I have received several requests from students over the last year asking for suggestions on PhD thesis topics in INFOSEC; here is the latest one:

>I am thinking of doing my PhD in security and I wanted to ask
>your advice on what areas need the most research.<

Off the top of my head:

(1) Mandatory reporting of computer security breaches: mandatory reporting in the health, transportation, and financial securities fields with recommendations for INFOSEC.

You would study documents and interview people from the LCDC, JCAHO, DoT, SEC and made sense of the historical patterns and current regulations governing mandatory reporting of computer crimes. You could interview law enforcement people (FBI InfraGard program, attorneys), privacy advocates, corporate security personnel and executives, and academics. The project might involve surveys and statistical analysis. You could explore regulations in different countries if you wanted to. Your thesis would ideally end with a thorough analysis of the costs and benefits of mandatory reporting and a discussion of how such a system could be implemented successfully if you decide it would be worth trying.

(2) Analysis of technical and political aspects of identification and authentication technologies: tokens, smart cards and biometrics versus passwords.

This study would examine the current state of various I&A mechanisms. You would survey the literature, including produce evaluations and certification schemes, and then use survey instruments to evaluate the relative market-share of the different devices. You would want to interview principals at various firms where such systems are made as well as users. Of particular interest: user perceptions and relative acceptance of the different techniques. This study would allow you to delve into current issues of great interest such as legal ramifications of I&A and popular perceptions and attitudes about strong I&A. The study could conclude with recommendations for improvements and projections of the longer-term trends in I&A.

More in the next episode of this short series.

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Mich Kabay can be reached by e-mail at <mkabay@atomictangerine.com>.

AtomicTangerine is the Internet's first e-business venture consulting firm, combining the disciplines of venture capital, technology innovation and strategic consulting to create category killers and incubate new industries for companies of all sizes and at all stages of evolution.

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