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| Monitoring Remote Employees at FinPro |
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Monitoring Remote Employees at FinPro

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| Abstract: |
| In response to the COVID-19 pandemic, governments across the world issued containment and mitigation restrictions to reduce the spread of the virus originating from Wuhan, China in December 2019. To sustain operations and ensure continuity, businesses moved to remote working for their employees. To better hold work-from-home employees accountable, monitoring software, including emotion recognition software, is being used by employers to track employee productivity and compliance with Information Security Policy, among other uses. This paper is a teaching case, based on a fictitious company inspired by the actual experiences of employees working at a global financial services provider, intended for use worldwide in information systems or business courses at the undergraduate or graduate level. In the case, students are introduced to Financial Professional Services, LLC (“FinPro”), a fictitious American firm that makes the decision to monitor remote employees. Both software that records and controls end user activity and emotion recognition software are implemented. The teaching case provides an overview of artificial intelligence and emotion recognition software, and the opportunity for students to examine the differing perspectives of employers and employees regarding monitoring. |
| **Keywords:** Work from home, Employee monitoring, Emotion recognition software, Artificial intelligence, Employee privacy, Employee productivity, Cybersecurity, COVID-19. |

[Department statements, if appropriate, will be added by the editors. Teaching cases and panel reports will have a statement, which is also added by the editors.]

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# Introduction

Virtually everyone across the world has been impacted by the COVID-19 pandemic originating from Wuhan, China in late December 2019 and wants solutions. Financial Professional Services, LLC (“FinPro”[[1]](#footnote-1)), whose logo is presented in Figure 1, viewed protecting their employees’ well-being as paramount. Chief Executive Officer (CEO) Sophia Sturgeon commented, “We have updated new policies that relate to our organizations’ response to COVID-19 and how it affects employee health and safety as a primary focus.” Hence, FinPro requested employees to move to remote work as COVID-19 cases continued to spread around the world in March 2020. Remote work refers to employees working outside of the organization’s traditional office environment, supported by communication and collaboration technologies (Carroll and Conboy, 2020).

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| Figure 1. The Logo of FinPro (Created by Sipior, 2020) |

FinPro employees joined millions of workers forced to switch to home offices and kitchen tables due to widespread lockdowns. Key to managing any crisis is planning, preparation, and leadership. However, with little prior experience in remote work, CEO Sturgeon observed, “Some things get easier by the day, and others, well, we just go with the flow sometimes.”

# Background on FinPro

FinPro is an American multinational investment bank and financial services firm headquartered in Charlotte, North Carolina, USA, that specializes in meeting the domestic and international financial goals of high net worth individuals, families, businesses, institutions, and governments. FinPro, whose headquarters is presented in Figure 2, is truly a global citizen, with over 40 offices and more than 40,000 employees around the world. Founded in 1949, FinPro provides full service financial planning, from wealth planning, investment management, retirement solutions, estate planning to wealth transfer. FinPro offers the highest levels of experience, integrity, confidentiality, and personalized service to clients. As a result, FinPro has achieved the rank of No. 127 in the 2020 Fortune 500 list of the largest United States (US) corporations by total revenue, with US$24.088 billion in revenue.

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| Figure 2. FinPro Headquarters (Photo taken by Villanova University Staff Photographer, 2018) |

Fortunately, FinPro had prepared pandemic plans during the outbreak of the H1N1 influenza virus pandemic in 2009. For the current outbreak, the previous plans were updated and a cross-functional team, including representatives from every functional area, was assembled to develop a coordinated and comprehensive response effort. Work requiring on-site attendance was identified. For on-site employees, safeguards were put in place, such as revised cleaning protocols, personal protective equipment, and social distancing. All other employees were shifted to remote work to reduce the risk of virus transmission. To support the wide remote work deployment, a combination of technologies, practices and policies, safeguards, and training were put in place.

# Remote Work at FinPro

For FinPro and other financial service companies, flexible work was not the norm, with remote work being the exception for most financial institutions before the coronavirus forced state governments to issue stay-at-home orders in March 2020 (PwC, 2020). While advances in technologies, such as cloud computing and online collaboration tools, have enabled remote work in many jobs that once required in-person interactions, until the pandemic only a few companies, mainly in the technology sector, had fully embraced remote work (Bick et al., 2020). Nonetheless, FinPro is committed to making remote work more manageable and productive for their employees. CEO Sturgeon emphasized, “Our first focus is ensuring the health and safety of our employees in performing their work.” Chief Human Resources Director (CHRO) Henry Halibut commented, “We need to empower staff to stay engaged and be productive.” Chief Information Officer (CIO) Sarah Sardine added, “It is imperative that tools, resources, and solutions are deployed to every employee to enable them to be as productive and secure as possible in performing their job responsibilities, while working from remote locations and on any device.”

While many companies host systems and applications inside their perimeter, the finance sector had accelerated cloud transformation programs (EY, 2020), as did FinPro. The move to full virtual working was a test of the scalability of FinPro’s information technology (IT) infrastructure and the load on critical business applications. CIO Sardine observed, “The recent switch to Microsoft Office 365 products including Mail, Teams, and SharePoint significantly reduced the load on our remote access software because employees can do some of their work without being logged on to the virtual private network (VPN), while maintaining cybersecurity and privacy standards within the Microsoft system. For example, employees can get into their email without using remote connect software.” CIO Sardine continued, “Fortunately during the last few years, FinPro journeyed to the cloud. We implemented identity management and network access for all users, bolstered security on devices used to access the network, and provided productivity enabling apps users need.”

With little prior experience in remote work, FinPro made a cut-and-paste transition from office procedures to working online and adapted them along the way. The establishment of the work-from-home (WFH)[[2]](#footnote-2) program was not left to chance. Remote access, videoconferencing, and online collaboration tools were made available to all remote employees. CIO Sardine implemented practical steps to reduce the burden of having so many employees remotely connected. For example, the idle timeout period on the VPN was changed from eight hours to two hours and the license for the remote connect software was increased. Each user and device that connects to a remote desktop session host needs a client access license. CIO Sardine came to realize, "The biggest delay was not so much in getting the license, but in getting priority with the vendor to get the increase, because everyone around the world was asking for the same thing."

# Next Steps for Remote Work

FinPro got through the initial response to the pandemic and is now thinking about how to reset their strategy over the long-term. CEO Sturgeon is like most CEOs who are rethinking their plans and will continue to revamp their roadmaps as they work with their C-suite colleagues, including corporate counsel, to analyze what happened in the past months, where they now stand, and what will happen next (Pratt, 2020). CEO Sturgeon admitted, “We initially thought this ‘WFH thing’ would last a few weeks. We were overly optimistic. In a lot of ways, our roadmap isn’t changing. But what is different for us is determining how we can better manage this WFH situation and ensure that our employees are as engaged as possible. Technology can enable us to be more productive. ‘What the pandemic has done is made business realize the importance of IT. The reason we’re working today is because of IT’ (Pratt, 2020, Elevating IT section). ‘Digital transformation is the number one business imperative right now, and, as a result, the role of the CIO has never been more crucial’” (Loten, 2021, para. 3).

CEO Sturgeon met with the C-suite on Zoom[[3]](#footnote-3) to discuss the future of remote work at FinPro. The discussion focused on how to operate in the near term, as lockdown restrictions are slowly eased as country leaders across the world and state governors in the U.S. begin a phased reopening, and post-pandemic. Central to the discussion was the need to tightly manage costs and the cost benefits of a remote workforce, with HR Analyst Daria Dolphin presenting an estimate of the cost savings. CHRO Halibut noted, “‘Remote work is one example of creative cost savings that senior finance leaders are seeking in order to avoid more severe cuts and minimize the downside impact to operations’” (Gartner, 2020b, para 3).

As the discussion proceeded, CHRO Halibut observed, “We don’t have a full set of facts and we can’t wait for facts to emerge before determining what to do. As with any crisis, we are confronting many unknowns and surprises which contribute to uncertainty. We must decide whether to continue remote work, not only on the basis of intuition but by continually collecting information and observing how well our responses work.”

HR Manager Mike Mackerel noted, “Facebook and Google announced that employees can WFH until at least summer 2021 and Facebook is even hiring a Director of Remote Work to prepare for a shift over the next decade (Bindley, 2020). Twitter and Slack already announced that employees can WFH forever” (Bindley, 2020).

HR Analyst Dolphin added, “Results of a Gartner survey indicate that nearly three-quarters of financial executives plan to shift at least some of their workforces to full-time remote work after the pandemic subsides” as shown in Figure 3 (Gartner, 2020b).

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| Figure 3. Percentage of Workforce that will Remain Permanently Remote Post-COVID who were not Remote before COVID (Gartner, 2020b) |

CEO Sturgeon concluded, “Remote work could complement our cost-cutting measures by deferring our on-premise technology spending and real estate expenses. So, it is decided that many employees will continue to WFH indefinitely, and some will move to permanent remote models, as appropriate.”

# IT to Monitor Remote Employees

With the move to WFH indefinitely, CIO Sardine recognized a need for the C-suite to become familiar with available IT to support and monitor employees and therefore called a meeting on Zoom for this purpose. Software Support Specialist (SSS) Sam Salmon was called into this meeting to explain, “We could use IT to maintain some sense of security and control over employees to ensure productivity is monitored through, for example, tools such as Slack for workplace communication, Zoom for videoconferencing, and Trello for project management (Carroll and Conboy, 2020). Platforms used for videoconferencing, for instance, can be used to analyze participants’ attentiveness in real time, record participants’ voice, chats, faces, and their home surroundings (Papadopoulos et al., 2020). We could also use monitoring software. There are so many vendors, such as ActivTrak, Hubstaff, InterGuard, Time Doctor, and Teramind. For example, with InterGuard,[[4]](#footnote-4) … ”

CHRO Halibut interrupted, “In addition to mandating always-on webcams, we can schedule thrice-daily check-in’s with not-so-optional company virtual happy hours, game nights using game apps, and breaktime/lunchtime chats in breakout rooms.”

SSS Salmon resumed, “Better yet, with InterGuard, which we can install on employees’ computers using remote support software, we can create a minute-by-minute timeline of every app and website an employee views, categorizing each as ‘productive’ or ‘unproductive’ and ranking employees by their ‘productivity score’ (Harwell, 2020).”

CHRO Halibut interjected, “We don’t want to measure productivity by generating a productivity score. We just want to know that employees are attending to activities associated with their job responsibilities.”

SSS Salmon continued, “InterGuard can also alert managers if employees do or say something suspicious. For example, the words ‘job,’ ‘client,’ and ‘file’ could be flagged to indicate if an employee is looking elsewhere for a job (Harwell, 2020).”

CHRO Halibut responded, “Oh you’re right! Our employees could be doing something suspicious. Stress in these unsettling times can lead someone to unprofessional behavior. A trusted employee could develop malicious intent and seek to impose damages (Gartner, 2019a) on FinPro. We can't overlook the risk of insider threats as employees worry about layoffs, new remote working technology issues (Gelles, 2020), contracting the virus, social isolation, and more. According to the results of a recent survey of remote workers, 63 percent of respondents feel moderate to high levels of stress associated with ‘the current global situation and the financial uncertainty and health threats it brings’ (Pymetrics, 2020, p. 6). Further, research has shown that emotions such as anger can be associated with higher levels of incivility among colleagues and some negative emotions can be contagious (Motro et al., 2019). We need to know if our employees are happy. Happy employees were found to be more productive according to the results of research studies (Bellet et al., 2019; Oswald et al., 2015), the most recent of which was reported in *The Wall Street Journal* (Cutter and Feintzeig, 2020). We could require that employees answer a daily or weekly online survey about their happiness, like Amazon.com Inc. and Workday Inc. are reportedly doing (Cutter and Feintzeig, 2020). But, employees may not accurately report their true feelings and completing the self-report on how they are feeling may adversely affect their own emotional state” (Motro et al., 2019).

CIO Sardine replied, “I agree ‘we have to be better in tune with the mental health of our employees,” [s]he said, adding that “otherwise they won’t be as engaged with the company, which translates to lower productivity and a negative impact on business’ (Castellanos and Loftus, 2020, para. 10). We could monitor the happiness of our employees by using software like Receptiviti[[5]](#footnote-5) to scan for words, in emails or messaging systems, associated with emotions (Cutter and Feintzeig, 2020). Better than that, we could use emotion recognition software. SSS Salmon, could you explain artificial intelligence (AI) and emotion recognition software?”

## What is AI?[[6]](#footnote-6)

The term AI was first coined at The Dartmouth Conference, organized by mathematician John McCarthy, in the US in 1956. There is no commonly accepted definition of AI because the definition has changed as this technology has evolved. AI is a broad field now encompassing areas such as robotics, natural language processing (NLP), vision and sensory systems, and expert systems. Generally, AI refers to the ability of a machine to learn from experience, adjust to new inputs, and perform human-like tasks. At FinPro, we generally agree with Gartner’s (2019b) definition of AI: a computer-based system that “applies advanced analysis and logic-based techniques, including machine learning, to interpret events, support and automate decisions, and take actions” (para. 3).

Machine learning is at the forefront of the current expansion in AI applications (van Duin and Bakhshi, 2017). Gartner defines machine learning as a subfield of AI which “solves problems by using statistical models that can extract knowledge and patterns from data” (Gartner, 2020a, para. 3). Machine learning algorithms are based on artificial neural networks, which loosely model the way that neurons interact in the human brain. Neural networks are structured in layers comprised of a network of interconnected neurons. The simplest structure is two layers: an input layer and an output layer. The structure may be extended to multiple layers: an input layer, one or more hidden layers, and an output layer. Each layer attempts to detect patterns from large data sets or Big Data.

Based on data input, neural networks essentially work on a system of probability to make statements, decisions, or predictions with a degree of certainty (Marr, 2016). The strength of a connection, either excitatory or inhibitory, is denoted by a weight value to indicate the strength of the connection with an input value. A neuron may receive input from many neurons, but produces a single output communicated to other neurons. While the path is usually uni-directional, it may be bi-directional by adding another path in the reverse direction. The inclusion of a feedback loop enables learning. Learning is the process by which values of connection weights are adjusted to strengthen or weaken a connection. When a pattern is detected, the next hidden layer is activated, and so on, to learn to classify data in much the same way a human brain does. By sensing or being told, through data input, whether the decisions are right or wrong, the neural network modifies the approach taken in the future (Marr, 2016). The resulting model, a structured set of complex relationships, can perform actions under conditions it has never encountered before (Bleicher, 2017).

## What is Emotion Recognition Software?

Emotion recognition (a.k.a. affect recognition, emotion analysis, artificial emotional intelligence [AEI], facial expression analysis) is a subfield of AI that analyzes facial expressions, facial movements, and body language to detect emotion and other traits (Gartner, 2019b; Reibenspiess et al., 2018). It is different from facial recognition software, for which the goal is to identify a person, not an emotion. A standard for measuring emotions in visibly different facial expressions is the Facial Action Coding System (FACS) developed in 1976 (Ekman & Friesen, 1976) and revised in 2002 (Ekman et al., 2002). This categorization system is comprised of 46 observable action units (AUs), which are facial movements that make up facial expressions, which in turn express emotions. Each AU corresponds to an individual face muscle or muscle group identified by a number (i.e., AU1 to AU46). Facial expressions are comprised of AUs. For example, Figure 4 presents the three observable AUs of which the physical expression of the emotion “happy” is comprised (iMotions, 2016). Emotional expressions are perceived categorically, not as an impression along a continuum (Etcoff and Magee, 1992). Six basic emotions including anger, disgust, fear, happiness, sadness, and surprise seem to be expressed universally and interpreted consistently irrespective of gender, age, cultural background and socialization history (iMotions, 2016). However, if an individual is unable to move relevant facial muscles, the AUs cannot be observed (Etcoff and Magee, 1992).

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| Figure 4. Three AUs, from the FACS, for the Physical Expression of the Emotion “Happy” (Photo taken by Sipior, 2018) |

Automated emotion recognition analysis relies on the assumption that facial expressions and emotions are consistent, that is, the facial expression reflects the underlying emotion (Stöckli et al., 2018). A study by Strack et al. (1988) confirmed that facial expressions and emotions are closely intertwined. While a replication of this study (Wagenmakers et al., 2016) did not achieve the original results, Wagenmakers et al. (2016) stress that the inconsistent results do not invalidate the so-called “facial feedback hypothesis” that facial expressions truly represent emotional reactions. Thus, emotion recognition attempts to interpret facial expressions, in contrast to facial expression recognition which only identifies facial expressions (Fasel and Luettin, 2003).

# Concerns about Remote Worker Productivity and Compliance with Information Security Policy

Following the informative meeting overviewing IT to support and monitor WFH employees, CHRO Halibut met with CIO Sardine to discuss making a work-from-anywhere future that is effective and sustainable.

CHRO Halibut, thinking aloud, said, “We are no longer able to protect our interests through traditional measures of supervision. I wonder about the productivity of our ‘out-of-sight’ employees. You might be concerned about them watching Netflix, gaming, surfing inappropriate websites, or trading stocks while they are on the clock. But think about what they might do from a tourist location. A colleague of mine is staying at the Four Seasons Resort in Mexico. He took the whole family to ‘Work from Paradise’ and ‘Learn from Paradise’ (Fox, 2020). His kids are enrolled in their ‘Knowledge for All Seasons’ program, complete with after-school tennis, golf, and yoga. They log into class from pool- or beach-side cabanas, which are equipped with Wi-Fi, large TV monitors, headphones, snacks, and of course an ocean view. How much work do you think my colleague is getting done? According to a survey of how COVID-19 has affected employees' work life, nearly half (45%) of employees across the US report they are less productive and just over one quarter (27%) feel more productive!” (Eagle Hill Consulting, 2020).

CIO Sardine added, “And, more importantly, I wonder if our remote employees may place us at risk of cyber breaches by clicking on a link in a phishing email or spoof website. We need technology solutions for oversight and to ensure appropriate audit and forensics in the event of a breach or regulatory violation. A survey focusing on information security practices among U.S. businesses revealed 86 percent of C-suite executives agree that the risk of a data breach is higher when employees work off-site than when they work at the office (Shred-it, 2018). The survey also found that 47 percent of business leaders said human error by an employee had caused a data breach at their organization. Human behavior is often the weakest link in cybersecurity (Samuels, 2017), but one of the most important parts of the solution. We need to protect our customers’ and employees’ data.”

CHRO Halibut responded, “As a financial sector company, we are already tracking staff communications to prevent insider trading, as legally required (Solon, 2017). For that matter, some employees could even be selling trade secrets or engaging in corporate espionage! Is there more we could be doing to confirm employee productivity and compliance with our Information Security Policy (ISP)?”

# Decision to Monitor Remote Employees

CIO Sardine noted, “The abrupt shift to WFH has clearly made us nervous about reduced productivity and its potential impact on our business, just like other companies as evinced by a 55% increase in demand for monitoring software, compared to the pre-pandemic average (Brown, 2020). Workplace monitoring had been increasing over the past years. According to a survey by the American Management Association in 2017, an estimated 78 percent of major companies monitor their employees’ email, Internet, and phone usage in the workplace, up from 35 percent in 1997; while monitoring is significantly higher in the financial sector where 92.1 percent use communication-monitoring technologies (McParland and Connolly, 2020). This is not a surprising finding for financial services, an industry which is required to implement security measures to prevent employees from disclosing sensitive information (Matwyshyn, 2005). For example, under the Graham-Leach-Bliley Act, a.k.a. the Financial Services Modernization Act of 1999, financial institutions are required to protect the personal information of customers (Graham-Leach-Bliley Act, 2012). Also, insider trading laws prohibit the communication of inside information to others so they may buy or sell stocks or securities (Bondi and Lofchie, 2011). The most damaging security threats are from trusted insiders, who are either malicious or simply negligent (Cybersecurity Insiders, 2017). In addition to our concerns about employee productivity and more importantly, compliance with ISP while WFH, Teramind reported there are many business reasons for workplace monitoring (2019). Given that employees are ‘out of site’ during the pandemic, FinPro could take advantage of these additional benefits.” Reasons reported for monitoring are presented in Table 1.

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| Table 1: Reasons Why Employers Monitor Employees (Teramind, 2019) | |
| **Employer Reason** | **Explanation** |
| Employee productivity | Employers can determine to what employees are attending, when, and for how long. Unproductive activities can be identified. |
| Security, Compliance, and Legal liability protection | Employers are responsible for the activities of their employees. Companies risk legal liability or loss as a result of noncompliance with legal requirements, violations of company policies, or inappropriate employee activities. Examples include:   * Data breaches * Exceeding limitations on Internet access by employees * Employee misconduct including harassment and discrimination complaints * Industrial espionage. |
| Workforce management | Monitoring employees provides data to inform high-level business decisions. |
| Bandwidth management | Network monitoring software tracks bandwidth usage to protect networks from being overloaded by large data transfers or denial of service (DoS ) attacks. |
| Software asset management | Monitoring employee application use identifies over-licensed or under-licensed software, thereby avoiding unnecessary licensing costs. |

CIO Sardine continued, “At FinPro, we could record an employee's virtual interaction with a colleague on Zoom and examine it with Noldus FaceReader[[7]](#footnote-7) or a similar product such as Kairos,[[8]](#footnote-8) iMotions in partnership with Affectiva,[[9]](#footnote-9) nViso,[[10]](#footnote-10) or Sightcorp.[[11]](#footnote-11) With such emotion recognition software, facial expressions are assessed and quantified automatically to make a determination of the underlying emotion. FaceReader software, for example, can detect facial expressions from live, video, or still images using a series of algorithms to locate and analyze 500 key points on a face (Motro et al., 2019). A multi-layered neural network recognizes patterns in image pixels of a face and classifies facial expressions. FaceReader measures the presence of the six basic emotions, recognizes a neutral state, and can analyze contempt and other expressions (Loijens and Krips, 2019). The results for each expression are presented on a scale ranging from zero, which means ‘not present at all’ to one, ‘present at maximum intensity’ (Motro et al., 2019) to reflect that facial expressions vary in intensity, are often a mixture of emotions, and have inter-personal variation (Loijens and Krips, 2019).”

At the conclusion of the discussion, CHRO Halibut and CIO Sardine recommended to CEO Sturgeon who decided that FinPro will join the thousands of companies using monitoring software to record employees’ internet access, web browsing, and other activities (Harwell, 2020). Additionally, FinPro will record morning Zoom sessions and analyze the recordings for employees’ emotions. CIO Sardine emphasized, “Now more than ever, it’s essential to foster an outcome-driven culture that empowers and holds employees accountable for productivity in getting things done. And, if we know employees are happy, they will be more productive. Also, we want to encourage compliance with our ISP. Flagging non-compliance will help us to detect risks to security and rapidly respond to cyber threats.”

Together, CIO Sardine and CHRO Halibut evaluated employee monitoring software to identify the most appropriate enterprise-level tool to provide depth of monitoring, automation, and comprehensive data collection. CIO Sardine observed, “We need to minimize the burden on managers in tracking time and engagement, and in reviewing the multitude of screenshots and video recorded for each employee. I have evaluated various products and found that software from Teramind,[[12]](#footnote-12) which is user activity monitoring software, can be configured to automatically raise an alert, block an action, or lock out a user in response to any observable behavior we want to flag. The software can also stop emails from being sent, block uploads to certain websites, send an alert when a user chats with a specific party, and more!” The decision was made to license remote employee monitoring software from Teramind.

CIO Sardine commented, “Teramind is an easy tool to install and use. We can configure the administrative dashboard to show the entire organization, a particular department, or an individual team to get at-a-glance reports and data visualizations on productivity or ISP metrics, without much hassle. Then, managers can create reports and charts enabling us to identify suspicious activity, detect possible threats, optimize productivity, and continue to ensure regulatory compliance required of the financial services sector as we have been doing” (Sevilla, 2020).

Additionally, CIO Sardine and CHRO Halibut evaluated FaceReader and iMotions. CIO Sardine related the results reported in a study, “‘FaceReader performs best for happiness,’ with a ‘classification accuracy of 96 percent’ (Stöckli et al., 2018), as shown in Figure 5, while FaceReader reports its updated version 8 has a 100 percent accuracy (Loijens and Krips, 2019). Furthermore, the dashboard is flexible and can be configured to our needs. Let’s go with FaceReader to determine if employees are happy because happy employees are more productive.”

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| Figure 5. Emotion Recognition Accuracy for Humans versus FaceReader (FaceReader, 2020) |

# Preparing the Employee Consent Agreement for Monitoring

Chief Legal Officer (CLO) Sam Shark and relevant staff, and his counterparts in the more than 40 locations around the world in which FinPro operates, prepared an informed consent agreement to provide notification of the implementation of the Teramind employee monitoring software and FaceReader emotion recognition software. The agreement explicitly described and comprehensively explained the details of monitoring, including always-on webcams, along with the capabilities of the software, how employee data collected is handled, where the data is stored, duration of storage, and who has access to it. The agreement was carefully and thoroughly reviewed for compliance with legal regulations on both national and international levels.

All FinPro employees were required to electronically sign the agreement as a condition of continued employment. Clear notice of monitoring activities and employee consent reduce employees’ expectation of privacy, the basis of privacy violation claims, thereby providing the broadest protection for companies (Ford, et al., 2015). When employees acknowledge awareness of and agree to the specified details of monitoring by signing a consent agreement, companies may be successful in defending against invasion of privacy lawsuits (Ford et al., 2015). For employees, the emphasis on reasons for and the importance of monitoring, within the consent agreement, provides a foundation on which employees can base their workplace conduct (Ford et al., 2015). For employees who refuse to sign, employers have options including termination or documenting the employee’s obligations to nonetheless comply, which should be filed with a recording of the employee’s stated reasons for refusing to sign and what was explained to the employee (Holden, 2013).

# Creating the Monitoring Software Settings

CHRO Halibut began working with the various capabilities of Teramind monitoring software. Among the many capabilities are, for example, the ability of a manager to monitor metrics such as webpages and apps visited; emails sent and received using Google’s Gmail and Microsoft Outlook; instant messaging using Facebook Messenger, Google Hangouts, Skype, and WhatsApp; keystrokes; web searches; screenshots; and video. Behavior rules associated with these various uses can be set up for various employees to automatically enforce productivity and security rules (Sevilla, 2020).

CHRO Halibut reasoned that as a financial services company, it makes sense to set options for and the degree of monitoring according to job responsibilities, rather than another criterion such as salaried versus hourly employees. Financial planners, for example, are entrusted with sensitive financial data of the clients. Referencing a Securities and Exchange Commission (SEC) Risk Alert, CHRO Halibut noted, “use of social media, especially third-party social media sites, may pose elevated risks” (SEC Office of Compliance Inspections and Examinations, 2012, p. 5). CHRO Halibut thereby set a daily time limit on social media for Financial Planners. These employees are disallowed from visiting social media websites for more than 15 minutes per workday. Visits exceeding this duration would trigger an automatic instant message being sent to the user who exceeds the activity cap.

# The Monitoring Software Implementation Go-Live Date

Plan Design Specialist Holly Mackerel, staff support assistant to Financial Planners, booted up her laptop on Monday morning. After working for several hours on recommending adjustments to the asset allocation of a client’s investment portfolio, she logged into Facebook to view the timeline of a friend, to read some posts, and to look at some pictures. She was interrupted by an instant message automatically generated by Teramind indicating, "You have exceeded social media usage for the day" and the Facebook website was blocked. Holly muttered to herself, “What the…? George Orwell’s 1984 ‘revisité!’” Holly definitely was not happy. She had not yet given a thought to the stealthy emotion analysis of her recorded Zoom meeting from that morning.

# Questions

Please develop detailed written responses to each of the questions below. Additional research regarding remote work, employee productivity, cybersecurity, employee monitoring, AI and emotion recognition software, and employee privacy is necessary to adequately respond to each of the questions. Please include references for your research within your responses and state any assumptions that you make.

1. How did the move to remote work occur, as COVID-19 forced physical worksites to shut down?
2. Why should FinPro be concerned about the productivity of employees working from home?
3. In addition to monitoring employees, how can FinPro improve employee productivity for remote workers?
4. Why should FinPro be concerned about cybersecurity for employees working from home?
5. In addition to monitoring employees, how can FinPro protect themselves against cybersecurity risks due to remote workers?
6. What are the capabilities of employee monitoring software?
7. Find and describe three example applications of how emotion recognition software is being used.
8. If you worked at FinPro, would you be comfortable with the (a) monitoring software and (b) emotion recognition software being used? Why or why not?
9. Should FinPro monitor remote employees?
   1. Provide your response from FinPro’s perspective (i.e., the employers’ perspective).
   2. Provide your response from the employees’ perspective.
10. Is employee monitoring a violation of employees’ privacy?
11. Do employees have a right to privacy?
12. What legal privacy protection, if any, does an employee have in the monitoring of remote work?

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1. Financial Professional Services, LLC is a fictitious company. Data reported about this company is fictitious. Any resemblance to an actual company is purely coincidence. To our knowledge, this company name is not currently a registered business name according to the National Business Register at https://www.start.biz/. [↑](#footnote-ref-1)
2. The terms remote work and work from home (WFH) are used interchangeably, consistent with Choudhury (2020) who discusses the inception of remote work as the adoption of WFH policies dating to the 1970s when high gasoline prices, caused by the 1973 OPEC oil embargo, made commuting more expensive. [↑](#footnote-ref-2)
3. Zoom is a “cloud platform for video, voice, content sharing, and chat [that] runs across mobile devices, desktops, telephones, and room systems” (Zoom, 2019, para. 1). [↑](#footnote-ref-3)
4. InterGuard is a developer of monitoring software that records and controls all end user activity so organizations can measure and score employee productivity, conduct employee investigations, secure critical data, and maintain compliance. Headquarted in Westport, Connecticut, USA, InterGuard was founded in 2002 (InterGuard, 2020). [↑](#footnote-ref-4)
5. Receptiviti, based in Toronto, Ontario, Canada, provides software which uncovers signals from everyday human language, in emails and messaging systems, to understand the emotions, drives, and traits that affect human behavior (Receptiviti, 2020). [↑](#footnote-ref-5)
6. Section 6.1 is based upon Sipior et al. (forthcoming). [↑](#footnote-ref-6)
7. FaceReader is a facial expression recognition software product by Noldus Information Technology, headquartered in Wageningen, the Netherlands (Noldus, 2020). [↑](#footnote-ref-7)
8. Kairos is a provider of emotion detection and face recognition software (Kairos, 2020), founded in 2012 and headquartered in Miami, Florida, USA. [↑](#footnote-ref-8)
9. iMotions partnered with Affectiva to provide emotion recognition software that integrates and synchronizes multiple biometric sensors. Founded in 2005, iMotions is headquartered in Copenhagen, Denmark (iMotions, 2020). Affectiva is a venture-backed company that spun out of MIT Media Lab in 2009 and is headquartered in Waltham, Massachusetts, USA (Affectiva, 2020). [↑](#footnote-ref-9)
10. nViso is an award-winning provider of emotion recognition technologies, headquartered in Lausanne, Switzerland (nViso, 2020). [↑](#footnote-ref-10)
11. Sightcorp is an AI spin-off from the University of Amsterdam providing software which analyzes faces in images, videos, and real-life environments, headquartered in Amsterdam, The Netherlands (Sightcorp, 2020). [↑](#footnote-ref-11)
12. Teramind is a “global provider of employee monitoring, user behavior analytics, insider threat detection, forensics and data loss prevention software solutions” (Teramind 2020, para 1). Founded in 2014, Teramind is headquartered in Miami, Florida, USA. [↑](#footnote-ref-12)