
APPENDIX B

Mail Security Survey Details

This appendix presents details of the hard drive study presented in Chapter 3. Further details can be found online at <http://www.simson.net/ref/2004/smime-survey.html>.

B.1 Commercially Oriented Email

Typical email exchanged between merchants and consumers includes *advertisements* from the merchant to the consumer, *questions* that the consumer may pose the merchant, and *receipts* that the merchant may send the consumer after the transaction takes place. The consumer may send the merchant additional follow-up questions. Given that these are typical kinds of messages our respondents exchange with their customers, we sought to discover what level of security our respondents thought appropriate.

A majority of all respondents (58.8%) thought that receipts from online merchants should be digitally signed, while a roughly a third (46.8%) thought that receipts should be sealed with encryption. Remember, *all respondents in the survey are online merchants*—so these merchants are basically writing about what kind of messages they believe that they themselves should be sending. But given our sampling of Amazon.com merchants, it may be that most of them are individuals or small organizations who see themselves primarily as consumers.

On the other hand, few respondents thought that questions to online merchants required any sort of special protection. Interestingly, our two groups with either actual or acknowledged experience thought that questions to merchants required *less protection* than their counterpart groups.

Very few respondents (14%) thought advertisements should be digitally signed—a surprising number, considering that forged advertisements would definitely present many merchants with a significant problem. Instead, a majority of respondents (54%) thought that advertisements require no special protection at all. Roughly 29% of all respondents agreed with the statement that advertisements should never be sent by email.¹

¹This question did not distinguish between email that should not be sent because it might be considered “spam”

The free-response answers suggest that merchants were talking about the world of e-commerce as they would like it to be, rather than the one in which they are currently living:

- “Receipts from merchants should be encrypted if they contain your credit card information, I’m pretty sure the ones I’ve received haven’t.” (30843)
- “I think that digital signing is probably more important than encryption when it comes to advertising or work correspondence. Encryption is more important when dealing with financial transactions.”(30070)
- “I doubt any of my usual recipients would understand the significance of the signature.” (30468)
- “Your survey did not address the fact that any email containing credit card information should be encrypted. We get emails from customers almost every day with card numbers with orders, rather than using our secure systems on our sales sites. It is more common than I would ever have believed.” (30142)

and messages that should not be sent by email because their content is too sensitive, but comments from respondents indicated that many took this question to be a question about unsolicited commercial email.

	ALL	Europe	US	Savvy	Green
Should be <i>digitally signed</i>	25%	39% **	22% **	33% *	21% *
Should be <i>sealed</i> with encryption	13%	6% *	15% *	12%	14%
Should be <i>both</i> signed and sealed	34%	23% *	36% *	27% *	37% *
Does not need special protection	25%	29%	25%	26%	25%
Should never be sent by email	3%	3%	3%	2%	3%
<i>sealed or both</i>	47%	30% ***	51% ***	39% *	51% *
<i>digitally signed or both</i>	59%	62%	58%	60%	58%
Total Respondents	425	77	348	141	284
No Response	(8)	(3)	(5)	(1)	(7)

* $p < .05$; ** $p < .01$; *** $p < .001$;

Table B.1: When asked, most respondents thought that “Receipts from Online Merchants” should be digitally signed, and many thought that such receipts should also be sealed.

	ALL	Europe	US	Savvy	Green
Should be <i>digitally signed</i>	20%	15%	21%	18%	20%
Should be <i>sealed</i> with encryption	5%	6%	5%	6%	5%
Should be <i>both</i> signed and sealed	13%	9%	14%	8% *	15% *
Does not need special protection	61%	69%	59%	67%	58%
Should never be sent by email	1%	0%	1%	0%	1%
<i>sealed or both</i>	18%	15%	19%	14%	20%
<i>digitally signed or both</i>	33%	24%	34%	26% *	36% *
Total Respondents	426	78	348	141	285
No Response	(7)	(2)	(5)	(1)	(6)

* $p < .05$;

Table B.2: When asked what sort of protection was required for “Questions to online merchants,” most of our respondents—all of whom were merchants—said that they didn’t think that any protection was needed.

	ALL	Europe	US	Savvy	Green
Should be <i>digitally signed</i>	14%	14%	14%	18%	12%
Should be <i>sealed</i> with encryption	1%	1%	1%	2%	0%
Should be <i>both</i> signed and sealed	3%	1%	3%	2%	3%
Does not need special protection	54%	58%	53%	52%	54%
Should never be sent by email	29%	26%	30%	26%	30%
<i>sealed or both</i>	3%	3%	4%	4%	3%
<i>digitally signed or both</i>	17%	15%	17%	20%	15%
Total Respondents	429	78	351	142	287
No Response	(4)	(2)	(2)	(0)	(4)

Table B.3: When asked what sort of protection is appropriate for “Advertisements,” most respondents thought that no protection at all was required.

B.2 Financial Communications

Not surprisingly, a majority (62.7%) of our respondents thought that financial statements should be both signed and sealed. There was no significant difference in response rates to this question between any of our groups. Similar response rates were seen for official mail sent to government agencies.

Table B.4: Financial Communications: What Kind of Protection is Necessary?

	“A bank or credit-card statement:”	“Mail to government agencies on official business, such as filing your tax return or filing complaints with regulators:”
Does not need special protection	1.2%	4.2%
Should be <i>digitally-signed</i>	2.1%	9.2%
Should be <i>sealed</i> with encryption	16.2%	9.9%
Should be <i>both</i> signed and sealed	62.7%	64.6%
Should never be sent by email	17.8%	12.2%
<i>sealed or both</i>	78.9%	74.4%
<i>digitally-signed or both</i>	64.8%	73.7%
Total Respondents	426	426
No Response	(7)	(7)

B.3 Personal Email At Home and At Work

For years advocates of cryptography have argued that one of the primary purposes of the technology is to protect personal email sent or received at home and at work. The respondents to our survey found no strong desire for technical measures to ensure either integrity or privacy. Even more noteworthy, respondents in the *Europe* and *Savvy* groups saw fewer needs for protection than those in the *US* and *Green* group. One explanation for this result is that increased exposure to security technology increases one’s confidence in the computer infrastructure—even when that technology is not being employed. Another explanation is that generally more stringent privacy legislation in Europe has removed eavesdropping as a concern from many people’s minds.

Table B.5: “Personal email sent or received at work:”

	ALL	Europe	US	Savvy	Green
Does not need special protection	35%	47% *	33% *	40%	33%
Should be <i>digitally-signed</i>	17%	18%	17%	21%	15%
Should be <i>sealed</i> with encryption	15%	17%	14%	9% **	18% **
Should be <i>both</i> signed and sealed	23%	14% *	25% *	18%	26%
Should never be sent by email	10%	4% *	11% *	13%	8%
<i>sealed or both</i>	38%	31%	39%	26% ***	44% ***
<i>digitally-signed or both</i>	40%	32%	42%	38%	41%
Total Respondents	425	77	348	141	284
No Response	(8)	(3)	(5)	(1)	(7)

* $p < .05$; ** $p < .01$; *** $p < .001$;

Table B.6: "Personal email sent or received at home:"

	ALL	Europe	US	Savvy	Green
Does not need special protection	51%	58%	49%	53%	49%
Should be <i>digitally-signed</i>	18%	16%	18%	22%	16%
Should be <i>sealed</i> with encryption	9%	9%	9%	9%	9%
Should be <i>both</i> signed and sealed	23%	17%	24%	17% *	25% *
Should never be sent by email	0%	0%	0%	0%	0%
<i>sealed or both</i>	31%	26%	33%	25% *	34% *
<i>digitally-signed or both</i>	40%	32%	42%	38%	41%
Total Respondents	426	77	349	139	287
No Response	(7)	(3)	(4)	(3)	(4)

* $p < .05$;

B.4 Communication with Politicians

Unlike mail on official business, respondents felt that neither newsletters from politicians nor mail to political leaders required any kind of special protection. Once again this is somewhat surprising, given that such communications are easily spoofed either to discredit a politician or to mislead leaders about the depth of public support on a particular issue.

There was no statistically-significant difference between the way that any of our groups answered this question, so individual breakdowns by group are not provided.

Table B.7: Communication to and from Political Leaders: What Kind of Protection is Necessary?

	"Newsletters from politicians:"	"Mail to political leaders voicing your opinion on a matter:"
Does not need special protection	54.9%	52.5%
Should be <i>digitally-signed</i>	19.7%	27.2%
Should be <i>sealed</i> with encryption	0.5%	4.2%
Should be <i>both</i> signed and sealed	2.1%	10.3%
Should never be sent by email	22.8%	5.9%
<i>sealed or both</i>	2.6%	14.5%
<i>digitally-signed or both</i>	21.8%	37.5%
Total Respondents	426	427
No Response	(7)	(6)