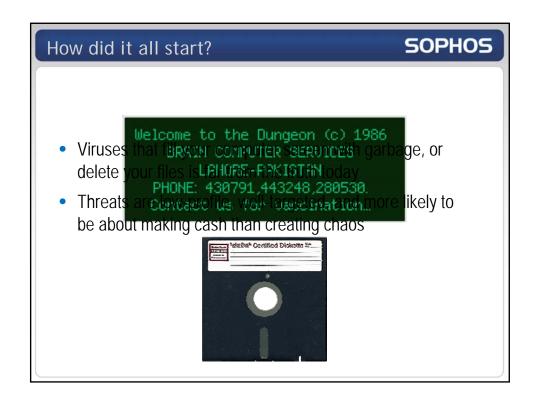
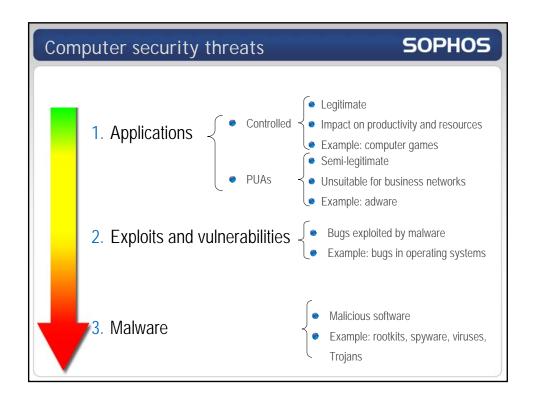


# How threats work Controlled applications Potential Unwonted applications Exploits and Vulnerabilities Malware The SophosLabs Security threat report 2010





### Controlled applications

### **SOPHOS**

- Legitimate programs
- Impact on business productivity and resources
- Controlled applications to review:
  - Computer games
  - File-sharing applications
  - FTP applications







### Computer games

### **SOPHOS**

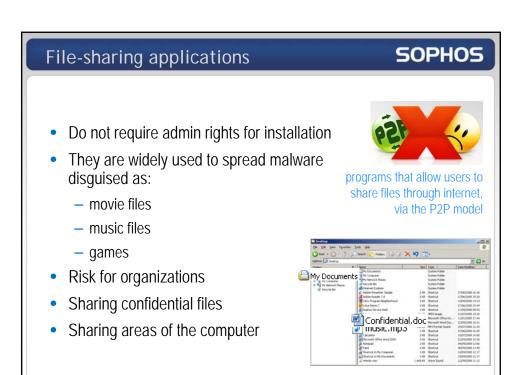
- Some operating systems come with a set of games
- Could impact on staff productivity
- Could become addictive

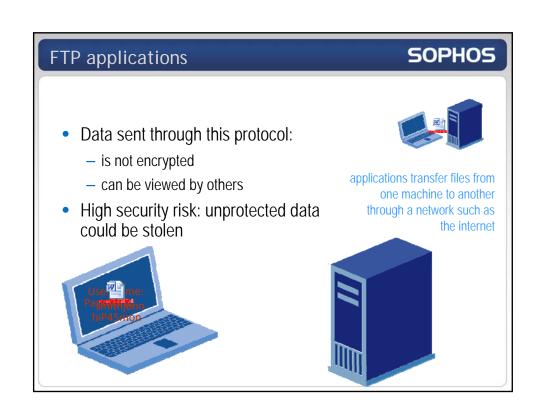


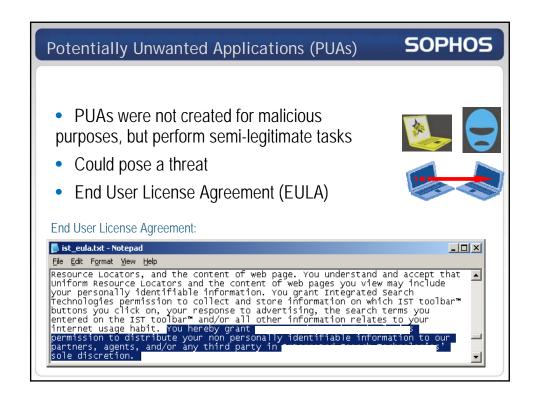
programs played on computers

"I bet there are millions of bosses out there who hate me. If I had a penny for every hour that has been wasted playing Solitaire in the office, I could hire Bill Gates as my golf caddie."

Wes Cherry, Author, Microsoft Windows Solitaire









### Browser hijackers

### **SOPHOS**

Some websites run browser hijackers that can:



- add shortcuts to "Favorites"
- change default browser's start page
- edit Windows registry settings
- remove options from the browser's Tools menu

change the settings in the internet browser without user's permission

force visits to a website to inflate the number of "hits" and site ranking

004573

### Remote administration tools

### **SOPHOS**

- Designed for IT staff and network administrators
- Run any application on the user's PC
- Useful to debug problems
- In the wrong hands could be used for malicious purposes



programs to control other people's computers remotely

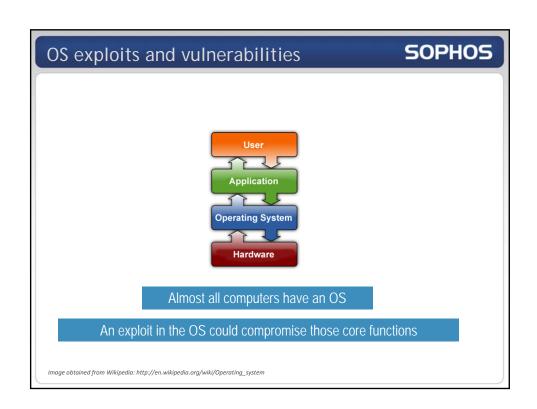


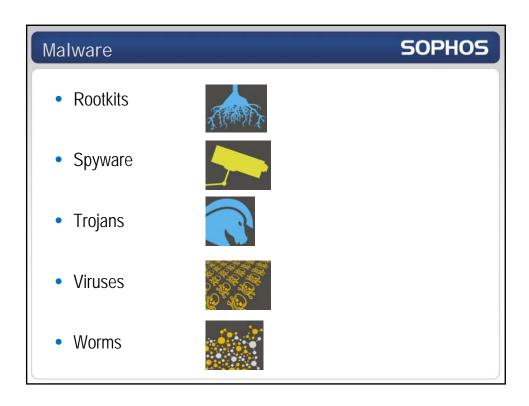


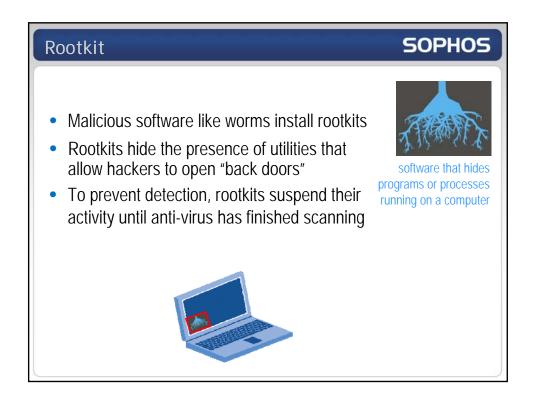
### • Vulnerability: weakness in the software, such as flaw, bug, or glitch, that can compromise the integrity of the software

Hardware

- Exploit:
   code that takes advantage of a vulnerability
- Exploits can distribute malware and launch "denial-ofservice" attacks, or even access confidential data







### Spyware

### **SOPHOS**

- Installed by web pages when visiting them
- User to download a "needed" software utility



software that gathers information without user's permission

- Spyware can:
  - change the default home page
  - track user's activity
  - report activity to others (advertisers)
  - make premium-rate calls using dial-up modem

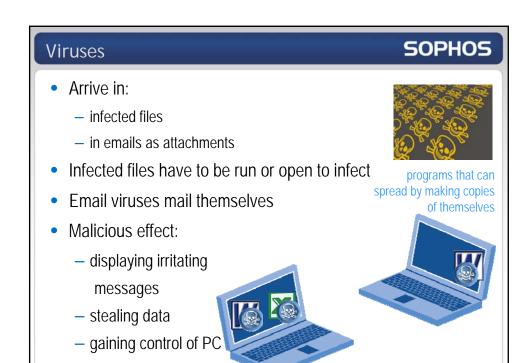
### Trojans

### **SOPHOS**

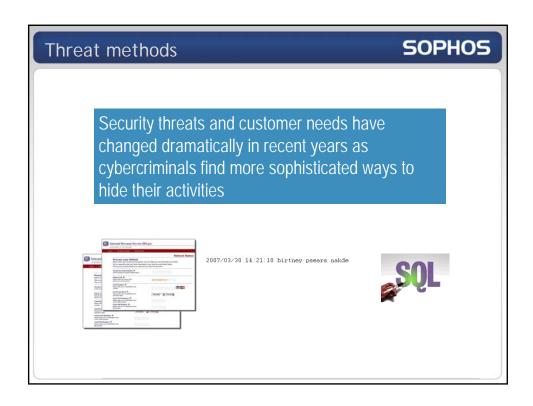
- Trojans do not make copies of themselves
- Trojans arrive in emails as attachments
- Claim one function, do something different
- Without user's knowledge
- Backdoor Trojans alert hackers when PC is online
- Hacker can:
  - run programs on infected PC
  - access personal files
  - modify and upload files
  - track the user's keystrokes
  - send out spam
  - launch "denial-of-service" attacks ("DoS" attacks)

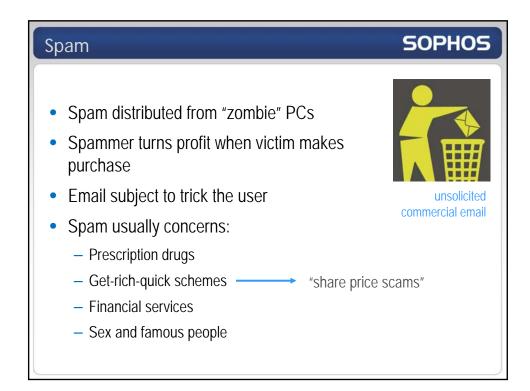


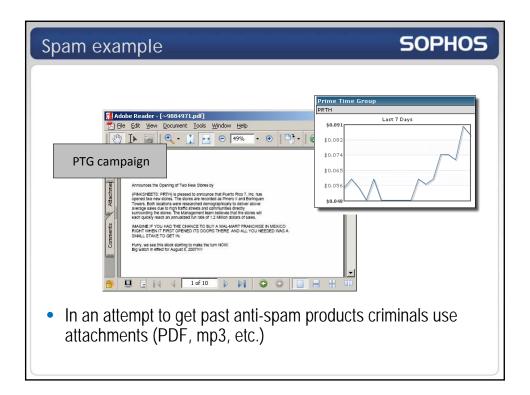
programs that pretend to be legitimate software, but actually carry out hidden, harmful functions



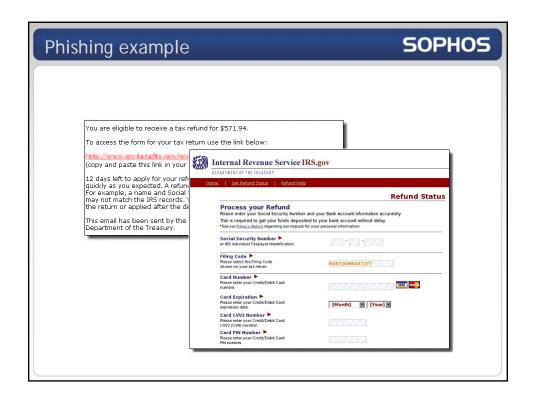
### **SOPHOS** Internet worms Worms differ from viruses because they can propagate themselves, rather than using a carrier program Create exact copies of themselves Use communication between PCs to spread programs that create copies of themselves They can cause: and spread via internet "denial-of-service" attacks encrypt user's files open "back door" on computer high network traffic slow down communications computers to crash



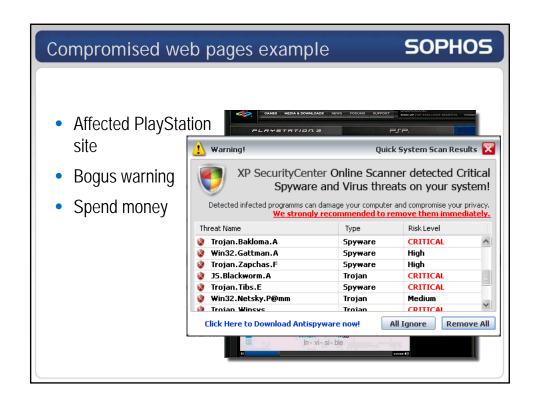


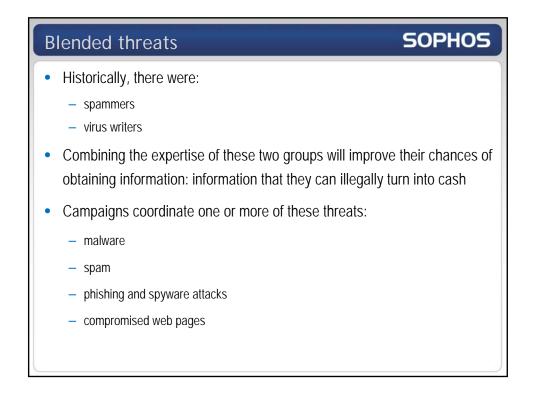


### **SOPHOS** Phishing • Email appears to be from a reputable organization • Email has a link to a "replica" website • Details entered in the "replica" website are stolen Phishing involves mass-mailing bogus emails and Spear phishing: small-scale and well-targeted websites to trick users into supplying Spear phisher mails users in organizations confidential or personal Spear phisher pretends to be from a trusted information department in the organization (i.e., IT, Human Resources)



# Hackers compromise reputable websites to infect trusting users Organizations have to face: Costs of recovery Commercial fallout Bad publicity Web surfers became infected from inappropriate sites, but they can now be infected by legitimate web pages that may have been compromised





### Blended threat example

### **SOPHOS**

- Cybercriminals exploit ANI, found in a component of various Microsoft OS
- Cybercriminals can take complete control of a computer
- Spam, websites and malware together
- Variable content: email subject and message change every time is sent



2007/03/30 14:21:10 birtney psears nakde 2007/03/30 14:26:58 birtney speasr nkaed 2007/03/30 14:34:04 britnye speras anked 2007/03/30 14:39:20 briteny psears nkaed 2007/03/30 14:40:15 britnye speasr nkaed 2007/03/30 14:40:23 rbitney spears nakde 2007/03/30 14:40:24 rbitney speras anked 2007/03/30 14:42:48 rbitney speasr nkaed 2007/03/30 14:42:58 britnye speras nkaed 2007/03/30 14:44:16 birtney speasr nkaed

### **Emerging threat**

### **SOPHOS**

- Emerging threat: data leakage
- 95% of data loss is accidental
- Media attention negative for organizations



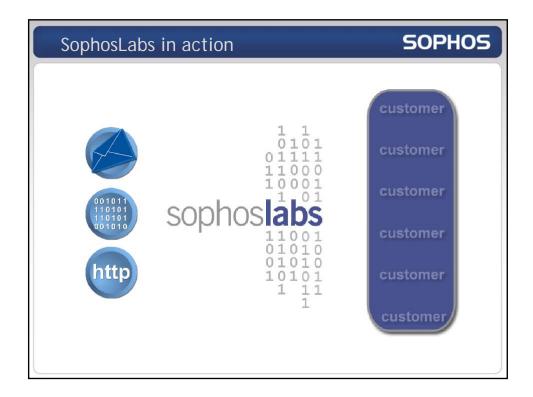




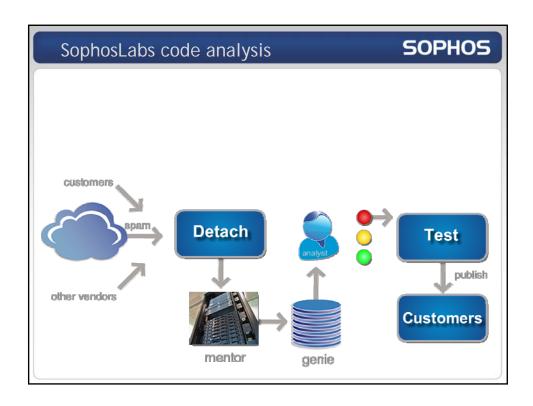
### SophosLabs

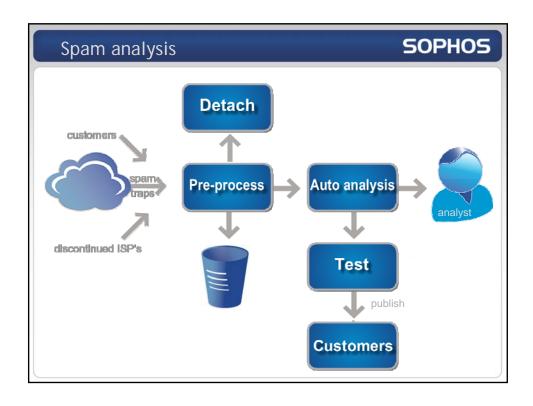
### **SOPHOS**

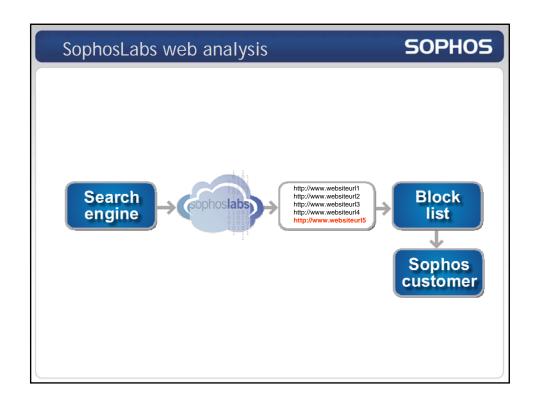
- Increase detection from highly skilled experts in:
  - Spam
  - Infected websites
  - Malware
- All analysts are trained for nine months
- Do we recruit malware authors?
- If you want someone to put out a fire you call a firefighter, not the arsonist!



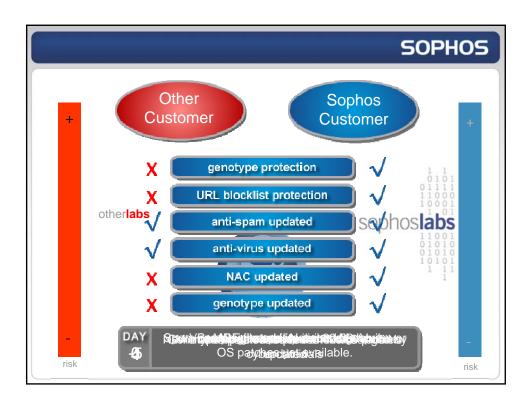


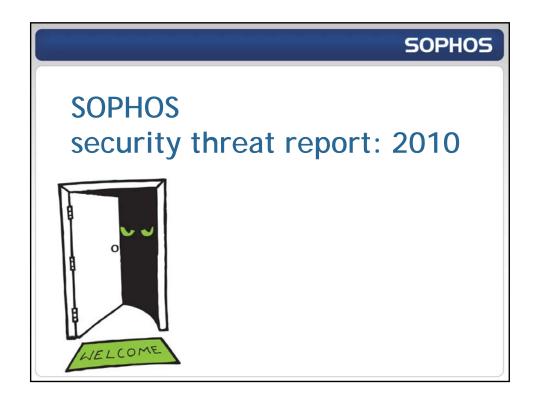






# New threats tend to shadow the working day Strategic positioning of SophosLabs Updated protection created and deployed before the working day even begins in many regions Abingdon

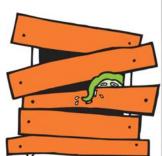




### 21st century: 10 years on

### **SOPHOS**

- Hackers moved from large-scale attacks
- They are more organized, targeted and unobtrusive
- Stealing data, from intellectual property to personal identities, are now key to financial gain
- Social networking sites exploded onto the web in the last half of the decade – becoming a primary target for hackers



### Security threat report 2010

### **SOPHOS**

### Summary of topics:

- Social networking threats
- Email threats
- Web threats
- Mobile threats
- Cyberwarfare
- The future

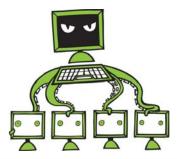


### Social networking threats

### Social networking attacks

### **SOPHOS**

- Social networking accounts are valuable to hackers
- They can use them to send spam, spread malware, steal identities..
- .. just like a compromised botnet PC



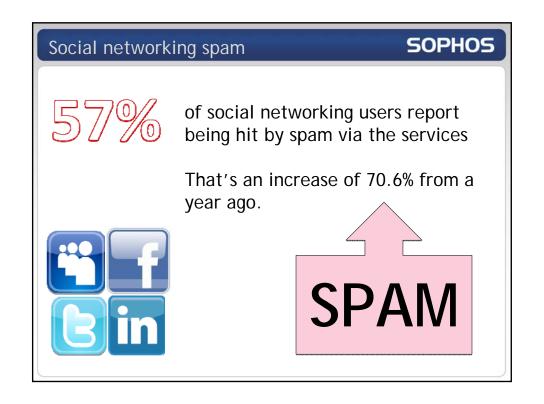
# Social networking spam

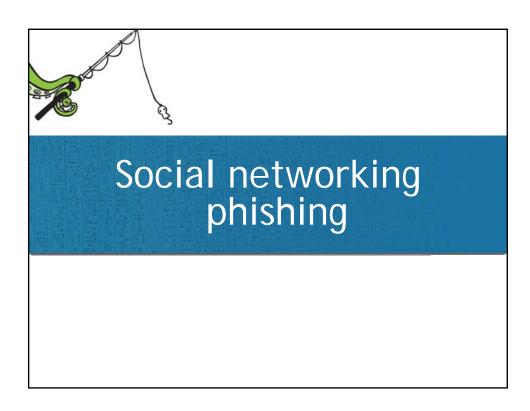
















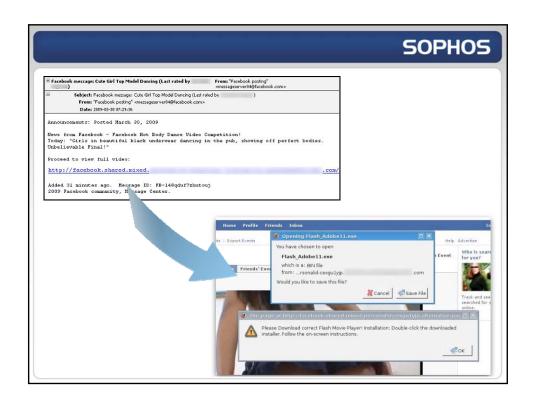






### Social networking malware



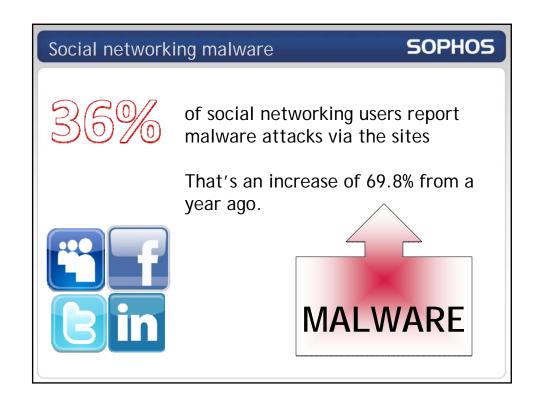


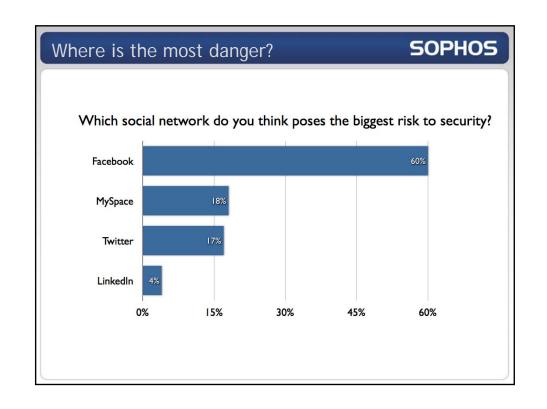




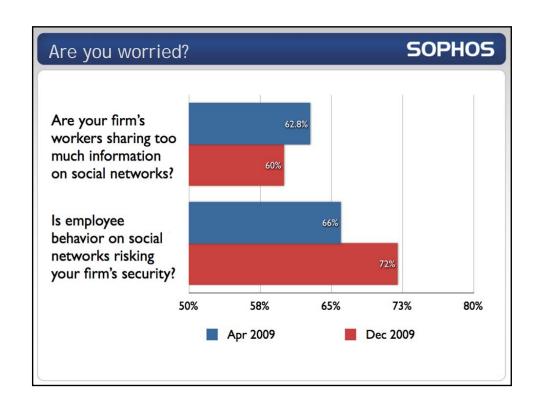












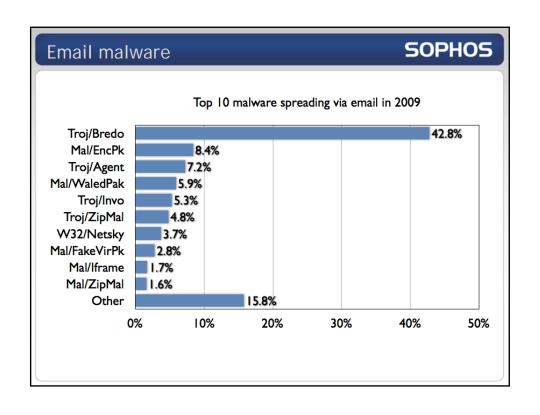


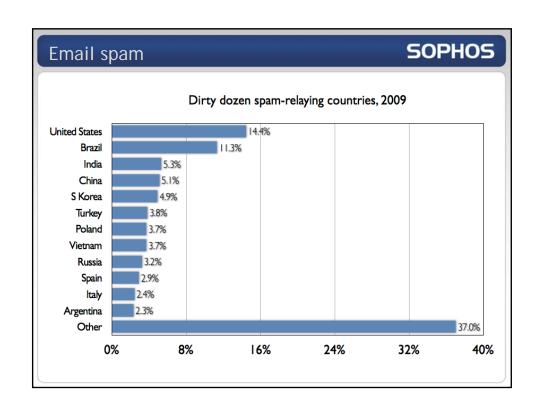


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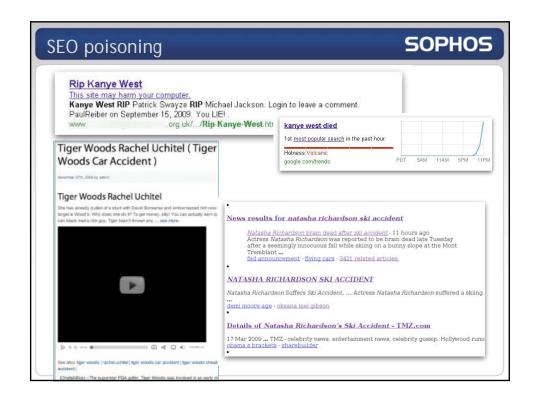
DHL Delivery Services.

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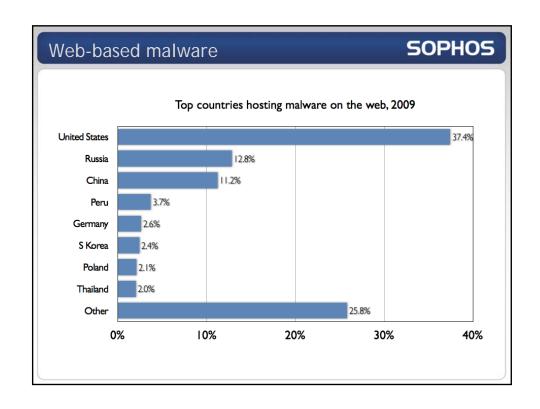












# Data loss Output Data loss





# Mobile malware



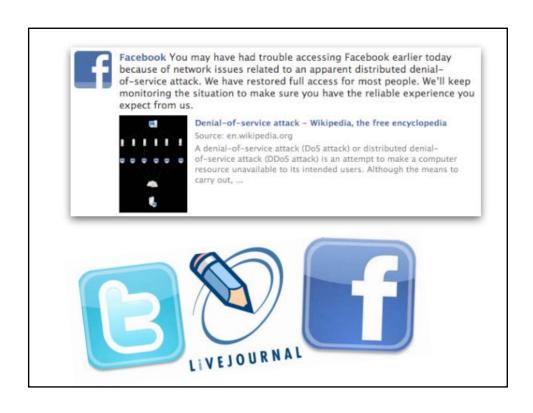




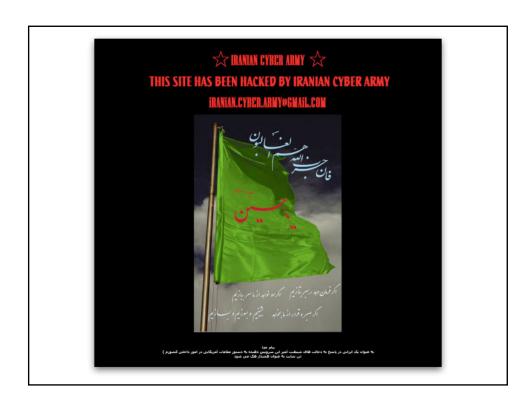


# August 6 2009

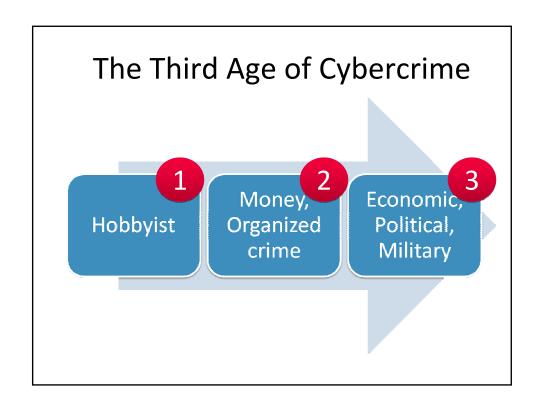


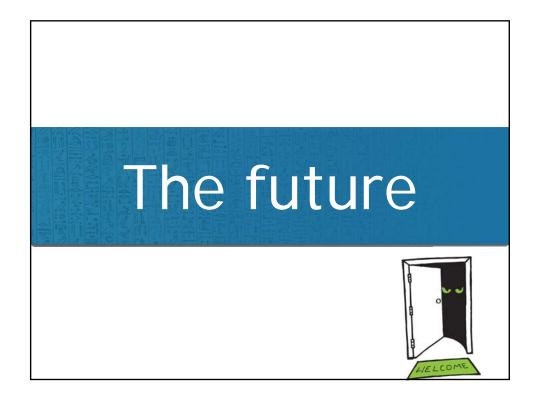












### The future

**SOPHOS** 

- Criminals are increasingly using social networking websites to steal identities, spread malware and send spam
- Social networks are getting better at protecting users against these threats – but there's a long way to go



### The future

**SOPHOS** 

- Criminals will continue to exploit social networks, commandeering identities to steal information and spread more attacks (a web 2.0 zombie)
- Users will continue to share information inappropriately, putting their identities – and potentially your firm – at risk
- But banning social networking may be rash
- Need to offer greater security and control to social networkers



### The future **SOPHOS**

 Hackers continuing to target ubiquitous software – such as Adobe Flash and PDF reader

- Growth in malware numbers currently 50,000 a day, what will be by the end of 2010?
- SEO poisoning and fake anti-virus will continue to be used by hackers for as long as victims fall for the tricks
- Will new OSes/platforms mean new danger or an opportunity to improve?

### The future

### **SOPHOS**

- Data leaks continue to embarrass firms who do not put data loss protection and encryption in place
- More attacks against cloud-based systems as more endusers trust their personal information to the internet
- More accusations of cyberwarfare and industrial espionage
  - perpetrated by cybercriminals

### Actions **SOPHOS**

 Regularly review the information you and your staff are sharing online, and act as appropriate

- Review your web 2.0 security settings you should only be sharing info with trusted parties
- Consider filtering access to social networks groups and time
- Scan websites accessed for malware/cybercrime
- Educate workforce regarding online risks

## Actions SOPHOS

- Roll out policies across your organisation regarding the use of security software and patches, and data encryption
- Keep ahead of the game sign-up for security alerts, RSS feeds for Sophos's blogs, etc
- http://www.sophos.com/security/

