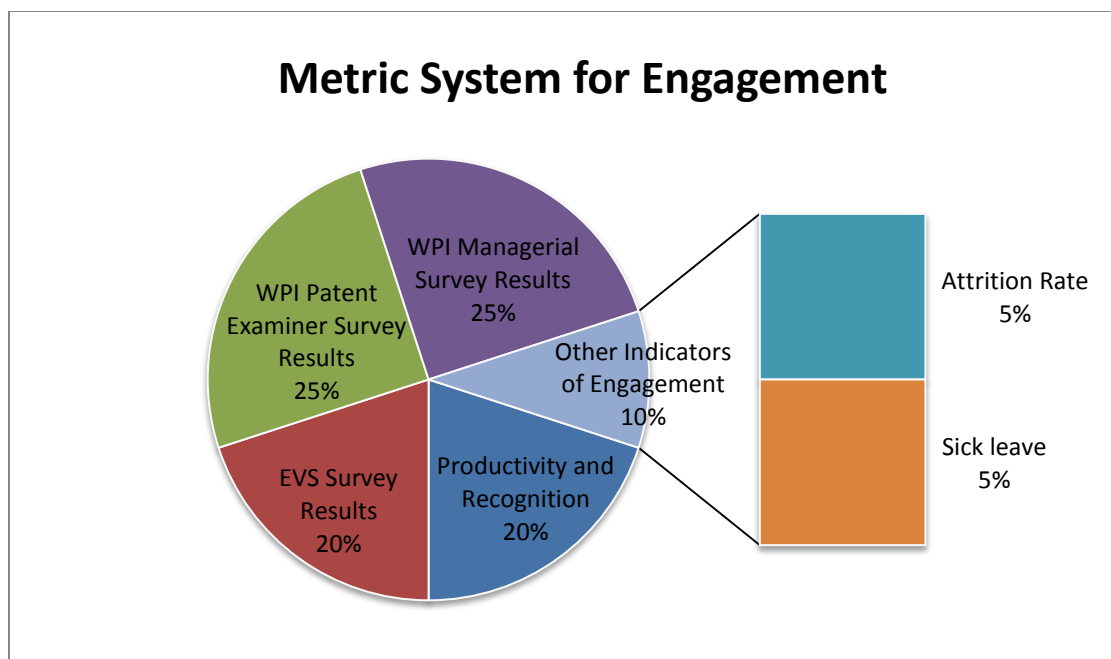


Figure 1
Metric System for Engagement Breakdown

Each category was weighted depending upon the importance of the indicator that it represents.

Table 1 at the end of this section shows what is being measured in each category.

The majority of the system relies upon the continuation of the surveys that the WPI team implemented, which is significant because the USPTO can customize the questions asked in order to gather more employee opinions on certain topics of employee engagement. Because each category results in its own score, it will be easy for the USPTO to look at each score and analyze trends from one year to the next. This will allow for a sharper focus when creating engagement initiatives in the future. We obtained feedback on our metric system through conducting a focus group with Supervisory Patent Examiners (SPEs), as well as holding multiple one-on-one interviews with Mr. Martin Rater, USPTO Statistician.

Using our proposed metric system, we established the baseline employee engagement score to be 65 for FY 2012. The score was calculated using data from the WPI Team Patent

Examiner and Managerial Surveys and from data and information provided by the human resources office, our liaisons, and the Patent Employee Engagement Team (PEET). The score produced from our metric system is meant to act as a baseline engagement score that the USPTO can look back on in the future to see what progress has been made in terms of engagement.

Table 1
Indicators Measured for Each Category

Category	Grading Criteria
Attrition Rate	Attrition rate from the previous FY
Sick leave	Sick leave average hours taken per employee from previous FY
Productivity and Recognition	Percentage of employees performing above average from previous FY + percentage of employees receiving monetary awards from previous FY + percentage of employees receiving non-monetary awards from previous FY
EVS Results	Measures USPTO average score increases, increases in lowest categories, and increases in engagement key driver categories
WPI Team Patent Examiner Survey	Measures the percentage of positive responses to closed questions sorted into three categories: Job Pride, Communications with Supervisors, and Empowerment.
WPI Team Managerial Survey	Measures the percentage of positive responses to closed questions sorted into three categories: Job Pride, Interactions with Subordinates, and Empowerment.

Recommendations

We recognize that this is the first time that a system to measure employee engagement is being used at the USPTO, and it therefore may face challenges during its implementation. Due to

this, we have developed the following recommendations for the continued use of the system. A more complete list of recommendations can be found in the full report.

- 1. In order to continue to respond to feedback and improve the point based metric system, we recommend that the point system be kept flexible.**
- 2. We recommend that an annual meeting be held by the directors and other executives of the USPTO to determine the most accurate weights for the following fiscal year's point system.**
- 3. It is important to know that in order to compare the flexible system scores each year the previous years' scores may need to be recalculated.**
- 4. The USPTO should analyze the 2012 EVS survey results upon their release in order to finalize the baseline for FY 2012.**
- 5. We endorse the use of the surveys used to create the baseline, and encourage the USPTO to send them to the patent examiners and SPEs annually.**
- 6. We suggest that the USPTO look into creating and encouraging the use of non-monetary awards that all employees can be equally considered for.**
- 7. It would be in the best interest of the USPTO to mold our metric system into a system that is specifically for measuring teleworker's engagement.**

Summary

In conclusion, our team has provided the USPTO with a metric system for employee engagement. This system is flexible, and can be tailored to the yearly needs of the USPTO. Through the utilization of this metric system, we have determined the baseline score of employee engagement at the USPTO for FY 2012. This metric system will be of substantial future use to the USPTO, as it encompasses both teleworking employees and main campus employees.

1.0 Introduction

In order for an organization or a company to become successful, it is important to have engaged employees that take pride in their work and their organization's mission. Engaged employees are the key for maximizing efficiency and are a vital asset that insures the sustainability and growth of the company (MacLeod & Clarke, 2009). It is especially challenging for managers and other company executives to sustain and enhance employee engagement when all of their employees do not work under the same roof. This is one of the biggest problems the United States Patent and Trademark Office (USPTO) is facing, as the organization opens more satellite offices and allows employees to work remotely from different locations through their teleworking programs (Ross & Atkisson, 2012). Without physical interaction among employees, it is more difficult to build trust and develop effective manager-patent examiner relationships, which are the key factors for engagement.

The USPTO has moved to a more flexible schedule, which allows its employees to work in the office at more convenient hours, or alternatively, to work from home through teleworking. As long as employees can be as efficient and engaged at home as they would be in the USPTO main office, there should not be any problems with teleworking (Bates, 2004). The USPTO (2012d) defines employee engagement for both teleworkers and workers at the main campus as "...the connection through which the employee feels valued, is committed, and is empowered to perform his or her duties with a sense of purpose, satisfaction, and pride" (p. 9). Currently the USPTO is conducting employee engagement initiatives in order to maintain connectivity among employees at separate locations. However, the USPTO needs ways to measure how well these employee engagement procedures are working, especially with employees who work from home or other remote locations.

Many companies have begun to analyze various indicators, such as a lowered sickness rate among employees, a decrease in sick leave taken, the improvement of project performance, lowered attrition rates, increased financial success, and the reduction in the number of employee complaints, in order to measure the level of employee engagement (MacLeod & Clarke, 2009; Johnson, 2012). An employee's opinion is vital to the level of success of an engagement initiative. Historically, researchers have used surveys as a simple method to gather employees' opinions about their level of engagement (Frey & Fontana, 1991). However, current measurement tools such as the survey can be of limited use because not all employees provide feedback; they are often hesitant to report on actual situations in the workplace, and it takes many years to accumulate valid or useful data (Harder, 2008; MacLeod & Clarke, 2009). To lessen such a roadblock to data collection, one-on-one interviews and focus groups have also been used to gather employees' opinions.

Although there has been extensive research on the methods and strategies used to improve employee engagement, ways to accurately measure the success of these engagement initiatives at the USPTO are nonexistent. The Patent Employee Engagement Team (PEET) (2012d) at the USPTO is devoted to gathering data on employee engagement, but they need to analyze the data they have collected in a meaningful way in order to provide useful feedback to the USPTO. The main tool used by the USPTO to collect data on employee engagement, like many other institutions across the nation, is an employee survey. However, these surveys are not able to accommodate or measure all indicators of employee engagement. Developing a measuring tool that can efficiently analyze different data gathered from employees at different locations is vital to the USPTO's objective of measuring the level of employee engagement.

The goal of this project was to provide an effective system for measuring the current level of employee engagement at the USPTO. To achieve this goal, we met three objectives. First, because employee engagement tools may have varying degrees of success, we determined the USPTO's most important indicators of engagement and identified a feasible system for measuring employee engagement. We then used the system to measure a baseline index score of employee engagement at the USPTO. With this data in hand, we provided recommendations to the USPTO as to what tools and indicators to use in order to help them measure how successful their existing and proposed engagement initiatives are or will be. Effectively measuring employee engagement is important to the USPTO because improved employee relations will allow the agency to run more smoothly and will result in a quicker patent review process. Additionally, the managers at the USPTO are all "home grown"; if employees are not engaged and satisfied in their work, the USPTO will lose not only experienced employees but potential managers. Measuring engagement will allow the USPTO monitor how satisfied and engaged their employees are, as well as guide future initiatives to increase engagement among all employees.

2.0 Background

Employee engagement is not a new concept. Many companies believe that employee engagement, and the measurement of it, are central to achieving efficiency and success. In this chapter we will explain what employee engagement is and describe examples of engagement initiatives various companies have implemented. We will also review how employee engagement has helped companies become more competitive and successful, and discuss how employee engagement is measured. Lastly, we will examine employee engagement at the United States Patent and Trademark Office (USPTO) and how the USPTO is trying to achieve improved employee engagement.

2.1 Definition of Employee Engagement

In a competitive economy, having employees who simply show up for work and ‘do their job’ will not guarantee the success of an organization (JRA, 2008). It is critical to have employees who believe in and support the organization’s mission and help the organization grow. Having the brightest employees does not guarantee the development of a company, unless the employees are properly engaged, because the best innovations and ideas generally come from collaborating minds. Having workers doing only the bare minimum just to get by will not assure the future success of the organization. It is important that managers and company executives look for ways to improve their work force’s performance.

Employee engagement has often been publicized as the key to an organization's success and competitiveness (Gruman and Saks, 2011). In order to bring out employees’ potential, it is essential that they feel they are a part of something important. Employee engagement helps the staff feel involved and empowered, as well as helping keep their faith in their organization.

Companies become successful when they make their employees' commitment, potential, and creativity central to their mission and goals (MacLeod and David, 2009). Even though having capital and a practical business strategy is crucial for a company, the performance of the employees determines the success or failure of the organization.

The term "employee engagement" has been given many different definitions by corporations and researchers, but all agree that employee engagement is beneficial to an organization's growth. Professor John Storey, from The Open University Business School, defined employee engagement as "a set of positive attitudes and behaviors enabling high job performance of a kind, which are in tune with the organization's mission" (MacLeod and David, 2009, p.8). It is necessary for employees to understand and believe in their organization's mission in order to do their job with passion. Focal EE (2010) defined employee engagement as, "The extent to which employees feel passionate about their jobs, are committed to the organization, and put discretionary effort into their work" (§. 1). Engaged employees work harder because they love their work, believe what they do matters, and want to see their organization succeed.

MacLeod and David (2009) define employee engagement as "when the business values the employee and the employee values the business" (p. 7). The existence of mutual respect between the workers and the employer is essential in order to create and maintain trust between them. When an organization values its employees, the employees will value their organization and help with its growth. Steve Bates (2004) from HR Magazine looked at engagement as the emotional state of the employees in the their company; he argued that when people feel appreciated and respected by their employers, they are more engaged and drive the company to greater success.

Some corporations such as Caterpillar defined engagement as, “The extent of employees' commitment, work effort, and desire to stay in an organization” (Bates, 2004, ¶. 2). In addition, the USPTO (2012d) has defined engagement as “the interactive relationship an employee has with the people and the work of the USPTO. This relationship is the connection through which the employee feels valued, is committed, and is empowered to perform his or her duties with a sense of purpose, satisfaction, and pride” (p. 8). Figure 2 below shows the elements that define employee engagement and how those elements will lead to productivity and success.



Figure 2: Employee Engagement Process

Engaged employees believe in their organization, work to make improvements, understand the big picture, and are respectful and willing to go the extra mile (Robinson, Perryman, and Hayday, 2004). These are the types of engagement employers want to see in their employees, because these qualities will guarantee the competitiveness of the company.

Employee engagement is essential for any organization that wants to grow. However, engagement initiatives alone do not guarantee success, unless the outcomes of the initiatives are being measured and improved.

2.2 How Employee Engagement is Measured

Many variables can be looked at from within a company to determine if employee engagement is at the desired level. Lowered sickness rates, decreased sick leave days taken, improved project performance, quality of manager feedback, lower staff turnover, increased financial success, and a reduction in complaints are just a few metrics that can be analyzed (MacLeod & Clark, 2009; Johnson, 2012). Missing work without notice or leaving the agency can result from employee discontent. An improvement in these statistics shows that employees have become more engaged with their jobs than they previously were. Feedback from the managers can also show improved engagement due to the supervisors knowing the employees in more than a professional way. Enhanced performance, whether it is manifested as the improvement in the company's financial state or a specific project within the company, is an indicator of more productive employees, which can help support the conclusion that employees are happier and more engaged than they were before, along with other factors such as increased scores on satisfaction surveys or other engagement indicators. Finally, an engaged employee will be more pleasant for a customer, client or associate to work with. Fewer complaints from people whom the employees interact with can be a direct result of more engaged employees.

Another way to assess if employees are engaged or have become more engaged is to gather their opinions. Opinions cannot be collected by simply analyzing quantitative data. To gain this vital feedback, surveys are typically used (MacLeod & Clark, 2009; Walton, 2009;

Harder, 2008; Johnson, 2012). Survey questionnaires are normally issued to the general staff body by the company's management staff, company human resources staff, or a third party. A third party is often used to ensure that the results and analysis of results are not biased towards showing that the company has indeed improved. The questionnaires typically give various options per question, and the employee rates them voluntarily and anonymously; an employee is never forced to take the survey.

A second way to gather opinions of employees is through group interviews, such as focus groups. Group interviews can be utilized to explore the various views on how successfully a company or agency is accomplishing its goal to increase employee engagement (Frey & Fontana, 1991). A group interview can also give baseline data to determine how current initiatives are going before the researcher makes recommendations on how to improve, if any improvements are needed. For example, in the health industry, focus groups have been used to understand the beliefs of patients, to evaluate the success of a nutrition improvement initiative, and to develop strategies in care management (Rabiee, 2004). The formality of a group interview can vary, but the interview typically is useful for gathering data that rely on social interaction, whether simply as a baseline, as aforementioned, or to measure the progress the company is making in its engagement initiatives.

2.3 Employee Engagement Indicators

There are many different factors that are encompassed by individual indicators of employee engagement. In the following sections, we will discuss three main indicators of engagement that are or can be used by the USPTO: sick leave, the results from the Employee

Viewpoint Survey (EVS), and employee attrition rate. These indicators are commonly used to measure engagement.

2.3.1 Sick Leave

Sick leave is considered a serious problem that every company has to deal with. There is the concern that employees use sick leave as extra vacation time instead of for legitimate health reasons. This illegitimate use of sick leave is an indicator of an employee's negative engagement at the agency. Excessive use of sick leave can lower the level of production for the company, which can lead to an overall financial loss. High rates of sick leave among employees can result in lower customer satisfaction (Mateo, Tanco, & Santos, 2012). To fight this, companies need to lower their rates of employee sick leave so they are getting the most out of a limited number of workers while not losing money.

One main factor in decreasing sick leave is offering flexibility in working hours. Workers desire flexibility in their hours so they can deal with unexpected family events or so they can take a short personal break for leisure (Hunt, 2012). This cuts down on sick leave because someone with flexible hours can take off a few hours, whereas someone with a rigid work schedule may have to take off the whole day. To solve this problem, companies can offer more flexible hours to their workers, often through teleworking programs. At the USPTO, the rate of sick leave has dropped off recently, mostly due to the fact that employees can choose to work their own hours (C. Clugston, personal communication, October 30, 2012). They can work at the main campus or from their homes and are given the option to complete their work at home if they do not finish it while on the main campus.

2.3.2 Employee Viewpoint Survey

The Federal Employee Viewpoint Survey (EVS) is distributed to all federal agencies by the US Office of Personal Management with the intention to measure employee satisfaction (Partnership for Public Service, 2011b; Partnership for Public Service, 2011d). The Partnership for Public Service uses the EVS to create the Best Places to Work in the Federal Government rankings as a mechanism to hold agency leaders accountable for employee satisfaction and the health of their organization. The EVS results and Best Places to Work (BPW) rankings encompass 308 federal organizations, 33 of which are large federal agencies, 35 are small agencies, and 240 are agency subcomponents. The USPTO is categorized as an agency subcomponent under the Department of Commerce (Partnership for Public Service, 2011d). The data trends that are provided in the EVS results and BPW rankings allow side-by-side comparison of agencies or agency subcomponents to see if a particular workplace has improved or regressed over time.

The EVS was conducted April 4 through May 31, 2011 (Partnership for Public Service, 2011d). The survey was completed by 266,376 federal workers, giving a response rate of 49.3% of all federal employees. The sampling error is $\pm 3\%$ at a 95% confidence level. The statistical model used by the BPW to analyze the EVS is based on the CFI Group's methodology, the CFI being the group that created the American Consumer Satisfaction Index. The BPW index is calculated by the percentage of positive responses, Strongly Agree/Agree or Very Satisfied/Satisfied, to three workplace satisfaction questions within the EVS. These three questions are used only in determining the index and are not the key drivers of engagement. The three workplace satisfaction questions are: I recommend my organization as a good place to work; considering everything, how satisfied are you with your job; and considering everything,

how satisfied are you with your organization. The results are then weighted by a proprietary formula developed in 2007 by the Hay Group. In addition to the index, workplace environment scores are calculated by the percentage of positive responses in ten categories that include the three key drivers of engagement: effective leadership, employee skills/mission match, and pay (Partnership for Public Service, 2011d; Partnership for Public Service, 2011c; USPTO, 2012c). For the data provided to the agencies, a regression analysis is performed to determine which categories within the agencies had the highest BPW rankings and index satisfaction scores.

Beyond the raw data provided to agencies, the BPW also provides descriptions of the categories that EVS questions are placed in for analysis (Partnership for Public Service, 2011a). One category that is a key engagement driver is the employee skills/mission match category. Employee skills/mission match measures the extent that employee skills and talent are used effectively. It also assesses at what level the employees gain satisfaction from their work and how much an average employee understands how his/her job is relevant to the agency. The second key driver category is effective leadership, which has four subcategories to encompass all important factors. Empowerment that results from effective leadership is intended to measure the extent employees feel empowered in their work processes and how satisfied employees are with being included in decisions that affect their work.

The “fairness” of effective leadership subcategory is described as how much an employee feels that disputes are resolved fairly in a work unit, whether an employee believes that favoritism or arbitrary actions are tolerated, and if an employee feels comfortable reporting illegal activity without fear of being reprimanded. The effective leadership of the agency’s senior leaders subcategory measures employee respect for senior leaders, satisfaction with the amount of information management provides, and perceptions about a senior leader’s honesty, integrity,

and ability to motivate employees. Finally, the effective supervisor leadership subcategory measures the employees' opinions of immediate supervisors. These opinions cover the supervisors' job performance, the opportunity for supervisors to allow leadership among employees, and the ability of supervisors to provide developmental support and worthwhile feedback to employees.

2.3.3 Attrition Rates

A good indicator of positive employee engagement is employee retention. Attrition rates show employees' involvement and commitment to their organization (Scott, McMullen, & Royal, 2001). It is also important that companies create programs to retain positive and motivated workers while also maintaining good performance and productivity among the employees. When the attrition rate for any organization is high, it suggests that the employees feel disengaged and not committed to their organization. Nonetheless, when employees are satisfied and engaged in their company, evidence shows they are more likely to be loyal to their organization, which leads to a low attrition rate.

Employee retention is vital for any organization's success because a low attrition rate allows the continuity of business performance (Scott, 2012). According to the report *Retaining Talent* by David Allen (2008), from the Society for Human Resource Management, "Employee turnover matters for three main reasons, first it is costly, second it disrupts business performance, and thirdly it becomes increasingly difficult to manage" (p. 3). One of the first reasons attrition rates matter is because of the large monetary expense to replace employees. Most organizations like the USPTO train their newly hired employees until the employees fully understand their roles and tasks in the workplace. The USPTO (2012f) trains their new employees in four to

twelve month intervals before the patent office allows them to examine patents independently. Training employees comes with a great expense and use of resources; if those employees leave the organization within three years, they are increasing expenditures to the organization because the employee does not contribute enough to allow the company to profit from the employee's work. According to a study done by D. Scott, T. McMullen, and M. Royal (2012) with the WorldatWork analysis organization, "estimates suggest that the cost of employee turnover often ranges from 50% to 200% of the employee's annual salary based on the type and level of job he/she holds" (p. 2). It is important that companies attract quality employees and retain these employees in order to reduce the cost of replacing workers.

Another finding from Allen's (2008) report about the importance of employee turnover is that turnover disrupts business performance, preventing the growth of the organization. It is important that businesses everywhere gather employees that specialize in skills the company needs in order to be competitive and stay ahead. The loss of these quality employees interrupts company performance and halts their progress to success. It is vital to find ways to retain and engage quality employees because replacing and training new employees will slow down the potential to compete.

2.4 Employee Engagement at Selected Companies

In this section we will discuss successful employee engagement initiatives that companies, such as Pixar, Campbell's Soup Company, and Google, have taken and how the initiatives have benefited the organizations.

2.4.1 Employee Engagement at Pixar

One of the best examples of a success story in employee engagement is Pixar Studios. A main reason Pixar is the most successful studio in the industry is due to the workforce behind it (Goldstein, 2008). Pixar has some of the most engaged employees, and they thrive to bring in high quality and well developed products for their customers. According to Ed Catmull (2008), President of Walt Disney and Pixar Animation, “Pixar has an environment that nurtures trusting and respectful relationships and unleashes everyone’s creativity” (p. 4). Pixar employees go the extra mile because they truly believe in their organization. They believe what they do is extraordinary, everyone’s ideas and work is respected, and all employee input is encouraged.

A second employee engagement initiative that has allowed Pixar to succeed is the environment and the setting of the work place itself. The atmosphere of a workplace plays an important role in shaping the employees’ mood and their engagement level (Stallard, 2012). This employee initiative was developed by one of the greatest innovators of the 21st century, Steve Jobs. Jobs knew that innovation and creativity do not happen in cubicles or through emails; he believed “creativity comes from spontaneous meetings and from random discussions” (Ashley, 2012, ¶. 2). The design for Pixar’s headquarters was specifically intended to enhance employee interaction and to create an atmosphere that is new and enjoyable to everyone. According to Pixar designer and Academy Award-winning director Brad Bird, “The cafeteria, meeting rooms, employee mail boxes and restrooms are centralized to make it more likely Pixar employees will interact with one another”(Stallard, 2012, ¶. 7).

Instead of assembling their offices with cubicles, Pixar created a very modern work place filled with common areas, spacious work areas, game lounges, a fitness center, and even a large theater (Ashley, 2012). Pixar’s Chief Creative Officer, John Lasseter, describes his experience as

the following, “I kept running into people that I hadn’t seen for months. I’ve never seen a building that promoted collaboration and creativity as well as this one” (¶. 4). The Pixar office is a great example that shows interaction and promoting innovation, and this fact motivates and attracts employees to come to work every day and enjoy what they do. It is an appealing environment that makes workers feel like a part of a community as a whole, despite their varying job descriptions and positions.

2.4.2 Employee Engagement at Campbell’s Soup Company

Leadership is an important aspect of employee engagement. Employees need some push and motivation from leaders in the company, such as CEOs and managers, in order to collaborate and work together. Leaders are the engine that drives employee engagement, so it is important for an organization to have a leader that is able to inspire and make the workers passionate about their organization (MacLeod and Clarke, 2009). The former CEO of Campbell’s Soup, Doug Conant, is the perfect example of a leader that motivated and inspired his employees. When Conant joined Campbell’s Soup, he recalled the distrust that existed between employees and managers due to recent layoffs (Waghorn, 2009). In order to gain the employee’s trust and to have them engaged, Conant declared himself committed to enhancing employee engagement and increasing productivity.

The first step the former CEO took was to find ways to earn his employees’ trust back (Waghorn, 2009). Employees trust their organization when the managers respect and value their contribution to the company, and Conant understood this. According to an interview by Waghorn from *Forbes Magazine*, Conant delivered hand-written notes all around the world to his employees celebrating what each person did and their contribution to the organization. This

showed that the company was paying attention to its employees and that it cared about the work they were doing. Mr. Conant (2012) recalled his visit to Campbell's factories all around the world and found his hand-written notes posted on their bulletin boards in their cubicles. These notes led them to feel valued and respected. Conant claimed in the course of 10 years he wrote about 30,000 notes and that the company only had 20,000 employees.

Involvement from managers and CEO's is necessary for engagement. When employees see their managers or CEO more often, it will make them feel that what they are doing matters (Bates, 2004). The former CEO of Campbell's Soup implemented another engagement initiative with this in mind. During his lunch hours, Conant (2012) walked around the building of his company with his pedometer and walking shoes on. He walked around the building for two reasons; the first was to get some exercise and to promote well-being since an employee's health can have an impact on his or her work. The second reason was to talk to his employees and to see how they were doing. During this process he got to know his employees, which sent a positive message throughout the company.

Due to the high involvement and strong employee engagement initiatives from the CEO, Campbell's Soup (2011) was able to overcome the problems they had been facing before Conant took over Campbell's leadership; now they are one of the companies that has the most engaged employees. The productivity and the work atmosphere inside the company can speak for the success of their employee engagement initiatives. In 2010 they were awarded the Gallup Great Workplace Award for the fourth consecutive year.

2.4.3 Employee Engagement at Google

In order to unleash a worker's creativity, managers need to trust their employees and give them some freedom to think and practice their own ideas that may become beneficial to the company (Ulanoff, 2009). Google understood this philosophy, and created the “20% time” program to encourage employee creativity. Through the 20% time program, Google engineers are allowed to work on a project of their own design that is related to Google’s mission one day per week (Marre, 2011). The results of Google’s 20% time program have been astonishing. The ideas for popular Google products, such as Gmail and Google News, came from their 20% time engagement initiative.

When people are free to practice their own ideas and theories, it leads to creativity, which leads to success (Bates, 2004). In order for employees to go the extra mile, they need to know that their ideas are being respected by the organization. Giving them time to be creative independently makes employees feel empowered. When the 20% time idea creates a new product, other employees will form groups and work on the idea to make it a reality (Meddiratta, 2007). These groups don’t have any budget or any authority figure that manages the project, but rather they are committed employees working on their ideas, trying to make the ideas a reality and propose them to Google managers. When a company has employees who strive for innovation and are engaged with new ideas, the results are substantial. Engaged employees are one of the reasons that Google has become one of the most important companies in the 21st century.

The other employee engagement initiative that is implemented at Google is based on the theory that employees should not just raise problems, but they should solve them too (Marre, 2011). Google holds focus groups called “Fixit”, which are problem solving sessions for

employees on current business plans and internal and external problems the employees are facing. Employees have a better understanding of what goes on in their organizations, and they have a better understanding of how their work place can be improved, so it is important for a company to have its employees involved in identifying and solving problems that exist in their organizations.

2.5 What is Teleworking?

Teleworking has recently become much more common in the workplace as a solution to some engagement issues, as well as to lower company operating costs. Teleworking is an arrangement in which the employee can work during any portion of regular paid hours at an approved worksite such as at home or a telework center (US Office of Personal Management, 2012d). However, neither official travel nor mobile work is considered teleworking. Any employee can telework according to individual company policy, but the management has the final say whether or not the employee is allowed to telework (US Office of Personal Management, 2012c). If any employee's performance and productivity declines or fails, the management of the company has the right to end the employee's telework arrangement. Managers who oversee teleworkers are encouraged to participate in teleworking as well so as to set a positive example for their subordinates (US Office of Personal Management, 2012a). The passing of the Telework Enhancement Act of 2010 requires managers to treat teleworkers and non-teleworkers the same, although some changes in communication techniques may be needed (US Office of Personal Management, 2012b).

The number of teleworkers has greatly increased in response to the cost efficiency, saving at least \$2000 per employee from company expenses in areas such as sick leave and saving

employees' expenditures on gas and parking (Sundin, 2010). Teleworking also allows for greater work/life flexibility; employees may then have a higher degree of satisfaction and productivity. The sick leave, turnover, and job burnout rates are also lower among teleworking employees. While it is considered that these benefits outweigh the costs of teleworking, the one cost that cannot be ignored is that teleworking can lead to a feeling of isolation, long hours, and lowered engagement.

To avoid a major decrease in engagement, Kirsten Sundin (2010) suggests that employees who telework have a strong balance of technical knowledge and social skills, are adaptable, organized, self-motivated, and flexible. These traits will also allow employees who telework to be more successful. Sundin also suggests that managers who oversee teleworkers should be organized and be effective communicators. Being an effective communicator will allow the virtual interactions that dominate the teleworking supervisor/supervisee relationship to have the same quality of interaction as typical in person interactions around the office. The virtual interactions will tend to be short and frequent, but the interactions must have a purpose so that the teleworker can feel included and connected to the rest of the company. Teleworkers will have increased engagement if they receive informal feedback from the managers as well through the virtual interactions. Finally, the teleworkers' sense of being valued and engaged will increase if company recognition of achievements, through means such as promotions or pay raises, is at the same rate for both teleworkers and on site employees. In general, an employee who teleworks must feel that he or she is valued by the company just as much as an employee who works on site.

2.6 Employee Engagement at the USPTO

The USPTO wants its employees to feel valued, committed and empowered to fulfill their duties (USPTO, 2012d). If employees do not currently feel engaged, then it indicates that not enough is being done to promote positive engagement between the USPTO and its employees. Government employers such as the USPTO have begun to implement new programs in order to increase employee engagement, and therefore increase the feeling of self-worth and productivity amongst employees.

2.6.1 The Changing Nature of the Patent Office

In response to the rapidly changing lifestyles of employees, the USPTO has revamped its hours of business and the way some employees do business. At an earlier point in time all employees operated out of the same office; now workers are spread out across the country, reaching from Detroit, Michigan, to the main office in Alexandria, Virginia (Ross & Atkisson, 2012). Additionally, the USPTO runs a hoteling program, which allows employees to telecommute and come into the main office only once a week in some programs. This expansion provides a unique challenge to the USPTO. How does a business maintain connections among employees if all employees are not housed under the same roof?

To address this problem, the USPTO (2012f) is working to provide a worker friendly, productive, and communication-based atmosphere for employees. “The USPTO recognizes the importance of fostering an active communication culture as a vital part to achieving transparency, accountability and interactivity through the agency” (p. 7). The USPTO has created a Patent Employee Engagement Team (PEET), in order to implement programs and measure the success of these programs. This team strives for the highest ratings and the most

satisfaction from employees, in order to achieve the goals outlined by the Strategic Human Capital Plan (USPTO, 2012d).

2.6.2 What Has Been Done In The Past

The EVS is currently the system wide measure in place to gauge employee satisfaction and work-life balance (USPTO, 2009a). In the past, the USPTO has had high scores in the categories of diversity, highly educated employees, flexible schedules, and a good balance between the business world and the personal world. It is important for the USPTO to maintain these scores as well as improve in areas such as timeliness of patent approval that were not scored as high.

The USPTO currently has a few measures in place to analyze employee engagement and the type of environment at the main office. These tools include general surveys as well as ideas for social media outlets. In the near future, the USPTO will be taking part in websites and virtual groups such as YouTube, Flickr and Facebook (USPTO, 2012f). These websites will allow for positive external communications, as well as give employees another avenue to engage with the bigger picture of what is happening at the USPTO. Focus groups are an additional way used to gain knowledge of employee conditions. These avenues for feedback have been very helpful in maintaining employee engagement, but efforts are being put towards new outlets such as week-long feedback and training sessions, which may be more successful. These strategies have a time frame that began in Fiscal Year 2011 and are scheduled to last until Fiscal Year 2015.

Additionally, the USPTO (2012d) offers training sessions on topics such as “Managing in a Telework World”, “Setting Examiner Goals and Providing Effective Feedback”, and “USPTO Engagement Overviews” (p. 23). These initiatives provide employees with opportunities to learn

more about themselves and what the company has to offer, allowing them to become more personally involved in the day-to-day activities of the company.

Other avenues of communication between employees and management of the USPTO include Town Hall Meetings and Affinity Groups (USPTO, 2012d). Town Hall Meetings are a gathering of a large number of employees to share their input and ideas. Designated USPTO staff members run the meetings while all USPTO employees are encouraged to attend. These meetings allow new ideas from employees to come to the forefront. Affinity Groups provide support for an increasingly decentralized and diversified workplace. In these groups, members who have a common background, ancestry, or share common ground on current political issues are provided with a social outlet as well as a business support group. These two outlets allow employees to connect on more than just a workplace level, but also on a personal level.

2.6.3 What Could Be Done In The Future

There is a three phase Strategic Human Capital Plan process currently in place at the USPTO (2012f). This plan was created in 2010 and is meant to reach from 2011 to 2015. Phase I deals with Talent Management, as the USPTO's mission requires a highly skilled workforce. This Phase focuses specifically on motivating a diverse workforce, which becomes key in forging relationships and mentorships that will help to keep employees engaged and interested in the company for the long term. This phase also focuses on hiring people who are technically proficient. An additional focus will be placed on addressing any gaps in the workforce that are based on competency. The USPTO's goal is to use percentages of hired employees, completion of training courses, mentoring framework developed, and focus group sessions conducted every year to measure the success of Phase I.

Phase II, the Results Oriented Performance Culture Phase, involves identifying a way to measure the success of employee engagement programs by evaluating the outcomes of the goals and objectives across the agency (USPTO, 2012f). It becomes incredibly important in this phase to have outstanding communication between employees and customer service both internally and externally. The USPTO has developed a few benchmarks specific to their organization that will help them to measure success. These include measuring employee engagement levels and tracking the number of approved patents over a specific period of time. These goals are productivity-oriented and easily achievable if the initiatives are successful. Lastly, this phase looks to improve the USPTO's performance management and reward system, which will be impossible without a clear measurement system with defined objectives.

Phase III introduces a top down approach, focusing on the leader's method to keep the employees involved (USPTO, 2012f). This Phase is called the Leadership and Knowledge Management Phase. The USPTO believes that "leadership is demonstrated at all levels within the organization" (p. 18). In order to maintain this leadership, there must be opportunities for improvement along every step of the way. The success of these training programs will be gauged by year-to-year improvement on the EVS, an increase in the number of managerial problems discussed and resolved, and the frequency of shared successful business practices. Overall, this approach emphasizes the need for managers to maintain a finger on the pulse of the atmosphere amongst their subordinates.

While these are useful measurement systems, they rely heavily on the USPTO's ability to organize and on the self-assessments provided by employees. Surveys are unbiased and able to get a lot of information for the company, however, employees provide little feedback in the first years that the surveys are implemented, and it often takes several years of distributing the survey

to gather viable data (Harder, 2008). In fact, it takes three to four years to truly see useful results from surveys, as employees are more likely to complete surveys if they are confident that their feedback will indeed be used by management to improve working conditions.

2.7 Summary

Employee engagement is one of the central pillars in any successful company. An understanding of programs at other companies, both successful and unsuccessful, may stir new ideas for creating employee engagement initiatives as well as new systems for measuring engagement in the future. The USPTO's teleworking program is unique in the fact that all managers are required to work on campus, whereas any patent examiner can work from home. This presents the difficulty of how to keep examiners who are in another location engaged, and furthermore, how to measure that engagement. The measurement programs at other companies provided the basis for the research conducted by our group at the USPTO, as we worked to develop engagement metrics that are best suited for the USPTO.

3.0 Methodology

The goal of this project was to propose a metric system to measure employee engagement at the USPTO. Through background research, we identified specific pieces of the current engagement program that we determined may be in need of re-evaluation. Our objectives were to identify inclusive categories for the metric system, determine employee opinions about measuring engagement, and determine a baseline level of employee engagement at the USPTO using our metric system. We have outlined our research methods in the following sections to address how our major research objectives were reached and how the data from this research was analyzed to achieve our goal.

3.1 Identification of Engagement Categories for the Metric System

The EVS is created and distributed to all federal agencies by the non-governmental agency, the Partnership for Public Service. This agency has the intent to standardize a scoring system to identify the best federal agency to be employed by, as well as provide a roadmap that these agencies can use to improve their management. The survey contains 84 questions targeted at determining employee engagement and satisfaction. We analyzed the responses of USPTO employees to each question to determine the reasons why patent examiners were in favor of, neutral to, or opposed to a given statement. We closely examined the questions associated with the three key drivers of employee engagement. This allowed our team to identify the most important questions to ask in surveys for future use at the USPTO. We then collected the scores in each key driver category for the past five years. These scores were entered into an Excel spreadsheet, and the trends in the scores were analyzed to determine category relationships. This analysis consisted of plotting the previous four years of scores in a line graph and observing the

overall trends among the scores. We were looking to see if there were increases from year to year among key driver satisfaction scores.

Data from the EVS were also collected from the Federal Best Place to Work website. This data was also analyzed by moving them to an Excel spreadsheet; we created line graphs to measure changes in each category over the past five years. We chose to compare the USPTO to the Department of Commerce (DOC) as a whole, because the USPTO is one branch of the DOC, and comparing it to the whole department enables the USPTO to see where it stands among its immediate peers. We calculated the difference between the USPTO averages and the corresponding DOC averages, and plotted the difference on scatterplots to visualize variability in the responses. The question categories with the most change were identified through the use of statistical analysis. We calculated the standard deviation of the variables for each category and time period. We then identified the three categories whose scores had the highest number of standard deviations from the mean. This allowed us to identify the three lowest scoring categories that needed to be improved upon by the USPTO.

We received attrition data in the Office of Patent Financial Management report, which showed the number of supervisory patent examiners (SPEs) and patent examiners who have resigned, been terminated, or passed away in the past thirteen years (1998-2011). We looked at the distribution of attrite employees compared to the time that these employees stayed at the USPTO. We then looked at how many employees resigned, or were terminated during each of the last thirteen fiscal years and compared the results from each fiscal year. We did this in order to understand employee retention trends for the past thirteen fiscal years.

Along with the attrition data, we also received employee sick leave data from the Office of Patent Financial Management for the past five fiscal years (2008-2012). First, we looked for changes in patent examiners' used leave from year-to-year. Then we divided the sick leave hours per year by the number of patent examiners at the USPTO each year in order to identify the average sick leave hours taken per employee. This analysis was done to investigate absenteeism as an indicator of engagement and to determine the increase or decrease in the use of sick leave in recent years.

Lastly, we assessed the level of production and recognition among employees at the USPTO. The data on both production and recognition were obtained from the Human Resources Office. Production is defined as the number of patents approved each year by examiners, and in order to measure production we looked at the percentage of employees who performed above the average level, or at 110% or higher. The data on recognition were split into two categories: monetary awards (bonuses) and non-monetary awards. Since all employees are paid, it is not useful to compare pay scales alone. The first category measured the number of employees who were recognized monetarily with annual bonuses. The second category identified the number of patent examiners who were annually recognized with non-monetary awards, such as the Gold, Silver and Bronze USPTO awards for performance.

3.2 Feedback on the Metric System

Due to a low response rate from the SPEs, we only performed one focus group in order to gain first-hand ideas about what managers would like to see in a measurement system for employee engagement. We hoped that this focus group would allow us to gain feedback on our proposed evaluation system, as well include managers in the process of creating a system for

measuring the relationships between themselves and the patent examiners.

With the help of the nine technology center (TC) Directors, we contacted thirty-six SPEs, with the hope of assembling a focus group made up of nine SPEs. To organize the focus group, each SPE was assigned a number so that four SPEs from each technology center (TCs 1600, 1700, 2100, 2400, 2600, 2800, 2900, 3600, and 3700) could be chosen through a random number generator. One focus group was then planned since only eleven SPEs responded with an affirmative; some TC's were not represented, but enough variation was present with five TC's participating. Two members of our WPI team were present, one to lead the group and one to take notes. The note-taker was present to allow the moderator to focus solely on interacting with the participants. The moderator introduced the WPI team and our goal of helping the USPTO measure employee engagement and explained the informed consent policy. The focus group session followed the protocol in Appendix A, and the minutes of the session can be found in Appendix B. All questions asked were open-ended and were geared toward gathering input on the categories that should be included in an engagement index as well as how each category should be rated.

We also carried out one-on-one interview sessions with Mr. Martin Rater, USPTO Statistician, who became a vital person in creating and weighting the metric system. Mr. Rater was selected based on his position held within the office, as he could provide feedback on our point-based metric system based on experience with other employee related measures. We carried out four interviews, two formal and two informal, so that way we could make adjustments as our understanding of the system grew and changed. An interviewer and scribe were both present with the interviewee. The one-on-one interviews were much more structured than the focus group sessions, though similar information was gathered. Again, all questions

asked were open-ended, but the responses differed in that they reflected the individual's opinions without any influence from other employees. Lastly, we were given feedback on our methods of collecting the EVS, attrition rate, survey results and focus group data. We requested this feedback during the interview with Mr. Rater in case he could suggest better methods for collecting data that we had not originally considered.

In order to gain a much wider perspective on employee engagement and approaches to improving it and measuring it, we carried out two surveys (one to managerial staff and one to patent examiners) using a web-based means of distributing the questionnaires. The questionnaire was uploaded to the online survey software, SurveyMonkey, and then distributed as a link through an email with an explanation of the survey's purpose.

Mr. James Dwyer, USPTO Assistant Deputy Commissioner, directly distributed the patent examiner survey to Technology Centers 1600, 1700, 2100 and 2400. Mr. Dwyer then sent the patent examiner survey to the directors in the remaining Technology Centers: 2600, 2800, 2900, 3600, and 3700; the directors of these five technology centers were asked to send the survey on to the patent examiners in their centers. This decision to send the survey to two separate groups of patent examiners (7,700 patent examiners in total) by two different mechanisms helped us determine if examiners were more likely to respond to the survey if it came from their direct supervisor, rather than from a more distant supervisor; if the former, then it would show a higher level of engagement.

The email that distributed the managerial survey contained an attached document that the WPI team created stating that participation in the survey was voluntary, anonymous, and would have no impact on the participant's standing with the USPTO. The email sent from Mr. Dwyer

contained a description of the survey and referred the reader to the document. The same explanation was provided in the body of the email in which the patent examiner survey was sent. The questions, included in Appendix C, focused on patent examiners' feelings of engagement, while the managerial survey was sent to the SPEs (seen in Appendix D) with a focus on the engagement initiatives they have implemented with the patent examiners they oversee. Both surveys contained closed questions, but the managerial survey also contained open-ended questions which asked for their opinions on why they think that engagement initiatives have been effective or have not been effective. The questions lent themselves to specific and similar answers given by the SPEs, which allowed us to easily quantify the trends in responses.

3.3 Determine the Current Level of Employee Engagement

In determining measurement plans for current and future employee engagement initiatives at the USPTO, we established a baseline for employee engagement. We consulted with the PEET that the USPTO had previously formed in order to establish this baseline. Consultation with PEET continued throughout our time spent at the USPTO, because the PEET will be able to use the metrics that we created to measure engagement in the future. This baseline provided a starting point that USPTO managerial staff can look at years later to determine if their engagement initiatives have been successful. The formation of this baseline was done through the use of a point-based metric system. To develop the baseline, we first identified variables such as communication, attitude, and feelings of employees to be the key to engagement at the USPTO. We collected information about these variables from previous surveys conducted by the USPTO, interviews, focus groups, and through our own surveys (see Appendix A, B, C, and D for interview protocols, focus group protocols, and survey questions).

We used the questions and results from the 2011 EVS to analyze employee responses to engagement and used these responses to help establish the baseline along with the surveys we sent to patent examiners and managers. Our survey questionnaires mainly focused on the employees' and supervisors' feelings and attitudes toward the USPTO. It also asked how the employees prefer to contact each other (email, conference call, chat rooms, social networks, face- to- face, etc.), and how many emails or phone calls they sent to or received from their co-workers per week. This allowed us to identify the types of communication methods employees prefer and how often teleworkers communicate with the main office. Therefore, the survey results gave us an understanding of the employees' emotional attachment to the USPTO and helped us to identify the current level of engagement.

With the opening of new branches, the USPTO may have to change its approach to achieving engagement, from initiatives that involve employees all located in the same place, to initiatives encompassing the entire company, including teleworkers. The USPTO additionally has to know what is working in regard to engagement as well as what is not working, which is where the baseline data we obtained and the system we have developed will become extremely important. The following chapter contains the results of our research on developing a reliable way to measure employee engagement at the USPTO.

4.0 Results and Analysis

The development of the employee engagement metric system for the USPTO first involved identifying individual indicators that would be most useful for measuring engagement. The system was scrutinized many times, and the importance and weighting of each category in the system was evaluated. The finalized metric system is a fluid model that allows the USPTO to take multiple indicators of engagement and combine them into one easily defined score. This section will discuss the different outcomes we obtained when testing and creating the metric system.

4.1 Employee Opinions of Engagement at the USPTO

We utilized surveys to gather employee opinions on their engagement at the USPTO. We sent two surveys to employees: one to the patent examiners and the other to the patent examiner's supervisors, the SPEs. Collecting data from these two different types of employees at the USPTO gave us meaningful insights into the engagement process, depending upon the level of the employee's experience. Additionally, we analyzed the number of days of sick leave used and attrition rates amongst employees.

4.1.1 Patent Examiners' Perspectives

The USPTO has a set guideline for the number of positive responses they hope to receive whenever they send out questionnaires or conduct interviews. Their goal is to obtain at least five positive responses for every negative response. The USPTO's statistical department reasons that one person will tell around 5 people about a bad experience with a company, whereas that same person is likely to tell only a couple of people, if any at all, when he/she has a good

experience (as seen in Appendix F). We determined that anything below a 5 to 1 ratio of positive-to-negative answers needed to be addressed.

The questions we asked the patent examiners on our surveys revealed some very encouraging and positive data for the USPTO. All questions were voluntary, so not all participants responded to each question. Many of the answers showed that the patent examiners are positive about their job. When asked if it is important to meet or exceed customer expectations, the patent examiners who responded to the question had a ratio of 40 positive responses in agreement to every 1 negative responses, which can be seen below in Figure 3 (taken from the results to question #13 in Appendix C).

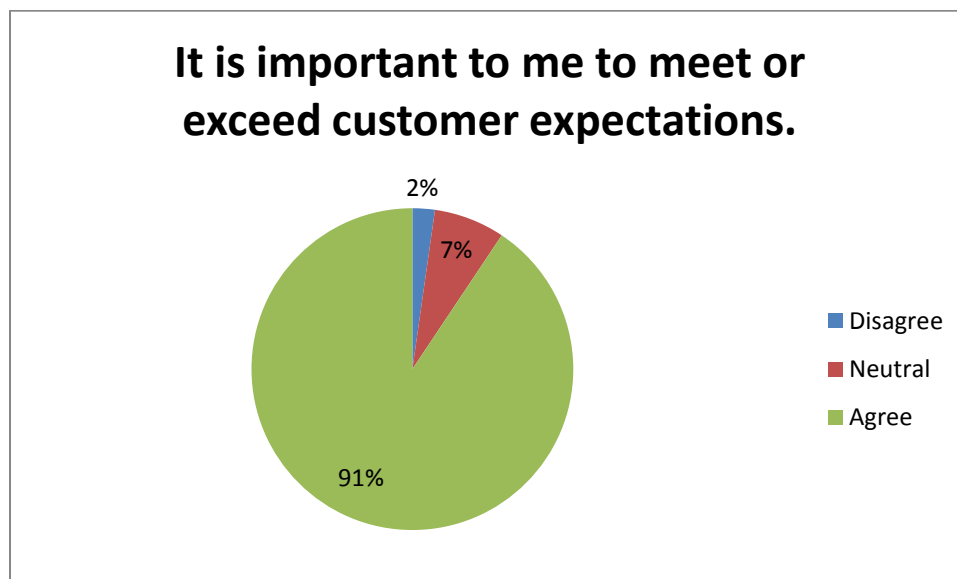


Figure 3

Response to Question #13 on the Patent Examiner Survey

This shows that over 90% of USPTO workers are concerned about their customers, which should be encouraging news to the USPTO. This concern shows positive engagement in their work.

Another question that had a high positive response rate for the USPTO was when we asked the

examiners for their opinions on whether or not they were willing to put in the extra effort to get the job done (question 21 in Appendix C). The results from this question can be seen in Figure 4.

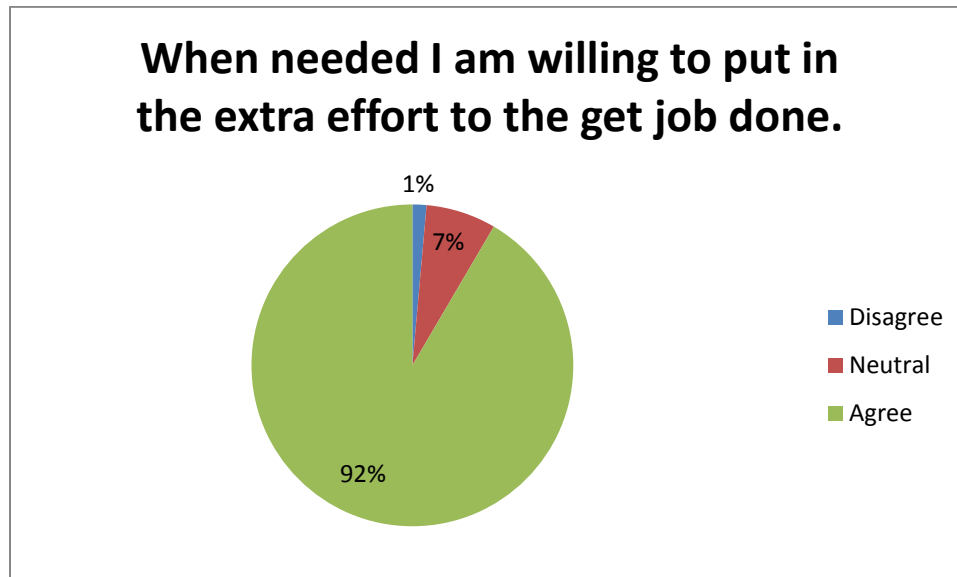


Figure 4

Response to Question #21 on the Patent Examiner Survey

Only 15 out of 1065 workers who responded to the question said they were not willing to put in the extra effort to get the job done, compared to nearly one thousand agreeing that they would. Currently, only one percent of the USPTO workforce reports it is not willing to put in extra work. This should be very reassuring to the USPTO because an employee who is willing to go above and beyond the required level of work is a very good sign of employee engagement overall.

Finally, when patent examiners were asked if they look for new and better ways to do their jobs (question #17 in Appendix C), the agree-to-disagree ratio of the respondents to the question was nearly 18 to 1, which can be seen in Figure 5.

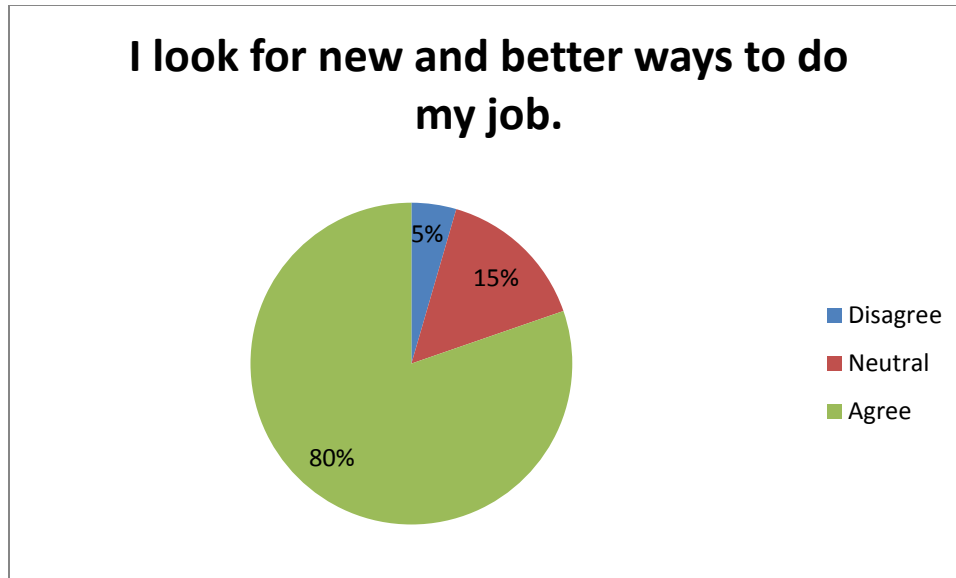


Figure 5

Responses to Question #17 on the Patent Examiner Survey

This is a clear indicator of employee engagement because the employees are trying to improve and make the USPTO better overall. The agency as a whole benefits when over 80% of the employees are looking for ways to improve.

4.1.2 Teleworker's Perspective

The USPTO has offered workers much greater flexibility through teleworking, or hoteling. Teleworking is convenient for both the employees and the USPTO, but it also creates a potential for unengaged employees because teleworkers do not experience the main campus environment. Like most organizations the USPTO likes to promote from within and having teleworkers increases the chances of having unengaged employees, which decreases the chances of the teleworkers being promoted to SPE level. One of the main ways to keep teleworkers engaged with the rest of the organization is by expanding the amount of communication between

them and their SPEs and other managers and by keeping the teleworkers informed about the current issues of the organization.

On the Patent Examiners Survey we asked additional questions to the teleworkers in order to identify the level of communication between them and the main campus. Out of the 1200+ examiners who responded to our Patent Examiner Survey about 460 of them were teleworkers and one of the first questions we asked the teleworkers was how often they visited the campus per month. The results of the survey question are shown in Figure 6 below.

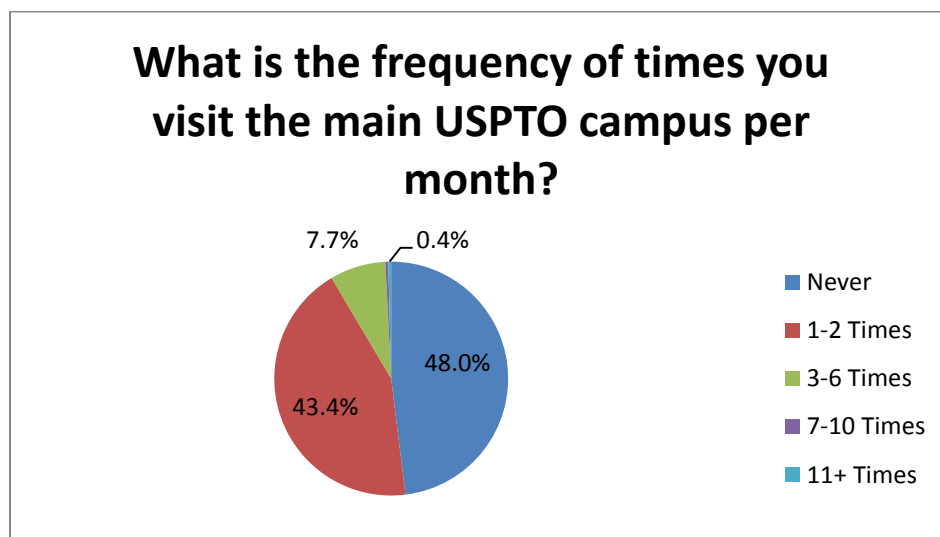


Figure 6

Response to Question #9 on the Patent Examiner Survey

About 52% of the teleworkers who responded to this question said they at least come to the main campus once a month. This is encouraging for the USPTO because the teleworkers are not required to come to the main campus. However, it is important to find ways to encourage the teleworkers to come to the main campus more frequently and increase their involvement with USPTO events.

The other key concern with having teleworkers was identifying how well informed they were with the main campus events and issues. We asked this question to the teleworkers trying to identify how connected they are with the main office, and the result is shown in Figure 7 below.

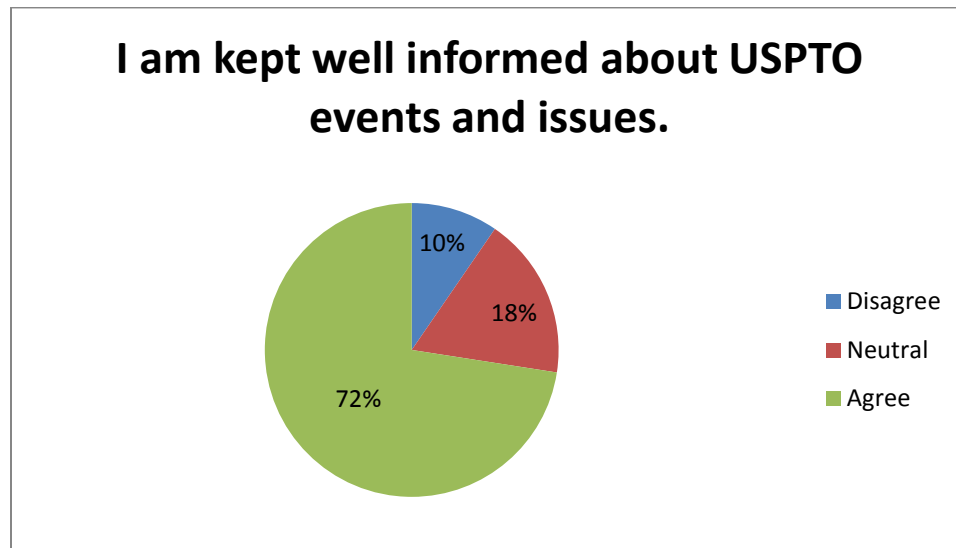


Figure 7

Response to Question #8 on the Patent Examiner Survey

Even though the majority of the teleworkers who took this survey feel that they are well informed with the current events and issues, the USPTO still has room to improve. Since many of these teleworkers are not required to come to the main office, it is important for the USPTO to keep all of the teleworkers well informed with what is happening in the office. The level of communication should be higher than with those who are on the main campus; otherwise, the USPTO could increase the chances of creating disengaged employees.

We also asked teleworkers how often they communicated with other USPTO employees during any given week. Over 65% of the responses indicated that they were in contact less than 10 times per week. The other key communication question we asked the teleworkers was how

often they communicate with their USPTO supervisors. Figure 8 below shows the result of the survey question.

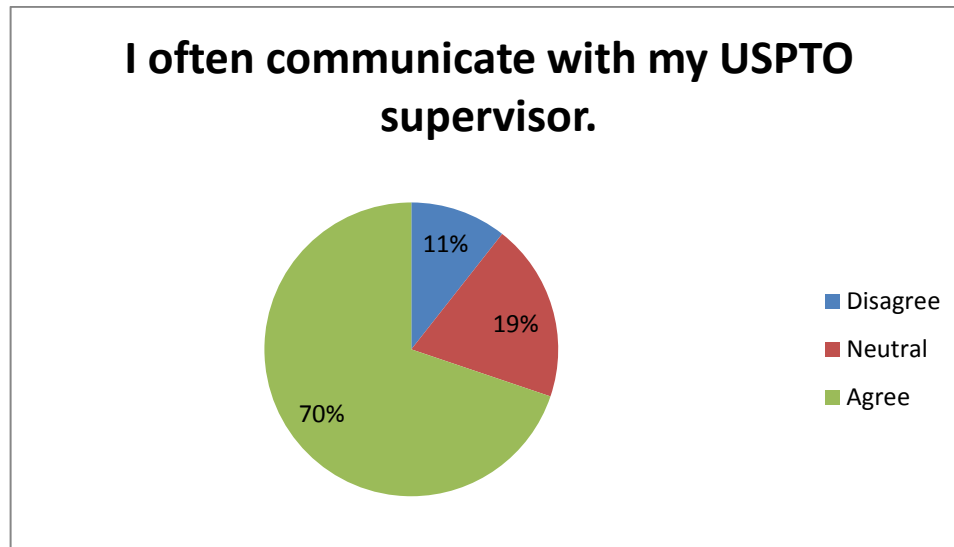


Figure 8

Response to Question #12.23 on the Patent Examiner Survey

One of the main effective ways to keep teleworkers engaged is by increasing the interaction between them and their supervisors. About 30% of the teleworkers feel that they do not communicate with their supervisors as often as they might. In addition, about 32% of the examiners who work in the main office feel they do not communicate with their supervisors as often as possible. However, even though the teleworkers communicate slightly more than the examiners in the main office, it is important to increase the level of communication between teleworkers and their supervisors. An increase in communication is one of the few ways the teleworkers can feel as though they are a part of the USPTO. Lack of communication can lead to less engaged employees. Therefore communication is a key issue that should be addressed.

Another important question we asked the teleworkers through the Patent Examiner Survey is about their future with the USPTO. This is an important question because the USPTO promotes from within, and these are the employees who have the potential to be promoted to SPEs. Therefore it is important for the USPTO to know if the teleworkers feel that they have opportunities in the organization and whether they want to stay with the organization or not. The result of the survey question is shown in the figure below.

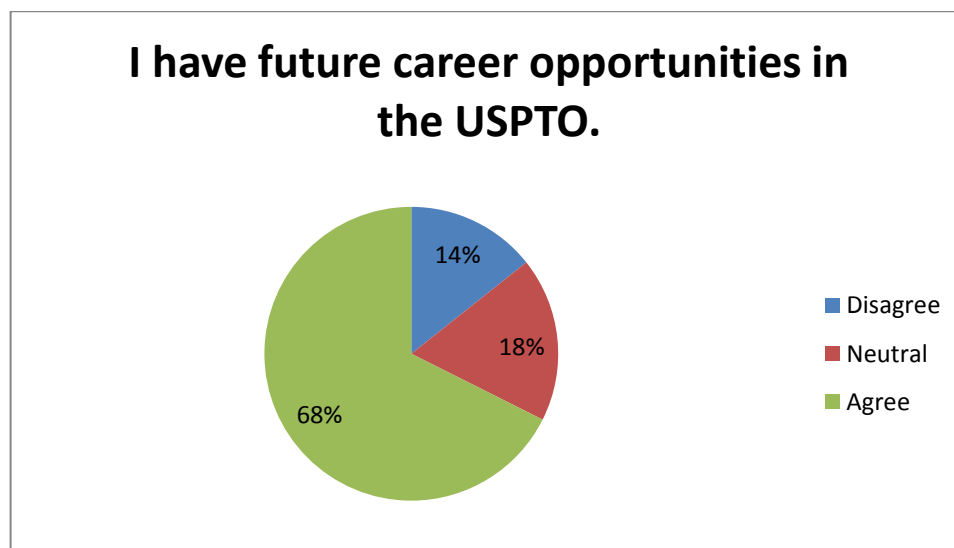


Figure 9

Response to Question #12.11 on the Patent Examiner Survey

As shown in the Figure 9 about 32% of the teleworkers feel they don't have career opportunities in the USPTO. That is slightly more than the response from the patent examiners who work in the main campus, as seen in section 4.2. Offering more career opportunities is one of the ways to motivate and retain employees, especially when it comes to the teleworkers. Otherwise, it would be easier to lose those employees and diminish the chances of promoting those employees to SPEs.

4.1.3 Managerial Perspective

One of the definitions of employee engagement is the emotional connection an employee has toward his or her organization. The purpose of the Managerial Survey was to capture the emotional connection of the supervisors to the USPTO. In the first section of the SPEs survey, we were hoping to see if the supervisors felt committed, proud, respected, and valued by their organization and also to gauge their relationship with and thoughts on their subordinates. The second part of the survey was comprised of open response questions, which we were hoping would show the supervisors' understanding of employee engagement and how they have used engagement techniques in the past to manage the employees for whom they are responsible.

We sent out our supervisor survey questionnaires to all 550+ SPEs at the USPTO, and 32% of them responded to our survey. The responses we received were similar, and they were mostly positive and encouraging to the USPTO. Figure 10 shows the overall result of the survey.

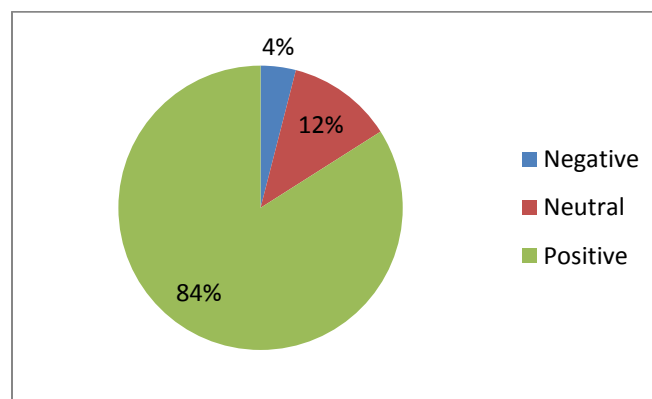


Figure 10

Overall Average Result of the Supervisors' Survey

As shown in the pie chart above, the overall result of the survey, which was calculated after combining the results of each question in the survey, showed an average of 84% positive

responses, 4% negative responses, and 12% neutral answers. This is a promising number for USPTO, and encouraging when it comes to understanding the level of engagement among supervisors in the workplace. Most of these questions in the survey asked the supervisors ‘Are you proud of the work you do?’ ‘Are you trusted with your job?’ ‘Do you understand your role at the USPTO as a whole?’ These were the types of questions that were asked in the survey because they are good indicators of employee engagement. Approximately 90% of the employees had positive responses and low negative responses to these questions.

Even though all of the questions on the survey had high positive responses, some questions had more positive answers than others. Figure 11 below shows the results from the question that asked the managers how committed they are to the quality of their work. This question had the highest number of positive responses (98.3%) and zero negative responses.

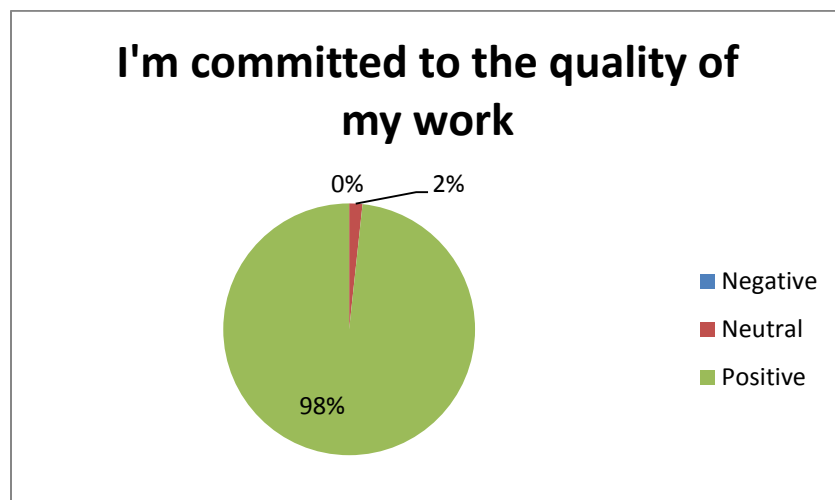


Figure 11

Response to Question #5 on the Managerial Survey

Commitment to work is one of the factors that define employee engagement, which we discussed in detail in Chapter 2. Most of the SPEs at the USPTO feel they are committed to their

work. This is important for the USPTO because having committed workers determines higher performance and higher quality of work. However, there were also some questions that received a less positive response on the survey. The question that asked if supervisors were satisfied with USPTO leadership got the highest number of negative responses (shown in Figure 12).

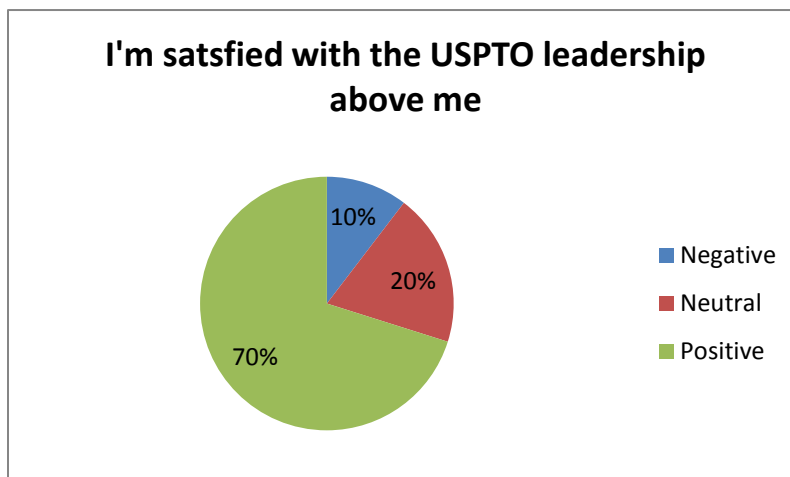


Figure 12

Response to Question #7 on the Managerial Survey

As discussed in Chapter 2, good leadership is necessary for any organization in order to continue to improve its performance. However, according to the survey results, almost 30% of the supervisors at the USPTO are not satisfied with the leadership above them, evident by the combined negative and neutral responses. This is something the USPTO should be concerned about and may need to address the important issues regarding leadership in order to improve employee satisfaction with management.

One way of determining the engagement level among supervisors is by asking them for feedback on their interactions with the employees they supervise. We asked this question to the SPEs to determine if they did anything to identify the engagement level among their supervisees.

As seen in Figure 13 below, this question had the lowest number of positive responses compared to the rest of the open-ended questions in the survey.

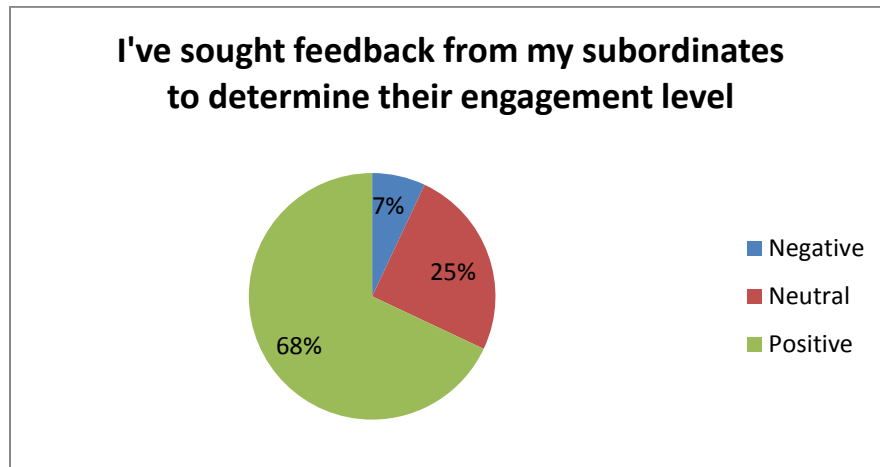


Figure 13

Response to Question #14 on the Managerial Survey

More than 30% of the supervisors at the USPTO do not seek feedback from the employees they supervise. This suggests that SPEs can improve leadership and enhance engagement by recognizing and improving on this shortcoming.

We analyzed the first section of the managerial survey responses according to various demographic characteristics, such as different age groups and genders of the respondents. However, they all had very similar responses and were mainly positive, which led us to the conclusion that the SPEs at the USPTO feel enthusiastic, committed and happy with their job and with their organization no matter what individual characteristics they have. These are the key ingredients that enhance and maintain employee engagement.

One noticeable characteristic in the managerial survey results is the high positive response rates for all questions; it was more than what we were expecting. However, the main

reason for this high positive response rate could be because the supervisors who took this survey have been with the USPTO at least for 5 years. The USPTO prefers to promote from within, and the patent examiners who are promoted to supervisors are the employees who performed well. Therefore the SPEs who took this survey were the employees who did well and have been with the USPTO for years; the majority of the SPEs who took this survey have been at the USPTO for 11-20 years. This suggests that they were the employees who seemed to be happy with the USPTO and decided to stay, and this might be the reason for such a high rate of positive responses. The high positive response rate could also be due to the SPEs taking the survey for the first time. They may have given the normative responses that were very positive because the SPEs thought that the USPTO wanted them to respond positively. However, the only way to know if that is the case is by administering the survey multiple times over a period of years and sees how the answers change. Also, management could respond to some of the suggestions made by the SPEs, which will encourage them to give more honest answers on the surveys.

4.1.4 Managerial Survey Open-Ended Question Responses

In the second part of the managerial survey we included open response questions, through which we hoped to see how much the SPEs know about employee engagement and how they have practiced it in the past. This was important because the supervisors play an important role in enhancing and maintaining employee engagement and it is vital for the USPTO that SPEs understand engagement. About 20% of the SPEs responded and gave their opinions on engagement in the open response section. In the paragraphs below, we will explain the trends we found in the survey responses.

When asked to define employee engagement in their own words, the supervisors at the USPTO had a variety of answers; however, there were some noticeable trends. The supervisors felt that communication was vital to the success of the USPTO and without it, production would suffer. Communication was deemed the best indicator for measuring employee engagement. They felt that employees would not be as engaged without proper communication between themselves and their bosses. Figure 14 below shows the ranking of preferred methods of communication for the supervisors.

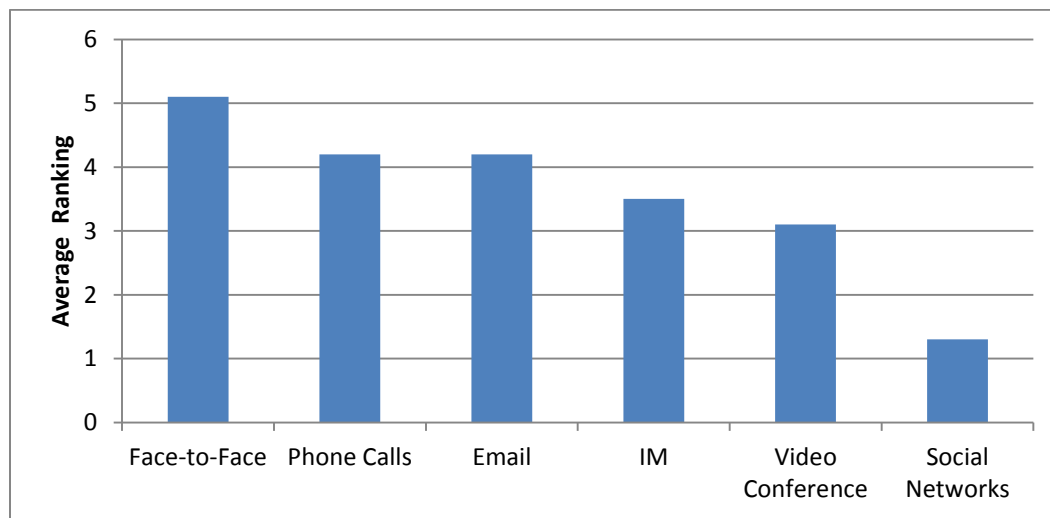


Figure 14

Preferred Method of Communication for SPEs

The first choice in communication method for SPEs is face-to-face, followed by emails and phone calls. This is important data for the USPTO to look at because it shows that the SPEs believe a big part of engagement is communication, and it is important that the USPTO improve and facilitate their preferred methods of communication.

The other main part of defining employee engagement that many of the supervisors agreed on was that examiners needed to be motivated and excited about their work. They argued

that engaged workers are the type of people who like their jobs and submit their work in a timely manner. These are employees who are always willing to go above and beyond, while consistently producing quality work and meeting any time restrictions.

Another open-ended question posed to the SPEs in the supervisor survey was one asking about how the SPEs gauge employee engagement among their subordinates; in essence, they were asked how they determine if the examiners they oversee are positively or negatively engaged. Overall, SPEs reported they use two ways to gauge engagement, depending on the individual SPEs employee engagement definition. About 41% of the SPEs liked to use the level of productivity as a tool to gauge engagement, confirming ideas we had previously formed. We realized that SPEs like to measure something that they can control and can be represented in numbers. Looking at productivity based on the number of approved or rejected patents is an easy numerical way to determine if an examiner is doing his/her job well, and to some SPEs this indicates good employee engagement.

Approximately 56% of the SPEs gauge employee engagement through direct interaction, or communication, as seen in the first open-response question answers. Whether this involves talking face-to-face or communicating over email, phone, or video conference with teleworkers, SPEs like to interact with the examiners to determine if they are engaged. Feedback can be exchanged, and discussion about topics other than work can happen as well. SPEs find that it is easiest to measure engagement with direct interaction and the frequency with which non-work related topics come up in conversation. In the open-ended responses, the theme of communicating and interacting with examiners was much more common than the theme of production and productivity. Even though communication and personal interaction was the preferred method that SPEs use to gauge patent examiner engagement, it brings up challenges

when it comes to teleworkers. In the open-ended responses only 4% of the SPEs mention any initiatives they used to gauge engagement among the teleworkers, so it is important that they develop and expand other forms of communications, such as emails and video conferencing, in order to engage the teleworkers.

The survey additionally asked the SPEs what they would consider to be the best way to measure employee engagement, or what metric could be implemented in the future. The open-ended responses show that about 60% of the SPEs would encourage face-to-face communication and interaction to measure engagement, which are methods they used in the past to measure engagement. They also mentioned looking at the productivity and ability of the individual examiners to excel in their careers. The measurement of productivity was further defined as the use of docket management, which measures the quality and amount of work being produced by examiners.

Another question that the managerial survey's open-ended section asked the SPEs was what kind of initiatives geared toward increasing engagement were they a part of. Figure 15 below shows the engagement initiatives the SPEs have used in the past.

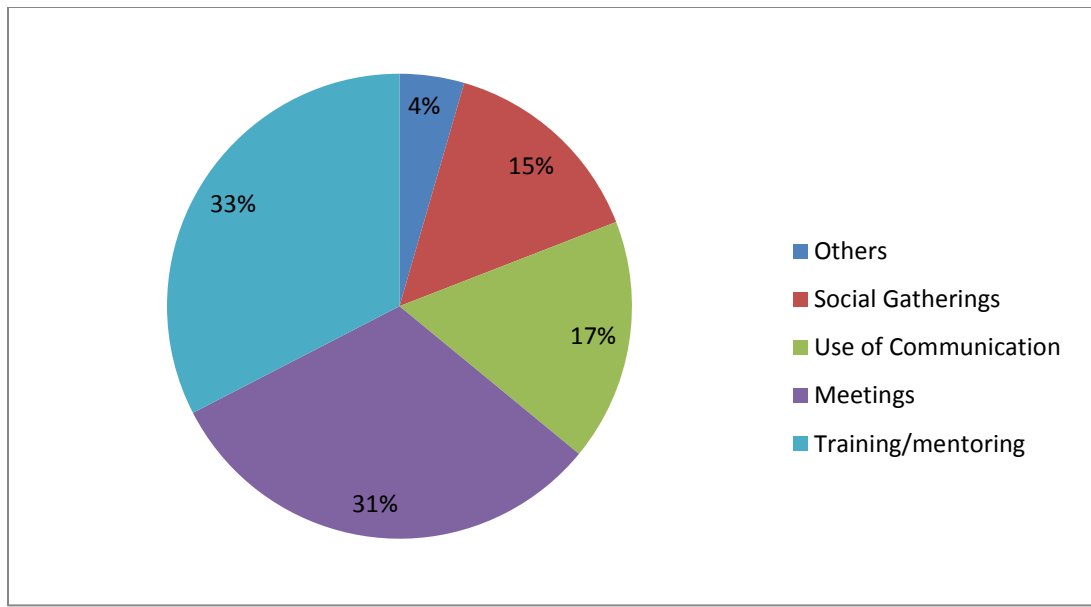


Figure 15

Response to Open-Ended Question #2 from the Managerial Survey

The responses we received showed a few common themes, however the most supported initiative participated was training and mentoring new employees. About 33% of the SPEs mentioned the importance of mentoring the new employees and helping them with career development as well as adapting to the USPTO environment. These mentoring and training initiatives involved management conference classes, working one-on-one with the employees in order to help them improve their quality index, giving older employees the opportunity to train junior examiners, and recognizing expertise and enhancing interaction based on expertise. About 31% of the SPEs also mentioned holding meetings with the employees in their technology centers in order to increase engagement. These meetings were both formal and informal; SPEs met with their examiners for lunch or weekly to help them with their work and be involved in their personal life. Informal meetings were also conducted by the SPEs in order to increase interaction among the employees; they mentioned a lot of social gatherings, such as happy hours,

birthdays, holidays, and community days. Additionally, some SPEs hold one-on-one interviews and focus groups with their employees seeking feedback on their work as a manager.

The other main initiative that 17% of the SPEs mentioned was the use of communication. These communication methods involve having open door policies in order to increase communication and encouraging their employees to come to their office and interact with them. The SPEs also mentioned adapting to their employees preference of communication, since some employees prefer IM rather than phone calls. However, as previously mentioned, these methods become challenging when it comes to teleworkers. We found very few responses on initiatives they took to increase engagement among the teleworkers. We also found that the SPEs mentioned very few other important engagement initiatives, such as recognizing employees, trusting employees, and giving their employees more responsibilities. These are important engagement initiatives that will allow the employees to feel valued in the organization. It is also important that the SPEs personally acknowledge their employees for the work they are doing.

Additionally, the survey asked the supervisors how they gauged the success of initiatives put in place to improve employee engagement. The supervisors seemed to agree that the most important measure of success at the USPTO is an examiner's productivity, and therefore, performance. This includes having good attendance and meeting their assigned goals. The SPEs' argument stated that if an employee was not engaged or coming into work, he or she would not be producing at the desired level, and their performance would suffer. SPEs use biweekly reports, as well as looking at each examiner's production over pay periods, quarters and whole fiscal years. In addition, about 45 % of the supervisors measured the levels of success of initiatives of employee engagement through communication with their subordinates and co-workers. Many of the supervisors ask employees for feedback on ways to improve, through

surveys, face-to-face interviews or meetings. A final way to gauge the success of employee engagement, which about 32% of the supervisors agreed upon, was to see the success through observing their employees. They claimed that a useful measurement of engagement is an examiner's attitude. When examiners seem excited and in a good mood, they are much more engaged and motivated.

The overall theme we found in many of the responses was that about 41% of the SPEs who responded to the open-ended survey questions view performance as the main indicator of employee engagement. However, that is not entirely true. Indeed, performance is one of the indicators of engagement, but it is not the most important one. An employee can perform well and dislike his or her job at the same time, and that is not the ideal work place the USPTO is trying to create. Therefore, it is important that the SPEs understand the other aspects of engagement in order to enhance and maintain employee engagement at the USPTO.

4.1.5 Employee Viewpoint Survey Responses

The EVS is distributed to all federal agencies, making it a standardized assessment tool when comparing one agency to another. The EVS encompasses seventeen categories that questions are sorted into, and the agency is scored on. In order to make the most out of the employee engagement questions asked of the USPTO employees, our team analyzed the results from three different measurements.

The first measurement is the USPTO's overall average index score for 2011. This index score is compared to the overall average index score of the entire Department of Commerce (DOC). The USPTO's overall index score for 2011 was 74.1 points, which was an increase of 6.6 points from 2010. In comparison, the overall DOC index score was 67.5, which was a one

point decrease from 2010. This increase shows that employees at the USPTO are more engaged when questioned in 2011 as opposed to 2010, which was not true in the case of the DOC overall. We recognize that the DOC overall average encompasses more than one agency; however, it is important to compare the USPTO to its peers when analyzing the EVS data.

The second measurement was the analysis of the three lowest scoring categories from 2010 to 2011. The lowest scoring categories in 2010 were Performance Based Rewards and Advancement Satisfaction, Strategic Management Satisfaction, and Effective Leadership Satisfaction. We looked to see if there was any kind of change in these categories. We found that there was no increase from 2010 to 2011, which is not favorable. The USPTO should make it its goal to increase in every category each year, as each of these categories scores lower than the DOC average.

The last measurement addressed by the USPTO refers to the three key drivers of engagement as defined by the USPTO: Employee Skills/Mission Match, Effective Leadership, and Pay Satisfaction. Because these three categories are seemingly the most important to both the employer and employees, we looked for the scores from these three categories to increase from year to year. All three scores did increase from 2010 to 2011, which is encouraging to the USPTO, as it gives sufficient support to claims that the USPTO is employee-oriented, and working to keep employees happy and engaged.

4.1.6 Data-Based Engagement Indicators

Along with the data we received from the surveys that addressed how employees felt about the USPTO, we also discovered that the number of hours employees were missing from

work due to sickness had dropped for three consecutive years. Currently, the level is at a five year low, as seen in Figure 16 below.

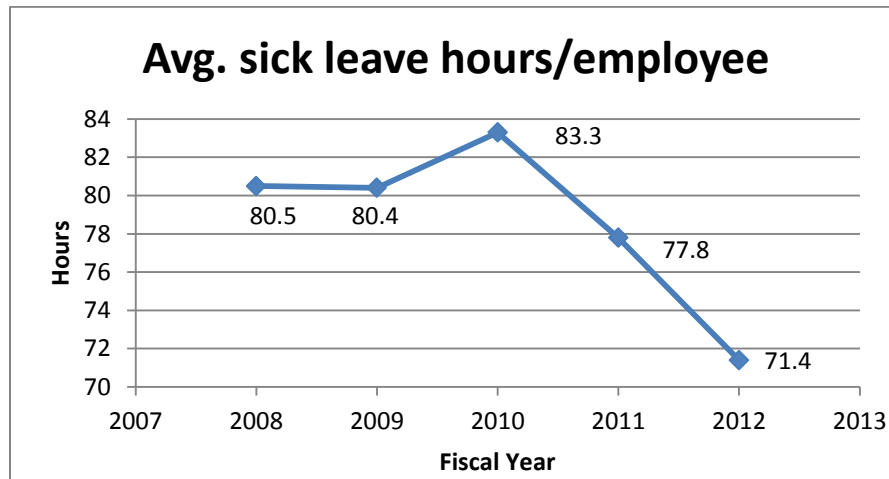


Figure 16

Average Sick Leave Hours Taken Per Employee Per Year

This five year low can probably be attributed to employees being able to work from their homes and having more flexible hours to do so. A reduction in the rate of sick leave taken per employee is a positive indicator for the USPTO because it means that employees are more engaged in their work, which can enable employees to increase the amount of work they accomplish.

Another positive result we found for the USPTO was regarding its attrition rate. The attrition rate is fairly high for new workers; however, once a worker has worked at the USPTO for more than two years, the rate drops dramatically. As seen in Figure 13, the rate for veteran workers at the USPTO is much lower and continues to decrease after five years of employment.

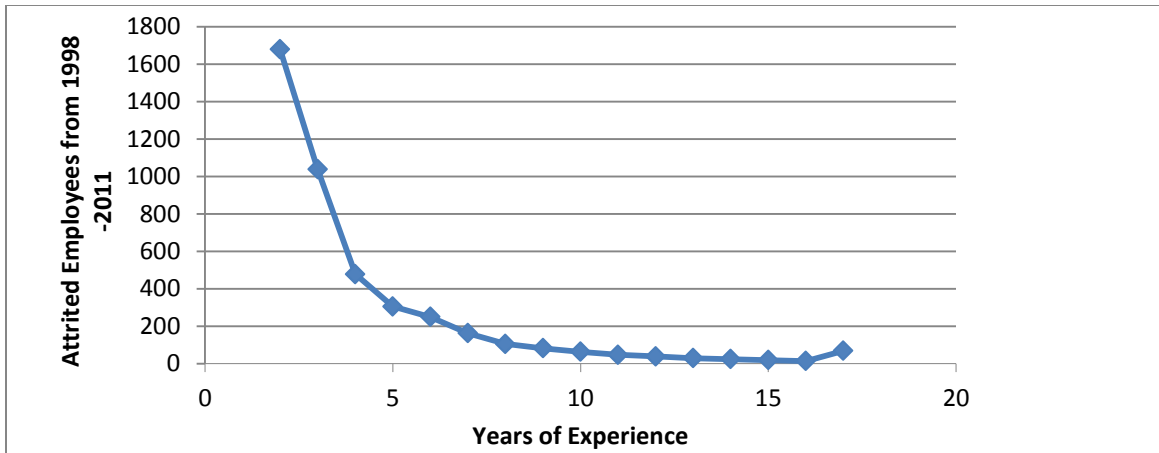


Figure 13

Employee Attrition Rates from 1998-2011

This means that if the worker stays past the initial training stages that take up to two years, he or she is likely going to stay for a long time. The USPTO needs to work to make sure newer employees enjoy their work so they are less likely to leave. With more experienced and successful workers, the USPTO can perform at higher levels. Until now the USPTO has been losing a significant number of employees in the first two years of employment, so this is an area needing improvement.

4.2 Factors Working Against Engagement at the USPTO

The question that raised the biggest concern was when patent examiners were asked if they are passionate about their job (question number 5 in Appendix C). The agree-to-disagree ratio of respondents was only a little more than 4 to 1, which is below the USPTO's accepted 5 to 1 ratio, as shown in Figure 18.

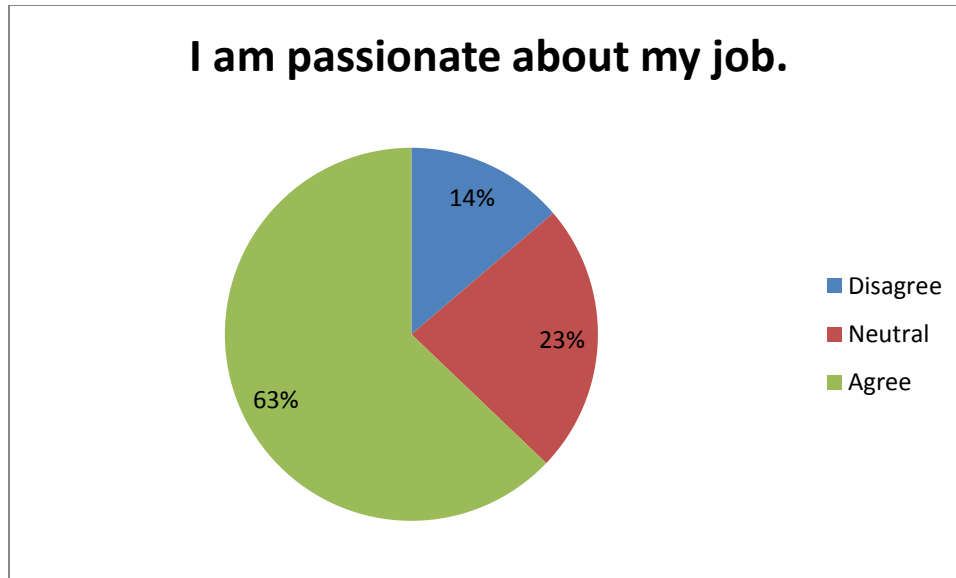


Figure 18

Responses to Question #5 on the Patent Examiner Survey

While only 14% disagreed, nearly a quarter of the employees were only neutral. This is concerning for the USPTO because employees who are not excited and passionate about their jobs are not as engaged as they could be. Further examination into the issue reveals that the longer an employee is at the USPTO, the more passionate he or she is about the job. Our survey results showed that the older the employee is, the more likely that he or she is passionate about the job while working at the USPTO. We also found that the most passionate workers were the ones who had been working at the USPTO for 11 to 20 years, followed by the workers who had been there for less than a year. However, the workers who have been at the USPTO from 1 to 4 years had the lowest level of passion. This is telling because the attrition rate is the highest for workers who have not been working at the USPTO for a long time. The USPTO needs to find ways make these examiners enjoy their work more so they are more likely to stay.

The only other cause for concern resulting from the patent examiner survey was the question where examiners were asked if they believe they have a future career with the USPTO

(question number 11 in Appendix C). The agree-to-disagree was only slightly above 5 to 1, as shown in Figure 19.

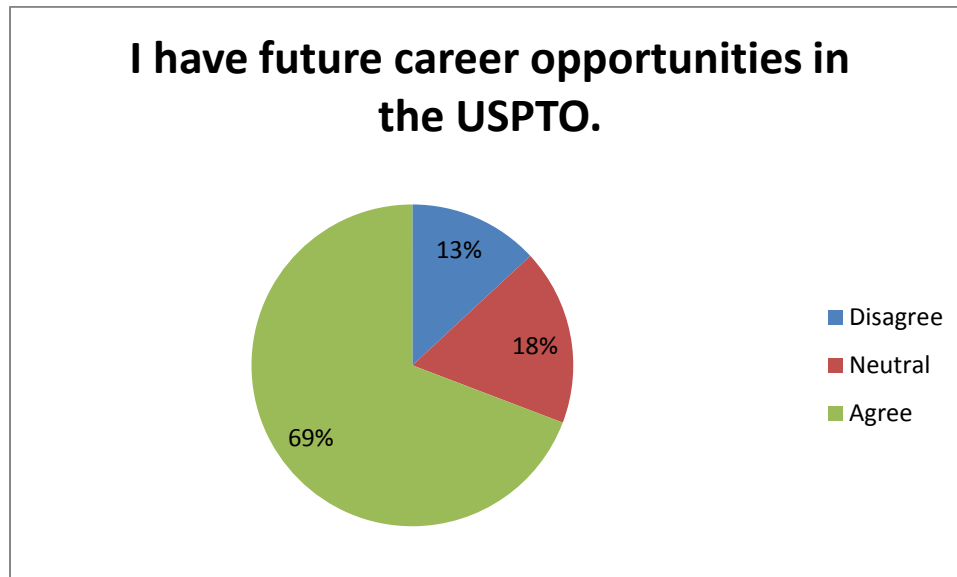


Figure 19

Responses to Question #11 on the Patent Examiner Survey

The average positive-to-negative response ratio for other survey questions was nearly 20 to 1. Over 30% of the workers feel neutral or disagree about the fact that they have a future with the USPTO. Workers may not be as engaged when they do not see themselves as having future opportunities for career advancement in the USPTO.

The EVS results revealed some other discouraging data about the USPTO's engagement levels. The USPTO ranked far below average in the strategic management category in 2011, which measures employees' faith and trust with their superiors, as seen in Figure 20.



Figure 20

Strategic Management Satisfaction Score

This statistic reveals that employees are not confident in their managers and are not satisfied with their managers' strategic visions for the future of the USPTO. While the number of satisfied employees is over 55%, it is still much lower than average and needs improvement.

4.3 Stakeholders' Metric System Input

It was vital to the development of the point based metric system to determine what categories the USPTO employees viewed as important indicators of engagement. One way we gathered opinions about an early draft of the point system was to conduct a focus group with the SPEs. The original protocol was cut short due to the direction of the discussion, which was dominated by a few vocal participants. The SPEs were very determined to make production the main indicator of engagement in the system. We tried to have the SPEs come up with different

categories that could indicate engagement in our proposed system since they did not agree with ours, but they only reiterated two of our categories, specifically recognition and performance. When the packets mentioned in the protocol in Appendix A were collected and analyzed after the focus group, the category weights and reasons the SPEs gave were much more comprehensive, although production was ranked at over 50% by the majority of the eleven SPEs. The use of surveys to gather opinions of employees was also a major contested point. The vocal SPEs did not quite understand the need for employee opinions in an employee engagement measurement system and in the PEET employee engagement definition, and the SPEs wished the quantitative data to be emphasized. We determined that the dislike for obtaining employee opinions as an indicator of engagement and the PEET definition of engagement stemmed from the emphasis the SPEs' jobs places on productivity.

Our liaison, Mr. Dwyer, recommended that we speak with Mr. Martin (Marty) Rater, the statistician at the USPTO, about our metric system prototype and to gather a wider range of opinions. While we had hoped that Mr. Rater would be able to help better define how we should weight each engagement category, we found during our meetings (see Appendix F for meeting notes) that Mr. Rater could offer us much more than that. During our discussions, Mr. Rater raised the valid point that it is important that a metric system be flexible. Engagement is an extremely fluid topic comprised of many different indicators, and the system that we create must reflect that in order for it to be successful. In addition to raising many helpful and valid points, Mr. Rater has created different metric systems for the USPTO before, such as one to measure quality among approved patents, and he was able to help us identify the key pieces that should be included as categories in our engagement metric system. He also recommended the addition of the productivity and recognition category, which as seen in the focus group, was an extremely

important indicator of engagement in the eyes of the SPEs. With Mr. Rater's guidance, we were able to create a weighting system for each category.

After reviewing the opinions presented in the focus group and interviews with Mr. Rater, we identified a few common themes. First, the supervisory patent examiners were focused on what they can control. The patent examiners, whom the SPEs are in charge of, are the main contributors to production. Production leads to recognition, whether of the patent examiners or of the SPEs who are successful managers because their subordinates are successful. We decided to take the opinions of the SPEs into account, but not to put specific emphasis on them since the views of the SPEs were biased by their job description and duties, which was to be expected. Second, since Mr. Rater has helped the USPTO create a variety of metric systems, his ideas ended up being a major contributor to the final metric system. Due to these influences from the SPEs' unexpectedly strong opinions, we increased the weight of production and recognition from the first draft of the point system.

4.4 Determination of the Metric System Weights

As stated before, the USPTO's definition of employee engagement is: "the interactive relationship an employee has with the people and the work of the USPTO. This relationship is the connection through which the employee feels valued, is committed, and is empowered to perform his or her duties with a sense of purpose, satisfaction, and pride" (USPTOd, 2012, p. 8). This definition, along with other definitions that the team came across in our research, emphasize that engagement is based on how an employee feels. While quantitative numbers and metrics can indicate that there is a generally positive atmosphere and that benchmarks are being met, numerical data do not convey an employee's opinion. Setting and meeting benchmarks is

important, and without reaching these agency goals, positive employee engagement is extremely difficult to obtain because the company as a whole will be focused on meeting benchmarks instead of engaging employees. It was therefore very important to combine quantitative data, agency benchmarks, and employee opinions and attitudes in our metric system. However, the feedback from individual employees about how satisfied they are and how they feel is emphasized most in the point system because it is the employees' feelings that dictate the actual engagement level.

The metric system we proposed for measuring employee engagement is shown in Figure 21. It is a point-based system, or a system that uses a total of 100 points and divides them up among the categories according to the predetermined importance and percentage weight.

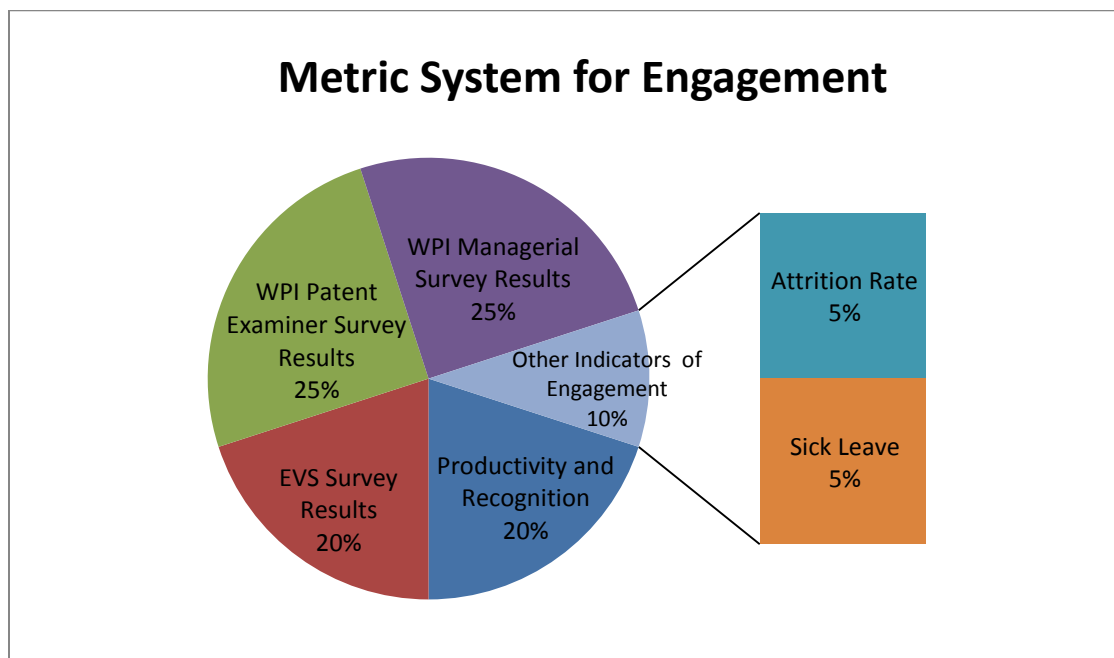


Figure 21

Metric System for Engagement Breakdown

The point system weights are intended to be fluid, with the potential for emphasis and weights to change as the USPTO's goals and objectives change with respect to employee engagement.

Based on research we conducted on various indicators of engagement, the team determined which categories were the most important. The following section explains the team's reasoning behind each section of the flexible point system weights; the methods for implementing the system to calculate the employee engagement score are described below in section 4.5.

4.4.1 Reasoning for Other Indicators of Engagement Category

The category with the least amount of weight is the category entitled Other Indicators of Engagement. These are important indicators but are those that were determined to be of lesser importance. Quantitative data is important, but employee engagement is defined to be based on employee opinions, so in the metric system more weight is given to the opinion based categories. The first portion of this category is attrition rate. If employees enjoy the jobs they are assigned, they are much more likely to stay with the agency for a longer period of time. The relationship between attrition rate of recent hires and long term employees seen in Figure 17 earlier is also consistent; this can be due to the economy or simple trends in the typical USPTO attrition rate. Though important to employee engagement, attrition rate is not a direct indicator and is also relatively consistent, so it was only allotted 5% of the total points in the team's version of the system. The second portion of the Other Indicators of Engagement category is sick leave taken per employee. While sick leave is an important indicator of engagement, it was only given 5% of the total points available due to the USPTO's teleworking and hoteling programs and the possibility of an unengaged employee being present to keep personal production and pay at a maximum.

4.4.2 Reasoning for Production and Recognition Category

As mentioned before, productivity is very important to employees, managers, and the USPTO as a whole. The purpose of the office is to quickly and accurately approve patents for the general public. If this mission is not fulfilled, it is difficult to focus on employee engagement. Discussions with managers themselves reinforced the idea that a high productivity is vital to the office and employee engagement to an extent. Production is therefore included in the point system. The high importance of performance to the USPTO, along with the influence on various opinions and feelings, makes it necessary for the category to be separate from the Other Indicators of Engagement Category. However, since production is quantitative orientated indicator and therefore not directly based on opinions from the employee pool, it is a smaller portion of the system when compared to the survey results categories.

Another indicator that is heavily tied to production is recognition. Employees want to be rewarded and recognized for exceeding job expectations and achieving high productivity. A higher rate of monetary awards and other incentives awarded to employees will help increase overall satisfaction; it will not fix engagement, but it will definitely help engagement stay positive. The recognition category is combined with productivity because the employees who are the most productive are the employees who are receiving awards from the agency. However, it is not its own section because quantitative data such as the number and amount of monetary reward does not always indicate positive employee engagement. The two patent review completion-based categories, recognition and productivity, combine to create 20%.

4.4.3 Reasoning for EVS Survey Results Category

The EVS covers a multitude of engagement factors such as employee skills/mission match, satisfaction with leadership, satisfaction with pay, etc. It is also administered by an outside source and analyzed by another outside source, so there are no biases in favor of the patent office. The range of topics and being covered through an outside source places a high importance on the EVS, but the weight for the category is capped at 20% in the team's version of the point system because the USPTO cannot ask questions pertaining to the agency's specific goals. The EVS questions also have a potential to change from year to year, which the USPTO cannot control; this further emphasizes why the weight of the EVS Survey Results category is capped at 20% of the point-based metric system.

4.4.4 Reasoning for the WPI Patent Examiner Survey and Managerial Survey Results Categories

One survey created for the patent office by the WPI team was the survey for patent examiners. This survey asks questions that are directly about engagement. It also gathers feedback specifically on the examiners opinions (v. other employees such as SPEs or support staff). The USPTO can also edit the questions and have control over the wording for use in the future to suit their needs. Among these strong positives for weighting the WPI Patent Examiner Survey strongly, one potential limitation is that the USPTO will have to identify resources to collect and analyze the data in future years after the WPI team leaves if they wish to have a third party analyze that data. The focus on employee engagement and the ability to control the questions leads the weight of this category to be 25%.

Similar to the patent examiner survey, the managerial survey directly asked about engagement and interactions between SPEs and patent examiners. These interactions are vital to keeping patent examiners engaged. The survey also collects feedback on the SPEs' opinions and ideas, which cannot be accessed otherwise unless the SPEs are interviewed or participate in focus groups. Similar to the patent examiner survey, the patent office can change questions in the future to suit their needs though the same bias, the bias from an agency measuring its own statistics that are trying to be improved, is also present. The importance of the managerial survey is equal to that of the patent examiner survey because it gathers opinions directly from the other group of people affected by positive examiner engagement, the SPEs, so it also has a weight in this version of the point system to be 25%.

4.5 FY 2012 Engagement Baseline

Each category of the metric system has its own individual criteria for how that category is measured and graded. While the system is flexible and the weights given to each category may change from year to year, the criteria for grading each category will remain relatively the same. In some categories, the multiplication or division factor will change, but it will be very small and easy to accommodate change. Please refer to Appendix G for a more detailed outline of each category's grading system.

4.5.1 Other Indicators of Engagement Category

The attrition rate point system begins with a total of 5 points (derived from the category's weight of 5%). First, we identified the current year's average attrition rate. Next we subtracted the average attrition rate from the 5 points allotted to the category. This resulting number is the

score for the attrition rate category. This score may be negative, depending upon the average attrition rate, as seen in the example in Appendix G. We recognize that attrition can be affected by economic factors; therefore allowing the score to be negative can accurately represent that particular year's attrition rate.

In the metric system we created for FY 2012, attrition rate received a score of 1.93 out of a possible 5 points. The average attrition rate out of all USPTO employees from October 2012 to September 2012 was 3.07%. We took the 5 points allotted to attrition, and subtracted 3.07 from it. This resulted in the score of 1.93 points in this category.

Total Points for Attrition Rate: 5
2012 Attrition Rate: 3.07
$5 - 3.07 = 1.93$
Attrition Rate Score: 1.93

The process for calculating the sick leave category score begins with 5 total points. We first calculated the average number of sick leave hours taken per employee, by dividing the total number of sick leave hours taken in the past year by the number of employees. This average of sick leave hours taken per employee was weighted by 5%, through multiplying it by 0.05. The result of this multiplication was subtracted from the category's five points, to calculate the sick leave category score.

For the sick leave portion of the Other Employee Engagement Indicator category, 1.43 points out of 5 were earned. In 2012, the average sick leave taken per employee was 71.4 hours. We multiplied 71.4 by 5% (or 0.05), which gave us 3.57. We then subtracted 3.57 from 5, resulting in the final score being 1.43 points.

<p>Total Points for Sick Leave: 5</p> <p>2012 Average Sick Leave Hours/Employee: 71.4</p> $71.4 \times 0.05 = 3.57$ $5 - 3.57 = 1.43$ <p>Sick Leave Score: 1.43</p>
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4.5.2 Productivity and Recognition Category

The performance portion of the productivity and recognition category carries a total of 10 points. We first identified the percentage of employees that performed at or above 110% productivity. We took this percentage of employees and divided it by 10, converting the percentage out of 100 to points out of 10.

A total of 1.92 points out of 10 possible points were earned for the performance portion of this category. In 2012, 19.2% of employees performed above average, or above 110% productivity. The percentage, 19.2, was then divided by 10, giving the final score of 1.92 points.

<p>Total Points for Performance: 10</p> <p>% of Employees Performing Above Average (110%): 19.2%</p> $19.2 / 10 = 1.92$ <p>Performance Score: 1.92</p>

The recognition category was divided evenly (5 points each) between monetary awards and non-monetary awards. The calculations for both monetary and non-monetary awards are the same. We first found the percentage of employees that received monetary awards in a given fiscal year. We then multiplied the percentage by five in order to weight it according to its category. The result of this multiplication was then divided by 100 to change the percentage to the category score in terms of points.

In the case of FY 2012, 3,240 employees were recognized monetarily. When divided by the total number of employees at the USPTO, this translates to 41.78% of employees. This percentage was then multiplied by five, and then divided by 100 to take it out of the percent form. This leaves the final score for the monetary recognition category to be 2.08 points out of a possible five points.

<p>Total Points for Monetary Recognition: 5 % of Employees Who Received Monetary Awards in FY 2012: 41.78 $(41.78 \times 5)/100 = 2.08$ Monetary Recognition Score: 2.08</p>
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Out of all the employees at the USPTO, 316 were recognized non-monetarily during FY 2012. This translates that 4.07% of all USPTO employees were recognized. However, only long term employees are qualified to be recognized through the Docket Management Recognition System, so the pool of potential awardees was much smaller than that for monetary awards. We took this percentage, multiplied it by five, and then divided by 100 in order to take it out of its percentage form. The final score for this section of the recognition category is computed to be 0.2 points. The calculation of this category may need to be re-evaluated to reflect the smaller pool of eligible employees.

<p>Total Points for Non-Monetary Recognition: 5 % of Employees Who Received Non-Monetary Awards in FY 2012: 4.07 $(4.07 \times 5)/100 = 0.2$ Non-Monetary Recognition Score: 0.2</p>
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4.5.3 Employee Viewpoint Survey Category

The EVS category was worth a total of 20 points. These 20 points were divided into three major measurements. The first compares the overall USPTO Index Score to the DOC Index

score, and is worth two points. If the USPTO index score increases by one to three points from the previous year, one point is awarded. If the USPTO index score increases by four or more points than the full two points for the measurement are awarded. The next measurement identifies the three lowest categories from the previous years. If all three increase, then two points are awarded. If only two categories increase, one point is awarded, and if only one category increases, then 0.5 points are awarded. The final measurement required a comparison of the 2010 and 2011 scores in the key drivers to engagement: Pay Satisfaction, Employee Skills/Mission Match, and Effective Leadership. This measurement is worth a total of sixteen points, which were broken down in the following manner. If there is an increase in Pay Satisfaction, four points are awarded. If there is an increase in Employee Skills/Mission Match, six points are awarded. Lastly, if there is an increase in Effective Leadership, six points are awarded. Our metric system looks to reward any improvement in these three categories, thus there is no graduation of the scores for the categories. These three categories were weighted unequally, due to the ability of the USPTO to control the outcome of each. Employee Skills/Mission Match and Effective Leadership are given a higher point weighting than pay satisfaction because these two categories embody the definition of employee engagement as provided by the PEET. Pay Satisfaction, while recognized as a key driver, is not something that can be controlled or improved upon by SPEs or even USPTO Directors. Additionally, it is more likely that a person will continually respond that they are unhappy with their level of pay, with the hopes that they will be additionally compensated for their work. This is not true when responding to the Employee Skills/Mission Match and Effective Leadership categories.

The points awarded for each measurement were tallied to give the final score for the EVS category. No points were awarded in any measurement for a decrease or if there is no change,

because the content of the EVS is not controlled by the USPTO and our metric system was designed to encourage improvement, not to penalize the entire system heavily for something that cannot be controlled in-house.

A total of 18 points were received for this calculation EVS category. Because the USPTO index score increased from 2010 to 2011 when compared to the DOC, the full two possible points were awarded for that measurement. The second measurement involved comparing the scores of the three lowest categories from 2010 to those categories' scores in 2011. The lowest categories compared were: Performance Based Rewards and Advancement Satisfaction, Strategic Management Satisfaction, and Effective Leadership Satisfaction. All three of these categories either decreased or stayed the same, meaning no points were awarded for this measurement either. There were increases seen across the board in the final measurement, the USPTO key driver categories, earning it 16 points.

Total Points for EVS: 20
Index Score Increase: 2 Points Awarded
2010's Three Lowest Category Scores Increase in 2011: 0 Points Awarded
Employee Engagement Key Driver Categories Increase from 2010 to 2011:
16 Points Awarded
$2 + 0 + 16 = 18$
EVS Score: 18

4.5.4 WPI Team Patent Examiner Survey Category

The WPI Team Patent Examiner Survey Category is worth 25 points. In order to analyze individual categories on the survey, we placed each close-ended question into one of the three following sub-categories: Job Pride, Communication with Supervisors, and Empowerment. Job Pride is worth nine points, Communication with Supervisors is worth seven points, and Empowerment is worth nine points. The Job Pride and Empowerment categories are weighted

more than the Communication with Supervisors category because both Job Pride and Empowerment are identified in the PEET's definition of employee engagement. Each sub-category is calculated by finding the percentage of positive responses to the questions encompassed by that sub-category. This percentage is then multiplied by the number of points allotted to that sub-category. The result of this multiplication is the score for that sub-category. All three sub-categories are added together once each score is complete to find the total score for the overall category. The sub-categories and the questions they encompass can be found listed in the WPI Team Patent Examiner Survey Results section of Appendix G.

Out of a possible 25 points, 20.3 points were awarded for the Patent Examiner Survey category. The percentage of positive responses for the questions in the Job Pride sub-category was 84%, translating to 7.6 points out of 9. Positive responses tallied 79% of all the responses for the Communication with Supervisors sub-category, resulting in 5.5 out of 7 points being awarded. The Empowerment sub-category had an 80% positive response rate, which earned 7.2 out of 9 points. Adding the scores for the three sub-categories resulted in the final score of the Patent Examiner Survey category.

Total Points for Patent Examiner Survey: 25
Job Pride Score: 7.6
Communication with Supervisors Score: 5.5
Empowerment Score: 7.2
$7.6 + 5.5 + 7.2 = 20.3$
Patent Examiner Survey Score: 20.3

4.5.5 WPI Team Managerial Survey Category

The calculation of the WPI Team Managerial Survey Category score is very similar to that of the WPI Team Patent Examiner Survey Score. The close-ended questions were sorted into

three sub-categories: Job Pride, Interactions with Subordinates and Empowerment. Job Pride is worth nine points, Interactions with Subordinates is worth seven points, and Empowerment is worth nine points. Again, Job Pride and Empowerment are weighted more heavily than Interactions with Subordinates because they directly correlate with the PEET's definition of employee engagement. Each sub-category is calculated by finding the percentage of positive responses to the questions encompassed by that sub-category. This percentage is then multiplied by the number of points allotted to that sub-category. The result of this multiplication is the score for that sub-category. All three sub-categories are added together once each score is complete to find the total score for the overall category. The breakdown of what question belongs in which sub-category can be found in Appendix G.

The baseline score for the Managerial Survey category was 18.8 points out of a possible 25. 61% of SPEs positively responded to the Job Pride sub-category questions, translating to 5.5 points out of 9 being earned. Out of all the responses to the Interactions with Subordinates sub-category, 77% were positive, resulting in 5.37 out of 7 points awarded. Lastly, 89.6% of responses were positive to the Empowerment sub-category, earning 8 out of 9 points. The three sub-category scores were added together resulting in the final score for the Managerial Survey Category.

<p>Total Points for SPE Survey: 25 Job Pride Score: 5.5 Interactions with Subordinates Score: 5.3 Empowerment Score: 8 $5.5 + 5.3 + 8 = 18.8$ Managerial Survey Score: 18.8</p>
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4.5.6 Baseline Employee Engagement Measurement

In order to determine the final index score for employee engagement in FY 2012, we had to combine the scores from each category. This is demonstrated in Table 2 below.

Table 2
Employee Engagement Index Score FY 2012

Category	Score
Attrition Rate	1.93 / 5
Sick Leave	1.43 / 5
Productivity	1.92 / 10
Monetary Recognition	2.08 / 5
Non-Monetary Recognition	0.2 / 5
EVS Results	18 / 20
WPI Team Patent Examiner Survey	20.3 / 25
WPI Team Managerial Survey	18.8 / 25
TOTAL:	65 / 100

The FY 2012 index score is 64.66, rounded up to 65 out of 100. It is important to note that this is the baseline for engagement measurements for future years. This is a starting point for the USPTO to refer back to when calculating future index scores.

4.6 Results Summary

The development of the metric system to measuring employee engagement at the USPTO was a challenging process. Each category included was carefully scrutinized to determine which would be the best weight for each indicator. Once all the indicators were weighted and a grading

system for each category developed, we received feedback from the USPTO statistician and SPEs through the use of interviews and a focus group. These interviews and focus group gave the employees at the USPTO the opportunity to make important suggestions, which were taken into account as we finalized the metric system.

The two most heavily weighted categories, the WPI team surveys, were the main indicators used to analyze employee opinions of engagement at the USPTO. These surveys were reworked numerous times by our team as well as by members of the PEET in order to gather the most meaningful data. The creation of our metric system would not have been possible without the implementation of these two surveys.

Our metric system provides the USPTO with one final index of employee engagement at the USPTO. By gathering the data for the FY 2012 engagement score, we are able to provide the USPTO with a baseline measurement of employee engagement calculated with our system. This will allow the PEET to look back on the score and see in what categories the USPTO changes from year to year. The development of this system as a fluid model will additionally allow the USPTO directors and supervisors to sit down at the beginning of every fiscal year and adjust the system's categorical weightings depending upon which aspects they consider to be important that year. If the weightings are changed, however, the index must be recalculated with the previous year's category weighting so that the index results are comparable from year to year. The following chapter will outline the main conclusions that our team came to after developing the point-based metric system. It also contains our recommendations for the future use and implementation of this system.

5.0 Conclusions and Recommendations

After developing a system of metrics for measuring employee engagement at USPTO and utilizing it to produce an employee engagement baseline, we have identified some conclusions and recommendations based on our developmental process as well as the feedback we have received along the way. This chapter highlights our most important conclusions as well making some recommendations that will help the USPTO carry the metric system into the future.

5.1 The USPTO's Baseline Engagement Data is Encouraging

It is essential to note that our employee engagement metric is based around the idea of improvement and for the USPTO to establish a high level of employee engagement; most importantly, it will help the office to keep striving to improve scores from year to year. The metric system is dynamic, as opposed to static, so focus can be placed on newly arisen weak areas. The system can both reward the USPTO for its advances, as well as penalize it for lack of success, thus pushing it to improve.

Since the metric is newly created and has never been implemented before, the biggest limitation at present is that there is no way to conduct a score comparison from other years. Some categories can be compared, such as the EVS data and sick leave information, because the information is available. However, with half of the total score coming from the WPI Team surveys, it is impossible to provide scores for previous years.

Another constraint the USPTO faces is the response rate from the managerial and patent examiner surveys. Improvements can be made to the response rates we received, and the improvement would be very beneficial to the accuracy of the point based metric system. As the

surveys are used more frequently, the response rate will hopefully increase, and as such will not be as much of a constraint to the accuracy of the metric system.

We recommend implementing the use of the point based metric system for at least five years to determine the effectiveness of the system and the degree to which engagement can be improved. After use for multiple years, the USPTO will be able to compare its final scores to our baseline score and see where improvements. While this year's score of 65 out of 100 may initially seem low, it is important to note that this gives much room for improvement.

5.2 The Point System is the First of its Kind at the USPTO

The information gathered from various sources leads us to conclude that our version of the point system is the best it can be for this year since it is the first time the USPTO has used a system to measure engagement. Overall, the point based metric system was able to successfully provide a baseline employee engagement score so that employee engagement at the USPTO can be tracked in the future. In order to continue to respond to feedback and improve the point based metric system, we recommend that the point system be kept flexible. Flexibility allows for the category weights to be changed. If, over time, some categories are found to be better indicators than others, then the weights of each should change accordingly to reflect the up-to-date findings.

Flexibility will lead to changing category weights and we recognize the change in weights will not allow comparison to the past years' engagement scores. We therefore recommend that the PEET use the current year data in the FY 2012 calculation system in order to compare the engagement score to our baseline score. All data will be present after FY 2012, so from the baseline forward recalculation of previous years' scores will be a relatively simple task.

We further recommend that an annual meeting be held by the directors and other executives of the USPTO to determine the most accurate weights for the following fiscal year's point system. Annual meetings will allow all executives to have input on the direction of employee engagement so that the main goals of the USPTO can be reached.

Lastly, we recommend that the USPTO look at the 2012 EVS results once they become available. The current engagement score provided by the point based metric system uses 2012 data in all categories except the EVS, because the EVS data for 2012 were not published until after the WPI Team finished their project at the USPTO. The same methods we used to analyze the 2011 data should be applied to the 2012 EVS data: the improvement of the USPTO's index average compared to the DOC, the improvement of the three lowest EVS categories in 2011, and the improvement of the key drivers of engagement will each be awarded points as described in Appendix G. This update will allow the USPTO to have the most accurate start to measuring employee engagement.

5.3 Teleworkers' Engagement

Our team came to the conclusion that based upon our survey results, teleworkers are as engaged as the on-campus patent examiners. However, our point-based metric system cannot be used to calculate a baseline engagement score for teleworkers alone. SPEs cannot be teleworkers, but the managerial survey is worth a quarter of the total points. In addition, the EVS survey, sick leave, and attrition rate data we received cannot be separated into on-campus employees and teleworker employees. We therefore recommend that the USPTO continue using the patent examiner survey to measure employee engagement of teleworkers and to start tracking the sick leave use and attrition rates of teleworkers so as to compare the control measurement of all sick

leave and attrition rate data to the rates among just teleworkers; parsing out these categories can allow further comparison and an accurate conclusion to the level of teleworker engagement when compared to the overall engagement of patent examiners at the USPTO.

5.4 Expanding Recognition Awards

We recommend that the USPTO creates more opportunity for lower level employees to be recognized non-monetarily, as currently only a small population is qualified for recognition due to seniority parameters placed on the awards. We recognize the ability of SPEs to offer “On-The-Spot” awards for examiners who may not qualify for achievement awards but are nonetheless outstanding in their work for the agency, and encourage the utilization of additional informal awards such as these. Employees who are consistently recognized for their work and have an equal opportunity to be rewarded are more likely to be engaged and continue performing at a high level.

5.5 Annual Distribution of Surveys

We concluded that the surveys sent out to the patent examiners and supervisors were very useful in capturing the employees’ feeling towards one another and also towards the USPTO. The surveys were simple, short, and easy to answer, which is a reason for our strong first-time response rate from both the supervisors and patent examiners. We concluded that the high positive response rate we received could be because this was the first time our survey questionnaires had been sent to employees. As a result the employees may have ended up providing mainly normative responses to the questions.

We recommend that the USPTO takes the surveys used to create the baseline and send them to the patent examiners and SPEs annually. If the USPTO finds that some of the questions on the survey no longer apply to the organization's mission and goals, or if it is found that some of the questions are less important from year-to-year, the surveys can easily be changed and updated to be more useful and representative. Distributing these surveys will allow the USPTO to stay continuously up to date with the status of their employees' engagement.

However, we recognize that if subordinates are sent too many surveys and do not see changes resulting from their recommendations, they will be less likely to answer future surveys. It is important that the managers and directors do what they can to improve areas that have been identified as weak through the surveys and other avenues of feedback. If this is not done the survey response rate will fall and responses may be less useful, which is counterproductive to the process of increasing engagement. We also recommend that the USPTO send both the patent examiner and managerial surveys because the relationship between the two is important for engagement. Collecting opinions from both groups will help the USPTO determine the groups' relationship; the annual survey will allow any changing relationships to be determined as well.

5.6 Increasing Annual Survey Scores

Our team has developed the following definitions for each category, allowing the USPTO the flexibility to determine what type of initiative would be best to increase each score:

The Job Pride category measures how employees feel in relation to their work. This emphasizes the connection an employee feels toward their work and the mission of the USPTO. The Communications and Interactions category looks to measure the amount and quality of communication within the office. If managers and their subordinates are having high quality

interactions, they will be more likely to be engaged. Lastly the Empowerment score identifies how confident employees are in completing the tasks assigned to them with minimal to no guidance, as well as how willing employees are to go the extra mile for a customer. This willingness and ability to produce quality products are extremely beneficial to employee engagement.

5.7 Conclusions and Recommendations Summary

The goal of this project was to provide the USPTO with a metric system to measure employee engagement among both teleworkers and main campus employees. Our report confirms that the USPTO has taken measures to improve engagement, but had not yet taken the next step to measure the success of those initiatives by seeing an increase or decrease in the overall level of engagement. The development of the system described in this report will be essential to the USPTO in order to keep improving employee engagement. Without a metric system, there would be no concrete evidence of a change in engagement.

In order for this metric system to have an impact on the USPTO community, it is important that the system is examined and redefined each year to identify the indicators that are most relevant to the mission of the USPTO. This system holds the USPTO directors and supervisors responsible for the maintenance and improvement of employee engagement. The score generated by our system will encourage a more in-depth look at the factors that play into engagement, as well as the factors that keep employees motivated. We believe that the creation of this metric system, if fully adopted by the USPTO, will not only enable a solid reading of the “touchy-feely” topic that is employee engagement, but establish a precedent of attention being paid to the factors that keep employees loyal to the company that they work for.

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Appendix A: Managerial (SPE) Focus Group Protocol

Interviewees: Anonymous

1) Icebreaker: the picnic name game. (5 minutes)

- a. Everyone says their name, a picnic item that corresponds with the first letter of his or her first name, and all the people that came before in the game. IE, “Hi, my name is Sarah, and I will bring strawberries. Hi, my name is Andrew, and I will bring apples. Sarah is bringing strawberries.”
- b. If employees already know each other’s names, go around and each person say one fun fact that members of the group do not know about them.

Present the Point System categories to the participants (5 minutes) (Make sure everything is of equal weight so we do not bias them when we show the categories):

- *Attrition Rate*
- *Absenteeism Rate using Sick Leave*
- *Productivity*
- *EVS Survey Results*
- *WPI Team Patent Examiner Survey Results*
- *WPI Managerial Survey Results*

2) The metric system is a point system out of 100 points, or 100%. How would you suggest weighting each category?

3) Why did you weight the categories in that manner (15 minutes)?

- a. Is one category in particular more important than the others? Why may that be?

Present our category weights. Explain our reasoning why we gave each category the percentage we did (5 minutes).

- *Attrition Rate – %*
- *Absenteeism Rate using Sick Leave – %*
- *Performance – %*

- *EVS Survey Results – %*
- *WPI Team Patent Examiner Survey Results – %*
- *WPI Managerial Survey Results – %*

4) How would you all suggest the final point style metric system categories be weighted (**20 minutes**)?

Are you comfortable being quoted in our project report? Our project report will be published.

If you wish, we will keep this interview confidential and anonymous.

Upon completion of this interview we will send you our notes to be sure that we have not misquoted or misunderstood you in any way.

Again, thank you for your time; may we contact you again if we have additional questions?

Appendix B: Meeting Notes from the Focus Group with 11 Anonymous SPEs

Interviewees: 11 Anonymous SPEs

Location: Madison West Building Room 251, 1pm

Chair: Sarah Conlin

Secretary: Jeannette Gerry

Also in attendance: Mr. Bill Korzuch was present for the first five minutes to introduce the purpose of the WPI Engagement Team; he was not present for the majority of the focus group.

- Before the focus group:
 - Some SPEs already know each other to varying degrees. It was decided the icebreaker game was not needed and simple introductions with names and technology center would suffice.
 - We have a nice diversity between ethnic background and TC.
- Sarah introduced herself and our IQP project.
- Bill introduced himself and gave background on the Engagement Team and our project.
- We went around the table and the SPEs introduced themselves and their TC
- Sarah explained the consent and anonymous nature of any quotes if they feel comfortable being quoted.
- Sarah started in on the packet.
 - A SPE was wondering what each section meant, so Sarah explained the different sections of the pie chart.
 - The two WPI surveys
 - EVS Survey Results
 - Performance
 - Outcome Orientated Data
- The SPEs were given time to fill in their own pie chart.
- One SPE gave input about why attrition rate, absenteeism, and recognition should be in separate categories or not at all in the metric system.
 - Sarah explained why we originally included it.
 - Another SPE suggested that because of the current economy, they might not be the most accurate indicators.
- Another few SPEs gave some feedback on the packet
 - Include breakdown of what each is in the packet so that they know what they are looking at
- Sarah made the executive decision about changing the way the group will run
- Start by putting a list on the whiteboard of what they think we should include
 - Performance

- Everyone thinks of production, though this is just a portion of performance.
 - Customer satisfaction
 - Productivity
 - Taking ownership of actions: attitude and willingness to take ownership and expectations of examiners
 - Production may be up, but this doesn't matter in interactions necessarily
- Need to include engagement definition on everything
- Surveys were biased and too broad for the USPTO
- Two types of engagement: managers/SPEs and the patent examiners
- Expectations
 - It is clear to examiners what is expected of them when they come out of training, but not necessarily as time goes on
 - Are the examiners proactive?
 - Need to define expectations.
- Recognition
- Engagement with teleworking examiners
 - This is a different type of engagement.
 - Separate section of the pie potentially
 - If it is a successful program, it should be seamless and not necessarily separate, but this is not the reality.
- Surveys need to be part of the metric but must not be biased
 - One SPE suggested not having a neutral option.
 - The number of questions is a key factor.
 - Are the questions home-made?
 - Need to have a balance between number of questions and how reflective the question is of the topic.
 - Are the results of the survey what really happens?
- Stakeholder
- Managers – engaged in leadership
- Consistent policies – will engagement be important in the future for example
- Baseline of if the current USPTO policies are being followed.
- Sending out another survey with multiple different categories to choose from to see what would work best with this baseline system.
 - We would want to see what their reactions are.
- After the meeting (Alula and Andrew came over to talk with us):
 - The vocal SPEs were not a fan of the system but didn't really understand what we were getting at
 - There were many good points about including definitions.

- Many people filled out the packet and understood, but there were a few problem SPEs who were vocal and “led the group down a bad path”
- Many did not realize that employee engagement is centered on opinions, they preferred to use hard data as categories.
- Many SPEs didn’t agree with our categories, but did not really give input on what new categories could be.
- We have very good feedback in the handouts, but the actual discussion was derailed by the few vocal extroverts
- The SPEs appear to be not on the same page as the directors – they were very against opinions and didn’t agree with the PEET engagement definition. They thought that there should be hard data emphasized, not opinions.
- Much of the discussion was valid, but not what we were looking for; however, the feedback on the handout was very good and useful.
- Bill came back to check on us!
 - Surveys definitely should be a majority.
 - Rate data lower, fluid model so you can “plug and play”
- Next step:
 - Send out a new survey to the SPEs?
- We should send a thank you email and include a blurb explaining that if they have any additional feedback, we would love to hear it!

Appendix C: Employee Engagement Survey for all Patent Examiners

Questions Adapted From the North Carolina Office of State Personnel: Employee Engagement Survey

Please indicate your age group:

- 18-25
- 26-35
- 36-45
- 46-55
- 56-65
- 66+

Please indicate your gender:

- Male
- Female

How long have you worked at the USPTO:

- >1 year
- 1-4 years
- 5-10 years
- 11-20 years
- 21-30 years
- 30+ years

Please indicate your level of education:

- Bachelor's Degree
- Master's Degree
- Doctorate Degree/PHD
- Law Degree

Please tell us your technology center at the USPTO:
(Fill in the blank)

Which USPTO location do you work at?

- Main Campus
- Hoteling

If hoteling, please state where you work from.

Please rate the following question on a scale of 1 to 5, 1 being the least favorable method of communication for use in business, and 5 being the most favorable method:

Phone Calls	1	2	3	4	5
Email	1	2	3	4	5
IM	1	2	3	4	5
Face to Face	1	2	3	4	5
Social Network (ie Facebook, Twitter etc)	1	2	3	4	5

Video Conferencing

1 2 3 4 5

Please rate the following questions on a **scale of 1 to 5**, 1 = Never true for me, 2 = Rarely true for me, 3 = Sometimes true for me, 4 = Usually true for me, 5 = Always true for me.

- | | |
|--|-----------|
| 1. I am proud of the work I do. | 1 2 3 4 5 |
| 2. I am trusted to do my job without any interference. | 1 2 3 4 5 |
| 3. I understand my role in the USPTO as a whole. | 1 2 3 4 5 |
| 4. I am enthusiastic about my job. | 1 2 3 4 5 |
| 5. I am passionate about my job. | 1 2 3 4 5 |
| 6. I am committed to my work. | 1 2 3 4 5 |
| 7. I trust my coworkers. | 1 2 3 4 5 |
| 8. I am satisfied with my supervisor. | 1 2 3 4 5 |
| 9. I am satisfied with USPTO leadership above my supervisor. | 1 2 3 4 5 |
| 10. My supervisor takes professional interest in me. | 1 2 3 4 5 |
| 11. I have future career opportunities in the USPTO. | 1 2 3 4 5 |
| 12. I know my job expectations. | 1 2 3 4 5 |
| 13. It is important to me to meet or exceed customer expectations. | 1 2 3 4 5 |
| 14. My supervisor respects me. | 1 2 3 4 5 |
| 15. My supervisor values my work. | 1 2 3 4 5 |
| 16. I intend to stay with this organization as long as I can. | 1 2 3 4 5 |
| 17. I look for new and better ways to do my job. | 1 2 3 4 5 |
| 18. I have the necessary information to do my job. | 1 2 3 4 5 |
| 19. I get help with my job when I need it. | 1 2 3 4 5 |
| 20. I have a clear understanding of the USPTO's mission, values and goals. | 1 2 3 4 5 |
| 21. When needed I am willing to put in the extra effort to the get job done. | 1 2 3 4 5 |
| 22. I consistently challenge myself to exceed expectations. | 1 2 3 4 5 |
| 23. I often communicate with my USPTO supervisor. | 1 2 3 4 5 |

Below are questions which will be available to participants who respond that they are Hotelers/Teleworkers:

- | | |
|--|-----------|
| 24. I am kept well informed about USPTO events and issues. | 1 2 3 4 5 |
| 25. I have developed a high level of trust with my supervisor. | 1 2 3 4 5 |

Please rate the following question on a **scale of 1 to 5**.

There will be a drop down menu with the following options:

1 = never, 2 = 1-2 times/month, 3=3-6 times/month, 4=7-10 times/month, 5=11+ times/month

- | | |
|---|-----------|
| 1. In the past year or since you have begun teleworking, how many times have you visited the main USPTO campus? | 1 2 3 4 5 |
|---|-----------|

Please rate the following question on a **scale of 1 to 5**.

There will be a drop down menu with the following options:

1= 0-5 times/week, 2= 6-10 times/week, 3= 11-15 times/week, 4= 16-20 times/week, 5= 21+ times/week.

1. Approximately how often are you in contact with other USPTO employees? 1 2 3 4 5

Appendix D: Survey for Managerial Employees (SPEs)

Questions Adapted From the North Carolina Office of State Personnel: Employee Engagement Survey

Please indicate your age group:

- 18-25
- 26-35
- 36-45
- 46-55
- 56-65
- 66+

Please indicate your gender:

- Male
- Female

How long have you worked at the USPTO:

- 0-5 years
- 6-10 years
- 11-20 years
- 20-30 years
- 30+ years

Please indicate your level of education:

- Bachelor's Degree
- Master's Degree
- Doctorate Degree/PHD
- Law Degree

Please tell us your position at the USPTO:

(Fill in the blank)

Which USPTO location do you work at?

- Main USPTO campus
- Hoteling

If hoteling, please state where you work from.

Please rate the following question on a scale of 1 to 5, 1 being the least favorable method of communication, and 5 being the most favorable method:

Phone Calls	1	2	3	4	5
Email	1	2	3	4	5
IM	1	2	3	4	5
Face to Face	1	2	3	4	5
Social Network (ie Facebook, Twitter etc)	1	2	3	4	5
Video Conferencing	1	2	3	4	5

Please rate the following questions on a **scale of 1 to 5**. 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

- | | |
|--|-----------|
| 1. I am proud of the work I do. | 1 2 3 4 5 |
| 2. I am trusted to do my job without any interference. | 1 2 3 4 5 |
| 3. I understand my role in the USPTO as a whole. | 1 2 3 4 5 |
| 4. I am enthusiastic about my job. | 1 2 3 4 5 |
| 5. I am committed to my work. | 1 2 3 4 5 |
| 6. I trust my coworkers. | 1 2 3 4 5 |
| 7. I am satisfied with USPTO leadership above me. | 1 2 3 4 5 |
| 8. I respect employees who work for me. | 1 2 3 4 5 |
| 9. I value employees who work for me. | 1 2 3 4 5 |
| 10. I am able to determine when one of my subordinates is having an issue, either personal or work related. | 1 2 3 4 5 |
| 11. My subordinates are competent in doing their work. | 1 2 3 4 5 |
| 12. My subordinates are engaged while doing their work. | 1 2 3 4 5 |
| 13. I have been offered training opportunities to help increase employee engagement amongst my subordinates. | 1 2 3 4 5 |
| 14. I have sought feedback from my subordinates to determine their engagement level. | 1 2 3 4 5 |

Please answer, to the best of your ability, the following questions. Please keep your answers to two or three sentences.

1. Please define employee engagement in your own words.
2. Please describe any initiatives you have been a part of to increase employee engagement.
3. How do you gauge employee engagement amongst your subordinates?
4. Would you consider the previously listed initiatives you have been a part of as successful or unsuccessful? Please describe what kind of data was used to gauge how successful they were.
5. Are there noticeable factors in your workplace that indicate good employee engagement?
6. How would you best measure employee engagement?

Appendix E: USPTO Staff One-on-One Interview Protocol

Interviewee: Marty Rater, USPTO Statistician

Thank you for taking the time to speak with us today.

1. Introduce ourselves and the project. Allow Marty to introduce himself and his work.
2. What do you suggest should go into a new metric system?
 - a. We currently have made a very rough draft of a point system and are researching the different categories to determine how much to weight each category.
 - b. Do you agree with our choice of indicators?
3. How would you suggest we incorporate the EVS data into our system?
 - a. Jim Dwyer informed us that some questions may change from year to year. Could this affect how we weight the EVS survey results?
 - b. Should we stick to using the three key indicators of engagement in the EVS, or emphasize a wider variety of EVS questions?
4. What do you think the most important factors of engagement are?

Are you comfortable being quoted in our project report? Our project report will be published.

If you wish, we will keep this interview confidential and anonymous.

Upon completion of this interview we will send you our notes to be sure that we have not misquoted or misunderstood you in any way.

Again, thank you for your time; may we contact you again if we have additional questions?

Appendix F: Meeting Notes from Formal Interviews with Mr. Marty Rater

Interview 1: November 8, 2012

Interviewee: Mr. Marty Rater, USPTO Statistician

Location: Madison West Building 4B87, 2pm

Chair: Sarah Conlin

Secretary: Jeannette Gerry

Also in attendance: Mr. Marty Rater, Andrew Sinkewicz, and Alula Shiferaw

- The team explained that we were the WPI team working on employee engagement.
 - Mr. Dwyer had strongly suggested that we meet with Marty.
- We asked Marty what he thought about our point style metric system
 - We determined with Marty that we are looking at the outcome: does the USPTO have good employee engagement?
 - Marty explained that in the past, engagement has been measured in pieces.
 - Marty gave us feedback about our point system.
 - It is good that we have included productivity.
 - Attrition rate is also good, though it has recently flat lined due to the economy. It needs to be included though because of the potential for the rate to change regularly in the future.
 - We clarified that absenteeism is defined by sick leave in our system. Marty agreed that it is a good thing to include in our system.
 - He liked that we put emphasis on the surveys.
 - They focus on engagement as a whole and are short and to the point.
 - SPEs are a tough group to survey, so the fact that we have so many responses already is awesome.
 - The EVS portion
 - All questions within the EVS are fair game, so it's good that we have it as a whole, not a portion of the EVS
 - Do we have weight on the drivers of engagement?
 - The drivers we have listed now may not be drivers in the future due to the various population of the USPTO. We have to keep it flexible.
 - We may want to include the Gallup survey.
 - The Gallup survey is either a Q10 or Q12 (the number of questions in the survey) and is a streamlined survey; it has been tested by the Gallup organization over many years and the few questions asked

are determined to be direct indicators of general employee engagement at organizations.

- It may not cover the specifics we need in our surveys, but we should check it out to make sure.
- One topic of questions in the EVS deals with employee (in the USPTO's case, patent examiner) involvement in company decisions. It is a category that typically scores low due to the nature of the USPTO's decision making processes and how much time the examiners need to spend on reviewing patents
- Pay and enough compensation are extremely important to examiners and other employees at the patent office.
 - Most people will say they are underpaid and overworked
 - We can't outright ask employees about the pay, has to be indirect.
 - It is all relative with pay: Marty suggested comparing the average pay of the examiners to other engineers within federal agencies because most patent examiners have their background in engineering.
- We may want to look at the satisfaction with the tools the office uses to communicate, but this may be included in the EVS. We also have some questions about communication in our surveys.
- The only thing that we really would possibly need to add to the point system as a category is the Gallup surveys.
 - If we include pay, we need to look at the raw numbers and keep it objective.
 - We have a very good start in terms of coverage, especially since the EVS is so comprehensive.
 - We should not include quality coverage as part of engagement. It is a separate "beast" and the USPTO already measures that.
- We asked Marty for further help on including the EVS in our system.
 - The office cannot be 100% sure who responds to the survey and has no control over questions asked in the EVS. They cannot know if the EVS results are biased by demographic either.
 - 20% is a good number for the EVS, it's weighted more than productivity.
 - It's really good that half of our system is from data that the USPTO can have control over in the form of our surveys.
 - Marty suggested we group these into one encompassing category:
 - Absenteeism/Sick Leave
 - Attrition
 - Pay

- This grouping will help solve the issue of having a number as small as 5% that can change a lot but not have an effect on the number representing good engagement.
 - Marty explained that he is a fan of the theme that covers how likely an employee is to recommend the USPTO to a friend as a workplace.
 - This may not be a key driver, but is a good indicator.
 - This may be covered by a Gallup Q12.
- It is good that we have a business portion, an employee portion, a generating patents portion, and a replacing employee portion for our system as these are all very important.
 - Very good to have 50% of the system as variables that the USPTO can control, meaning they can control the questions asked in a survey.
 - We have designated a good portion for the EVS; the EVS contains a lot of important information that should be included in our point system, but the USPTO has no control over the survey, which brings down how much we would weight it.
 - The variables such as absenteeism/sick leave, attrition rate, and productivity are outcome orientated variables. It is good to have these not as weighted as the others.
 - In general, it is still arbitrary though.
- Can we break down our system by demographic?
 - The EVS does not break down by demographic.
 - In our survey though, we have it broken down by demographic.
 - Keeping the EVS as a portion of the system that cannot be separated by demographic is a good constant.
- Our breakdown is very similar to the USPTO's breakdown of the quality compliance metric.
- Marty asked as a few questions about our surveys.
 - He suggested as a survey to ask people how they would rank importance in our point system. The format that we would use if we made a survey like this is check boxes.
 - When presenting our system breakdown to people, make sure to have each category as an equal percentage for them to take away from or add to. This will help our questioning be unbiased.
 - We want to be aware of the stakeholder impact.
- The final topic was more feedback about the point system that we are proposing.
 - He suggested making four or five categories.
 - One category would include absenteeism and attrition rate and potentially pay. Within this overarching category, the weights of each number can be changed from year to year according to USPTO objectives.

- He strongly suggested for us to assign weights to each category this year, but have in our protocol for it that we have given a model but that the USPTO will determine the weights at the beginning of each year.
 - This meeting to prioritize is essential.
- Marty will be sending us the Gallup overview document and quality composite presentation.
 - He gave us permission to borrow ideas from the quality composite metric.
 - He is extremely willing to help us, especially when it comes to summarizing the data we gather from SurveyMonkey.
 - Marty has software that works better at analyzing the data than SurveyMonkey.
 - Andrew volunteered after the meeting to work with Marty on using his software to analyze the data once we get it.
- It was found after the meeting when we looked at the Gallup overview document that while the Gallup survey is extremely well done and useful, it is too broad for our use since we are looking at specific areas of engagement.

Interview 2: November 13, 2012

Interviewee: Mr. Marty Rater, USPTO Statistician

Location: Madison West Building 4B87, 2pm

Chair: Sarah Conlin

Secretary: Jeannette Gerry

Also in attendance: Mr. Marty Rater, Andrew Sinkewicz, and Alula Shiferaw

- We reviewed our new breakdown of the point system.
 - Sarah explained the focus group results.
 - Marty gave a potential explanation of why the SPEs were focused on productivity.
 - They are essentially “making productivity” and are rated based on productivity.
 - The SPEs can control performance so they are partial to that category.
 - They are engineers, so naturally they like to quantify data
 - The SPEs put all of the surveys down to 5% for the most part and leaned toward raw numbers
 - Marty shared that the USPTO measures performance a great deal already.

- For example, in 2000, the office looked at the USPTO's productivity versus employee satisfaction and found that there was no nexus.
 - If anything, engagement increases productivity.
 - Not all employees have productivity ratings. For example, Marty himself is a statistician and does not have a productivity rating and he works with about 60 other employees that do not have a productivity rating.
 - Marty liked the flexibility of our 'Object Orientated Outcomes' category.
 - He also wants us to keep this category because it is good for comparison across the board with other Department of Commerce or federal agencies since the benchmarks can be common in all agencies.
 - Marty briefly went back to discussing the focus group and the SPEs opinions.
 - The focus on productivity has to do with the comfort level of the SPEs.
 - They may have been worried it had the potential to be focused in on their one ART unit instead of the patent examiner core as a whole.
 - He again emphasized to take the SPE input with a grain of salt. We, the WPI team, are acting as the consultants in the situation.
- We went over the open ended responses to the Managerial survey.
 - The answers from the SPEs in this were along the lines of what we had tried to get at because they had our definition of engagement when they went through the closed ended questions.
 - There were some of the same type of productivity focused responses as in the focus group, but we have several good themes to work from.
 - The spreadsheets Marty helped us with have filters built in. We can use these in many ways, one of which is to find a quote to represent a category or theme of the open ended questions.
 - For the numbers, bar graphs and such are very useful! But not as much for the open ended questions.
 - Marty suggested we talk to Bill Korzuch so we can look at the Virtual ART Pilot program report he worked on; it has a very good format for reporting the data.
 - We broke the data up into demographics, but Marty pointed out that there is not much variation in the data by demographic.
 - Marty mentioned that the cool charts we see were just made in Excel or PowerPoint, there's no special software the office uses.
- We went over the status of the patent examiner survey.
 - While we don't want bias, we can look at the data a few days before it closes so we can get an idea of how we want to start analyzing it all.
 - We may want a reminder email about the survey sent out to examiners if we need more data.

- A good idea Marty brought up is to combine the “disagree” and “strongly disagree” categories, and then the same for the two agreeing categories, so we only graph three things. It will be clearer what we are trying to convey.
- We came up with a new way to potentially look at the “grading” of each category in our point system
 - We may want to look at ratios of satisfied to unsatisfied employees for our index.
 - Percents can bounce around, but in the long run we want to have more positive than negative responses.
 - A good ratio that the USPTO likes to have is 5 positive responses to 1 negative
 - It can balance 5 negative ‘rumors’ started by 1 unsatisfied person to the one or two positive ‘rumors’ started by five satisfied people.
 - The first step for an unsatisfied employee is to move to the neutral category, so ratios can help show just the decrease in unsatisfied people.
 - Ratios can show changes quicker.
 - We can use ratios in the results for:
 - The SPE/Managerial Survey
 - The Patent Examiner Survey
 - The EVS Survey
 - It is key to look at healthy ratios!

Appendix G: The Point Based Metric System for Measuring Employee Engagement

TOTAL SCORING SUMMARY:

- Other Employee Engagement Indicators – 10%
 - Attrition Rate – 5%
 - Sick Leave – 5%
- Productivity and Recognition – 20%
- EVS Survey Results – 20%
- WPI Patent Examiner Survey Results – 25%
- WPI Managerial Survey Results – 25%

CATEGORY GRADING:

- **ATTRITION RATE- 5%**
 - Subtract the attrition rate from the category's 5%
 - Example:
 - In 2011, the attrition rate was 2.96
 - $5 - 2.96 = 2.04$
 - The overall score for this category would be 2.04
 - Example for if the attrition rate was negative:
 - In the year 2024, the attrition rate was 5.37
 - $5 - 5.37 = -0.37$
 - The overall score for the category would be -0.37
- **SICK LEAVE - 5%**
 - Multiply the current year's sick leave average per employee by 5%, or 0.05; subtract this product from the category's 5%
 - Example:
 - In 2012, the average sick leave taken per employee was 71.4
 - $71.4 \times 0.05 = 3.57$
 - $5 - 3.57 = 1.43$
 - The overall score for the absenteeism category is 1.43
- **PRODUCTIVITY AND RECOGNITION – 20%**
 - Performance-10%
 - In order to determine performance, look at the percentage of the employees that performed above average. Above average performance is 110% or higher.

- For example:
 - 30% of patent examiners had a performance rate that is at or more than 110%
 - $30/10 = 3$
 - The overall score in performance will be 3/10
 - Recognition - 10%
 - Monetary awards (bonuses) - 5%
 - First find the percentage of employees that received monetary award in a given fiscal year. Then weight the result in 5%
 - For example:
 - 85% of patent examiners received monetary award in FY 2011
 - $(85 \times 5)/100 = 4.25$
 - The overall score in monetary awards will be 4.25/5
 - Non-monetary awards (silver medals and bronze medals etc.) - 5%
 - First find the percentage of employees that received non-monetary award in a given fiscal year. Then weight the result in 5%
 - For example:
 - 30% of patent examiners received non-monetary award in FY11
 - $(30 \times 5)/100 = 1.5$
 - The overall score in non-monetary awards will be 1.5/5
 - The overall score for the performance and recognition section will be:
 - $3 + 4.25 + 1.5 = 8.75/20$
- **EVS RESULTS- 20%**
 - 2 points for overall USPTO average increase within Dept. of Commerce
 - 2 point for increase in the three lowest categories from the previous year
 - 1 points if 2 categories increased
 - 0.5 points if only one category increased
 - Key driver categories:
 - No points for the following if decrease
 - 4 points for an increase in pay satisfaction
 - 6 points for an increase in employee skill/mission match
 - 6 points for an increase in effective leadership
- **WPI TEAM PATENT EXAMINER SURVEY RESULTS - 25%**
 - Each of the closed answer questions are sorted into three categories, whose points are distributed as follows:
 - Job Pride – 9 Points

- Communication with Supervisors – 7 Points
 - Empowerment – 9 Points
 - Multiply the percentage of positive (4 or 5) responses to the questions in each category by that category's weight to determine the overall score for the category.
 - The following lists the question numbers encompassed in each category:
 - Job Pride: Questions 1, 4, 5, 11, 12, 15, 16, 20, 21
 - Communications with Supervisors: Questions 7, 8, 9, 13, 14, 18, 22, 23, 24
 - Empowerment: Questions 2, 3, 6, 10, 17, 19
 - Example:
 - 75% of responses were positive for the Job Pride Category
 - $9 \times 0.75 = 6.75$
 - The overall score for the Job Pride category example is 18.75
 - Job Pride Score + Communication with Supervisors Score + Empowerment Score = WPI Team Patent Examiner Survey Results Score
- **WPI TEAM MANAGERIAL SURVEY RESULTS - 25%**
- Each of the closed answer questions are sorted into three categories, whose points are distributed as follows:
 - Job Pride – 9 Points
 - Interactions with Subordinates – 7 Points
 - Empowerment – 9 Points
 - Multiply the percentage of positive (4 or 5) responses to the questions in each category by that category's weight to determine the overall score for the category.
 - The following lists the question numbers encompassed in each category:
 - Job Pride: Questions 1, 4, 5
 - Interactions with Subordinates: Questions 8, 9, 10, 11, 12, 13, 14
 - Empowerment: Questions 2, 3, 6, 7
 - Example:
 - 75% of responses were positive for the Job Pride Category
 - $9 \times 0.75 = 6.75$
 - The overall score for the Job Pride category example is 18.75
 - Job Pride Score + Interactions with Subordinates Score + Empowerment Score = WPI Team Managerial Survey Results Score

Appendix H: Sponsor Description

The U.S. Constitution put the Executive Branch in charge of providing an entity to, “promote the progress of science and the useful arts by securing for limited times to inventors the exclusive right to their respective discoveries” (U.S. Const. art. I, § 8, cl. 8). This is what became the United States Patent and Trademark Office. The main mission of the USPTO (2012g) is “to foster innovation and competitiveness providing high quality and timely examination of patent and trademark applications, guiding domestic and international intellectual property policy, and delivering intellectual property information and education worldwide” (§ 3).

The first Patent Act was signed by President George Washington on April 10, 1790, creating the issuance of patents as part of the Secretary of State’s job (USPTO, 2012f). Not long afterwards, the Patent act of 1793 was passed (Watson, 2008). This act created the Patent Board, consisting of the Secretary of State, Attorney General, and Secretary of War. Two-thirds of the Board needed to vote in favor of a patent’s approval. A large backlog of pending patent applications gradually developed since the Board members were preoccupied by other primary duties. To fix this, the Patent Act of 1836 was signed into law. Under this legislation the Secretary of State and the other board members no longer approved patent applications; however, the Department of State still oversaw the patent approval process. Patents were also now required by law to be distributed to libraries to reduce lawsuits from patent owners against other inventors who violated the rights guaranteed by the patent.

The USPTO (2012f) receives the most patent applications compared to foreign patent offices, such as Germany and Japan. Most of the patent applications the USPTO received came from utility inventors. In 2011 alone the USPTO received 535,188 applications from the U.S and foreign applicants. Out of the total applications received, 503,482 were utility patents, 30,467

design patents and 1,139 plant patent applications. However, only 247,713 patent applications in total were granted in the year 2011.

The goal of the USPTO (2011b) is to approve patents. The agency focuses on managing their resources in an efficient and responsible way so that their main goal can be attained: the “quality examination of patent and trademark applications” (§ 1). The USPTO (2012a) does not rely on taxes for funding and is able to have zero net discretionary spending as they are funded by user-fees, or the fees citizens pay to have a patent or trademark approved.

For 2013, the USPTO (2012a) plans on having a budget of \$2.822 billion and hopes to make \$2.953 billion from all of the various patent applications. The USPTO is currently not financed adequately, which has prevented previous plans implemented to speed up the patent approval process from being successful. Due to this shortage of funding, the USPTO will be forced to increase the price of all patent applications by fifteen percent in 2013 to continue running efficiently and effectively.

The USPTO (2012a) is an agency within the Department of Commerce, led by the Under Secretary of Commerce for Intellectual Property and Director of the USPTO. As of the end of FY 2011 the USPTO has 10,210 employees. Within the USPTO there are nine departments, as seen in Figure A-1 below. However, the two main departments in the USPTO are The Patent Office and the Trademarks Office. The main portion of workers at the USPTO is made up of patent examiners, while trademark examiners and other staff make up a much smaller portion of the employee pool. The USPTO trademark examiners are required to hold a degree in law, while patent examiners do not.

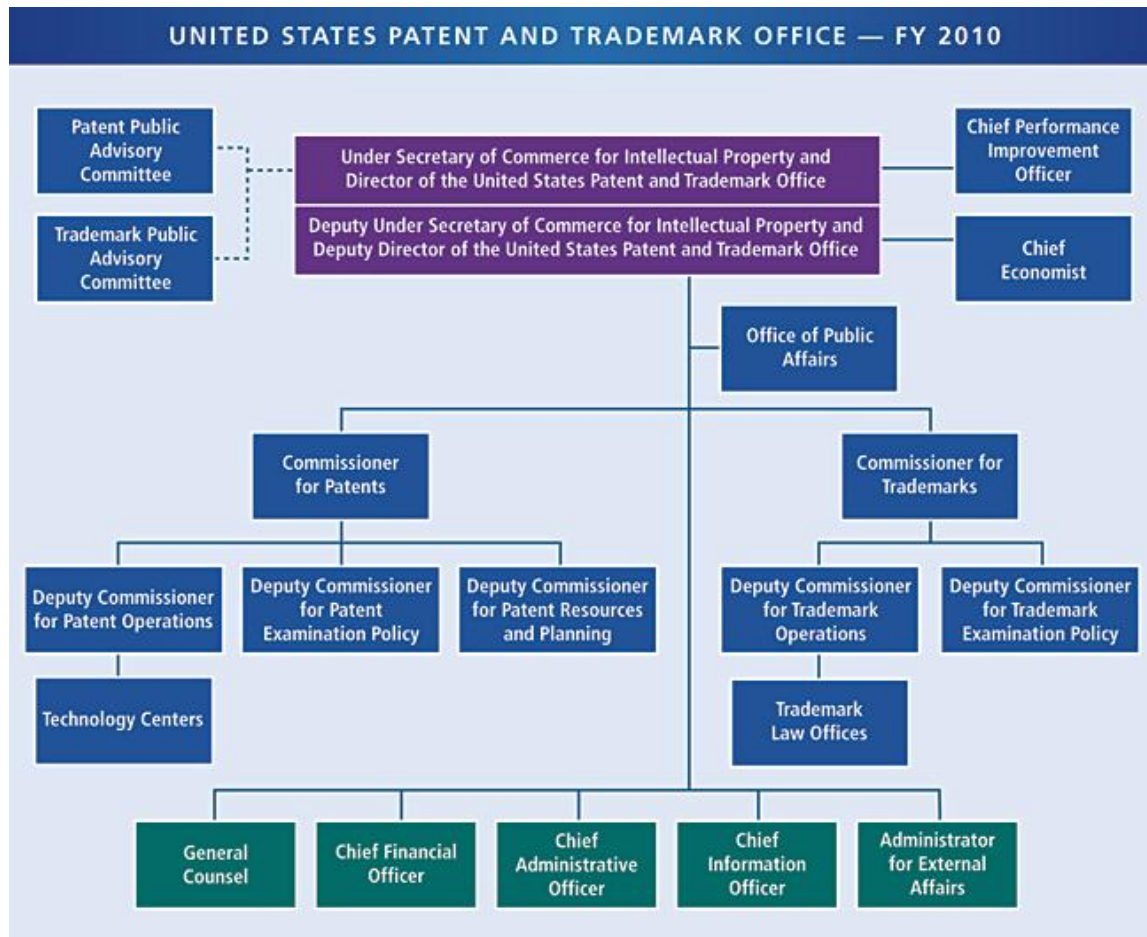


Figure A-1. Organization of the USPTO.
(USPTO, 2009, p. 9).

The USPTO has actively collaborated with companies such as HP, GE, BM, NYLS, IBM, the New York School of Law, and Microsoft in order to brainstorm ideas for improving the patent system (Loiselle, Lynch, & Sherrerd, 2010). These partnerships and sponsorships are extremely important as they provide resources for those working at and with the USPTO to increase productivity. Efficiency is the highest priority factor in approving patents and trademarks, and the USPTO currently has a large backlog of patents to be approved. These brainstorming sessions with HP, GE, BM, NYLS, IBM, the New York School of Law, and Microsoft open the door for ideas to pass from one major company to another.