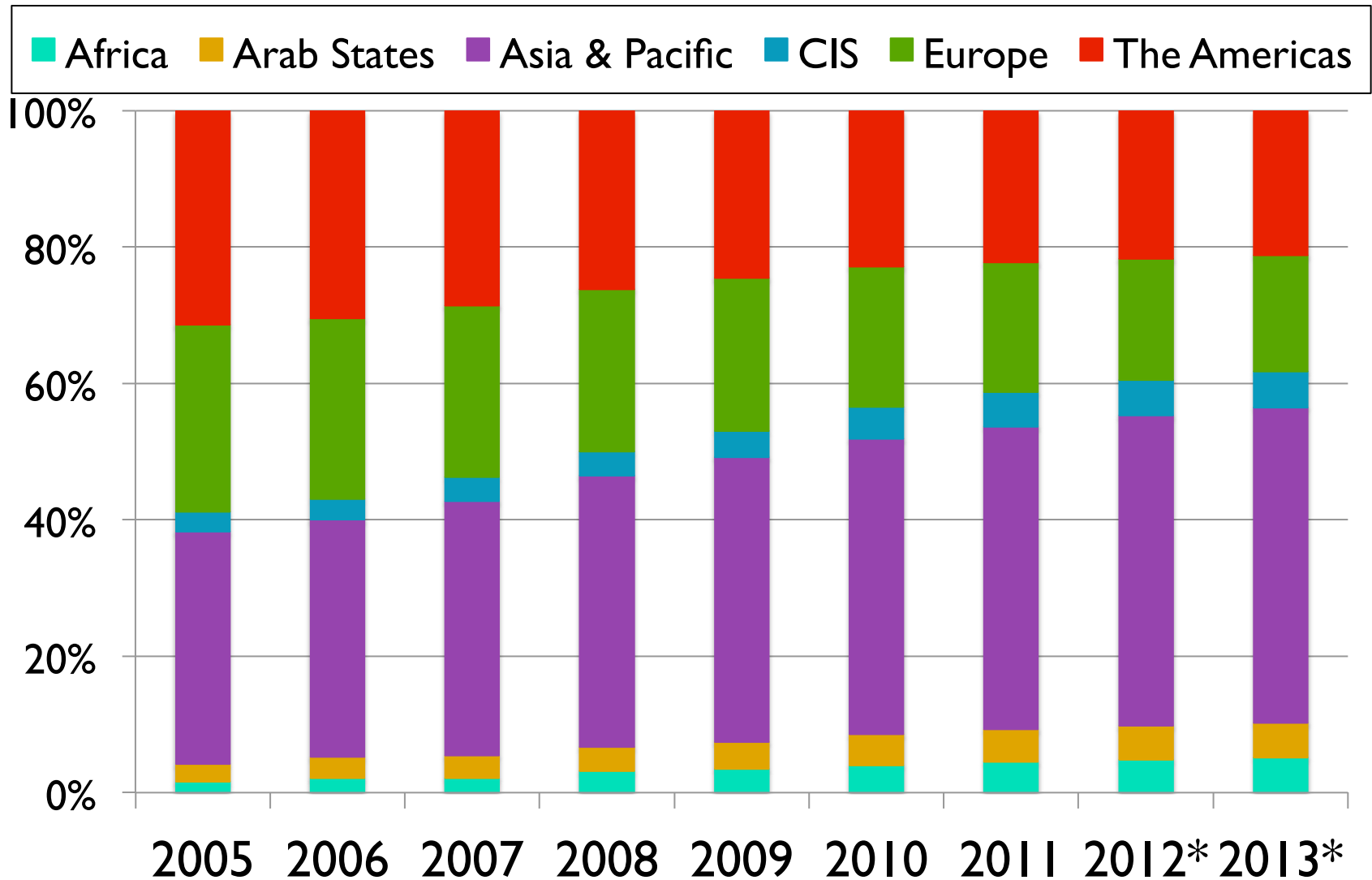# Security for the next billion Internet users
Panel on Social, Behavioral and Economics
April 23, 2014

Phillipa Gill

Assistant Professor, Stony Brook University
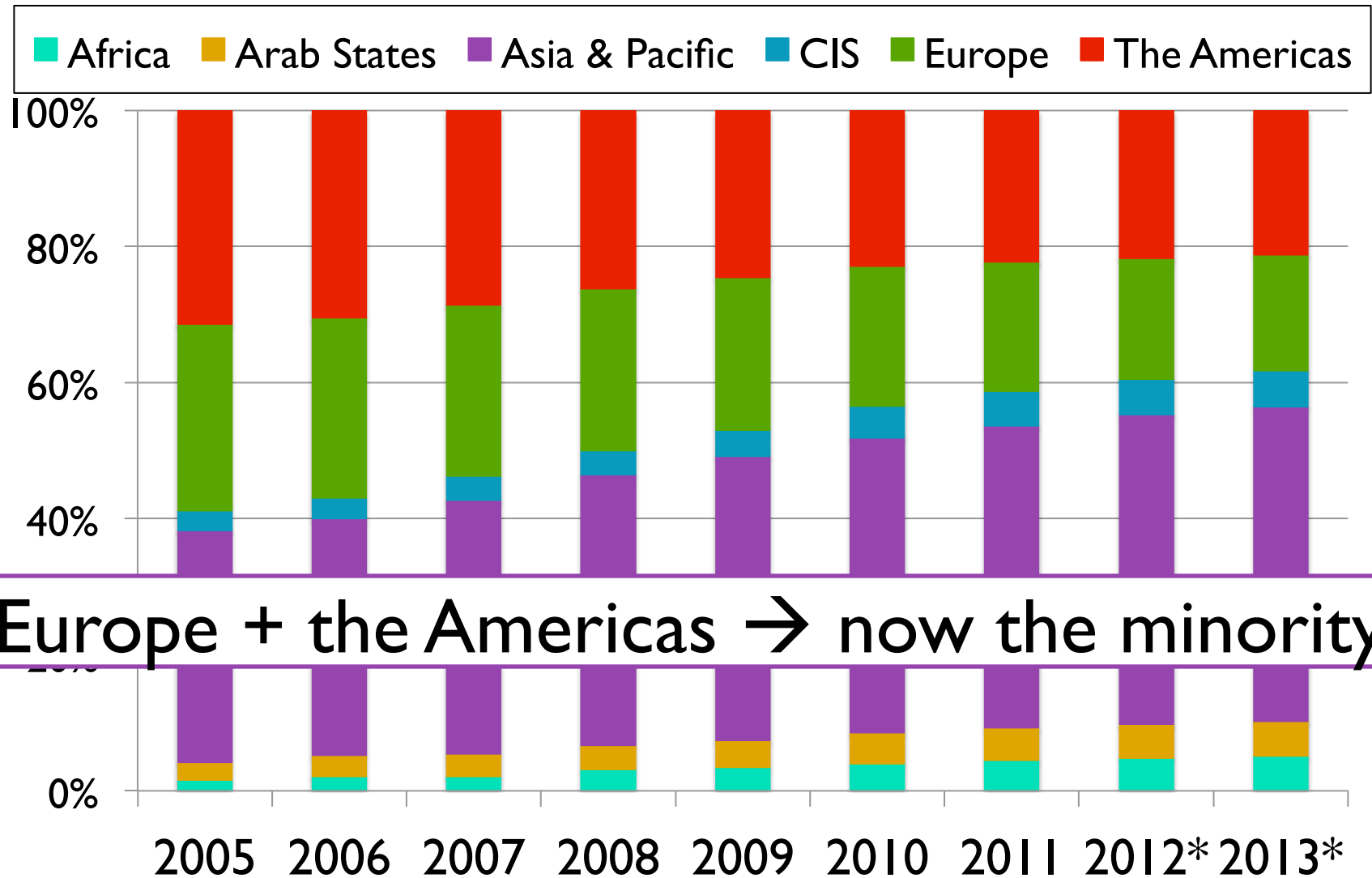
phillipa@cs.stonybrook.edu

Who is using the Internet?

Legend: Africa · Arab States · Asia & Pacific · CIS · Europe · The Americas

Data Source: ITU http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx

Who is using the Internet?

Legend: Africa · Arab States · Asia & Pacific · CIS · Europe · The Americas

Europe + the Americas → now the minority

2005 2006 2007 2008 2009 2010 2011 2012* 2013*

Data Source: ITU http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx

Trend 1: New economic models of attacks

Traditional spam: Financially-motivated adversaries targeting many users
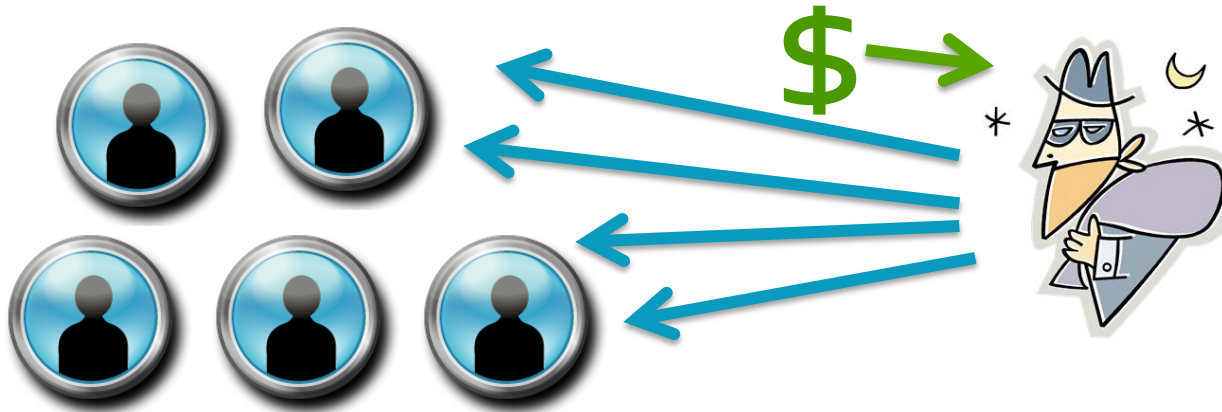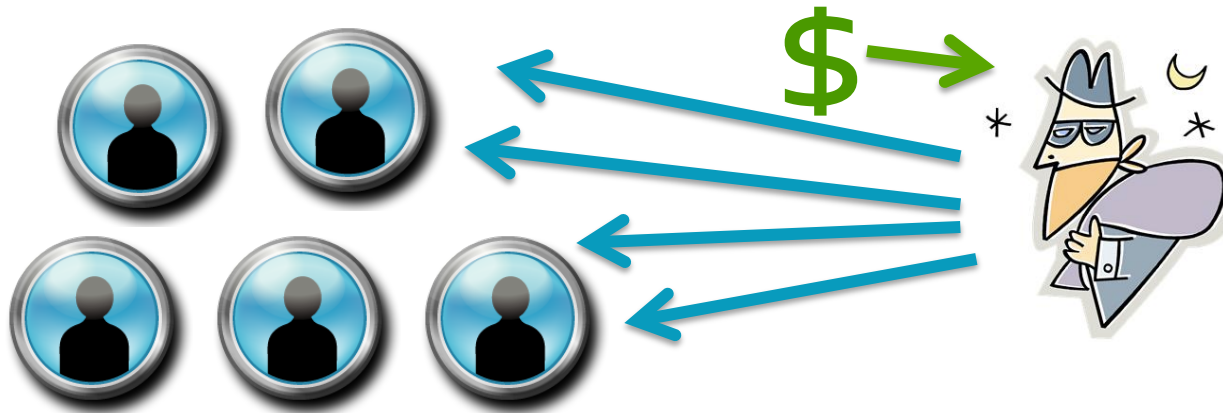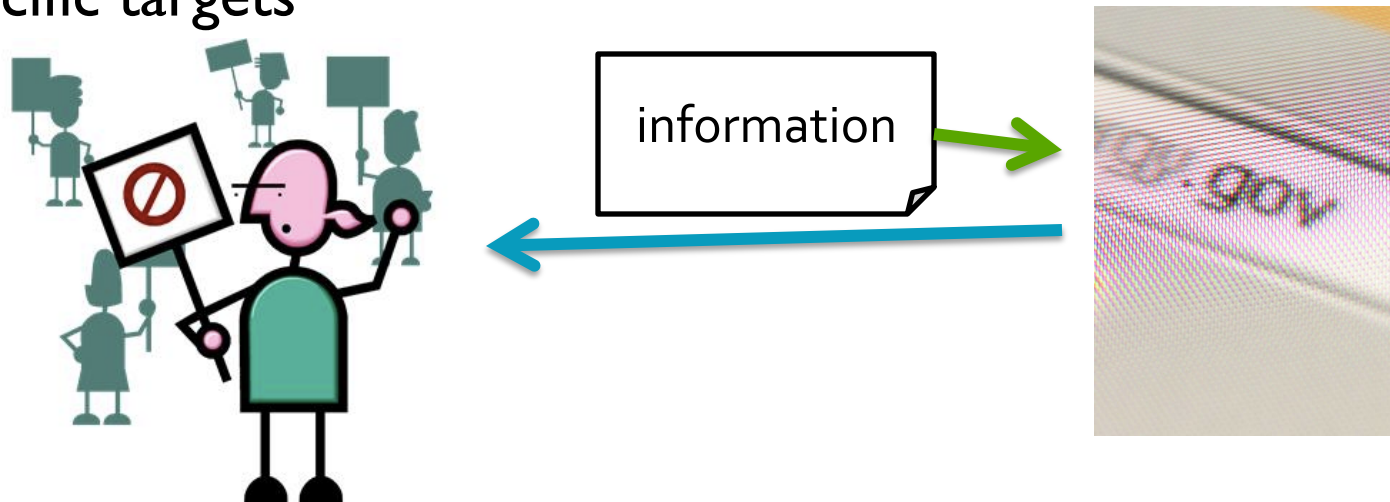
Trend: New economic models of attacks

Traditional spam: Financially-motivated adversaries targeting many users

Targeted threats: Politically-motivated actors honing in on specific targets

information

Run-of-the-mill Spam

Lots of tools and techniques to deal with spam

Highly targeted attacks

From Cheng Li <chengli.brookings@aol.com>

Subject **Happy Tib Losar and Ask You a Favour**

To ██████████████████████

Reply | Reply All | Forward | Archive | Junk | Delete

2012-02-23 02:00 PM

Dear ██████████████████████

I am Cheng Li from John L. Thornton China Center of Brookings. I will attend a annual meeting on Religious Research with CIIS in Shanghai next week, and plan to take the chance to visit Tibet. Attached is a list of tibetans who have self-immolated from 2009 which my assistant prepared for me, but i am not sure of its accuracy. Would you please have a look and make necessary corrections. I will be really much appreciated if you could do me the favor and offer some more information about the latest happenings inside tibet.

Thank you again and happy Tib losar!

Cheng Li
Director of Research, John L. Thornton China Center
Brookings Institution

📎 1 attachment: list_of_self_immolations.xls   116.5 KB

Highly targeted attacks

Subject **Happy Tib Losar and Ask You a Favour**

To ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮   Junk   ⊘ Delete

02-23 02:00 PM

Dear ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

Customized greeting.

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Brookings Institution

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Cheng Li is director of the John L. Thornton China Center and a senior fellow in the Foreign Policy program at Brookings. He is also a director of the National Committee on U.S.-China Relations. Li focuses on the transformation of political leaders, generational change and technological development in China. | View Full Bio

I am Cheng Li from John L. Thornton China Center of Brookings.

Claims to be from a real person.

Highly targeted attacks

From **Cheng Li** <chengli.brookings@aol.com>
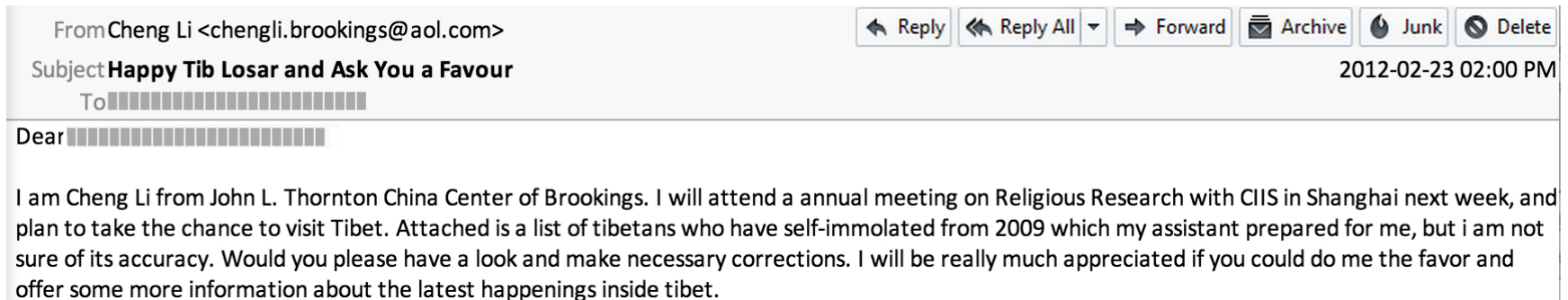
↩ Reply | ↩ Reply All ▾ | ➡ Forward | ✉ Archive | 🔥 Junk | ⃠ Delete

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Would you please have a look and make necessary corrections.

📎 1 attachment: list_of_self_immolations.xls 116.5 KB

Specifically asks for help editing the attachment.

Open questions

- How to identify **highly targeted** spam e-mail messages?

- How to provide tools and techniques that can be deployed by groups with **minimal resources**
  - How to secure a group with **no physical office space?**
  - Secure file and message exchange tools

ཟུར་སྐྱོན་དང་ཁ་བྲལ། **Detach From Attachments!**

- Tracking and identifying **the sources of these attacks**
  - Disrupt their activities, bring political action

Trend: New economic models of attacks

Traditional spam: Financially-motivated adversaries targeting many users

$

Targeted threats: Politically-motivated actors honing in on specific targets

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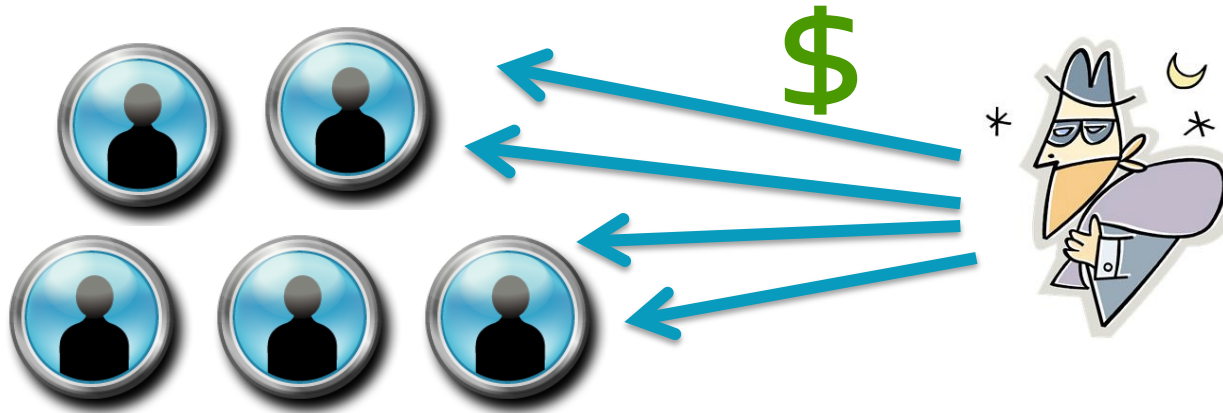
Politically motivated adversaries have re$ource$$

Huge market for censorship/ surveillance products

Estimated sales of **$5 billion** per year for surveillance/wiretapping products*

Products developed by Western countries!

*http://www.washingtonpost.com/world/national-security/trade-in-surveillance-technology-raises-worries/2011/11/22/gIQAFFZOGO_story.html

This has not gone unnoticed…

Bloomberg | News | Quick | Markets | Personal Finance | Tech | **U.S. Politics** | Sustaina

Obama Moves to Block Technology Used by Regimes on Rebels

By Roger Runningen | Apr 23, 2012 12:14 PM ET | **0 Comments** ✉ **Email** 🖶 **Print**

President **Barack Obama** authorized sanctions against individuals and entities that provide information technology that aid regimes in cracking down on dissidents.

The executive order from the president is aimed at thwarting the governments of **Syria** and **Iran** in particular for their "malign use of technology" to track, monitor and disrupt anti government protesters.

Related

▶ **Obama Speaks at Holo Museum**

http://www.bloomberg.com/news/2012-04-23/obama-moves-to-block-technology-used-by-regimes-against-protests.html

Open questions

- How can we monitor the usage of **specific technologies** for censorship to identify potential issues?

- How can we **enforce sanctions** on export of censorship products?

- Can we provide enough **disincentive** (financial/political) to get these vendors to stop selling products for censorship?

Longer term ...

Can we change the Internet to make things better?

- Harden protocols to prevent censorship "leakage"
  INTERNATIONAL consequences of **NATIONAL** censorship
  - E.g., BGPSEC, DNSSEC
  - Need to ensure translation from theory to practice doesn't open holes for censorship

- Future Internet architectures
  - Can we design an Internet that is **censorship resistant**?