# Chapter LIII Legal and Ethical Implications of Employee Location Monitoring

**Gundars Kaupins** Boise State University, USA

**Robert Minch** Boise State University, USA

## ABSTRACT

This article summarizes the legal and ethical implications associated with employee location monitoring. It states that few international laws and no American laws directly address this location monitoring. International privacy laws and directives, the Electronic Communications Privacy Act, the USA Patriot Act and other laws and directives involving Internet and e-mail monitoring provide the pattern for future location monitoring laws. It also states that ethical considerations such as productivity, security, goodwill, privacy, accuracy, and discipline fairness affect future laws. Furthermore, the authors hope that the understanding of existing laws and ethical considerations associated with electronic monitoring can lead to practical and reasonable location monitoring policies. Employer and employee interests must be balanced. Location monitoring policies should include a legitimate business purpose, ensure that employees are notified that they are being monitored, provide for adequate storage and dissemination of monitoring data, and provide for consistent evaluation of monitoring effectiveness.

### INTRODUCTION

Emerging technologies are making it possible for an organization to monitor the location of its employees in real time virtually anywhere. These technologies range in scale from the global positioning system (GPS), able to determine location outdoors worldwide, to sensor networks, able to determine location inside buildings (Minch, 2004). Individuals are generally locatable because they can be associated with location-aware (also called location-enabled) devices, such as riding in a GPS-equipped vehicle or carrying a cell phone with built-in location technology.

Rationales for monitoring employee locations and movements are many. Collection and delivery businesses have used the technologies to find the nearest driver to customer pickup locations in real time, thus improving customer service (Salheim, 2005). Other companies have monitored vehicle speeds in efforts to control fuel costs and enhance safety (Applegate, 2001). Benefits also include more efficient supply chain management and better tracking of assets (Chen, 2004). In addition to the relatively raw use of location data, location information may be processed and combined with other information to allow a great number of inferences that concern much more than mere location itself. Noting locations at multiple points in time may allow companies to infer the amount of time employees are spending at lunch or on breaks, and their route data may indicate whether they are taking the most efficient routes or combining personal travel with business, for example. Comparing location records for two employees can be used to infer whether or not they had the opportunity to exchange company property. We will address many more examples of these inferencing issues later.

Location-aware devices are becoming pervasive because of lower costs, government mandates, and marketplace factors. The cost to make a device location-aware ranges from nothing in devices already inherently locatable to tens or at most hundreds of dollars when GPS or other location technology must be added. To allow better response in emergencies, agencies such as the U.S. Federal Communications Commission (FCC) are phasing in requirements that cell phones be locatable (FCC, 2005). Businesses and consumers are beginning to demand location-aware technologies in the marketplace—for example, it is estimated that up to 80 percent of new vehicles will come equipped with location-aware technology by 2006 (Teicher, 2003). Estimates of the size of the global location-based services market are 20 billion U.S. Dollars by 2005-2006, with 31 percent of this market in Europe and 22 percent in the U.S. (Mobileinfo.com, 2002).

There is every reason to believe that locationaware technologies and their use for employee monitoring will increase dramatically in the future. Major telecommunications companies such as Sprint (Salheim, 2005) and AT&T Wireless (Chen, 2004) have entered the marketplace, and the largest software vendors such as Microsoft have developed "location-based service" tool sets (Microsoft, 2005). These services and software tools are already being used to develop sophisticated applications that monitor employee locations (Armonaitis, 2004), with many more sure to follow.

The low cost and pervasiveness of locationaware technologies not only mean that employers can easily provide it for their employees, but also that the workers may already be locatable through their own personal (i.e., not work-related) devices—including phones, PDAs, laptop computers, automobiles, and so forth. Even if a device is not designed to be location-aware, it may be locatable. Wireless local area network (WLAN) technologies using fixed access points with a range of only 50 to 100 meters make all users of the WLAN locatable by virtue of their association with the access point, and shorter-range technologies such as Bluetooth allow positioning within approximately 10 meters (Haartsen et al., 1998). Thus it is reasonable to assume that in one form or another the technology necessary to locate employees in the future is virtually certain to be available and nearly as certain to be used by business.

## PURPOSE

We will examine several important legal and ethical implications of employee location moni-

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