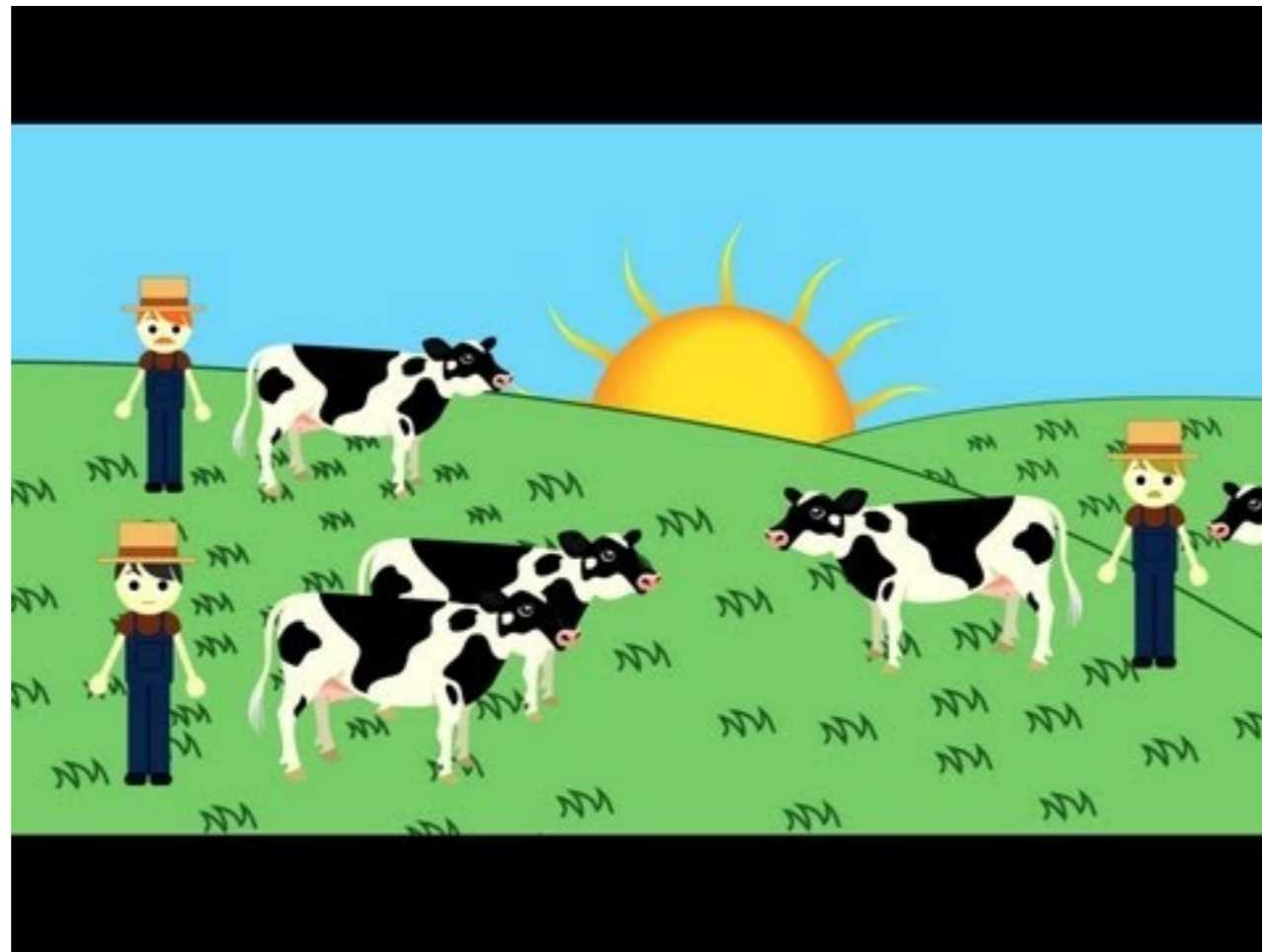


Honor Among Thieves

A Common's Analysis of Cybercrime Economics

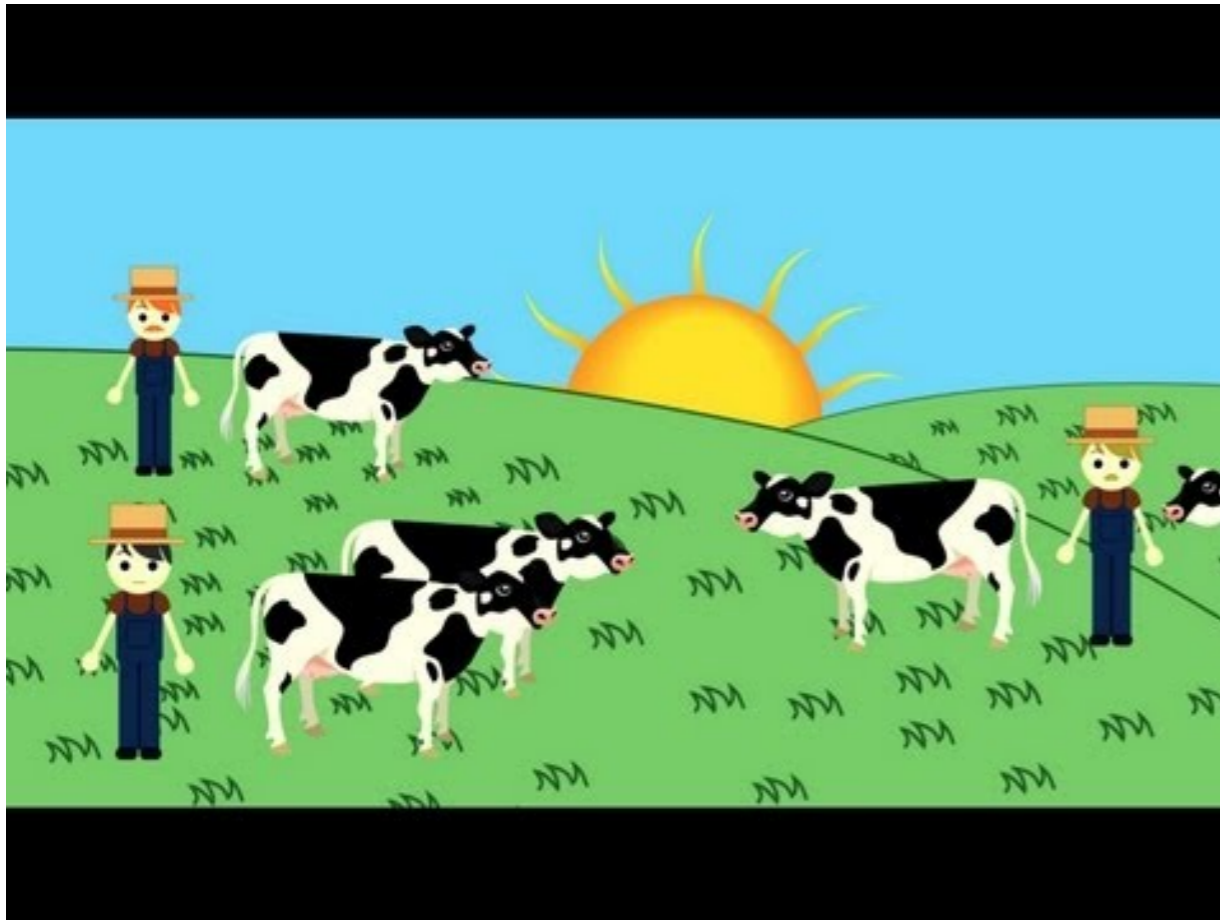
Sadia Afroz, Vaibhav Garg, Damon McCoy, Rachel Greenstadt

Tragedy of the commons



Farmers and cows

Underground forum



Black Hat World
BlackHat Seo Forum

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COMPLETELY MANAGED ENTERPRISE SERVERS INSTANT SETUP

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01-22-2013, 01:07 AM

fanblizzy
Newbie

Free facebook fans | free twitter followers

Hi Everyone,

I own a social media exchange site that was recently launched and currently has about 800 members ready to exchange likes, followers, views and web site traffic... I am giving away 2,000 FREE COINS to add to your account!! With these coins you will be able to build your social media accounts very quickly..

add a thanks to me here and comment with your twitter name and I will tweet you the code!

Cheers!

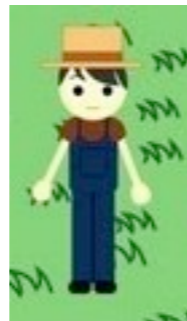
Join Date:	Jan 2013
Location:	NYC
Posts:	7
Reputation:	10
Thanks:	3
Thanked 19 Times in 1 Post	

What is the relationship?

- Cybercrime is **limited resource economy**
- **Underground forums** facilitate sharing of stolen resources



== Underground forums



== members of the forums



== members of the forums

Why is this important?

- Well-defined criteria to estimate sustainability in the physical world
- Are cybercrime communities sustainable?

Why would we care?

- Sustainable communities are more economically efficient
- Can we make these communities **unsustainable**?

Framework for sustainability

- Ostrom's framework for sustainable community:
 - Low cost of monitoring
 - Moderate rates of change of the resource/ resource consumers
 - Frequent communication between resource members
 - Low costs of enforcement
 - Exclusion

- Which underground forums meet these criteria?
- Are these forums successful?

Data

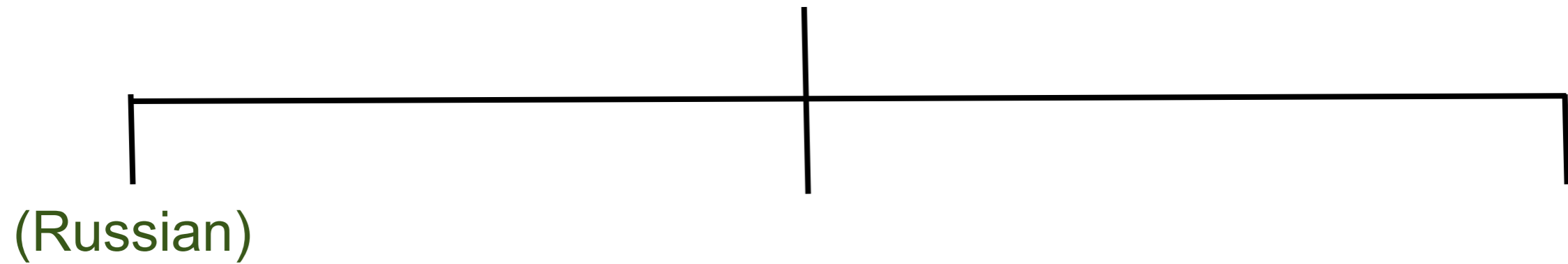
5 forums

Data

5 leaked forums

Data

5 leaked forums



Data

5 leaked forums



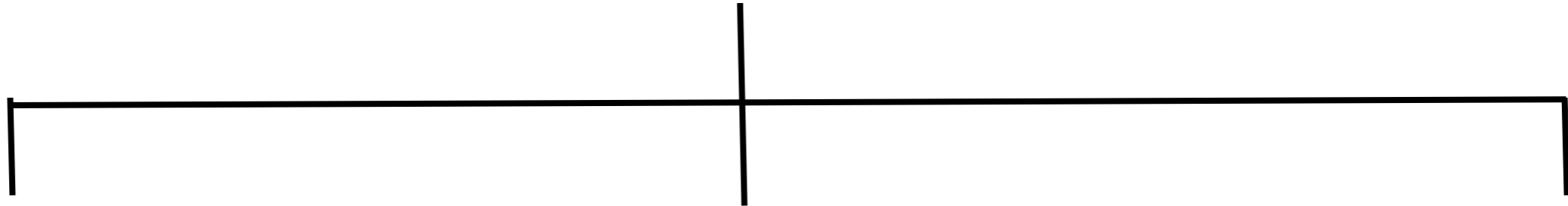
(Russian)

Antichat

(May 2002-Jun 2010)

Data

5 **leaked** forums



(Russian)

Antichat

(May 2002-Jun 2010)

(English)

BlackHat

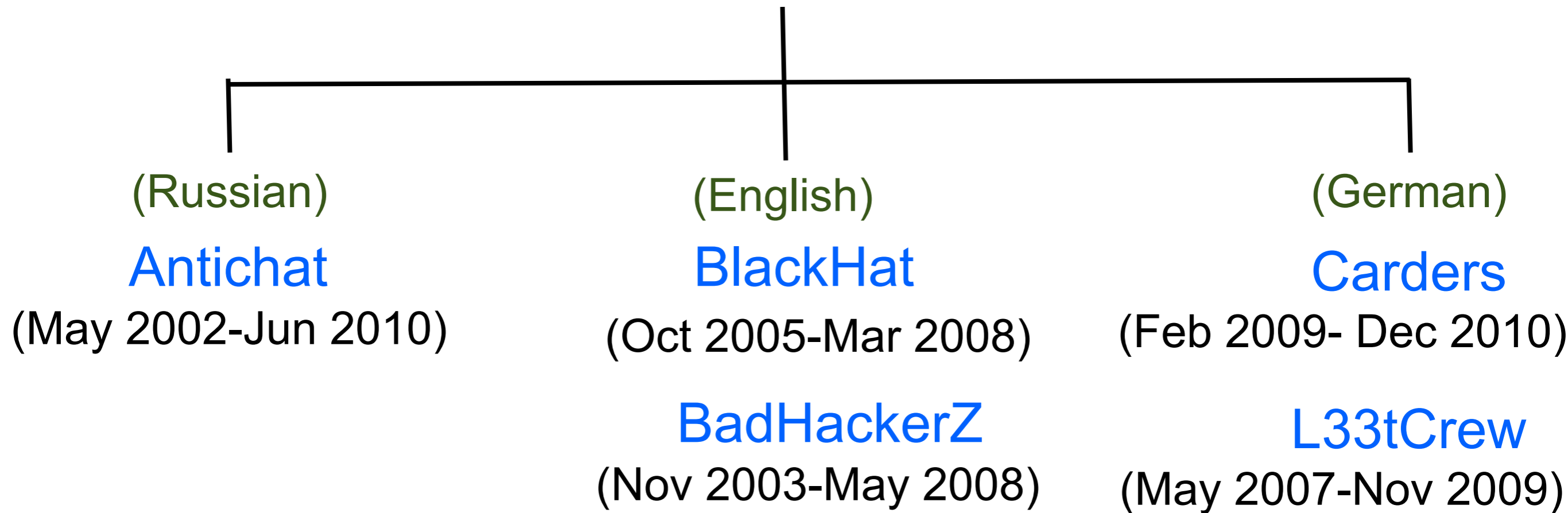
(Oct 2005-Mar 2008)

BadHackerZ

(Nov 2003-May 2008)

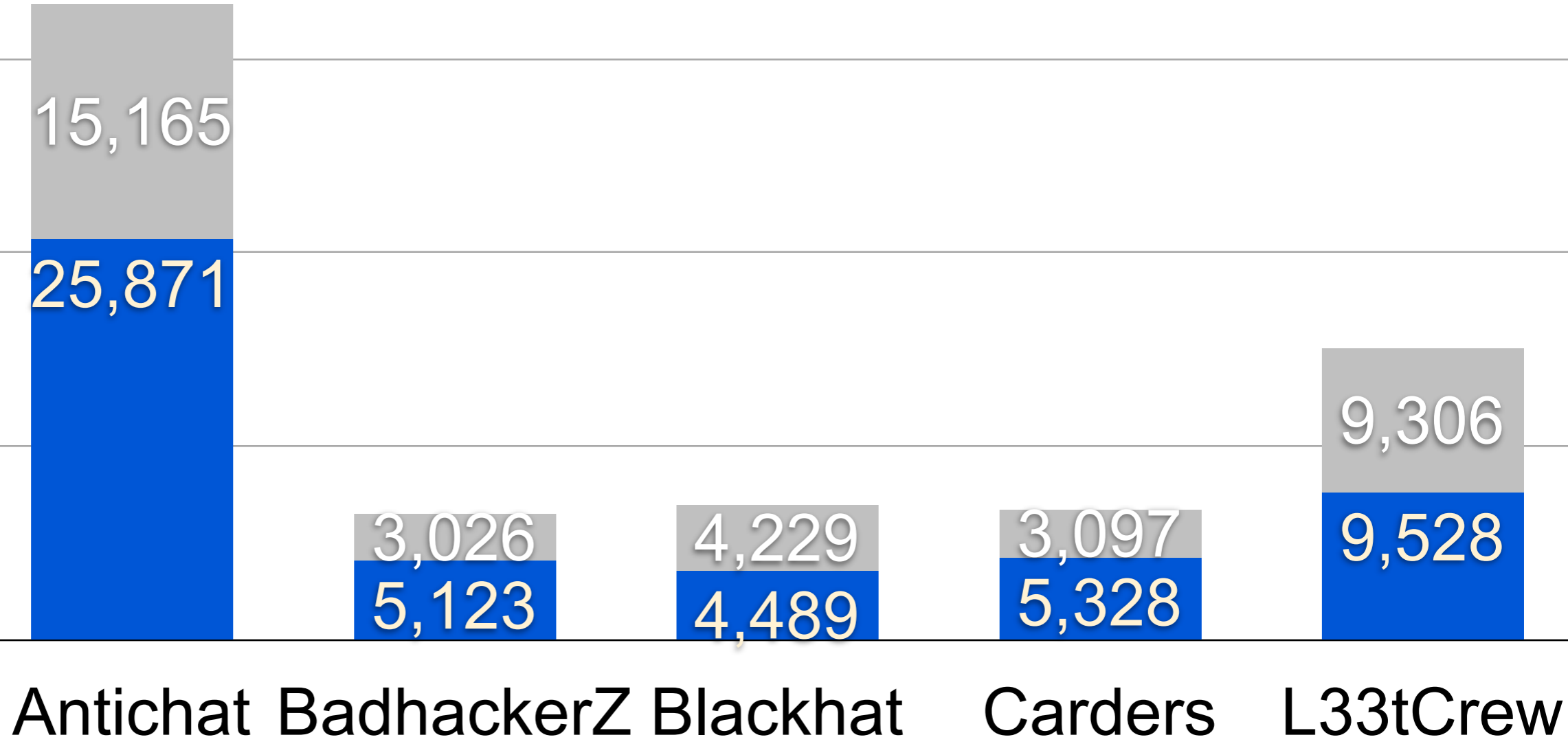
Data

5 **leaked** forums



Members

50,000
37,500
25,000
12,500
0

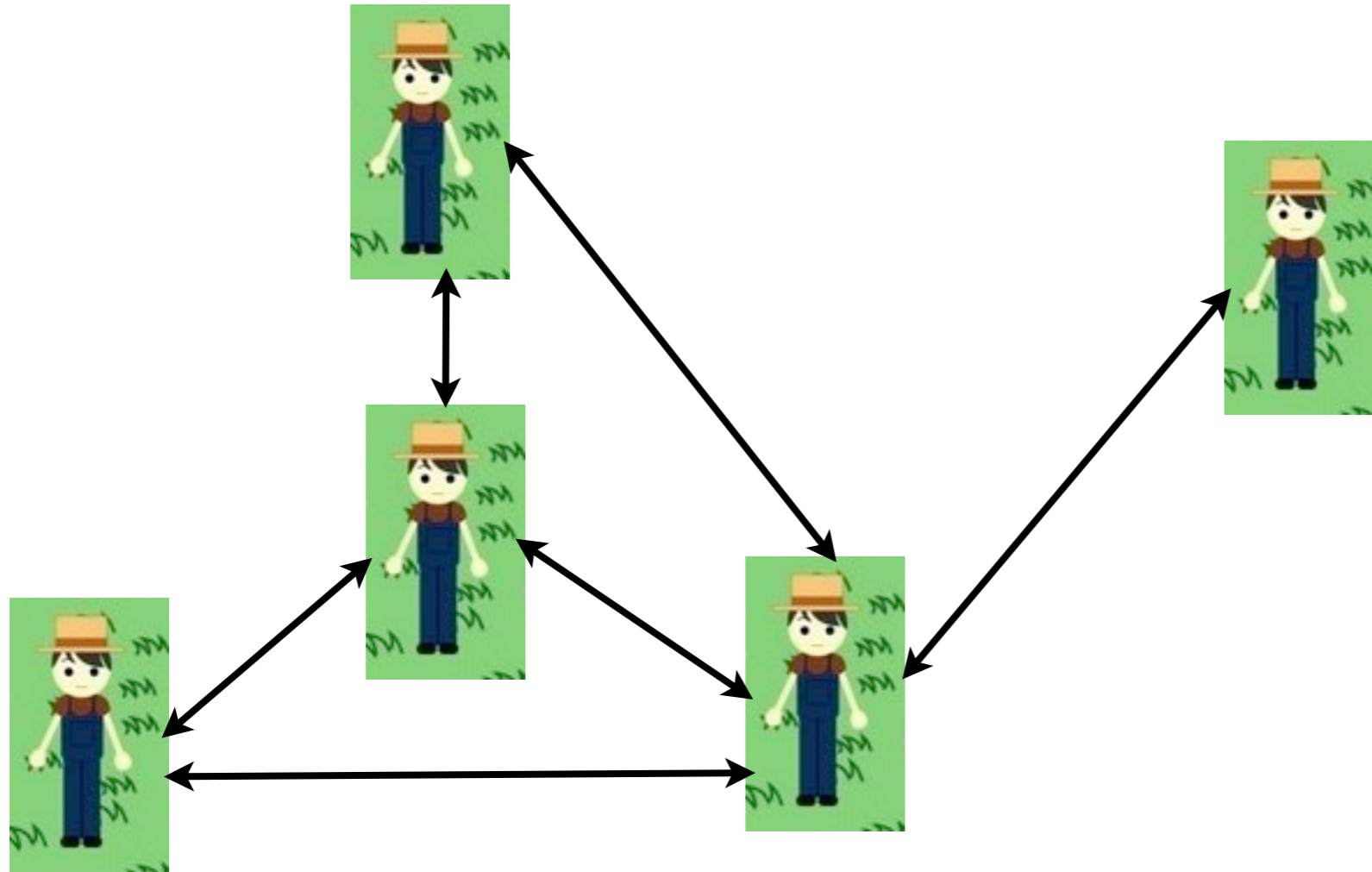


■ Active members ■ Lurkers

What is a successful forum?

- Long lasting and engaged
- “Small world”

Small world



1. Members are part of a connected group
2. Distance between any two members is small

What is a successful forum?

- Except **BadhackerZ** all shows “small world” effect
- **BadhackerZ** is an unsuccessful forum
- **The rest of forums** are successful

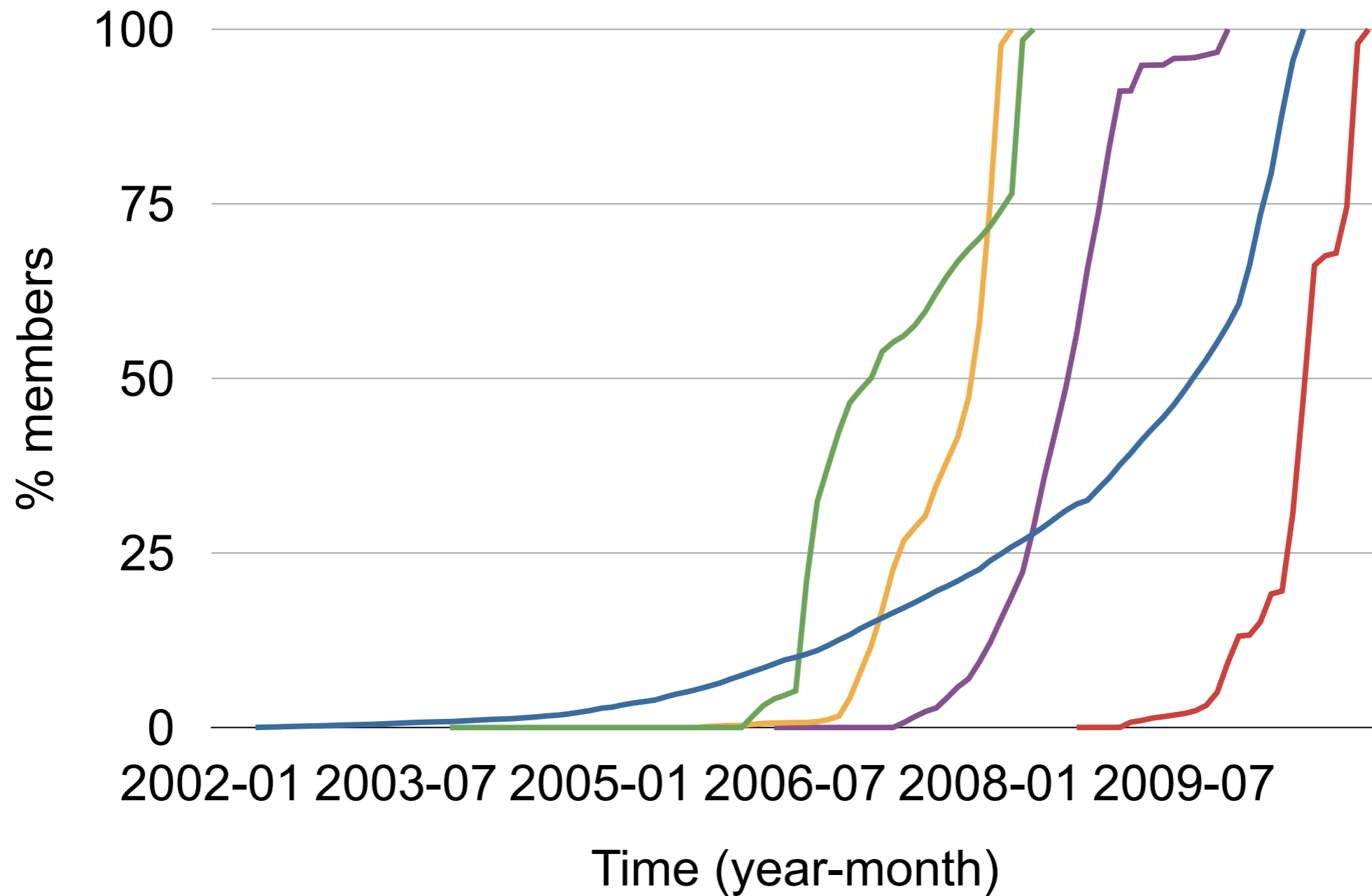
Low cost of monitoring

- 3 ways of monitoring:
 - admins and mods
 - automated filtering
 - community driven

Low cost of monitoring

- BadhackerZ had admins and mods
- Rest of the forums used all ways

Moderate rates of change of the resource consumers

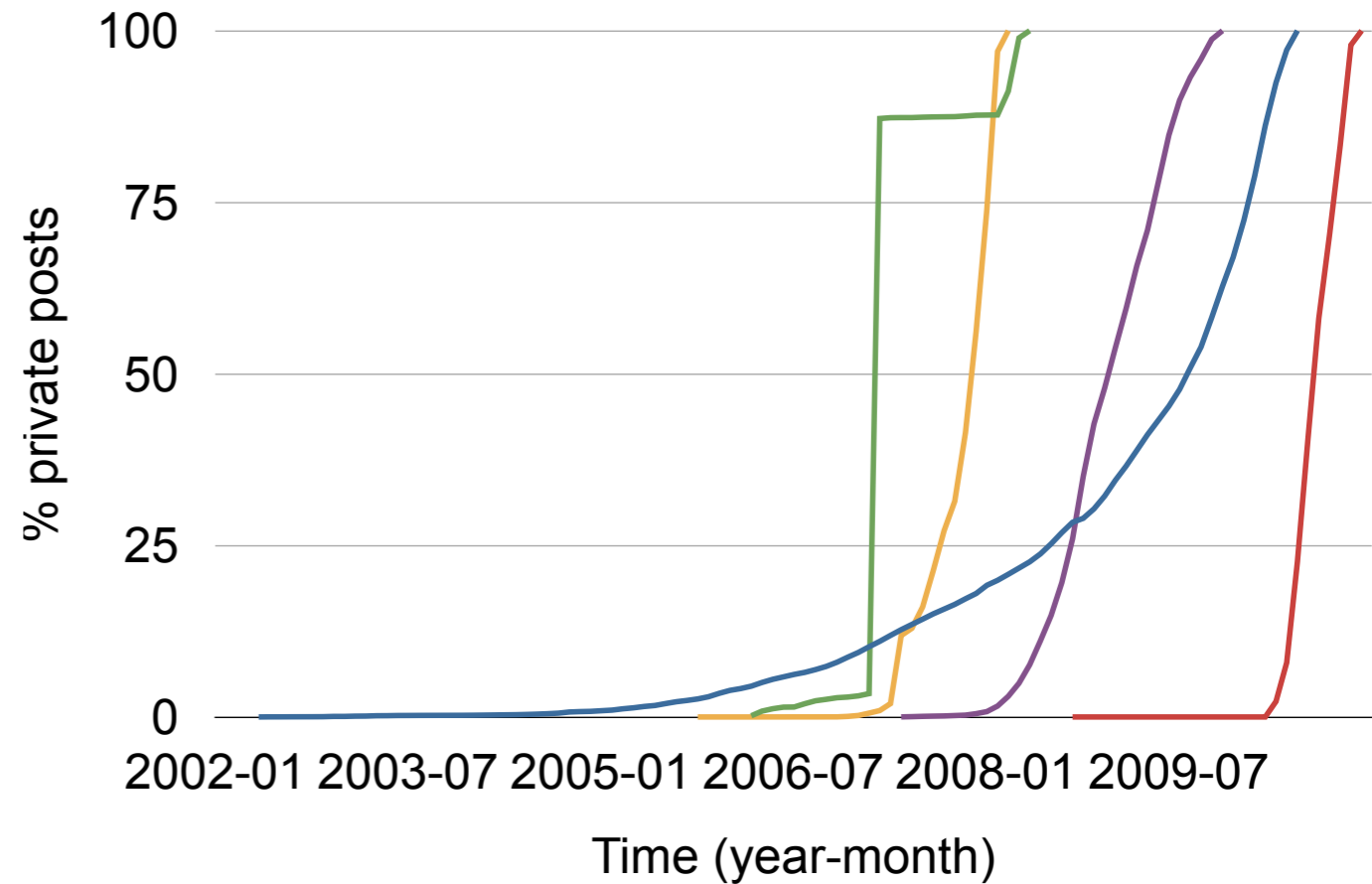
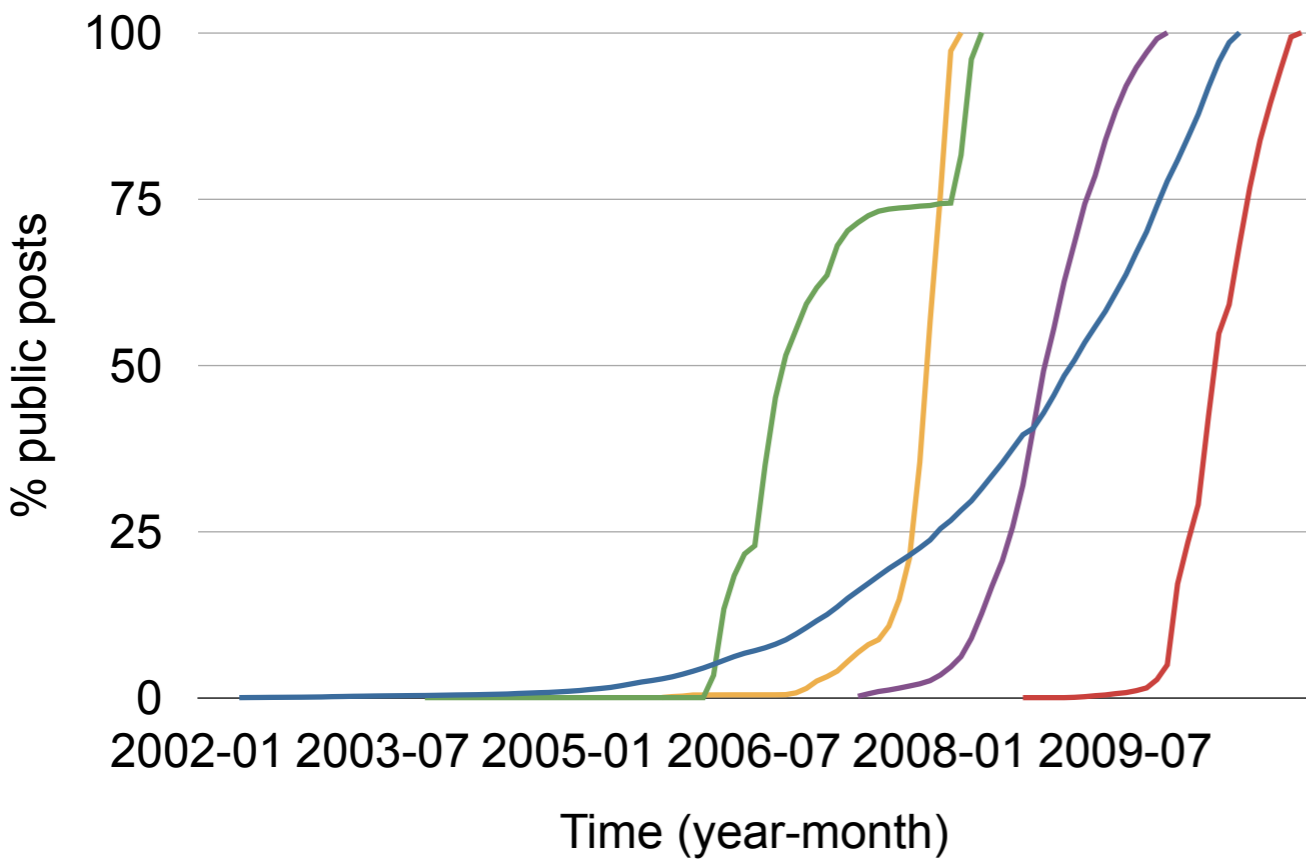


— Antichat
— Carders

— BadhackerZ
— L33tCrew

— Blackhat

Frequent communication between resource members



Antichat BadhackerZ Blackhat
Carders L33tCrew

Antichat BadhackerZ Blackhat
Carders L33tCrew

Low cost of Enforcement

- Bots
- Community driven: special threads for complaints
- Punishment is either monetary or temporary/permanent bans

Exclusion

- Anybody can join!
- But access is restricted based on rank

Summary

- Successful/sustainable forums have:
 - Easy monitoring
 - Moderate increase in members
 - Frequent communication
 - Limited privileged access
 - Strict enforcement

Future work

- Analyze more forums
- Use different measures of success
- Identify economically efficient ways to dismantle underground communities

Thanks!

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