

Homework 5

This assignment must be submitted **electronically** using the Yale Classes server by **5pm EDT, Tuesday, April 15, 2003**. It covers readings and lectures through Thursday, April 10, 2003. Late homeworks will not be accepted.

Please be sure to type your name and e-mail address at the top of your homework assignment. In addition, please include your NetID and “hw5” in the name of your file, *e.g.*, **vr48-hw5.doc**. Detailed instructions for submitting your homework are available on the course webpage at <http://zoo.cs.yale.edu/classes/cs155/spr03/submit.html>.

1. AUTHENTICATION POLICY AND TECHNOLOGY (30 points)

This question addresses some of the points in the two Executive Summaries of NRC reports covered in Joe Pato’s lecture on April 10.

A (21 points). For 7 points each, give the names of three companies mentioned in CPSC 155b this semester whose businesses you think would benefit if the US Government heeded the recommendations and findings in “Who Goes There?: Authentication Through the Lens of Privacy.” Briefly explain which products and/or services offered by these companies you think could be marketed as solutions to the problems addressed in this report and who you think would buy them.

B (9 points). Do you agree or disagree with the following statement made in the Executive Summary of “IDs – Not that Easy: Questions about Nationwide Identity Systems”:

Proponents of [a nationwide identity] system should be required to present a very compelling case, addressing the issues raised in this report and soliciting input from a broad range of stakeholder communities.

Briefly explain why you agree or disagree, on technical, legal, or political grounds.

2. OPEN-SOURCE SOFTWARE (25 points)

A (8 points). For two points each, what are the “four freedoms” of the open-source movement?

B (5 points). What is the difference between “free software,” as open-source developers use the term, and “software that’s available free of charge?”

C (12 points). For four points each, give three business models for information products or services (*e.g.*, those covered in Shapiro and Varian’s **Information Rules**, in **The Digital Dilemma**, or in lecture notes from earlier in the semester) and explain how they can be applied to open-source software.

3. TRUSTED PLATFORMS (20 points)

A (12 points). “Attestable TCBs” such as the Microsoft “Next-Generation Secure-Computing Base” could help entertainment-content owners build more diverse and profitable online-content-distribution businesses, but they will not be the only ingredients needed for such businesses to thrive. For four points each, give three other ingredients that will be used by content owners in conjunction with attestable TCBs to build Internet-based distribution businesses.

B (8 points). Microsoft’s marketing strategy for the Next-Generation Secure-Computing Base platform claims that it will be useful not only (or not even primarily) to mass-market entertainment-content distributors. Do you agree? If not, why not? If so, give an example of a class of users (other than mass-market entertainment-content distributors) that you think will benefit extensively from this new platform.

4. WEB SEARCHING AND GOOGLE (25 points)

A (5 points). What technical function is performed by the “Index-Server cluster” in Google’s system?

B (5 points). What technical function is performed by the “Doc-Server cluster” in Google’s system?

C (5 points). Web-page meta-tags, fonts, headings, and content of neighboring pages can make search engines’ jobs easier by, for example, clarifying which of several meanings of a word is the relevant one. Unfortunately, there is also a down-side to search engines’ reliance on page content. What is it?

D (10 points). On April 7th, 2003, the **New York Times** ran a story entitled “Yahoo Plans Improvements in Effort to Regain Lost Ground.” Among the points made in this story are that Yahoo! (1) plans to change the display style of its ads to make them more Google-like (*i.e.*, to use more plain text and fewer flashy graphics and other clutter), (2) plans to deliver location-based content (selected based on the user’s registration information if he or she has provided it) and other content from its directories as well as links to good pages, and (3) plans eventually to start using Inktomi’s search technology instead of Google’s. Yahoo’s goal is to compete more effectively against Google. Do you think that it will succeed? Why or why not?