Security Intelligence.
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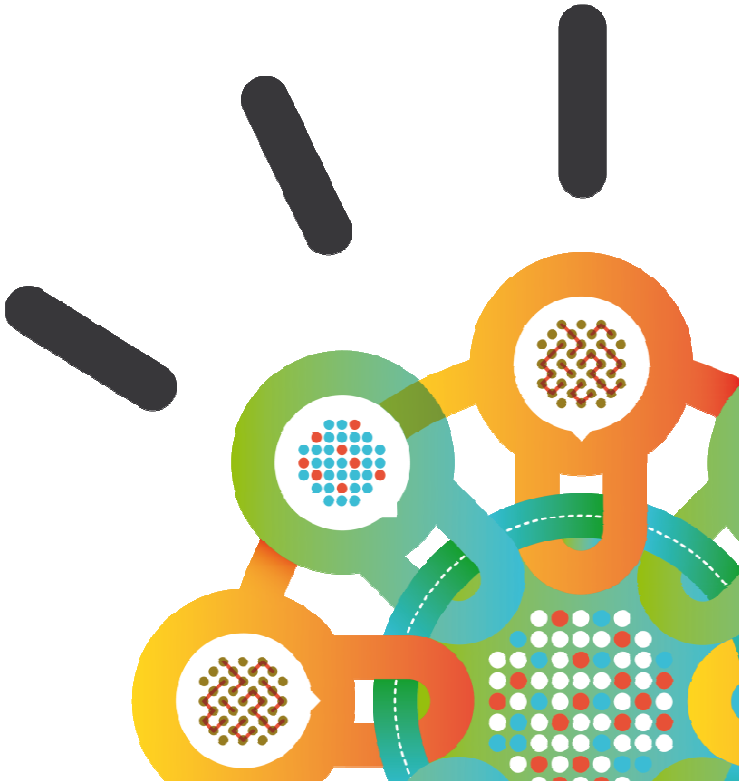
# IBM X-Force 2013 Mid-Year Trend and Risk Report

X-Force Threat Response Team

October 2013



# X-Force is the foundation for advanced security and threat research across the IBM Security Framework


X-FORCE

**The mission of X-Force is to:**

- **Monitor** and evaluate the rapidly changing threat landscape
- **Research** new attack techniques and develop protection for tomorrow's security challenges
- **Educate** our customers and the general public

# Collaborative IBM teams monitor and analyze the changing threat landscape

## Coverage

**20,000+** devices under contract

**3,700+** managed clients worldwide

**15B+** events managed per day

**133** monitored countries (MSS)

**1,000+** security related patents


IBM Research

## Depth

**17B** analyzed web pages & images

**40M** spam & phishing attacks

**73K** documented vulnerabilities

**Billions** of intrusion attempts daily

**Millions** of unique malware samples

## Mid-year 2013 theme:

# Attackers Optimize Tactics

# **3 Chapters** of this Trend Report presentation

## Targeted Attacks and Data Breaches

- Operational sophistication
- Watering hole attacks
- Compromised websites far from home
- DDoS diversions

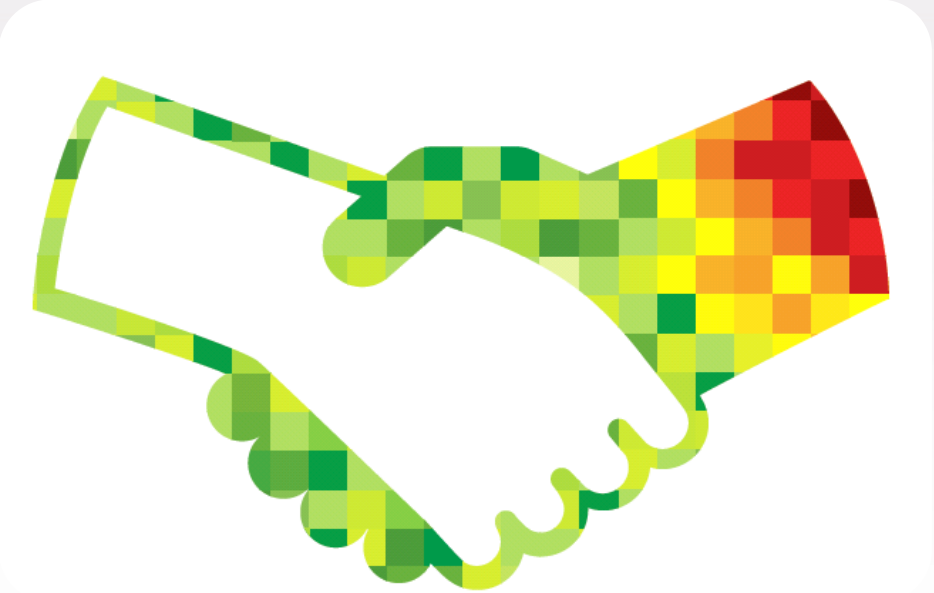
## Social and Mobile

## X-Force by the Numbers

# Exploiting Trust

**Security professionals should understand how attackers are taking advantage of trust in relationships to:**

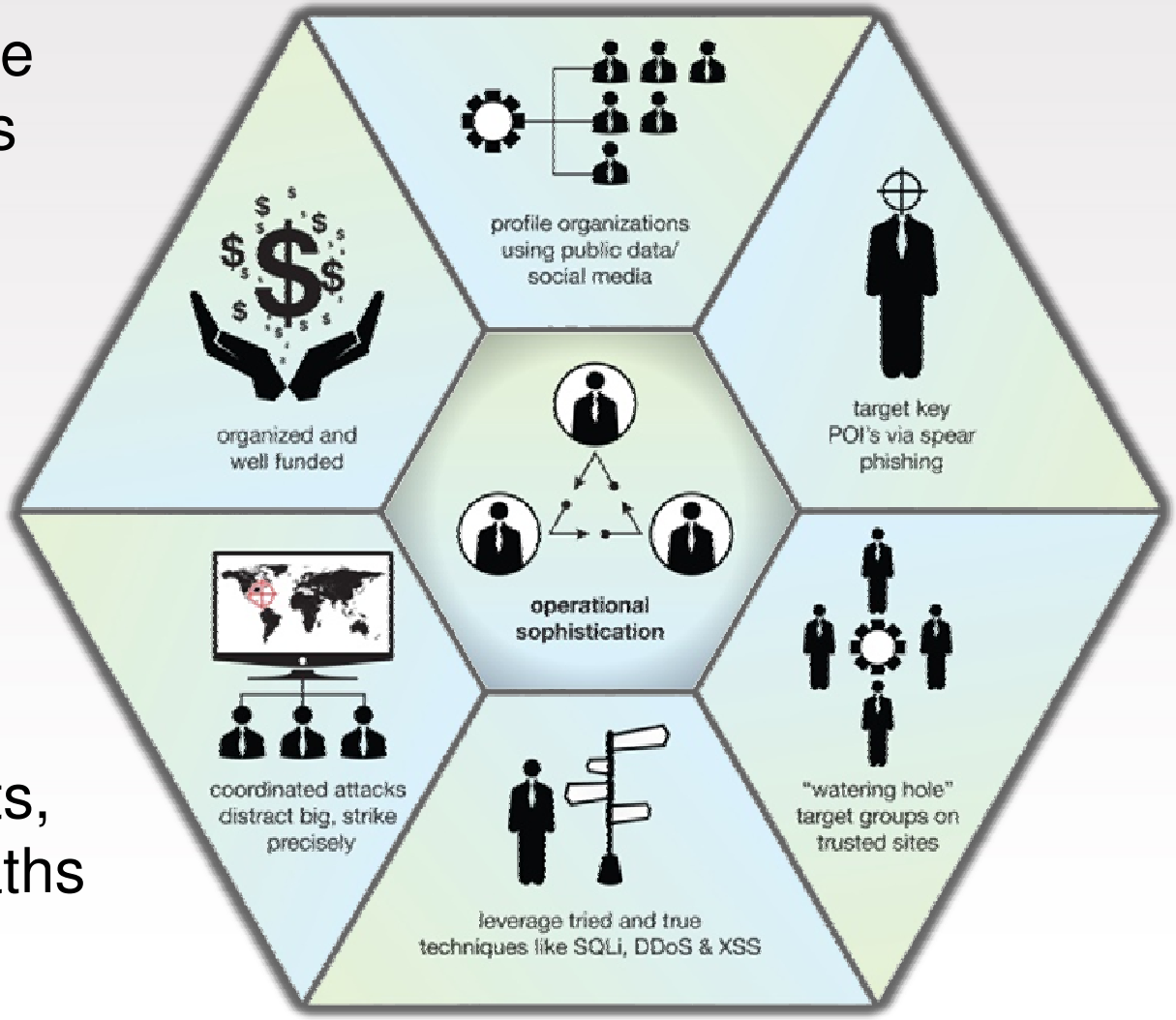
- Breach an organization
- Target groups of users
- Create methods of diversion



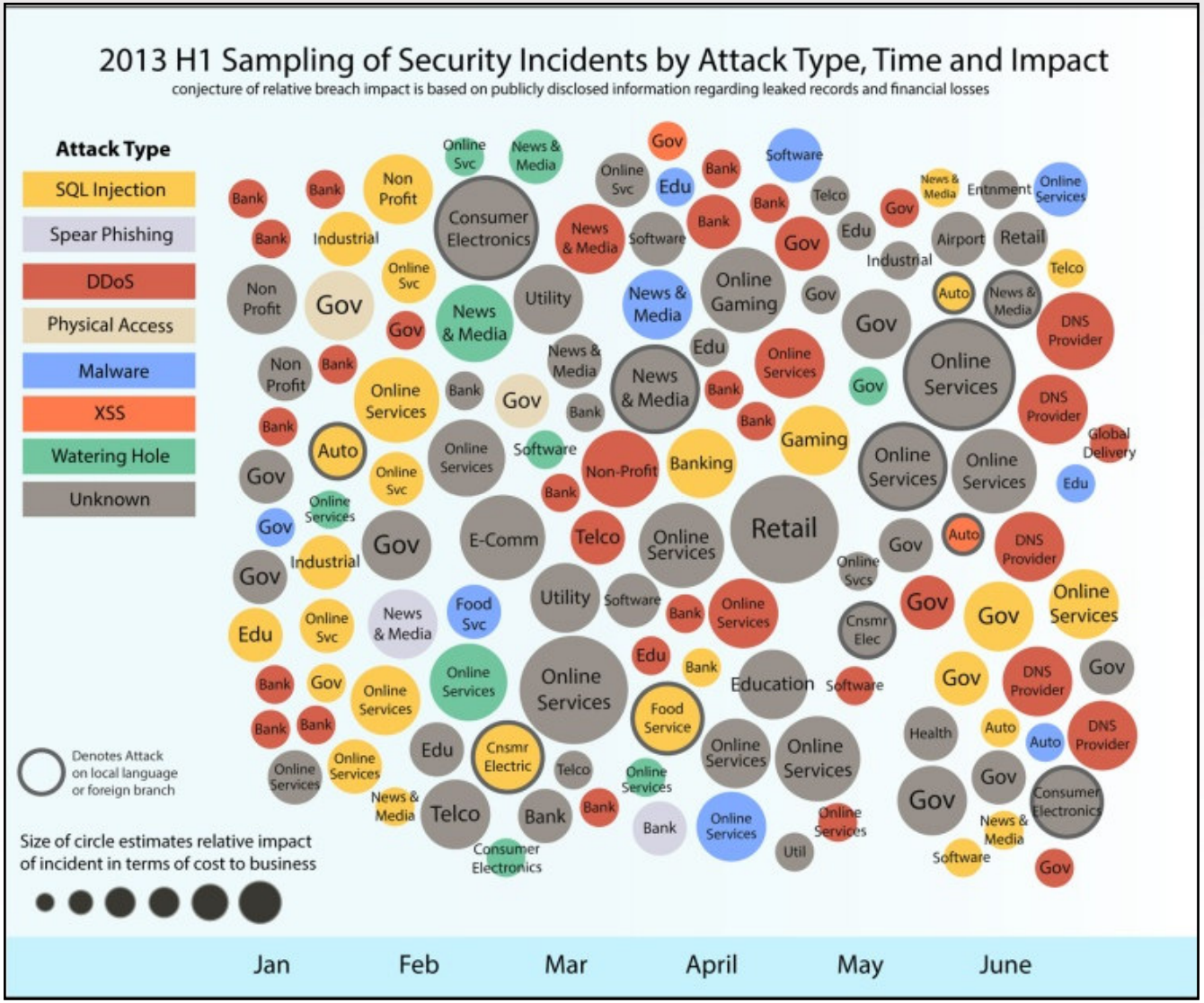
# Operational sophistication

Exploiting trust is one example of attackers becoming more operationally sophisticated to breach targets

Many breaches are not the result of custom malware and zero-day exploits, attackers look for paths of least resistance

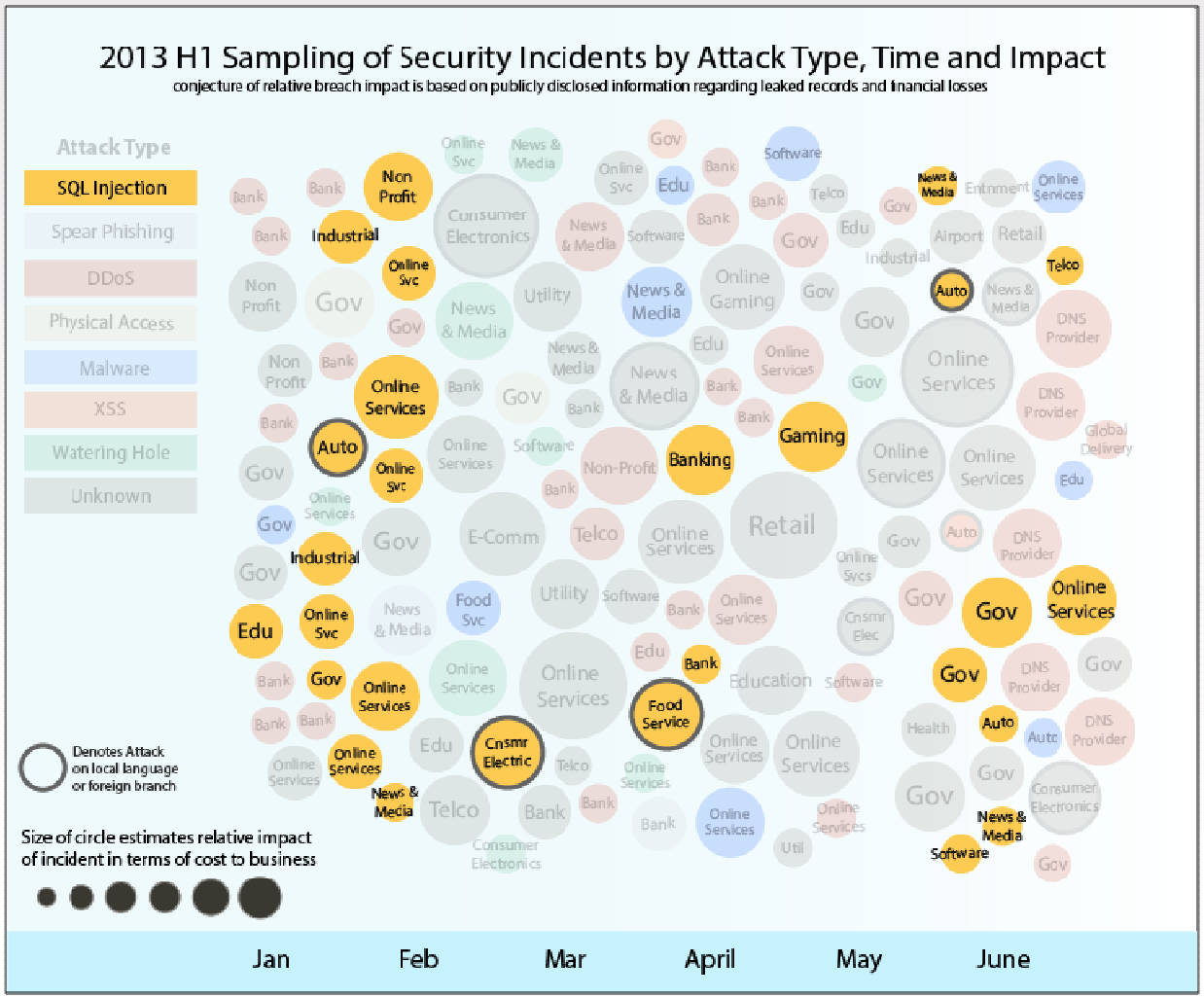


# Security Incidents in the first half of 2013



# SQL Injection

## still reliable for breaching databases

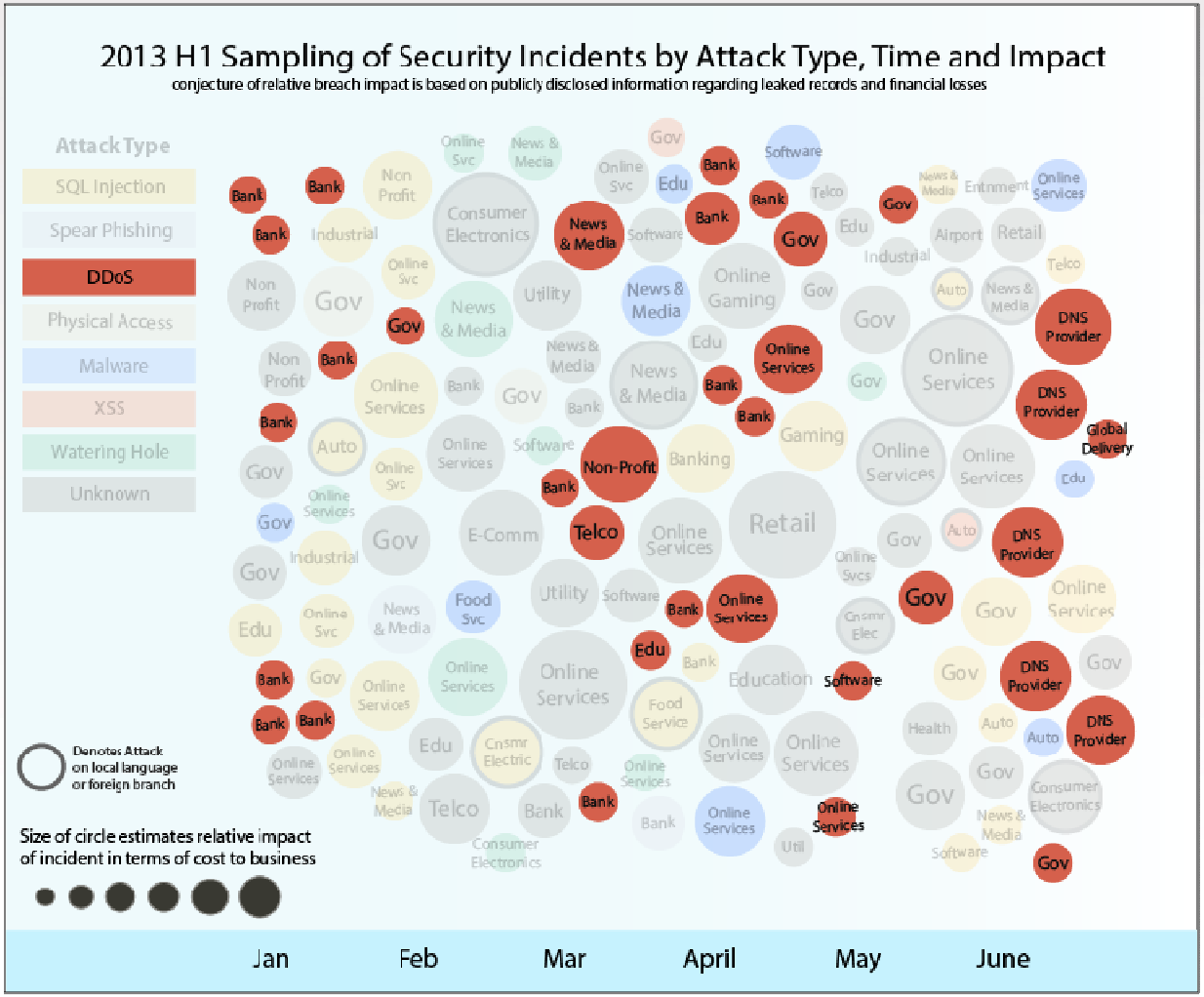



**22%** of tracked disclosed breaches

**Low risk / high reward**

- **Old CMS installations**
- **CMS Plugins**
- **Forum software**
- **Other popular 3rd party scripts**

# DDoS Attacks
## continue to disrupt businesses




**High traffic volume as much as**

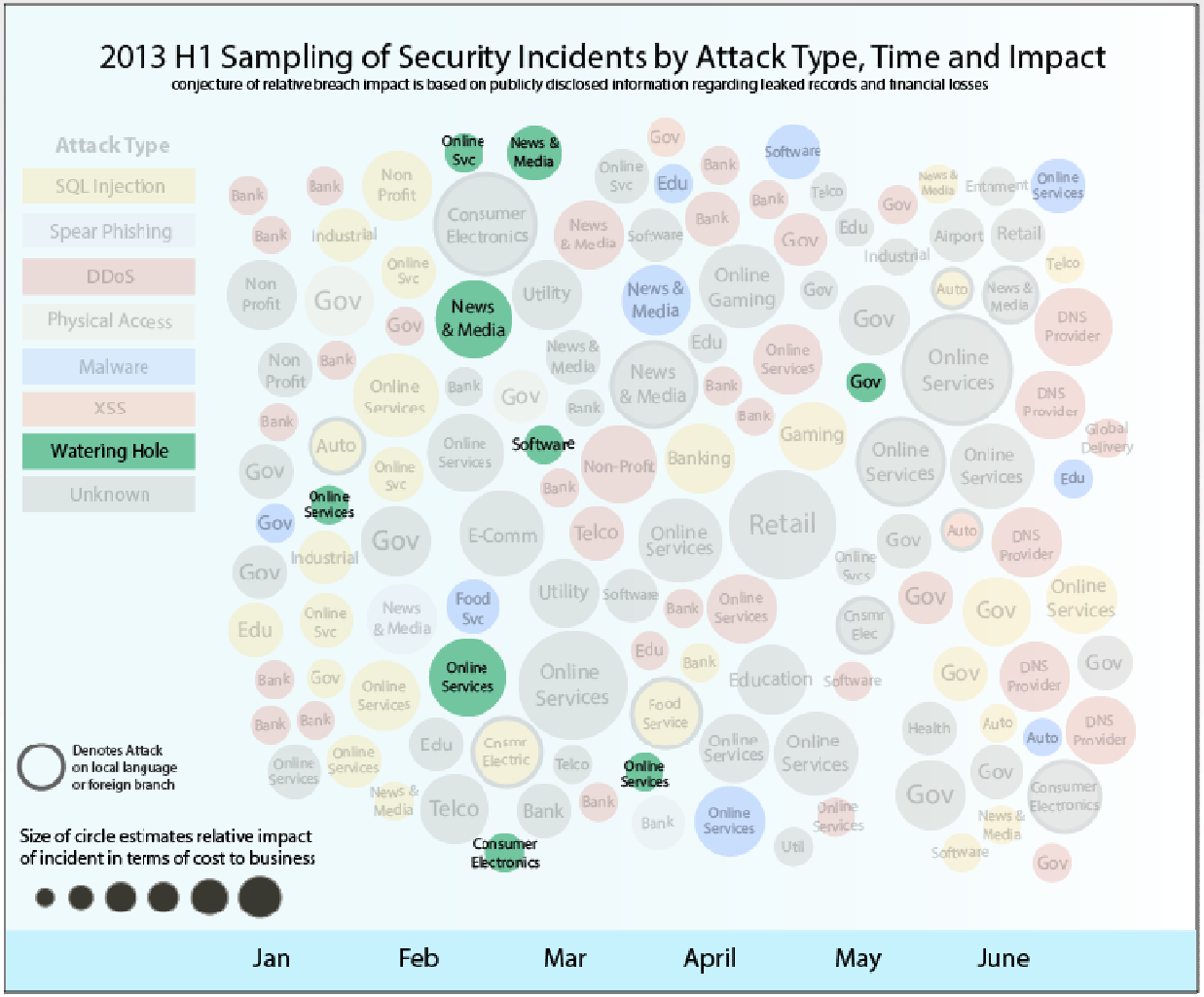
**300Gbps**

**Industries affected:**

- **Banks**
- **Governments**
- **DNS Providers**

# "Watering Hole"

## attacks compromise end user trust



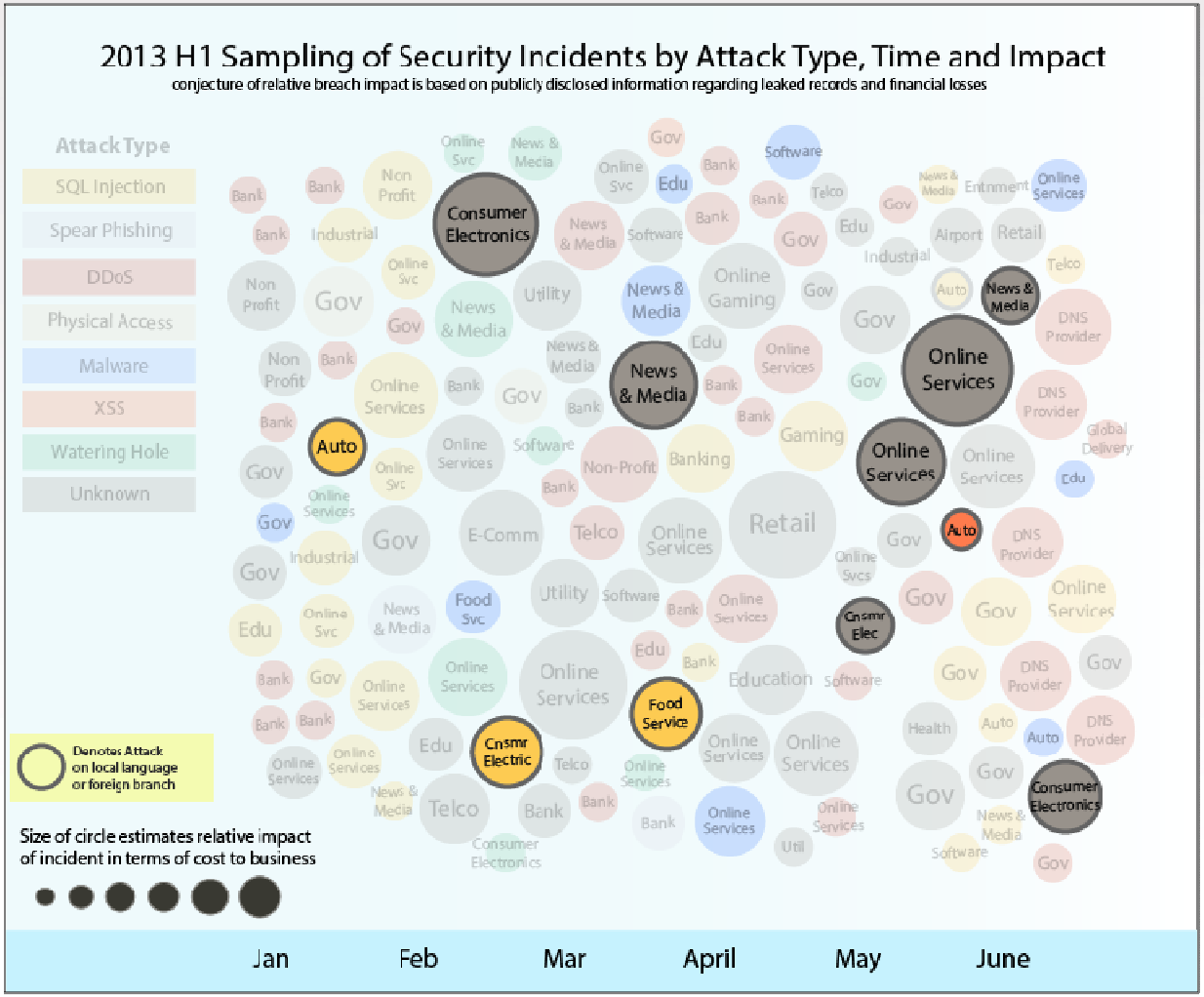

**Tainting legitimate sites with zero-day exploits**

### Targeting Savvy Users

- **Tech company developers**
- **Government Employees**
- **Unsuspecting viewers of trusted sites**

# Disenfranchised

## foreign branch or local language sites tarnish brands



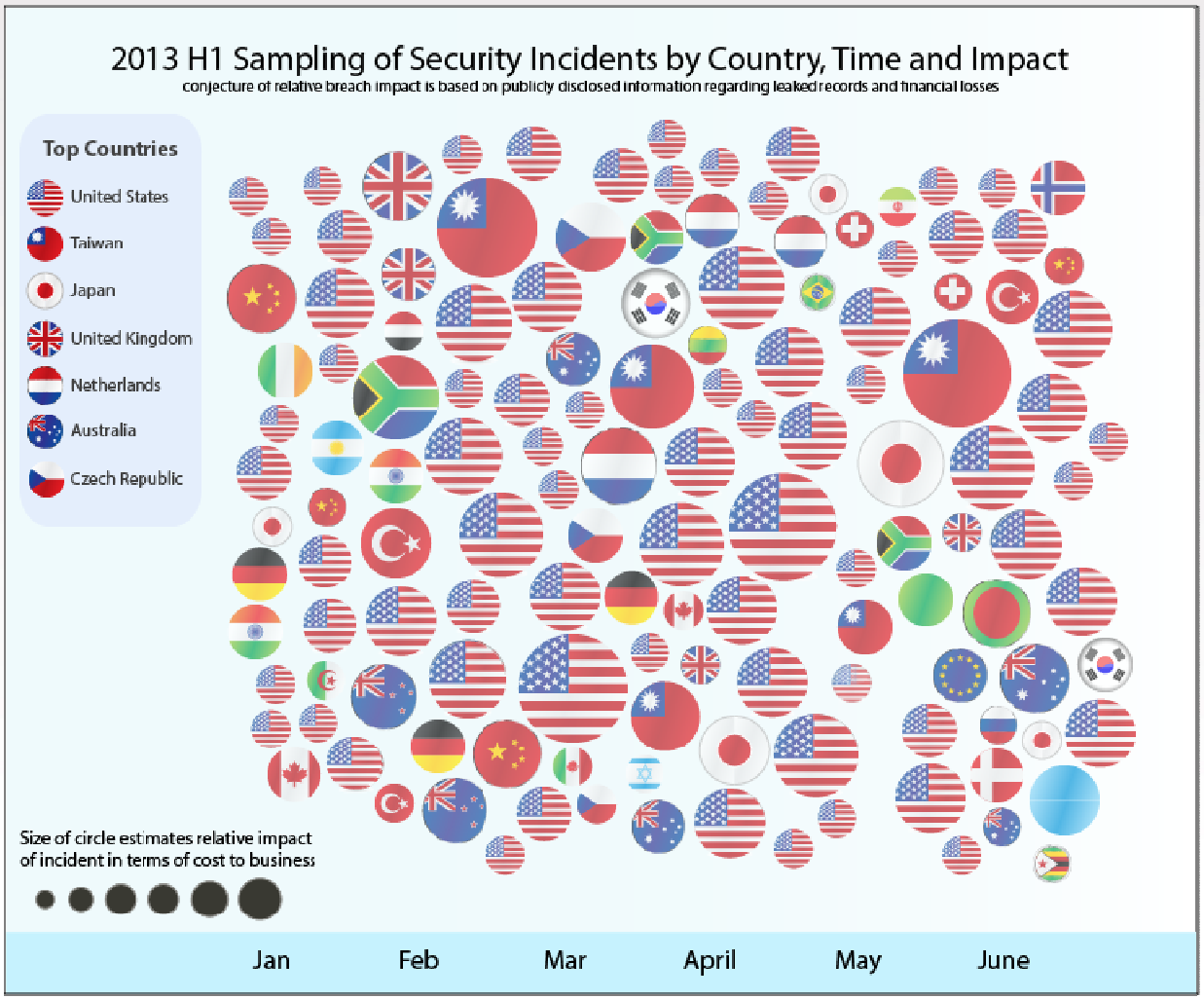

**Global brands targeted in foreign countries outside of home office**

**Attackers rely on**

- **Lower security on local language sites**
- **Temporary micro-sites which gather user data**
- **Tarnish brands with path of least resistance**

# Incidents by Geo

countries most impacted by security incidents




**The United States most reported breach target location**

**Taiwan was targeted in several foreign branch security incidents**

# **3 Chapters** of this Trend Report presentation

Targeted Attacks and Data Breaches

**Social and Mobile**

- Targeting users and abusing trust
- Economic and reputational impact
- Social media Black Market
- Recent advances in Android malware

X-Force by the Numbers

# Social Media

has become a new playground for attackers

**Social Media top target for attacks and mobile devices are expanding those targets**

- Pre-attack intelligence gathering
- Criminals selling accounts
- Campaigns enticing user to click on malicious links

# Economic and Reputational impact

as widespread adoption promotes both personal and business





**Instead of blocking services, organizations should determine how to monitor and mitigate abuses of these platforms**

- Social Media exploits can impact brand and financial loss
- Effective defense is education and to engender suspicion

# Mobile Threats

wherever you go, attackers will follow

**Explosive market growth for Android gets attention of malware authors**

Viable targets with strong intent related to specific organizations

ROI: Malware authors are investing more effort into malware that are more resilient and dangerous

# Advances in **Android Malware**

## Chuli

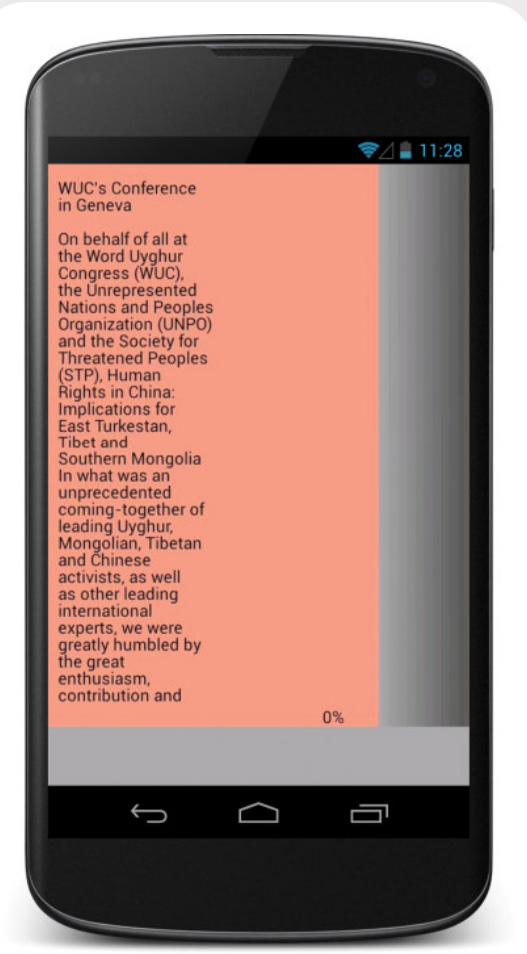
Very targeted attack

- Compromised address book
- Emails sent to targets
- Hooks into Android's SMS service
- Messages routed to remote C&C server

## Obad

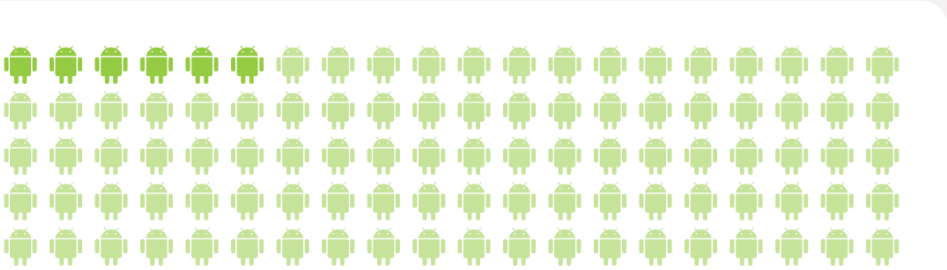
Spread primarily through SMS spam

- Spreading through Bluetooth
- Device Administration
- Anti-analysis techniques
- Code obfuscation



# X-Force expects the number of Android Malware applications to continue rising


**Degree of sophistication**
for this malware will eventually rival those found in desktop malware



**Android Security Enhancements**
Older devices more at risk with only 6% running latest version

Mobile operating system (OS) fragmentation will remain a problem

# **3 Chapters** of this Trend Report presentation

Targeted Attacks and Data Breaches

Social and Mobile

**X-Force by the Numbers**

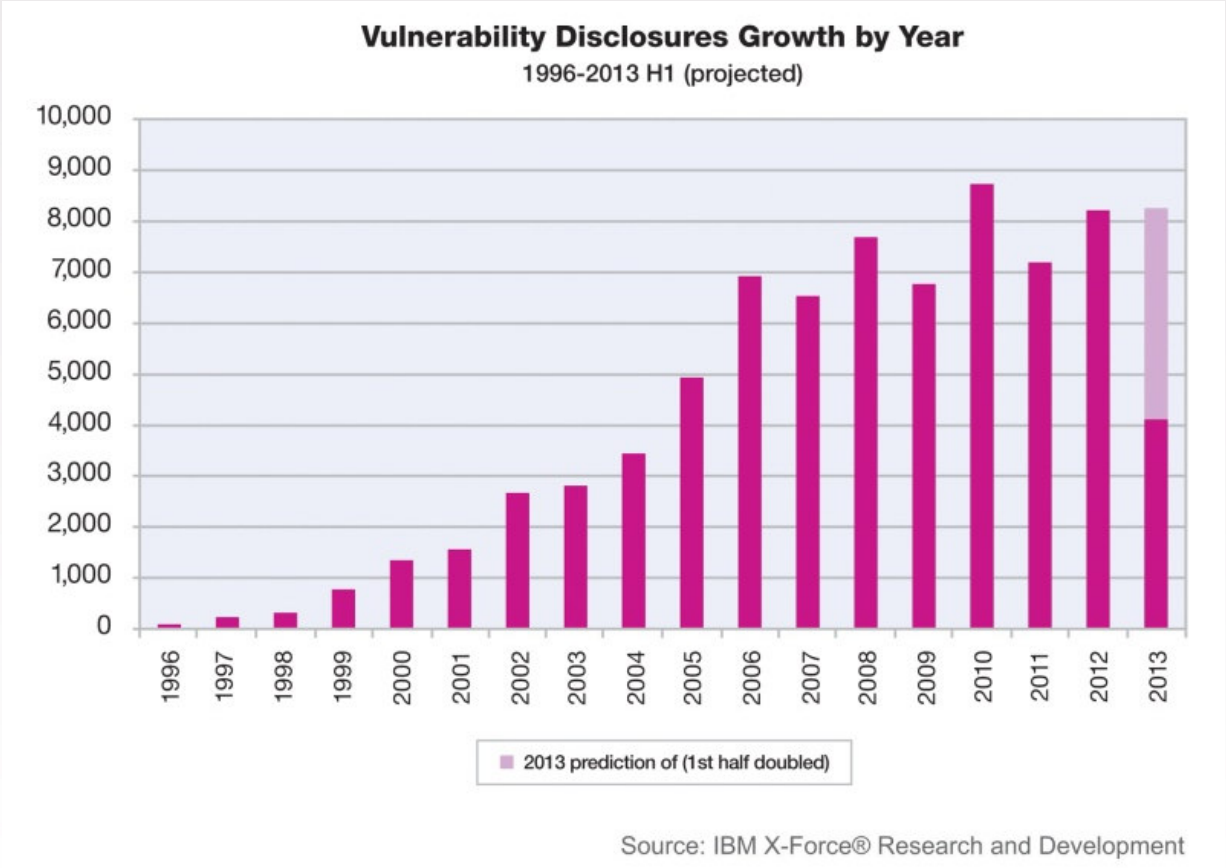
- Vulnerabilities
- Exploits
- Web trends
- Spam and Phishing

# Vulnerabilities Disclosures

**4,100**

publicly disclosed vulnerabilities

If trend continues, roughly same as 2012

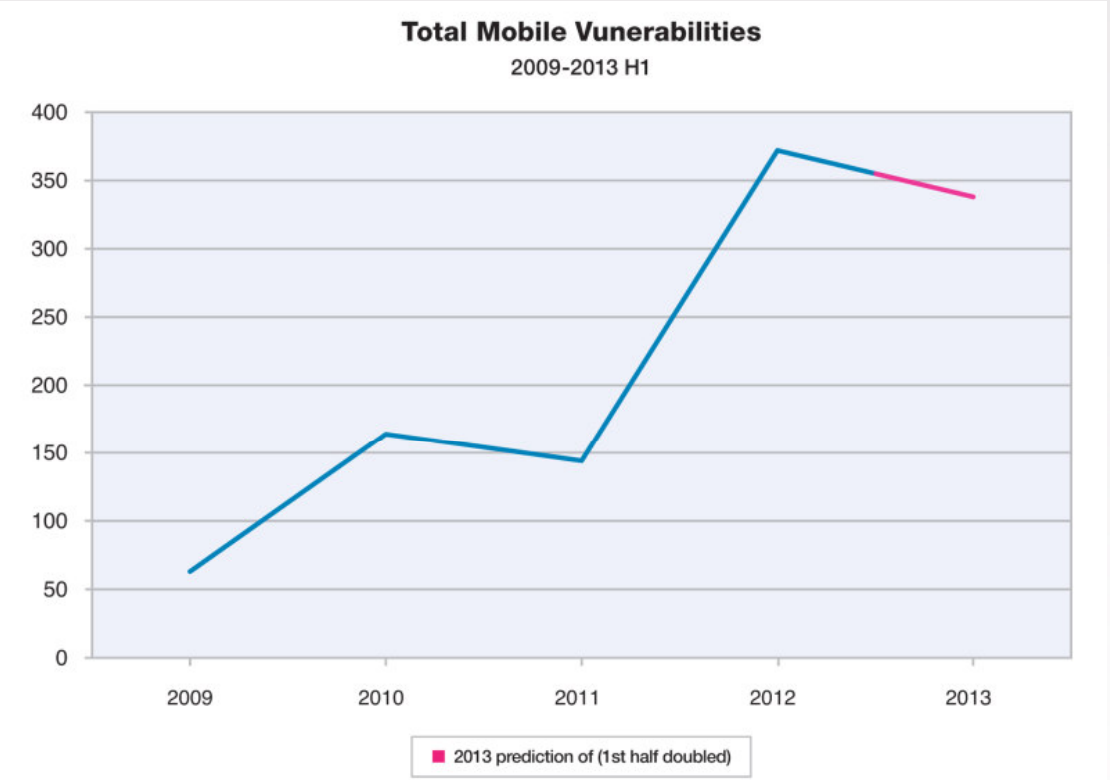


# Vulnerabilities affecting Mobile Software

**Mobile vulnerabilities** have increased since 2009

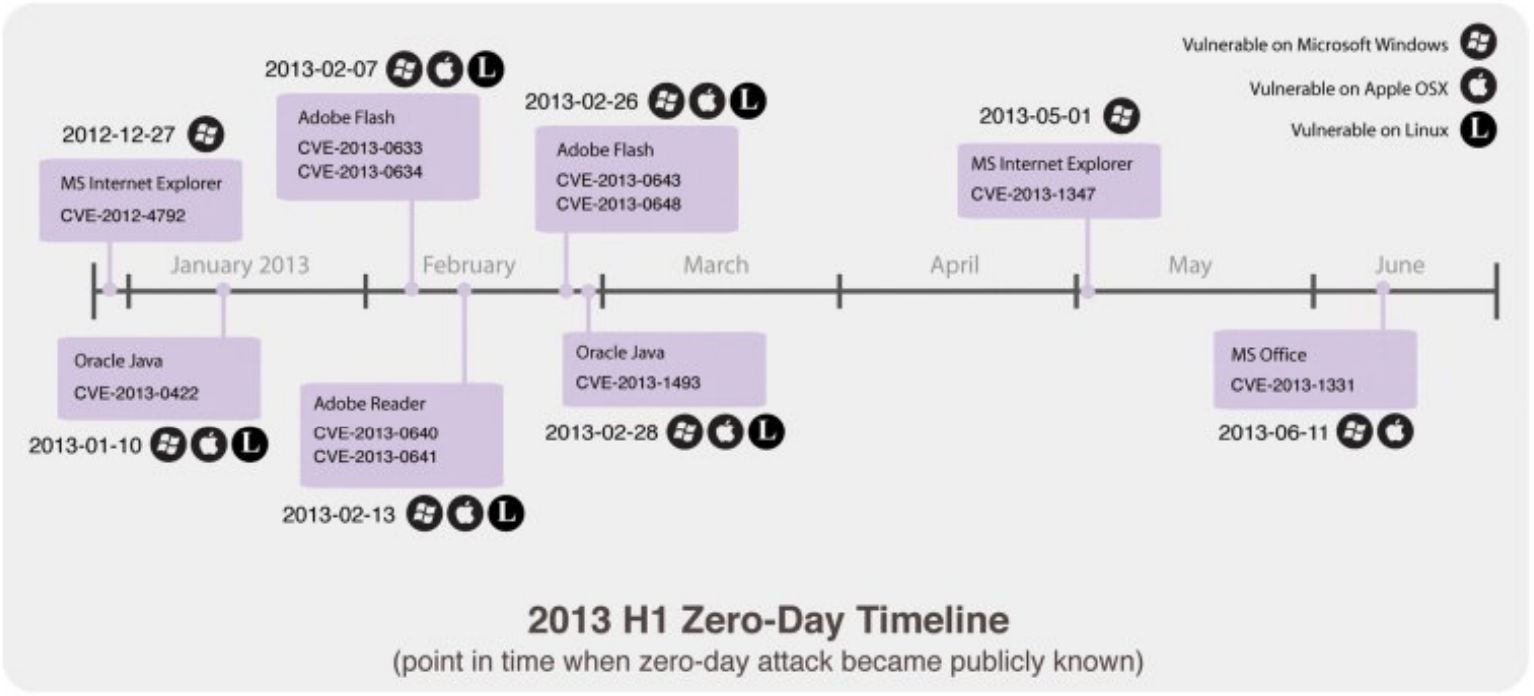
Although still small percentage of total overall

Affecting both mobile and desktop software




Source: IBM X-Force® Research and Development

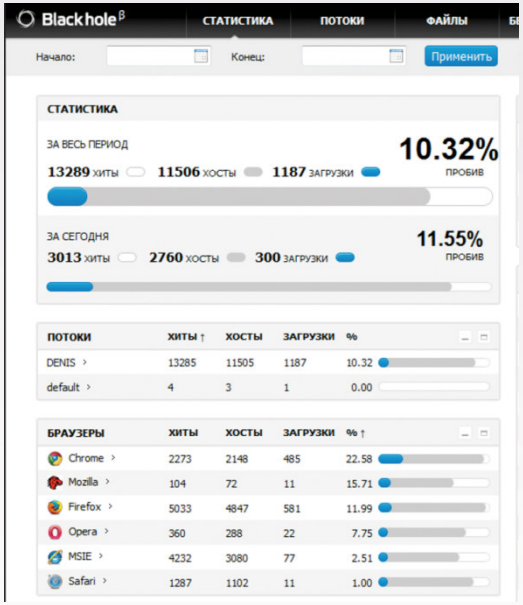
# Zero-Day Vulnerabilities




**2013 H1 Zero-Day Timeline**
(point in time when zero-day attack became publicly known)

**80% of zero-day**
vulnerabilities affect Windows and OSX

# **Oracle Java, Adobe Flash, Microsoft IE** crucial to protect & patch




## Java

- 0-days quickly utilized in exploit tool kits
- Recent updates allow you to “disable” java
- Default security settings are now “high”

## Adobe Flash

- Most common delivery method, since 2010 Reader sandbox, is via MS Office docs

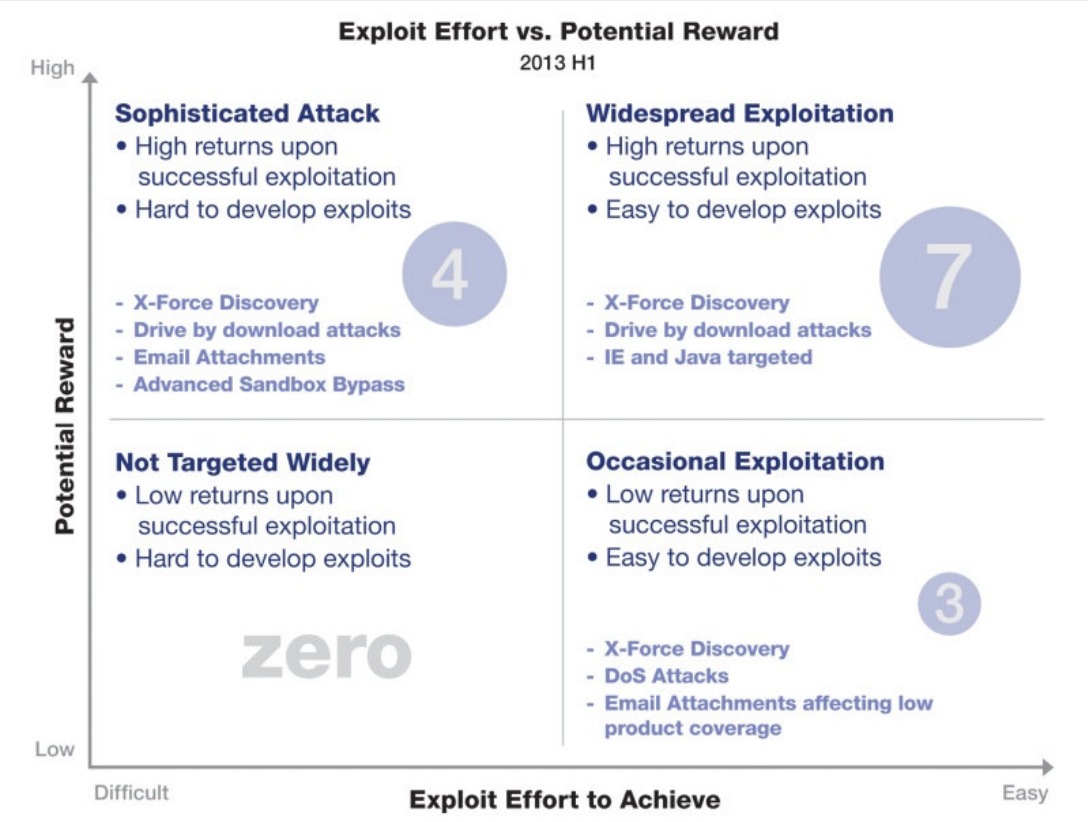
## Microsoft Internet Explorer

- Very targeted attacks and water hole technique

## How to do better:

- Reduce attack surface
- Update installed software
- Get educated on spear-phishing

# Exploit Effort vs. Potential Reward

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**Drive-by-downloads**

IE & Java targeted

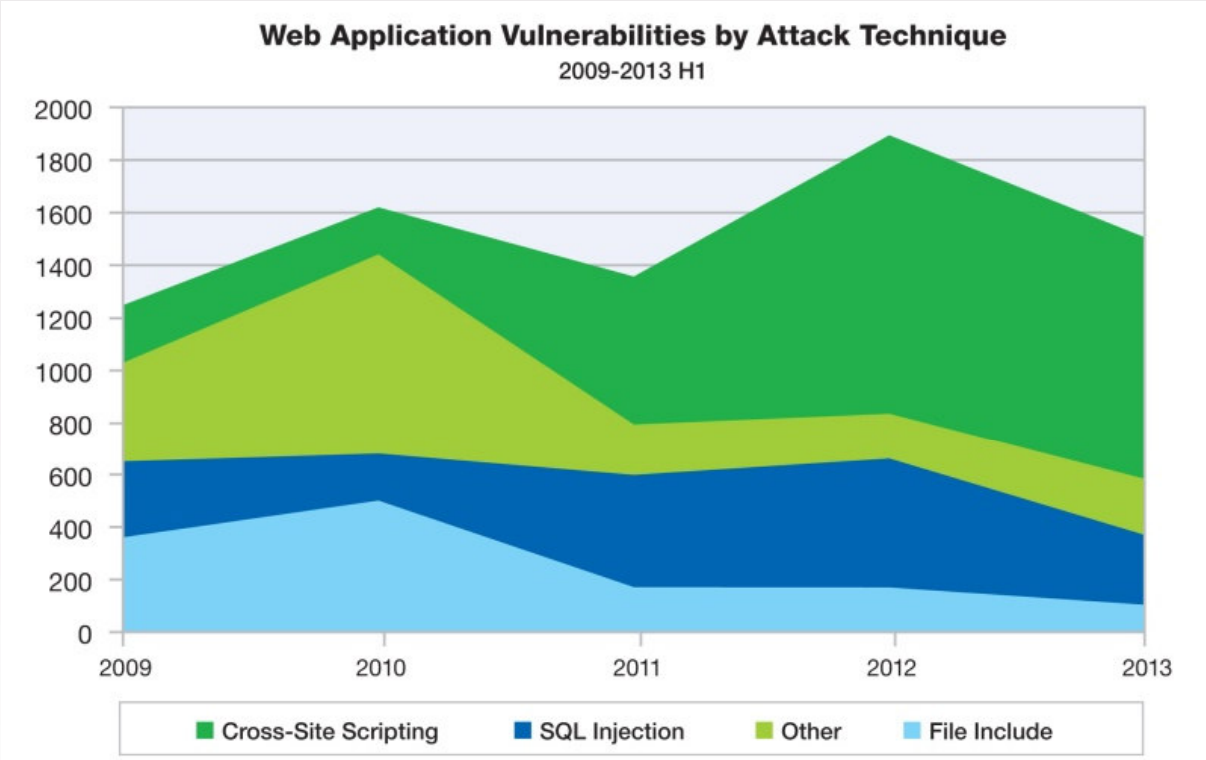
Easy exploitation with high potential reward – still the sweet spot

# Web Application Vulnerabilities

**50%**

of all web application vulnerabilities are XSS

Total slightly down in comparison to 2012

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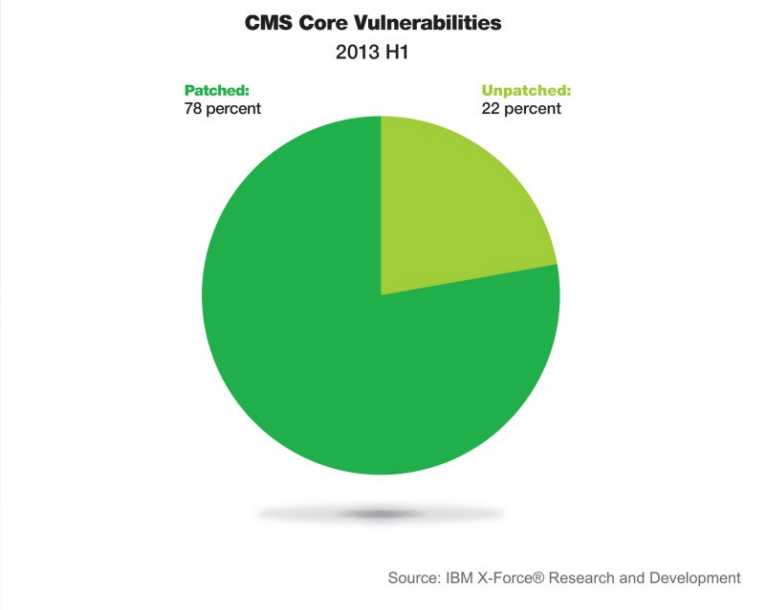
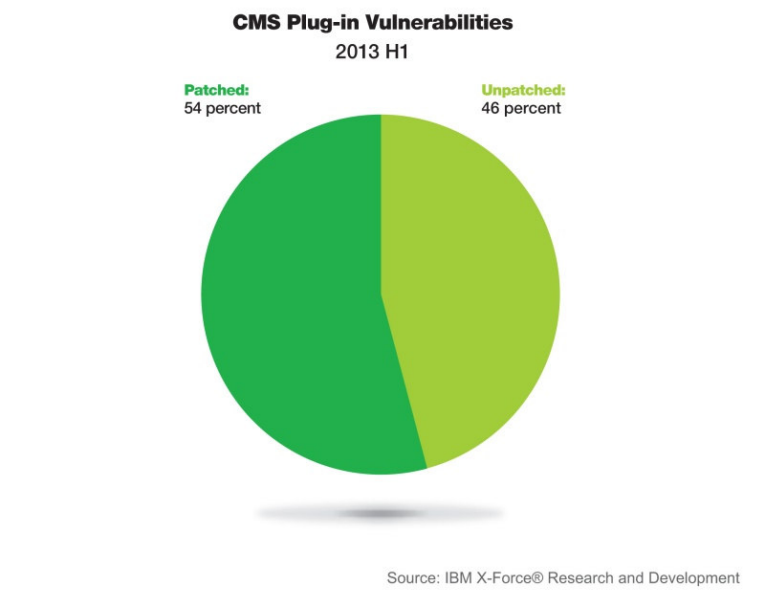
# **Content Management System plug-ins** continue to provide soft targets




Attackers know that CMS vendors more readily address and patch their exposures

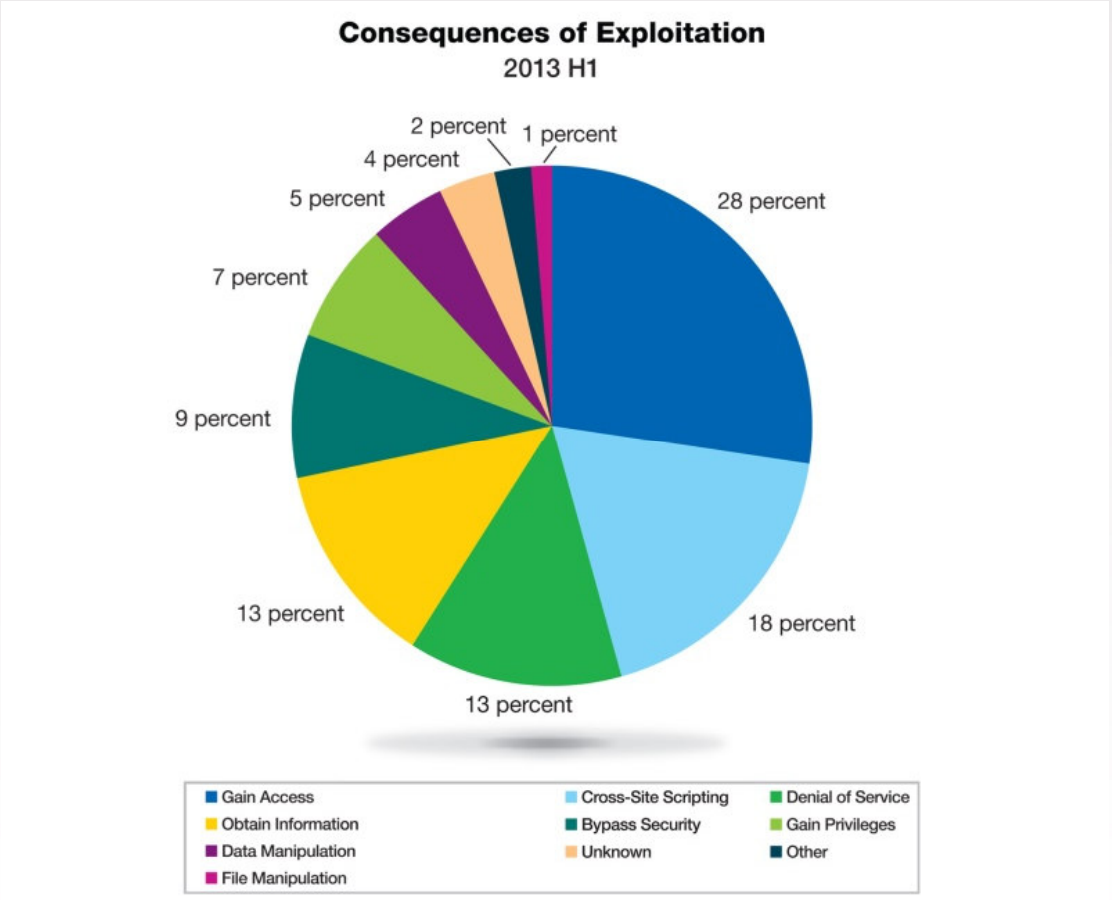
Compared to smaller organizations and individuals producing the add-ons and plug-ins

# Consequences of Exploitation

**28%**

"gain access"

Provides attacker complete control of system to steal data or launch other attacks



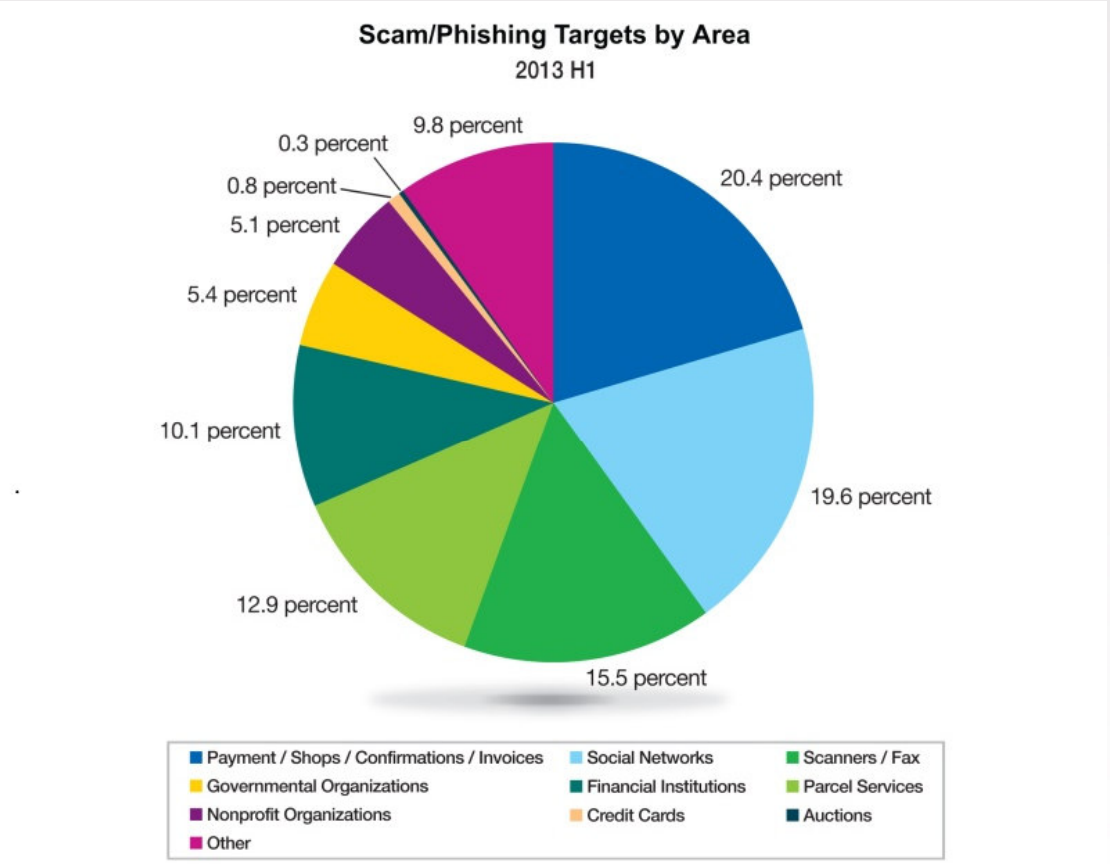

Source: IBM X-Force® Research and Development

# Scam and Phishing Targets

**55%**

bad links and attachments

- Social networks
- Payment / shops
- Scanners / Fax



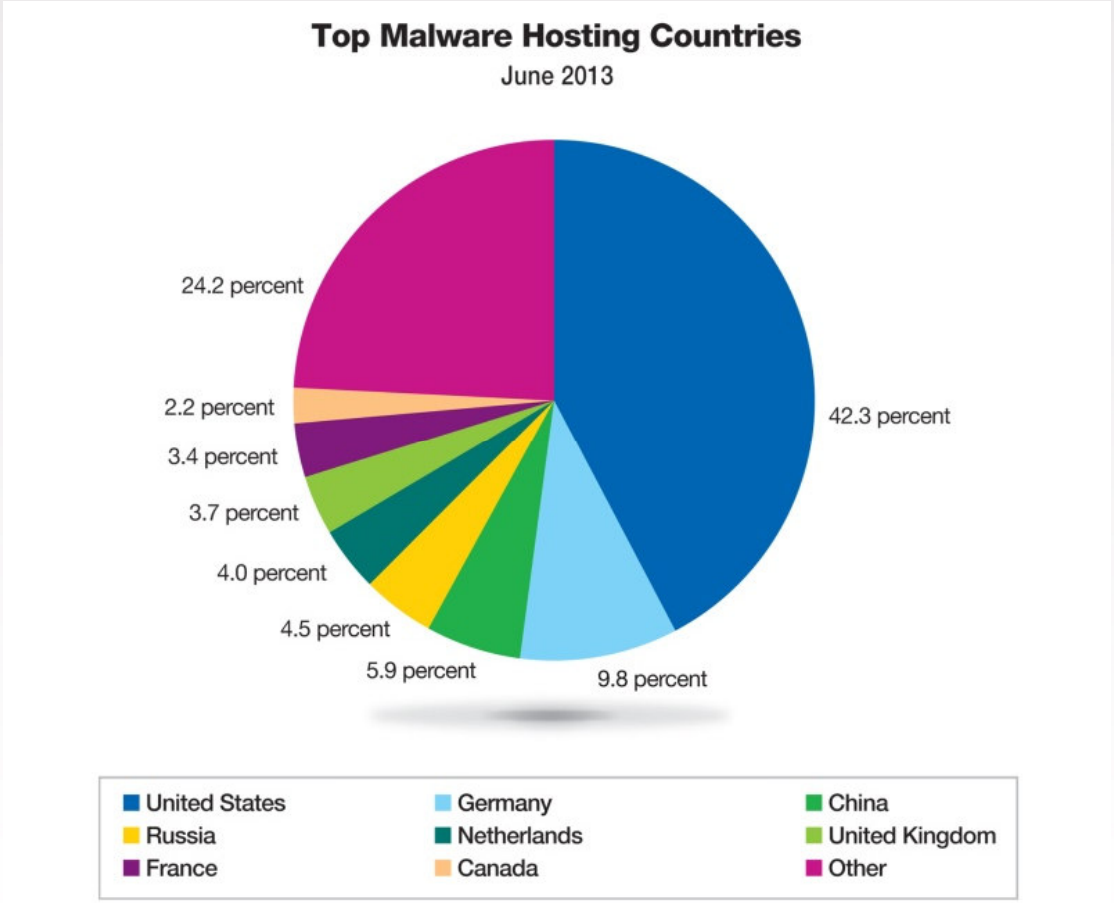

Source: IBM X-Force® Research and Development

# Malware Hosting

**42%**

malware distributed in U.S.

Germany in second at nearly 10%



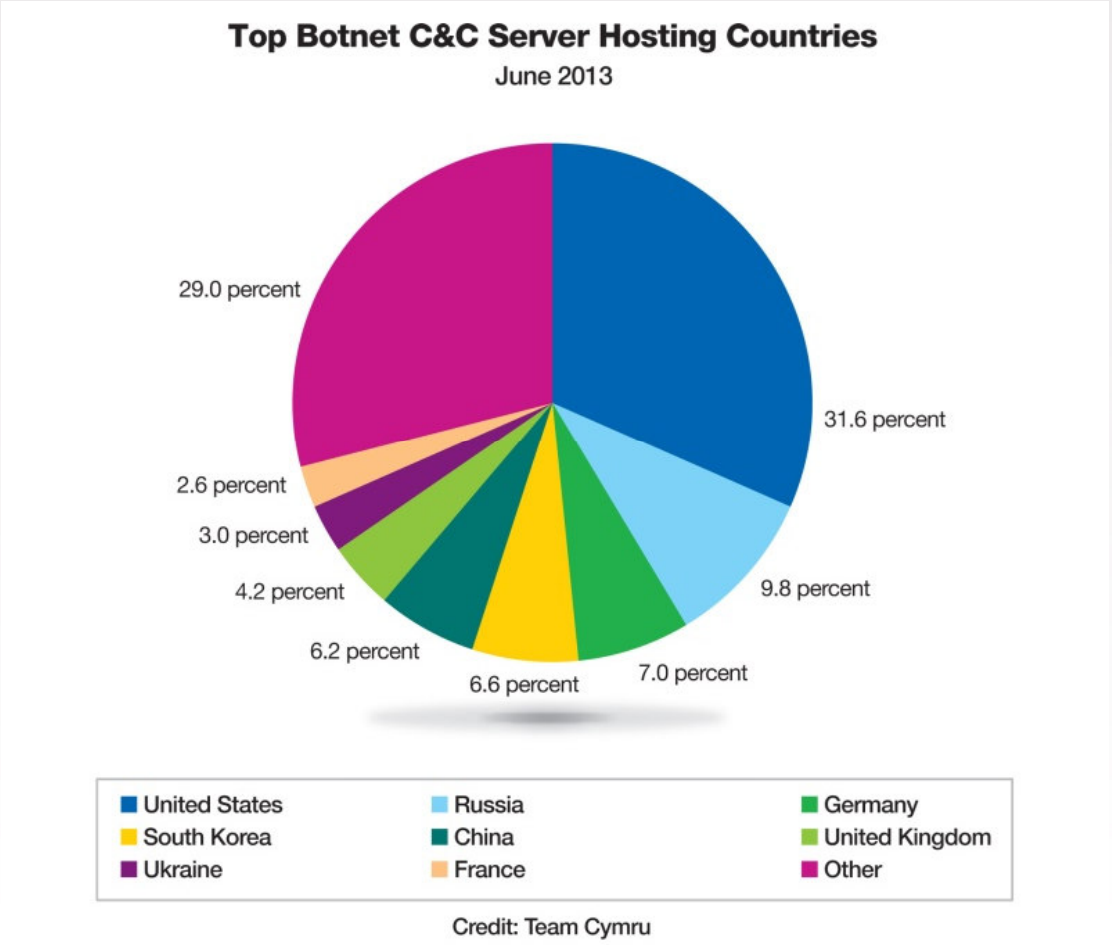

Source: IBM X-Force® Research and Development

# Botnet Command & Control Hosting

**32%**

botnet C&C servers in U.S.

Russia in second at nearly 10%




Source: IBM X-Force® Research and Development

# Key takeaways for CISOs

## Don’t forget the basics

scanning, patching, configurations, passwords

## Social Defense needs Socialization

educate users and engender suspicion

## Defragment your Mobile posture

constantly apply updates and review BYOD policies

## Optimize ahead of Attackers

identify critical assets, analyze behavior, spot anomalies

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Robert Freeman, Manager XF Advanced Security Research

rgfreem@us.ibm.com

Leslie Horacek,

XF Threat Response

HORACEK@be.ibm.com

Doron Shiloach,

XF Product Manager

doron@us.ibm.com

Michael Hamelin,

XF Security Architect

michael.hamelin@us.ibm.com

Kevin Skapinetz, Program Director Product Strategy

kskap@us.ibm.com

Mattias Johansson

Sr. Operations Manager

mjohansson@us.ibm.com

Jason Brewer, Manager XF Development

jcbrewer@us.ibm.com

Steve Seidenberg,

Manager XF Security Content

sseidenb@us.ibm.com

Ted Bannon, Manager XF Quality Assurance

tbannon@us.ibm.com

Brad Sherrill, Manager XF Data Intelligence

bsherrill@us.ibm.com

Ralf Iffert ,

Mgr, XF Content Security

ralf.iffert@de.ibm.com

Carsten Dietrich, Product Line Mgr, Content Security

Carsten.Dietrich@de.ibm.com

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