

Abstract

Technological advances have created a new existence, providing an unforeseen level of interaction and transaction between parties that have never physically met. Preliminary thinking was that these creations (such as the World Wide Web) would create a level of privacy and anonymousness previously unheard of in humanity. While a surface examination shows that privacy is abundant in modern society, a more thorough examination reveals different results. Rather than increase privacy, technological developments have produced a world in which more information is available about an individual than ever imaginable. For this reason, modern societies suffer an increasing lack of privacy, rather than an increase in privacy.

Statement of Interest

The choice of a thesis topic resulted from readings and discussions that were an essential requirement of VKSF 4002-718 Current Themes in IT. The most influential materials were discussions regarding the TIA (Total Information Awareness) program, and the articles by Timothy C. May and Alan Wexelblat in the “True Names and the opening of the cyberspace frontier” compilation.

Required Skills

The skills required for the thesis include a thorough understanding of political policy, operating systems, software applications, Web and Internet technologies, data warehousing and data mining, database operations, cryptography, steganography and networking. Program courses that have provided insight for the thesis include VKSF 4002-342 Internetworking Lab, VKSF 4002-318 Java for Programmers, VKSF 4002-718 Current Themes in IT, VKSF 4002-745 Transmission Systems, VKSF 4002-875 E-Commerce Implementation and VKSF 4002-750 Distributed Systems.

The thesis requires the analysis of political policy that has supported the reduction of privacy, and the technologies implemented to enforce those policies. Examined policies and programs will include the TIA system, Patriot Act, NASA mind reading experiments and the panoptic sort.

Software developments scheduled for examination include operating system operations and flaws, logs and records maintained by applications, device drivers, cookies and spyware. Internet and Web technologies scheduled for examination include HTTP specification and operation, TCP specification and operation, WHOIS specification and operation, packet captures, Java networking methods and search engine manipulation. Storage technologies scheduled for examination include data warehousing and data mining. Tagging methods scheduled for examination include persistent digital nyms and RFID (Radio Frequency Identification). Methods of privacy protection include cryptography methods, applications, and examples, and steganography methods, applications and examples.

The thesis will contain two case studies examining the amount of personal information about an individual that is publicly available on the World Wide Web. The first case study will examine Aaron D. Sanders, author of the thesis. The second case study will

examine a respected computer expert (pending the expert's approval). Upon completion of the information gathering process, an FBI profiler will examine the information in an effort to make determinations about each individual's personalities and lifestyle.

Planned Materials and Literature

Materials planned for the thesis include "Hiding in Plain Sight: Steganography and the Art of Covert Communications" by Eric Cole, "Absolute PC Security & Privacy" by Michael Miller, "HTTP: The Definitive Guide" by David Gourley and Brian Totty, "True Names and the opening of the cyberspace frontier" edited by James Frenkel and "Secrets and Lies: Digital Security in a Networked World" by Bruce Schneier. Additional resources will include articles from other relevant publications, such as the "Rochester Democrat and Chronicle", "USA Today", "The Washington Post", "Maximum PC" magazine and "Network Computing" magazine.

Research Schedule

It is desirable to achieve completion of the thesis requirements before the May 2004 Commencement Ceremonies, so that the author might receive his completed M.S. degree at those ceremonies. Every effort will be put forth to complete the thesis and ensuing defense by March or April of 2004.