Security, Your Business

SOME STUFF YOU SHOULD KNOW, SOME STUFF YOU CAN DO

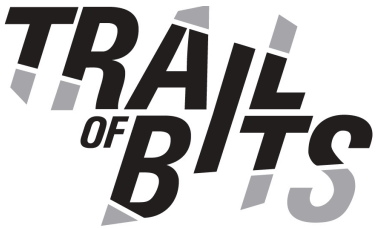
Myself

PhD Student at UMD

- Programming Languages and Security

Systems Engineer at Trail of Bits

- R&D on applied research in application security



Previously Kyrus

- Carbon Black, kernel level system integrity monitoring
  - Since acquired by Bit9, congrats!
- Collaboration with Microsoft on Zeus botnet takedown

The Threat Portrayed

Security consultants say don’t get hacked, your business…

- Will fail
- Customers will leave
- New customers won’t show up
- Your stock price will tank
- You’ll get sued
- Regulators will penalize you

Some Big Examples

Heartland payment processing

- Infiltrated payment exchange system
- Massive dumps of valid CC data directly from the backend

HBGary e-mail leak

- Full, indexed dump of all e-mail the company sent or received in its lifetime

```
<+greg> you realize that releasing my email spool will cause
                millions in damages to HBGary?

<@`k> yes

<+c0s> greg: another reason its not out yet.

<+Agamemnon> yes we do greg

<@`k> greg is will be end of you :) and your company
```

Perhaps this produces a few rules

- Do not antagonize Anonymous
- If you do, have a contingency plan more substantial than “go on to IRC and plead with the people who hack us”

Some Big Examples

LastPass

- Assumed full dump of LastPass online database

Comodo

- Hacker gained ability to sign certificates of their choice with Comodo key

```
5.  Here is another proof:
6.  http://rapidshare.com/files/454806052/GlobalTrustTable.rar
7.
8.  I uploaded JUST 1 table of their ENTIRE database which I own.
9.
10. Also ask Comodo about my hack, ask them what I did to them. Let me tell you what I did:
```

Some Of These Are Pretty Bad

Comodo is a PKI Certificate Authority

They sign CSRs for money

Their business is supposed to be choosing the right CSRs to sign

Their business is literally providing trust

They failed

They're not alone, other CAs have fallen in similar ways

People still use them though…

The Threat Deflated

How many companies have gone under because they were owned?

- Maybe two
  - And one of them is mtgox

Every company previously is still around

- HBGary was sold
- People I know still use LastPass
- Everyone still uses Heartland payment processing on the backend

If getting hacked is so bad, then why are they still around?

Unwarranted Cynicism

Maybe all the security people are full of crap

Maybe all the security people just want job security

- There's probably some truth in this
- A lot of the security industry definitely does not want to see security actually "solved"

Customers see getting hacked as a natural disaster

- You wouldn't blame a business when their office is hit by a tornado

We do have some useful things to tell you though

What Threats Do You Face?

So given this, what kind of threats will your new businesses face?

	Opportunistic	Targeted
Disruption	DDOS for Money	DDOS for a cause
Intrusion	Drive-By, Cryptolocker	Very motivated criminal enterprise

SECURITY

Tech Start-Ups Are Targets of Ransom Cyberattacks

By NICOLE PERLROTH and JENNA WORTHAM APRIL 3, 2014, 4:00 PM 8 Comments

What Can You Do?

Don’t panic about security

- Being told “you’re going to lose” shouldn’t be scary – it should be freeing

Think early about how to respond to security reports

- Having a `security@` for your company is a good step
- Not freaking out and trying to downplay the issue is also good

Please don’t use C

- C is like leeches, we used it before we knew better, but now we have science and technology

Don’t antagonize angry teenagers on the Internet

Google “matasano chargen indie security” and read the first hit

- Do it now

Indie Security 12(ish)-step

Prioritize security with your other goals	What else will kill the business first?
Do outreach correctly	Have a security page, don't argue with the security community
Practice basic code hygiene	Zero-init, abort on malloc failure, whitelist content to alpha-numeric
Just don't do some things yourself	Cryptography, passwords, installers, file download/upload
Deploy Rubber Chicken Security	Get PCI certified, use SSL
Fuzz test your app	Buy and learn burp
Don't treat code as secret	Assume all your code will be known

Security Is Largely An Ethical Concern

The market won't reward you for having good security

So your motivation for doing security well will be internally motivated

Your concerns should be proportional to the severity of information that you are trusted with

- Facebook for dogs? Ehh…
- A communication system for activists in hostile countries? Hmm…

Your customers will stick with you through good and bad security

- Your memories of the problems your customers have due to your bad programming will be with you for life though
- Learn things about security or get a good Scotch habit

Growing up

Maybe you never need to really care about security

Maybe one day, you'll have a lot of things that other people want

- Lots of data about people in the world
- And their money
- A large install base of very vulnerable code

When that day comes, you should probably grow up

- Give us a call ;)

In Summary

You will have to care about security, nobody else will

A lot will motivate you not to care

There are some focused things you can do to improve your security maturity without compromising your business agility

Things are pretty bad, but not as intractable as they might seem

https://github.com/isislab/Hack-Night

andrew@trailofbits.com